Additional Scanning Tables

Tables of monoclinic/inclined scanning for

groups of orthorhombic and higher symmetries

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$$\mathcal{G} = P222$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a} + m\mathbf{b}$	$-p\mathbf{a} + q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01

No. 17 $P222_1$ D_2^2

$$\mathcal{G} = P222_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{c}/4)$							

$$\mathcal{G} = P2_12_12$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{b}/4)$							
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{a}/4)$							

$$\mathcal{G} = P2_12_12_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{a}/4)$							
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{b}/4)$							
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{c}/4)$							

$$\mathcal{G} = C222_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
$(\mathbf{c}/4)$							
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = C222$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$			
$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$			
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01

$\mathcal{G} = F222$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$ $(\bar{h}k0)$	$\mathbf{c}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{c}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
	p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
	n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0hk)$ $(0\bar{h}k)$	$\mathbf{a}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{a}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
	p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
	n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01

$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(k0h)$ $(k0\bar{h})$	$\mathbf{b}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{b}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
	p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
	n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01

$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$\mathcal{G} = I222$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

$$\mathcal{G} = I2_12_12_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(\mathbf{b}/4)$							
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{c}/4)$							
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{a}/4)$							
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

$$\mathcal{G} = Pmm2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$	$\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\overline{m}n)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(n0m)$ $(n0\overline{m})$	$\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11

$$\mathcal{G} = Pmc2_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(0\overline{m}\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			q odd				
			m odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			q odd				
			m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd	q even				

No. 27 $Pcc2$ C_{2v}^{3}

$$\mathcal{G} = Pcc2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd		$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		n even	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
		p odd					
		n odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			q odd				
			m odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			q odd				
			m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd	q even				

$$\mathcal{G} = Pma2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$	$\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{a}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(n0m)$ $(n0\overline{m})$	$\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$				
		n odd p even n even p odd n odd p odd	q odd m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				$Pb11$	$s\mathbf{d}$	$pb11$	L12
				$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = Pca2_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}/4)$		n odd		$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		n even	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
		p odd					
		n odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd		$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		n even	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
		p odd					
		n odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd					

$$\mathcal{G} = Pnc2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{b}/4)$		n odd	m even	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			q odd				
			m odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			q odd				
			m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\,\mathbf{d}]$	$p1$	L01
		p odd	q even				

No. 31 $Pmn2_1$ C_{2v}^7

$$\mathcal{G} = Pmn2_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$ $(\mathbf{a}/4)$	$\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(0mn)$ $(0\overline{m}n)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(n0m)$ $(n0\overline{m})$	$\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$				
		n odd p even or n even p odd	m even q odd m odd q even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12

$$\mathcal{G} = Pba2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$	$\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{a}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even q odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			m odd q odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\,\mathbf{d}]$	$p1$	L01
		p odd	q even				
$(n0m)$ $(n0\overline{m})$ $(\mathbf{b}/4)$	$\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$				
		n odd p even	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even p odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
		n odd p odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = Pna2_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
$(mn0)$ $(\overline{m}n0)$	$\mathbf{c}$ $n\mathbf{a}-m\mathbf{b}$ $p\mathbf{a}+q\mathbf{b}$ $\mathbf{c}$ $n\mathbf{a}+m\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ L09 $p1$ L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{a}/4)$	$\mathbf{a}$ $n\mathbf{b}-m\mathbf{c}$ $p\mathbf{b}+q\mathbf{c}$ $\mathbf{a}$ $n\mathbf{b}+m\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$ n odd m even p even q odd or n even m odd p odd q even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$ L01
	p odd q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$ L01
	n odd m odd	$Pb11$	$s\mathbf{d}$	$pb11$ L12
$(n0m)$ $(n0\overline{m})$ $(\mathbf{b}/4)$	$\mathbf{b}$ $n\mathbf{c}-m\mathbf{a}$ $p\mathbf{c}+q\mathbf{a}$ $\mathbf{b}$ $n\mathbf{c}+m\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$ n odd p even q odd n even m odd p odd n odd p odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$ L01
		$Pb11$	$s\mathbf{d}$	$pb11$ L12
		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$ L01

$$\mathcal{G} = Pnn2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}/4)$		n odd	m even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{b}/4)$		n odd	m even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12

$$\mathcal{G} = Cmm2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$

h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$

h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			q odd				
			m odd	$Im11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			q odd				
			m odd	$Bm11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p odd	q even				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd		$Bm11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p even	q odd				
		n even	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
		p odd					
		n odd		$Im11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p odd					

$$\mathcal{G} = Cmc2_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$

h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd, q odd	$Im11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd, p even	m even, q odd	$Bb11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even, p odd	m odd, q even	$Cc11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even, p odd	m odd, q odd	$Cn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd, p even	m odd, q odd	$Bn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m odd, q even	$Ic11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m even, q odd	$Ib11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = Ccc2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$ $(\overline{h}k0)$	$\mathbf{c}$ $\quad n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $\quad p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{c}$ $\quad n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $\quad -p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad \widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$ h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$					
$(0mn)$ $(0\overline{m}n)$	$\mathbf{a}$ $\quad n\mathbf{b} - m\mathbf{c}$ $\quad p\mathbf{b} + q\mathbf{c}$ $\mathbf{a}$ $\quad n\mathbf{b} + m\mathbf{c}$ $\quad -p\mathbf{b} + q\mathbf{c}$				
	n odd $\quad m$ even p even $\quad q$ odd	$Cc11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n even $\quad m$ odd p odd $\quad q$ even	$Bb11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even $\quad m$ odd p odd $\quad q$ odd	$Ib11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n odd $\quad m$ odd p even $\quad q$ odd	$Ic11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd $\quad m$ odd p odd $\quad q$ even	$Bn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd $\quad m$ even p odd $\quad q$ odd	$Cn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$ $(n0\overline{m})$	$\mathbf{b}$ $\quad n\mathbf{c} - m\mathbf{a}$ $\quad p\mathbf{c} + q\mathbf{a}$ $\mathbf{b}$ $\quad n\mathbf{c} + m\mathbf{a}$ $\quad -p\mathbf{c} + q\mathbf{a}$				
	n odd $\quad m$ even p even $\quad q$ odd	$Bb11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even $\quad m$ odd p odd $\quad q$ even	$Cc11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n even $\quad m$ odd p odd $\quad q$ odd	$Cn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd $\quad m$ odd p even $\quad q$ odd	$Bn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd $\quad m$ odd p odd $\quad q$ even	$Ic11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd $\quad m$ even p odd $\quad q$ odd	$Ib11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12

$\mathcal{G} = Amm2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0kl)$ $(\overline{k}l0)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}-m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
	$\mathbf{a}$	$n\widehat{\mathbf{a}}+m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				

$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$ $\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$

k even, l odd or k odd, l even $\Rightarrow n = k+l, m = k-l$
k, l odd $\Rightarrow n = (k+l)/2, m = (k-l)/2$

$(n0m)$ $(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			q odd				
			m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			q odd				
			m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p odd	q even				

$\mathcal{G} = Abm2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0kl)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}-m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				
$(\overline{k}l0)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}+m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				
		n odd	m eve	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12

$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$ $\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$

k even, l odd or k odd, l even $\Rightarrow n = k+l, m = k-l$
k, l odd $\Rightarrow n = (k+l)/2, m = (k-l)/2$

$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{b}/4)$							
		n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			q odd				
			m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			q odd				
			m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p odd	q even				

$\mathcal{G} = Ama2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0kl)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}-m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(\overline{k}l0)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}+m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				
$(\mathbf{a}/4)$							
$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$		$\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$		k even, l odd or k odd, l even $\Rightarrow n = k+l, m = k-l$ k, l odd $\Rightarrow n = (k+l)/2, m = (k-l)/2$			
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p even	q odd				
		n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p odd	q even				
		n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q odd				

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$$\mathcal{G} = Aba2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd		$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
		n odd		$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0kl)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}-m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				
$(\overline{k}l0)$	$\mathbf{a}$	$n\widehat{\mathbf{a}}+m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}}+q\widehat{\mathbf{b}}$				
$(\mathbf{a}/4)$		n odd	m eve	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12

$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$ $\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$

k even, l odd or k odd, l even $\Rightarrow n = k+l, m = k-l$
k, l odd $\Rightarrow n = (k+l)/2, m = (k-l)/2$

$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{b}/4)$		n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p even	q odd				
		n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p odd	q even				
		n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q odd				

$$\mathcal{G} = Fmm2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$ $(\bar{h}k0)$	$\mathbf{c}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{c}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
	p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
	n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0hk)$ $(0\bar{h}k)$	$\mathbf{a}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{a}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$Im11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
	p odd q odd	$Bm11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
	n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(k0h)$ $(k0\bar{h})$	$\mathbf{b}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{b}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even p even q odd or n even m odd p odd q even	$Im11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
	p odd q odd	$Bm11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
	n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$\mathcal{G} = Fdd2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
	n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
	p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
	or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
	n even m odd				
	p odd q even				
	p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
	n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0hk)$	$\mathbf{a}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\overline{h}k)$	$\mathbf{a}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\mathbf{a}/8)$	n odd m even	$Ic11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	p even q odd				
	n even m odd	$Ib11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	p odd q even				
	n even m odd	$Bb11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	p odd q odd				
	n odd m odd	$Cc11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	p even q odd				
	n odd m odd	$Cn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	p odd q even				
	n odd m even	$Bn11$	$[s\mathbf{d}, (s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	p odd q odd				

$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Continued

$\mathcal{G} = Fdd2$

$(k0h)$ $(k0\bar{h})$ $(\mathbf{a}/8)$	$\mathbf{b}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{b}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
	n odd m even p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n even m odd p odd q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even m odd p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n odd m odd p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd m odd p odd q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd m even p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$

$$\mathcal{G} = Imm2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

$\mathcal{G} = Iba2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p even	q odd				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q even				
		n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p odd	q odd				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p even	q odd				
		n even	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p odd	q even				
		n even	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		p odd	q odd				
		n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q even				
		n odd	m even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				

$\mathcal{G} = Ima2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}/4)$		n odd	m even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p even	q odd				
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p even	q odd				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q even				
		n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p odd	q odd				

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$$\mathcal{G} = P\frac{2}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

$\mathcal{G} = P\frac{2}{n}\frac{2}{n}\frac{2}{n}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$[(\mathbf{a}+\mathbf{b}+\mathbf{c})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$[(\mathbf{a}+\mathbf{b}+\mathbf{c})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$[(\mathbf{a}+\mathbf{b}+\mathbf{c})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

$\mathcal{G} = P\frac{2}{n}\frac{2}{n}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

No. 49 *Pccm* D_{2h}^{3}

$$\mathcal{G} = P\frac{2}{c}\frac{2}{c}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{m}\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
				$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
		n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = P^{\frac{2}{b}\frac{2}{a}\frac{2}{n}} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$[(\mathbf{a}+\mathbf{b})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$[(\mathbf{a}+\mathbf{b})/4]$							
		n odd	m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$[(\mathbf{a}+\mathbf{b})/4]$							
		n odd		$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
		n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

$\mathcal{G} = P_{b\,a\,n}^{2\,2\,2}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d},\ \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d},\ -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2/b11$	$0\mathbf{d},\ \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d},\ -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd		$P2/c11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2/b11$	$0\mathbf{d},\ \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
		p odd			$[s\mathbf{d},\ -s\mathbf{d}]$	$pb11$	L12
		n odd		$P2/n11$	$[0\mathbf{d},\ \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d},\ \frac{3}{4}\ \mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d},\ (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

No. 51 *Pmma* D_{2h}^{5}

$$\mathcal{G} = P\frac{2}{m}\frac{2}{m}\frac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

$$\mathcal{G} = P\tfrac{2}{n}\tfrac{2_1}{n}\tfrac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

No. 53 *Pmna* D_{2h}^{7}

$$\mathcal{G} = P\frac{2}{m}\frac{2}{n}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

No. 54 *Pcca* D_{2h}^{8}

$$\mathcal{G} = P\frac{2_1}{c}\frac{2}{c}\frac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

No. 55 *Pbam* D_{2h}^{9}

$$\mathcal{G} = P\frac{2_1}{b}\frac{2_1}{a}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = P\frac{2_1}{c}\frac{2_1}{c}\frac{2}{n}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

No. 57 *Pbcm* D_{2h}^{11}

$$\mathcal{G} = P\frac{2}{b}\frac{2_1}{c}\frac{2_1}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

No. 58 *Pnnm* D_{2h}^{12}

$$\mathcal{G} = P\frac{2_1}{n}\frac{2_1}{n}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

$$\mathcal{G} = P\frac{2_1}{m}\frac{2_1}{m}\frac{2}{n} \quad \text{origin } 1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$[(\mathbf{a}+\mathbf{b})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11\ (\mathbf{a}'/4)$	L11
$[(\mathbf{a}+\mathbf{b})/4]$							
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11\ (\mathbf{a}'/4)$	L11
$[(\mathbf{a}+\mathbf{b})/4]$							

Continued

$\mathcal{G} = P\frac{2_1}{m}\frac{2_1}{m}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11

$$\mathcal{G} = P\frac{2_1}{b}\frac{2}{c}\frac{2_1}{n}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = P\frac{2_1}{b}\frac{2_1}{c}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

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$$\mathcal{G} = P\frac{2_1}{n}\frac{2_1}{m}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		or					
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$	$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11

$$\mathcal{G} = C\frac{2}{m}\frac{2}{c}\frac{2_1}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11\ (\mathbf{a}'/4)$	L11

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$

h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$

h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = C\frac{2}{m}\frac{2}{c}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

No. 65 *Cmmm* D_{2h}^{19}

$$\mathcal{G} = C\frac{2}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
		n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11

$$\mathcal{G} = C_{c\,c\,m}^{2\,2\,2}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
		n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = C\frac{2}{m}\frac{2}{m}\frac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				
$[(\mathbf{a} + \mathbf{b})/4]$							
		n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
		p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
		n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11

$\mathcal{G} = C_{\frac{2}{c}\frac{2}{c}\frac{2}{a}}$ origin 1

Orientation orbit (hkl)	Conventional basis the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$[(\mathbf{b}+\mathbf{c})/4]$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
$[(\mathbf{a}+\mathbf{c})/4]$							
		n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = C_{c\,c\,a}^{2\,2\,2}$ origin 1

$(n0m)$ $(n0\overline{m})$ $[(\mathbf{b}+\mathbf{c})/4]$	$\mathbf{b}$ $n\mathbf{c}-m\mathbf{a}$ $p\mathbf{c}+q\mathbf{a}$ $\mathbf{b}$ $n\mathbf{c}+m\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$					
	n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12

Continued

$\mathcal{G} = C_{c\,c\,a}^{\frac{2}{c}\frac{2}{c}\frac{2}{a}}$ origin 2

Orientation orbit (hkl)	Conventional basis the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$				
		n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = C_{c\,c\,a}^{\frac{2}{2}\frac{2}{2}\frac{2}{2}}$ origin 2

$(n0m)$	$\mathbf{b}$ $n\mathbf{c}-m\mathbf{a}$ $p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$ $n\mathbf{c}+m\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$					
	n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = F\frac{2}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit hkl	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}$ $s\mathbf{d}$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Orientation orbit hkl	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}$ $s\mathbf{d}$	
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Orientation orbit hkl	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}$ $s\mathbf{d}$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$ $\quad$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

$$\mathcal{G} = F\tfrac{2}{d}\tfrac{2}{d}\tfrac{2}{d} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$[(\mathbf{a}+\mathbf{b}+\mathbf{c})/8]$							
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{b})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$

$\widehat{\mathbf{b}} = (\mathbf{a}+\mathbf{b})/2$ $\quad$ h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$[(\mathbf{a}+\mathbf{b}+\mathbf{c})/8]$							
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$ $\quad$ h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$

$\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$ $\quad$ h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$

Continued

$\mathcal{G} = F\frac{2}{d}\frac{2}{d}\frac{2}{d}$ origin 1

$(k0h)$ $(k0\overline{h})$ $[(\mathbf{a}+\mathbf{b}+\mathbf{c})/8]$	$\mathbf{b}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{b}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
	n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
				$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{a})/2$ h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$
$\widehat{\mathbf{b}} = (\mathbf{c}+\mathbf{a})/2$ h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$

Continued

$\mathcal{G} = F\frac{2}{d}\frac{2}{d}\frac{2}{d}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$
$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

Continued

$(k0h)$ $(k0\overline{h})$	$\mathbf{b}$ $n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$ $p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$ $\mathbf{b}$ $n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$ $-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
	n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L16
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L17
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
	n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
	p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
	p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
				$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$ h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$

$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$ h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$

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$$\mathcal{G} = I\frac{2}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

$$\mathcal{G} = I\frac{2}{b}\frac{2}{a}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = I\frac{2_1}{b}\frac{2_1}{c}\frac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

$$\mathcal{G} = I\frac{2_1}{b}\frac{2_1}{c}\frac{2}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$$\mathcal{G} = I\frac{2_1}{m}\frac{2_1}{m}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

Continued

$$\mathcal{G} = I\frac{2_1}{m}\frac{2_1}{m}\frac{2_1}{a}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4)$							
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

No. 75 $P4$ C_4^1

$$\mathcal{G} = P4$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
$(mn0)$ $(\bar{n}m0)$	$\mathbf{c}$ $n\mathbf{a}-m\mathbf{b}$ $p\mathbf{a}+q\mathbf{b}$ $\mathbf{c}$ $m\mathbf{a}+n\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ L08 $p1$ L01

No. 76 $P4_1$ C_4^2

$$\mathcal{G} = P4_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
$(mn0)$ $(\bar{n}m0)$	$\mathbf{c}$ $n\mathbf{a}-m\mathbf{b}$ $p\mathbf{a}+q\mathbf{b}$ $\mathbf{c}$ $m\mathbf{a}+n\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ L09 $p1$ L01

No. 77 $P4_2$ C_4^3

$$\mathcal{G} = P4_2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
$(mn0)$ $(\bar{n}m0)$	$\mathbf{c}$ $n\mathbf{a}-m\mathbf{b}$ $p\mathbf{a}+q\mathbf{b}$ $\mathbf{c}$ $m\mathbf{a}+n\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ L08 $p1$ L01

No. 78 $P4_3$ C_4^4

$$\mathcal{G} = P4_3$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
$(mn0)$ $(\bar{n}m0)$	$\mathbf{c}$ $n\mathbf{a}-m\mathbf{b}$ $p\mathbf{a}+q\mathbf{b}$ $\mathbf{c}$ $m\mathbf{a}+n\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ L09 $p1$ L01

No. 79 $I4$ C_4^5

$$\mathcal{G} = I4$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

No. 80 $I4_1$ C_4^6

$$\mathcal{G} = I4_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

No. 81 $P\overline{4}$ S_4^1

$$\mathcal{G} = P\overline{4}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01

No. 82 $I\overline{4}$ S_4^2

$$\mathcal{G} = I\overline{4}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
		n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

No. 83 $P4/m$ C_{4h}^{1}

$$\mathcal{G} = P4/m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a} + n\mathbf{b}$	$-q\mathbf{a} + p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

No. 84 $P4_2/m$ C_{4h}^{2}

$$\mathcal{G} = P4_2/m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a} + n\mathbf{b}$	$-q\mathbf{a} + p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11

No. 85 $P4/n$ C_{4h}^3

$\mathcal{G} = P4/n$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a} + n\mathbf{b}$	$-q\mathbf{a} + p\mathbf{b}$				
$(\mathbf{a} + \mathbf{b})/4$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

No. 85 $P4/n$ C_{4h}^3

Continued

$\mathcal{G} = P4/n$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a} + n\mathbf{b}$	$-q\mathbf{a} + p\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

No. 86 $P4_2/n$ C_{4h}^4

$\mathcal{G} = P4_2/n$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$							
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

No. 86 $P4_2/n$ C_{4h}^4
Continued

$\mathcal{G} = P4_2/n$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
		n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
		or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n even	m odd				
		p odd	q even				
		p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
		n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

No. 87 $I4/m$ C_{4h}^5

$$\mathcal{G} = I4/m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a} + n\mathbf{b}$	$-q\mathbf{a} + p\mathbf{b}$				
		n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
		or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n even	m odd				
		p odd	q even				
		p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
		n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

No. 88 $I4_1/a$ C_{4h}^6

$\mathcal{G} = I4_1/a$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{b}/4+\mathbf{c}/8)$							
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

No. 88 $I4_1/a$ C_{4h}^6
Continued

$\mathcal{G} = I4_1/a$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
		n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

$\mathcal{G} = P422$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P42_12$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{n}m0)$ $(\overline{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{b}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(m0n)$ $(m0\overline{n})$ $(\mathbf{a}/4)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{h}hl)$ $(h\overline{h}l)$ $(\overline{h}hl)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$ $\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even, q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			m odd, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
			m odd, p odd, q even	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4_122$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{c}/4)$								
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{c}/8)$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(3\mathbf{c}/8)$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_12_12$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{n}m0)$ $(\overline{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{b}/4+3\mathbf{c}/8)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(m0n)$ $(m0\overline{n})$ $(\mathbf{a}/4+\mathbf{c}/8)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{hh}l)$ $(\mathbf{c}/4)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
				m odd q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
				m odd q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2_111$ $p1$	L09 L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4_222$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\mathbf{c}/4)$			n odd, m even, q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd, p odd, q even	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_22_12$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{b}+\mathbf{c})/4$								
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{a}+\mathbf{c})/4$								
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4_322$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{c}/4)$							
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(3\mathbf{c}/8)$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_32_12$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{b}/4+3\mathbf{c}/8)$								
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\mathbf{a}/4+\mathbf{c}/8)$								
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{c}/4)$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = I422$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$						

$\mathcal{G} = I4_122$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{b}/4+\mathbf{c}/8)$			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}/4+3\mathbf{c}/8)$			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = I4_122$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even, q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even, q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$						

$$\mathcal{G} = P4mm$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{n}m0)$ $(\overline{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\overline{m}n)$ $(m0n)$ $(m0\overline{n})$	$\mathbf{a}$ $\mathbf{a}$ $\mathbf{b}$ $\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$ $m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$ $q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
(hhl) $(\overline{h}\overline{h}l)$ $(h\overline{h}l)$ $(\overline{h}hl)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$ $\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$\mathcal{G} = P4bm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}\bar{n}0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}\bar{n})$ $(\mathbf{a}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$				
			n odd m even q odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			m odd q odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd p odd q even	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$ $(m0\bar{n})$ $(\mathbf{b}/4)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$				
			n odd p even q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd p odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			n odd p odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl) $(\bar{h}\bar{h}l)$ $(\mathbf{a}-\mathbf{b})/4$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
			n odd m even q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd p odd q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hhl) $(\bar{h}hl)$ $(\mathbf{a}+\mathbf{b})/4$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd m even q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd p odd q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_2cm$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}\bar{n}0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}\bar{n})$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$					
			n odd		$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p even	q odd				
			n even	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			p odd					
			n odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd					
(hhl) $(\bar{h}hl)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Pb11$	$s\mathbf{d}$	$pb11$	L12
				q odd				
				m odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				q odd				
				m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\,\mathbf{d}]$	$p1$	L01
			p odd	q even				
(hhl) $(\bar{h}\bar{h}l)$ $(h\bar{h}l)$ $(\bar{h}hl)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$ $\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				q odd				
				m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				q odd				
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_2nm$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p even	q odd				
			or					
			n even	m odd				
			p odd	q even				
			p odd	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				q odd				
				m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				q odd				
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4cc$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}\bar{n})$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd		$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p even	q odd				
			n even	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			p odd					
			n odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Pb11$	$s\mathbf{d}$	$pb11$	L12
				q odd				
				m odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				q odd				
				m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd	q even				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4nc$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}\overline{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
			n odd m even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p even q odd				
			or				
			n even m odd				
			p odd q even				
			p odd q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\mathbf{a}-\mathbf{b})/4$			n odd m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even q odd				
			n even m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd q even				
			n even m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd q odd				
			n odd m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even q odd				
			n odd m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd q even				
			n odd m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd q odd				
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{b})/4$			n odd m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even q odd				
			n even m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd q even				
			n even m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd q odd				
			n odd m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even q odd				
			n odd m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd q even				
			n odd m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd q odd				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P4_2mc$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$			$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}n)$ $(m0n)$ $(m0\bar{n})$	$\mathbf{a}$ $\mathbf{a}$ $\mathbf{b}$ $\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$ $m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$ $q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$			$Pm11$	$s\mathbf{d}$	$pm11$	L11
(hhl) $(\overline{hh}l)$ $(h\bar{h}l)$ $(\bar{h}hl)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$ $\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$						
			n odd p even	m even q odd		$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even p odd	m odd q even		$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even p odd	m odd q odd		$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd p even	m odd q odd		$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd p odd	m odd q even		$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd p odd	m even q odd		$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4_2bc$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}n)$ $(\mathbf{a}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$				
			n odd m even q odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			m odd q odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd p odd q even	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$ $(m0\bar{n})$ $(\mathbf{b}/4)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$				
			n odd p even q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd p odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			n odd p odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl) $(\bar{h}\bar{h}l)$ $(\mathbf{a}-\mathbf{b})/4$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
			n odd m even p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even m odd p odd q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd m odd p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m odd p odd q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m even p odd q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
$(h\bar{h}l)$ $(\bar{h}hl)$ $(\mathbf{a}+\mathbf{b})/4$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd m even p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even m odd p odd q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd m odd p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m odd p odd q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m even p odd q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = I4mm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
			n odd, m even; p even, q odd; or n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
			n odd, m even; p even, q odd; or n even, m odd; p odd, q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd, q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd; p even, q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even, m odd; p odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			n odd; p odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd; p even, q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even, m odd; p odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			n odd; p odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$\mathcal{G} = I4cm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n even	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n even	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				

Continued

$\mathcal{G} = I4cm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$ $\mathbf{b}'$ $\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
(hhl) $(\overline{h}\overline{h}l)$ $(\mathbf{a}/2$ or $\mathbf{b}/2)$	$\mathbf{a}-\mathbf{b}$ $n\widehat{\mathbf{a}}-m\mathbf{c}$ $p\widehat{\mathbf{a}}+q\mathbf{c}$ $\mathbf{a}-\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{c}$ $-p\widehat{\mathbf{a}}+q\mathbf{c}$ n odd p even q odd n even m odd p odd n odd p odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
		$Cm11$	$s\mathbf{d}$	$cm11$ L13
		$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$			
$(h\overline{h}l)$ $(\overline{h}hl)$ $(\mathbf{a}/2$ or $\mathbf{b}/2)$	$\mathbf{a}+\mathbf{b}$ $n\widehat{\mathbf{a}}-m\mathbf{c}$ $p\widehat{\mathbf{a}}+q\mathbf{c}$ $\mathbf{a}+\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{c}$ $-p\widehat{\mathbf{a}}+q\mathbf{c}$ n odd p even q odd n even m odd p odd n odd p odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
		$Cm11$	$s\mathbf{d}$	$cm11$ L13
		$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$			
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$			

$$\mathcal{G} = I4_1md$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p even	q odd				
			or					
			n even	m odd				
			p odd	q even				
			p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b})/8$			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n even	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
			n odd	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n odd	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}+\mathbf{b})/8$			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n even	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
			n odd	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n odd	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$$\mathcal{G} = I4_1cd$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n even	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n even	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}-\mathbf{b})/8$			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n even	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
			n odd	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n odd	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b})/8$			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n even	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
			n odd	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n odd	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$							

$$\mathcal{G} = P\bar{4}2m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				q odd				
				m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				q odd				
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\bar{4}2c$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{c}/4)$								
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\bar{4}2_1m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}\bar{n}0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}\bar{n})$ $(\mathbf{b}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(m0n)$ $(m0\bar{n})$ $(\mathbf{a}/4)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{hh}l)$ $(\mathbf{a}-\mathbf{b})/4$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hhl) $(\bar{h}hl)$ $(\mathbf{a}+\mathbf{b})/4$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$$\mathcal{G} = P\bar{4}2_1c$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}n)$ $(\mathbf{b}+\mathbf{c})/4$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(m0n)$ $(m0\bar{n})$ $(\mathbf{a}+\mathbf{c})/4$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\bar{h}\bar{h}l)$ $(\mathbf{a}-\mathbf{b})/4$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
		n odd, p even	m even, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even, p odd	m odd, q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even, p odd	m odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd, p even	m odd, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m odd, q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m even, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
$(h\bar{h}l)$ $(\bar{h}hl)$ $(\mathbf{a}+\mathbf{b})/4$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
		n odd, p even	m even, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even, p odd	m odd, q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even, p odd	m odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd, p even	m odd, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m odd, q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd, p odd	m even, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

No. 115 $P\overline{4}m2$ D_{2d}^{5}

$$\mathcal{G} = P\overline{4}m2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\bar{4}c2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}n0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}n)$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p even, q odd				
			n even, m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			p odd				
			n odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd				
(hhl) $(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even, q odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			m odd, q odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\ \mathbf{d}]$	$p1$	L01
			p odd, q even				
(hhl) $(\overline{hh}l)$ $(h\bar{h}l)$ $(\bar{h}hl)$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$ $\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\mathbf{c}/4)$			n odd, m even, q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			m odd, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01
			m odd, p odd, q even	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\bar{4}b2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\bar{n}m0)$ $(\bar{m}\bar{n}0)$ $(nm0)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p211$ $p1$	L08 L01
$(0mn)$ $(0\bar{m}\bar{n})$ $(\mathbf{a}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even q odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
				m odd q odd	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\,\mathbf{d}]$	$p1$	L01
			p odd	q even				
$(m0n)$ $(m0\bar{n})$ $(\mathbf{b}/4)$	$\mathbf{b}$ $\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$					
			n odd p even	q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even p odd	m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
			n odd p odd		$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl) $(\bar{h}\bar{h}l)$ $(\mathbf{a}+\mathbf{b})/4$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
				m odd q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\bar{h}hl)$ $(\mathbf{a}-\mathbf{b})/4$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even q odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
				m odd q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2_111$ $p1$	L09 L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\bar{4}n2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}\bar{n})$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}/4)$			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{b}/4)$			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$Pn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$Pc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$Pb11$	$s\mathbf{d}$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = I\bar{4}m2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p even	q odd				
			or					
			n even	m odd				
			p odd	q even				
			p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$						

$\mathcal{G} = I\bar{4}c2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p even	q odd				
			n even	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n even	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q odd				
			n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q even				
			n odd	m even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				

Continued

$\mathcal{G} = I\bar{4}c2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\mathbf{c}/4)$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\mathbf{c}/4)$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$$\mathcal{G} = I\bar{4}2m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl) $(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p even, q odd				
			n even, m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			p odd				
			n odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd				
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$ $(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p even, q odd				
			n even, m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			p odd				
			n odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd				
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$						

$$\mathcal{G} = I\bar{4}2d$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{b}/4+\mathbf{c}/8)$			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}/4+3\mathbf{c}/8)$			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = I\bar{4}2d$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd, p even	m even, q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even, p odd	m odd, q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, p odd	m odd, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd, p even	m odd, q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, p odd	m odd, q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, p odd	m even, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd, p even	m even, q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even, p odd	m odd, q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, p odd	m odd, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd, p even	m odd, q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, p odd	m odd, q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, p odd	m even, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							
	l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$							

No. 123 $P4/mmm$ D_{4h}^{1}

$$\mathcal{G} = P\frac{4}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd, m even, q odd	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd, m odd, q odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd, p odd, q even	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$$\mathcal{G} = P\frac{4}{m}\frac{2}{c}\frac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd		$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
				m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P\frac{4}{n}\frac{2}{b}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
				m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd		$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

$\mathcal{G} = P\frac{4}{n}\frac{2}{b}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
				m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd		$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P\frac{4}{n}\frac{2}{n}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$								

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\frac{4}{m}\frac{2_1}{b}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{m}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}\bar{m}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\tfrac{4}{m}\tfrac{2_1}{n}\tfrac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P\frac{4}{n}\frac{2_1}{m}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b})/4$								
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

$\mathcal{G} = P\frac{4}{n}\frac{2_1}{m}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$		$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P\frac{4}{n}\frac{2_1}{c}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{a}+\mathbf{b})/4$			n odd m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{b})/4$			n odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}+\mathbf{b})/4$			n odd m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \quad +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$								

$\mathcal{G} = P_{n}^{4}\,{}_{c}^{2_1}\,{}_{c}^{2}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

$\mathcal{G} = P\frac{4}{n}\frac{2_1}{c}\frac{2}{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \quad +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

No. 131 $P4_2/mmc$ D_{4h}^9

$$\mathcal{G} = P\frac{4_2}{m}\frac{2}{m}\frac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\frac{4_2}{m}\frac{2}{c}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd		$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd		$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/b11$	L16
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
				m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P\frac{4_2}{n}\frac{2}{b}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \ +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
			n odd m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
			n odd m even	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			m odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
			n odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
			n odd	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \ +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P^{\frac{4_2}{n}\frac{2}{n}\frac{2}{m}} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\frac{4_2}{m}\frac{2_1}{b}\frac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}\bar{n})$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

No. 136 $P4_2/mnm$ D_{4h}^{14}

$$\mathcal{G} = P\frac{4_2}{m}\frac{2_1}{n}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\bar{m}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\bar{m}\bar{m}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\frac{4_2}{n}\frac{2_1}{m}\frac{2}{c} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\bar{m}\bar{n}0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
					$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \ +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p\bar{1}$ $p211$ $(\mathbf{b}'/4)$ $p1$	L02 L08 L01
			p odd q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p\bar{1}$ $p211$ $p1$	L02 L08 L01
			n odd m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2/b11$ $pb11$	L16 L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$	$P2_1/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_1/m11$ $pm11$ $(\mathbf{a}'/4)$	L15 L11

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, \quad \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm \ +\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P\frac{4_2}{n}\frac{2_1}{c}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

$\mathcal{G} = P\frac{4_2}{n}\frac{2_1}{c}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211\ (\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd		$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd		$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2_1/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = I\frac{4}{m}\frac{2}{m}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

Continued

$$\mathcal{G} = I\tfrac{4}{m}\tfrac{2}{m}\tfrac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$\pm s\mathbf{d}, \ \pm s \ \ \frac{1}{2}\ \mathbf{d}$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$						
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$\pm s\mathbf{d}, \ \pm s \ \ \frac{1}{2}\ \mathbf{d}$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$						

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$$\mathcal{G} = I\frac{4}{m}\frac{2}{c}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{m}\frac{2}{d}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{b}/4+\mathbf{c}/8)$			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$s\mathbf{d}, -s\mathbf{d}$	$cm11$	L13
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}/4+3\mathbf{c}/8)$			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$s\mathbf{d}, -s\mathbf{d}$	$cm11$	L13

Continued

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{m}\frac{2}{d}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}/4+\mathbf{c}/8)$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}/4+\mathbf{c}/8)$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							

l odd $\Rightarrow n = 2l, m = 2h+l$; l even $\Rightarrow n = l, m = h+l/2$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p\bar{1}}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p\bar{1}}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$s\mathbf{d}, -s\mathbf{d}$	$cm11$	L13
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$s\mathbf{d}, -s\mathbf{d}$	$cm11$	L13

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}-\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}/2 \text{ or } \mathbf{b}/2)$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							

l odd $\Rightarrow n = 2l, m = 2h + l$; l even $\Rightarrow n = l, m = h + l/2$

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{c}\frac{2}{d}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(\mathbf{b}/4+\mathbf{c}/8)$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}/4+3\mathbf{c}/8)$			n odd	m even	$I2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$	L10
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{hh}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}/4+3\mathbf{c}/8)$			n odd	m even	$B2/b11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{c}\frac{2}{d}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}/4+\mathbf{c}/8)$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							
	l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$							

Continued

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{c}\frac{2}{d}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$I2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$	L10
						$\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}$, $\frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}$, $\frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}$, $(\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$							

Continued

$\mathcal{G} = I\frac{4_1}{a}\frac{2}{c}\frac{2}{d}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$							
	l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$							

$$\mathcal{G} = P312$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P321$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P3_112$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{hh}2hl)$ $(\mathbf{c}/3)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$ $(\mathbf{c}/6)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P3_121$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$ $(\mathbf{c}/3)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\bar{h}0hl)$ $(\mathbf{c}/6)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P3_212$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{hh}2hl)$ $(\mathbf{c}/6)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$ $(\mathbf{c}/3)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P3_221$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(\mathbf{c}/6)$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\mathbf{c}/3)$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$\mathcal{G} = R32$

Orientation orbit

Hexagonal axes $(hkil)$	Rhombohedral axes (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$	(hhl)	$\mathbf{a}$	$n\mathbf{c} - m\mathbf{c}_r$	$p\mathbf{c} + q\mathbf{c}_r$					
$(\bar{h}0hl)$	(lhh)	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}_r$	$p\mathbf{c} + q\mathbf{a}_r$					
$(h\bar{h}0l)$	(hlh)	$-(\mathbf{a}+\mathbf{b})$	$n\mathbf{c} - m\mathbf{b}_r$	$p\mathbf{c} + q\mathbf{b}_r$					
				n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
				or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
				n even	m odd				
				p odd	q even				
				p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
							$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
							$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
				n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
							$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Transformation of indices from hexagonal to auxiliary monoclinic basis

l odd $\Rightarrow n = l - 2h, m = 6h$; l even $\Rightarrow n = l/2 - h, m = 3h$

Transformation of indices from rhombohedral to auxiliary monoclinic basis

l odd $\Rightarrow n = l, m = 2h + l$; l even $\Rightarrow n = l/2, m = h + l/2$

$\mathcal{G} = P3m1$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$ $(\bar{h}0hl)$ $(h\bar{h}0l)$	$\mathbf{a}$ $\mathbf{b}$ $-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$ $-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$ $-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
			n odd	m even q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				m odd q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P31m$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$ $(\bar{h}\bar{h}2hl)$ $(2h\bar{h}\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$ $\mathbf{b}-\mathbf{a}$ $-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{b}-m\mathbf{c}$ $-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n\mathbf{a}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p\mathbf{a}+q\mathbf{c}$				
		n odd	m even q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			m odd q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
		p odd					
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$$\mathcal{G} = P3c1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$ $(\bar{h}0hl)$ $(h\bar{h}0l)$	$\mathbf{a}$ $\mathbf{b}$ $-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$ $-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$ $-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
			n odd p even	m even q odd		$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even p odd	m odd q even		$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even p odd	m odd q odd		$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd p even	m odd q odd		$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd p odd	m odd q even		$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd p odd	m even q odd		$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$								

$\mathcal{G} = P31c$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

No. 160 $R3m$ C_{3v}^{5}

$$\mathcal{G} = R3m$$

Orientation orbit

Hexagonal axes $(hkil)$	Rhombohedral axes (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$ $(\bar{h}0hl)$ $(h\bar{h}0l)$	(hhl) (lhh) (hlh)	$\mathbf{a}$ $\mathbf{b}$ $-(\mathbf{a}+\mathbf{b})$	$n\mathbf{c}-m\mathbf{c}_r$ $n\mathbf{c}-m\mathbf{a}_r$ $n\mathbf{c}-m\mathbf{b}_r$	$p\mathbf{c}+q\mathbf{c}_r$ $p\mathbf{c}+q\mathbf{a}_r$ $p\mathbf{c}+q\mathbf{b}_r$		$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				n odd, p even	m even, q odd				
				or					
				n even, p odd	m odd, q even				
				p odd	q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				n odd	m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13

Transformation of indices from hexagonal to auxiliary monoclinic basis

l odd $\Rightarrow n = l - 2h, m = 6h$; l even $\Rightarrow n = l/2 - h, m = 3h$

Transformation of indices from rhombohedral to auxiliary monoclinic basis

l odd $\Rightarrow n = l, m = 2h + l$; l even $\Rightarrow n = l/2, m = h + l/2$

No. 161 $R3c$ C_{3v}^{6}

$$\mathcal{G} = R3c$$

Orientation orbit

Hexagonal axes $(hkil)$	Rhombohedral axes (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$	(hhl)	$\mathbf{a}$	$n\mathbf{c} - m\mathbf{c}_r$	$p\mathbf{c} + q\mathbf{c}_r$					
$(\bar{h}0hl)$	(lhh)	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}_r$	$p\mathbf{c} + q\mathbf{a}_r$					
$(h\bar{h}0l)$	(hlh)	$-(\mathbf{a}+\mathbf{b})$	$n\mathbf{c} - m\mathbf{b}_r$	$p\mathbf{c} + q\mathbf{b}_r$					
				n odd	m even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p even	q odd				
				n even	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q even				
				n even	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q odd				
				n odd	m odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p even	q odd				
				n odd	m odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p odd	q even				
				n odd	m even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q odd				

Transformation of indices from hexagonal to auxiliary monoclinic basis

l odd $\Rightarrow n = l - 2h, m = 6h$; l even $\Rightarrow n = l/2 - h, m = 3h$

Transformation of indices from rhombohedral to auxiliary monoclinic basis

l odd $\Rightarrow n = l, m = 2h + l$; l even $\Rightarrow n = l/2, m = h + l/2$

$$\mathcal{G} = P\bar{3}1m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}\bar{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(2h\bar{h}\bar{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\overline{3}1c$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
		n odd	m even		$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}1$	L02
		p even	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd		$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd		$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd		$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m odd		$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		n odd	m even		$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\overline{3}m1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
					$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\overline{3}c1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
		n odd	m even		$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p even	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		n even	m odd		$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q even			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n even	m odd		$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
		p odd	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		n odd	m odd		$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p even	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m odd		$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
		p odd	q even			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
		n odd	m even		$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
		p odd	q odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

No. 166 $R\overline{3}m$ D_{3d}^{5}

$$\mathcal{G} = R\overline{3}m$$

Orientation orbit

Hexagonal axes $(hkil)$	Rhombohedral axes (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\overline{h}l)$	(hhl)	$\mathbf{a}$	$n\mathbf{c}-m\mathbf{c}_r$	$p\mathbf{c}+q\mathbf{c}_r$					
$(\overline{h}0hl)$	(lhh)	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}_r$	$p\mathbf{c}+q\mathbf{a}_r$					
$(h\overline{h}0l)$	(hlh)	$-(\mathbf{a}+\mathbf{b})$	$n\mathbf{c}-m\mathbf{b}_r$	$p\mathbf{c}+q\mathbf{b}_r$					
				n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
				or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				n even	m odd				
				p odd	q even				
				p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
							$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
							$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

Transformation of indices from hexagonal to auxiliary monoclinic basis

l odd $\Rightarrow n = l - 2h,\ m = 6h$; l even $\Rightarrow n = l/2 - h,\ m = 3h$

Transformation of indices from rhombohedral to auxiliary monoclinic basis

l odd $\Rightarrow n = l,\ m = 2h + l$; l even $\Rightarrow n = l/2,\ m = h + l/2$

No. 167 $R\bar{3}c$ D_{3d}^{6}

$$\mathcal{G} = R\bar{3}c$$

Orientation orbit

Hexagonal axes $(hkil)$	Rhombohedral axes (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(0h\bar{h}l)$	(hhl)	$\mathbf{a}$	$n\mathbf{c}-m\mathbf{c}_r$	$p\mathbf{c}+q\mathbf{c}_r$					
$(\bar{h}0hl)$	(lhh)	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}_r$	$p\mathbf{c}+q\mathbf{a}_r$					
$(h\bar{h}0l)$	(hlh)	$-(\mathbf{a}+\mathbf{b})$	$n\mathbf{c}-m\mathbf{b}_r$	$p\mathbf{c}+q\mathbf{b}_r$					
				n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
				n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
				n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12

Transformation of indices from hexagonal to auxiliary monoclinic basis

l odd $\Rightarrow n = l - 2h, m = 6h$; l even $\Rightarrow n = l/2 - h, m = 3h$

Transformation of indices from rhombohedral to auxiliary monoclinic basis

l odd $\Rightarrow n = l, m = 2h + l$; l even $\Rightarrow n = l/2, m = h + l/2$

$$\mathcal{G} = P6$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$$\mathcal{G} = P6_1$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$$\mathcal{G} = P6_5$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a} + (m+n)\mathbf{b}$	$-q\mathbf{a} + (p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a} - n\mathbf{b}$	$(q-p)\mathbf{a} - p\mathbf{b}$				

$$\mathcal{G} = P6_2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$$\mathcal{G} = P6_4$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$$\mathcal{G} = P6_3$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$$\mathcal{G} = P\overline{6}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

No. 175 $P6/m$ C_{6h}^{1}

$$\mathcal{G} = P6/m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

No. 176 $P6_3/m$ C_{6h}^2

$$\mathcal{G} = P6_3/m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$	$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$				

$\mathcal{G} = P622$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P6_122$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$\mathbf{c}/3$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$				
$\mathbf{c}/6$			n odd, m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd, q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}2h\overline{hl})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$\mathbf{c}/12$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{hh}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$5\mathbf{c}/12$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{hh}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
$\mathbf{c}/4$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P6_522$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/6$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/3$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

$\mathcal{G} = P6_522$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}2h\bar{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$5\mathbf{c}/12$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{hh}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/12$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{hh}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
$\mathbf{c}/4$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P6_222$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/6$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/3$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}2h\bar{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$\mathbf{c}/6$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h\bar{h}}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h\bar{h}}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/3$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{hh}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P6_422$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/3$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/6$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}2h\overline{hl})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$\mathbf{c}/3$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{hh}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$\mathbf{c}/6$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{hh}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P6_322$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$(\overline{h}h2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}h2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
$\mathbf{c}/4$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P6mm$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{hl})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			n odd, m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(\bar{h}2h\overline{hl})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$				
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{hh}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$				
$(2h\overline{hh}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			n odd, m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$$\mathcal{G} = P6cc$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
		n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p even	q odd				
		n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p odd	q even				
		n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q odd				
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$				
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$				
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$				
		n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p even	q odd				
		n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q even				
		n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
		p odd	q odd				
		n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p even	q odd				
		n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
		p odd	q even				
		n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
		p odd	q odd				

l odd $\Rightarrow$ $n = l$, $m = 2h$; l even $\Rightarrow$ $n = l/2$, $m = h$

$\mathcal{G} = P6cm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q$						
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$						
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$						
				n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p even	q odd				
				n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q even				
				n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q odd				
				n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p even	q odd				
				n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q even				
				n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p odd	q odd				
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$						
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$						
$(\overline{hh}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{hh}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(2h\overline{hh}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$						
$(2h\overline{hh}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$						
				n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
					q odd				
					m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
					q odd				
					m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				p odd	q even				
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$								

$\mathcal{G} = P6mc$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_111$	L09
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\bar{h}\bar{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
				n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
					q odd				
					m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
					q odd				
					m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				p odd	q even				
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$						
$(\bar{h}2h\bar{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$						
$(\bar{h}h2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\bar{h}h2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(2h\bar{h}\bar{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$						
$(2h\bar{h}\bar{h}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$						
				n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p even	q odd				
				n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q even				
				n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q odd				
				n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p even	q odd				
				n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q even				
				n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p odd	q odd				
l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$									

$$\mathcal{G} = P\bar{6}m2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{h}\bar{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$				
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$				
			n odd, m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			n odd, m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd, m odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(\bar{h}2h\overline{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$				
$(\overline{h}h2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}h2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$				
$(2h\overline{h}\overline{h}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$				
			n odd, m even, q odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd, m odd, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, m odd, q even	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\bar{6}c2$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$						
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(\mathbf{c}/4)$									
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\bar{h}\bar{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q$						
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$						
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$						
				n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p even	q odd				
				n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q even				
				n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q odd				
				n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p even	q odd				
				n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q even				
				n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p odd	q odd				
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$						
$(\bar{h}2h\bar{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$						
$(\overline{h\bar{h}}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{h\bar{h}}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(2h\overline{h\bar{h}}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$						
$(2h\overline{h\bar{h}}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$						
				n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
					m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
					m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\bar{6}2m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{hl})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$				
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
			n odd m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(\bar{h}2h\overline{hl})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$				
$(\overline{h\bar{h}}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h\bar{h}}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(2h\overline{h\bar{h}l})$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$				
$(2h\overline{hhl})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$				
			n odd m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P\bar{6}2c$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$Pm11$	$s\mathbf{d}$	$pm11$	L11
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$						
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(\mathbf{c}/4)$									
$(0h\bar{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\overline{h\bar{l}})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\bar{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\bar{h}0h\bar{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$						
$(h\bar{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\bar{h}0\bar{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$						
				n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
					q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
					m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
					m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$						
$(\bar{h}2h\overline{h\bar{l}})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$						
$(\overline{h\bar{h}}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{h\bar{h}}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(2h\overline{h\bar{h}l})$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$						
$(2h\overline{h\bar{h}\bar{l}})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$						
				n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p even	q odd				
				n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q even				
				n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				p odd	q odd				
				n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p even	q odd				
				n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				p odd	q even				
				n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				p odd	q odd				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P6/mmm$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$				
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$				
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$				
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$				
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$				
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$				
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$				
			n odd m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$				
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$				
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$				
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$				
			n odd m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P6/mcc$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$						
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$						
				n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = P6/mcc$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}2h\bar{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\bar{h}2h\bar{h}\bar{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$(\bar{h}\bar{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}2h\bar{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(2h\bar{h}\bar{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\bar{h}\bar{h}\bar{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$\mathcal{G} = P6_3/mcm$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$					
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$		$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$ $(\mathbf{a}'/4)$	L11
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$					
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$					
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$					
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$					
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$					
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$					
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$					
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$					
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P6_3/mmc$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$			Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn\overline{m+n}0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$						
$(\overline{m+n}mn0)$	$\mathbf{c}$	$m\mathbf{a}+(m+n)\mathbf{b}$	$-q\mathbf{a}+(p-q)\mathbf{b}$						
$(n\overline{m+n}m0)$	$\mathbf{c}$	$-(m+n)\mathbf{a}-n\mathbf{b}$	$(q-p)\mathbf{a}-p\mathbf{b}$			$P2_1/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/m11$	L15
$(nm\overline{m+n}0)$	$-\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$-q\mathbf{a}-p\mathbf{b}$				$[s\mathbf{d}, -s\mathbf{d}]$	$pm11\ (\mathbf{a}'/4)$	L11
$(\overline{m+n}nm0)$	$\mathbf{c}$	$n\mathbf{a}+(m+n)\mathbf{b}$	$p\mathbf{a}+(p-q)\mathbf{b}$						
$(m\overline{m+n}n0)$	$-\mathbf{c}$	$-(m+n)\mathbf{a}-m\mathbf{b}$	$(q-p)\mathbf{a}+q\mathbf{b}$						
$(0h\overline{h}l)$	$\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})+q\mathbf{c}$						
$(0h\overline{h}\overline{l})$	$-\mathbf{a}$	$n(\mathbf{a}+2\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+2\mathbf{b})-q\mathbf{c}$						
$(\overline{h}0hl)$	$\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{h}0h\overline{l})$	$-\mathbf{b}$	$-n(2\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(2\mathbf{a}+\mathbf{b})-q$						
$(h\overline{h}0l)$	$-(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})+q\mathbf{c}$						
$(h\overline{h}0\overline{l})$	$(\mathbf{a}+\mathbf{b})$	$n(\mathbf{a}-\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}-\mathbf{b})-q\mathbf{c}$						
				n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
					m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
					m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\overline{h}2h\overline{h}l)$	$2\mathbf{a}+\mathbf{b}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$						
$(\overline{h}2h\overline{h}\overline{l})$	$-(2\mathbf{a}+\mathbf{b})$	$n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}-q\mathbf{c}$						
$(\overline{h}\overline{h}2hl)$	$\mathbf{b}-\mathbf{a}$	$-n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$						
$(\overline{h}\overline{h}2h\overline{l})$	$\mathbf{a}-\mathbf{b}$	$-n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})-q\mathbf{c}$						
$(2h\overline{h}\overline{h}l)$	$-(\mathbf{a}+2\mathbf{b})$	$n\mathbf{a}-m\mathbf{c}$	$p\mathbf{a}+q\mathbf{c}$						
$(2h\overline{h}\overline{h}\overline{l})$	$\mathbf{a}+2\mathbf{b}$	$n\mathbf{a}+m\mathbf{c}$	$p\mathbf{a}-q\mathbf{c}$						
				n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
				n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
				n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
				n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
				p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
				n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
				p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
							$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = P23$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a} + m\mathbf{b}$	$-p\mathbf{a} + q\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$	$P211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p211$	L08
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				

$$\mathcal{G} = F23$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				

$$\mathcal{G} = I23$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

$$\mathcal{G} = P2_13$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$ $(\mathbf{a}/4)$	$\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(0mn)$ $(0\overline{m}n)$ $(\mathbf{b}/4)$	$\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(n0m)$ $(n0\overline{m})$ $(\mathbf{c}/4)$	$\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01

$$\mathcal{G} = I2_13$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(\mathbf{b}/4)$			n odd, m even; p even, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			or				
			n even, m odd; p odd, q even				
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(\mathbf{c}/4)$			n odd, m even; p even, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			or				
			n even, m odd; p odd, q even				
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(\mathbf{a}/4)$			n odd, m even; p even, q odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			or				
			n even, m odd; p odd, q even				
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

$$\mathcal{G} = P\tfrac{2}{m}\overline{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a} - m\mathbf{b}$	$p\mathbf{a} + q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a} + m\mathbf{b}$	$-p\mathbf{a} + q\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b} - m\mathbf{c}$	$p\mathbf{b} + q\mathbf{c}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b} + m\mathbf{c}$	$-p\mathbf{b} + q\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(n0m)$	$\mathbf{b}$	$n\mathbf{c} - m\mathbf{a}$	$p\mathbf{c} + q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c} + m\mathbf{a}$	$-p\mathbf{c} + q\mathbf{a}$				

$$\mathcal{G} = P\tfrac{2}{n}\overline{3} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = P\tfrac{2}{n}\overline{3} \quad \text{origin 2}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12

$$\mathcal{G} = F\tfrac{2}{m}\overline{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$				
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$		h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$				

$\mathcal{G} = F\frac{2}{d}\overline{3}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{b})/2$		h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$					
	$\widehat{\mathbf{b}} = (\mathbf{a}+\mathbf{b})/2$		h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$					
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$		h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$					
	$\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$		h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$					

Continued

$\mathcal{G} = F\frac{2}{d}\overline{3}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{a})/2$		h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$					
	$\widehat{\mathbf{b}} = (\mathbf{c}+\mathbf{a})/2$		h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$					

$\mathcal{G} = F\frac{2}{d}\overline{3}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$					
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$		h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$					
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$					
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$		h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$					

$\mathcal{G} = F\frac{2}{d}\overline{3}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$		h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$					
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$		h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$					

$$\mathcal{G} = I\frac{2}{m}\overline{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13

$$\mathcal{G} = P\tfrac{2}{a}\overline{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
			n odd	m even	$P2_1/b11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2_1/b11$	L17
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
				m odd	$P2_1/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$P2_1/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

$$\mathcal{G} = I\tfrac{2}{a}\overline{3}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$\pm s\mathbf{d},\ \pm s\ \ \frac{1}{2}\ \mathbf{d}$	$pb11\ (\mathbf{a}'/4)$	L12

$$\mathcal{G} = P432$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = P4_232$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{c})/4$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(lh\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(\mathbf{b}+\mathbf{a})/4$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
$(\mathbf{c}+\mathbf{b})/4$			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = F432$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(\bar{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(0\bar{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(h0\bar{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F432$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl) $(\overline{hh}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$						
$(h\overline{h}l)$ $(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$						
(lhh) $(l\overline{hh})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$						

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$ $(l\bar{h}h)$	$(\mathbf{b}+\mathbf{c})/2$ $(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$ $n\widehat{\mathbf{a}}+m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$ $-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even p even, q odd or n even, m odd p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$						
(hlh) $(\bar{h}l\bar{h})$	$(\mathbf{c}-\mathbf{a})/2$ $(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even p even, q odd or n even, m odd p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$						
$(\bar{h}lh)$ $(hl\bar{h})$	$(\mathbf{c}+\mathbf{a})/2$ $(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even p even, q odd or n even, m odd p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $(\mathbf{b}'/4)$ $p1$	L08 L09 L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$						

$\mathcal{G} = F4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(\bar{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(0\bar{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(h0\bar{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl) $(\overline{hh}l)$ $(\mathbf{a}/4+\mathbf{c}/8)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$						
$(h\overline{h}l)$ $(\overline{h}hl)$ $(\mathbf{a}/4+3\mathbf{c}/8)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$						
(lhh) $(l\overline{hh})$ $(\mathbf{b}/4+\mathbf{a}/8)$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$						

Continued

$\mathcal{G} = F4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}} - m\mathbf{a}$	$p\widehat{\mathbf{a}} + q\mathbf{a}$				
$(l\bar{h}h)$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}} + m\mathbf{a}$	$-p\widehat{\mathbf{a}} + q\mathbf{a}$				
$(\mathbf{b}/4 + 3\mathbf{a}/8)$							
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$						
(hlh)	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}} - m\mathbf{b}$	$p\widehat{\mathbf{a}} + q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}} + m\mathbf{b}$	$-p\widehat{\mathbf{a}} + q\mathbf{b}$				
$(\mathbf{c}/4 + \mathbf{b}/8)$							
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$						
$(\bar{h}lh)$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}} - m\mathbf{b}$	$p\widehat{\mathbf{a}} + q\mathbf{b}$				
$(hl\bar{h})$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}} + m\mathbf{b}$	$-p\widehat{\mathbf{a}} + q\mathbf{b}$				
$(\mathbf{c}/4 + 3\mathbf{b}/8)$							
			n odd, m even; p even, q odd; or; n even, m odd; p odd, q even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			p odd, q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd, m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$						

$\mathcal{G} = I432$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

Continued

$\mathcal{G} = I432$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{hh})$	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
(hlh)	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$\mathcal{G} = P4_332$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$ $(nm0)$ $(\overline{n}m0)$ $(\mathbf{a}/4)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(0mn)$ $(0\overline{m}n)$ $(0nm)$ $(0\overline{n}m)$ $(\mathbf{b}/4)$	$\mathbf{a}$ $\mathbf{a}$ $\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$ $m\mathbf{b}-n\mathbf{c}$ $m\mathbf{b}+n\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$ $q\mathbf{b}+p\mathbf{c}$ $-q\mathbf{b}+p\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(n0m)$ $(n0\overline{m})$ $(m0n)$ $(m0\overline{n})$ $(\mathbf{c}/4)$	$\mathbf{b}$ $\mathbf{b}$ $\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$ $m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$ $q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{h}\overline{h}l)$ $(\mathbf{a}+\mathbf{c})/8$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
			n odd p even $\quad q$ odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n even $\quad m$ odd p odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			n odd p odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01
$(h\overline{h}l)$ $(\overline{h}hl)$ $3(\mathbf{b}+\mathbf{c})/8$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd p even $\quad q$ odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n even $\quad m$ odd p odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			n odd p odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(\mathbf{b}+\mathbf{a})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(lhh)	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$3(\mathbf{c}+\mathbf{a})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\mathbf{c}+\mathbf{b})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hlh)	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$3(\mathbf{a}+\mathbf{b})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$\mathcal{G} = P4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$ $(\overline{m}n0)$ $(nm0)$ $(\overline{n}m0)$ $(\mathbf{a}/4)$	$\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$ $\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$ $n\mathbf{a}+m\mathbf{b}$ $m\mathbf{a}-n\mathbf{b}$ $m\mathbf{a}+n\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$ $-p\mathbf{a}+q\mathbf{b}$ $q\mathbf{a}+p\mathbf{b}$ $-q\mathbf{a}+p\mathbf{b}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(0mn)$ $(0\overline{m}n)$ $(0nm)$ $(0\overline{n}m)$ $(\mathbf{b}/4)$	$\mathbf{a}$ $\mathbf{a}$ $\mathbf{a}$ $\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$ $n\mathbf{b}+m\mathbf{c}$ $m\mathbf{b}-n\mathbf{c}$ $m\mathbf{b}+n\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$ $-p\mathbf{b}+q\mathbf{c}$ $q\mathbf{b}+p\mathbf{c}$ $-q\mathbf{b}+p\mathbf{c}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
$(n0m)$ $(n0\overline{m})$ $(m0n)$ $(m0\overline{n})$ $(\mathbf{c}/4)$	$\mathbf{b}$ $\mathbf{b}$ $\mathbf{b}$ $\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$ $n\mathbf{c}+m\mathbf{a}$ $m\mathbf{c}-n\mathbf{a}$ $m\mathbf{c}+n\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$ $-p\mathbf{c}+q\mathbf{a}$ $q\mathbf{c}+p\mathbf{a}$ $-q\mathbf{c}+p\mathbf{a}$	$P2_111$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p2_111$ $p1$	L09 L01
(hhl) $(\overline{h}\overline{h}l)$ $3(\mathbf{a}+\mathbf{c})/8$	$\mathbf{a}-\mathbf{b}$ $\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$ $n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$ $-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
			n odd p even $\quad q$ odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n even $\quad m$ odd p odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			n odd p odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01
$(h\overline{h}l)$ $(\overline{h}hl)$ $(\mathbf{b}+\mathbf{c})/8$	$\mathbf{a}+\mathbf{b}$ $\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$ $n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$ $-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
			n odd p even $\quad q$ odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111$ $p1$	L08 L09 L01
			n even $\quad m$ odd p odd	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c211$ $\widehat{p}1$	L10 L01
			n odd p odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p211$ $p2_111\ (\mathbf{b}'/4)$ $p1$	L08 L09 L01

Continued

$\mathcal{G} = P4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$3(\mathbf{b}+\mathbf{a})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(lhh)	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(\mathbf{c}+\mathbf{a})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$3(\mathbf{c}+\mathbf{b})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
(hlh)	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(\mathbf{a}+\mathbf{b})/8$			n odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even $\quad m$ odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$\mathcal{G} = I4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{b}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$				
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(\mathbf{c}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

$\mathcal{G} = I4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{c})/8$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}+\mathbf{c})/8$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
(lhh)	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\bar{h}\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(\mathbf{b}+\mathbf{a})/8$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(lh\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
$3(\mathbf{b}+\mathbf{a})/8$			n odd	m even	$C211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$\mathcal{G} = I4_132$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hlh)	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\mathbf{c}+\mathbf{b})/8$			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
$3(\mathbf{c}+\mathbf{b})/8$			n odd	m even	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
				m odd	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
				m odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$$\mathcal{G} = P\bar{4}3m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(lh\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
			n odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p even q odd				
			n even m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
			p odd				
			n odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd				

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$\mathcal{G} = F\overline{4}3m$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F\overline{4}3m$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
(hhl) $(\overline{h}\overline{h}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$			
	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$			
			n odd m even; p even q odd; or; n even m odd; p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$ L13
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$ $(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$			
	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$			
			n odd m even; p even q odd; or; n even m odd; p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$ L13
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
(lhh) $(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$			
	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$			
			n odd m even; p even q odd; or; n even m odd; p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$ L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$ L13
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

Continued

$\mathcal{G} = F\overline{4}3m$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\overline{h})$ $(l\overline{h}h)$	$(\mathbf{b}+\mathbf{c})/2$ $(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$ $n\widehat{\mathbf{a}}+m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$ $-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd m even p even q odd or n even m odd p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(hlh) $(\overline{h}l\overline{h})$	$(\mathbf{c}-\mathbf{a})/2$ $(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\overline{h}lh)$ $(hl\overline{h})$	$(\mathbf{c}+\mathbf{a})/2$ $(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd q odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

$$\mathcal{G} = I\bar{4}3m$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				q odd				
				m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				q odd				
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				q odd				
				m odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				q odd				
				m odd	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd	q even				
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

Continued

$\mathcal{G} = I\bar{4}3m$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh) $(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(lh\bar{h})$ $(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
(hlh) $(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(\bar{h}lh)$ $(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even, q odd	$Cm11$	$s\mathbf{d}$	$cm11$	L13
				m odd, q odd	$Im11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd, p odd, q even	$Bm11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$$\mathcal{G} = P\bar{4}3n$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P211$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p211$	L08
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$p1$	L01
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\bar{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(lh\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
			n odd, m even, p even, q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even, m odd, p odd, q even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, m odd, p odd, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd, m odd, p even, q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m odd, p odd, q even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m even, p odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$\mathcal{G} = F\bar{4}3c$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\bar{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\bar{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\bar{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$ $(\mathbf{b}'/4)$	L09
			or			$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
						$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl) $(\overline{hh}l)$	$(\mathbf{a}-\mathbf{b})/2$ $(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$ $n\widehat{\mathbf{a}}+m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$ $-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd m even p even q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m odd p even q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(h\bar{h}l)$ $(\bar{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$ $(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$ $n\widehat{\mathbf{a}}+m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$ $-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd m even p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd m odd p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(lhh) $(l\overline{hh})$	$(\mathbf{b}-\mathbf{c})/2$ $(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$ $n\widehat{\mathbf{a}}+m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$ $-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd m even p even q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m odd p even q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$ $(l\bar{h}h)$	$(\mathbf{b}+\mathbf{c})/2$ $(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$ $n\widehat{\mathbf{a}}+m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$ $-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd m even p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd m odd p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(hlh) $(\bar{h}l\bar{h})$	$(\mathbf{c}-\mathbf{a})/2$ $(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q even	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd m odd p even q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\bar{h}lh)$ $(hl\bar{h})$	$(\mathbf{c}+\mathbf{a})/2$ $(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even m odd p odd q even	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even m odd p odd q odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd m odd p even q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m odd p odd q even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd m even p odd q odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

$$\mathcal{G} = I\bar{4}3d$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(\mathbf{b}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$				
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$				
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(\mathbf{c}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
$(\mathbf{a}/4)$			n odd m even	$I211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111\ (\mathbf{b}'/4)$	L09
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even m odd				
			p odd q even				
			p odd q odd	$B211$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p211$	L08
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_111$	L09
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd m odd	$C211$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c211$	L10
					$[s\mathbf{d}, -s\mathbf{d}]$	$\widehat{p}1$	L01

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl) $(\bar{h}\bar{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\bar{h}l)$ $(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
(lhh) $(l\bar{h}\bar{h})$	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p even	q odd				
			n even	m odd	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q even				
			n even	m odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			p odd	q odd				
			n odd	m odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p even	q odd				
			n odd	m odd	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			p odd	q even				
			n odd	m even	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			p odd	q odd				
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$\mathcal{G} = I\bar{4}3d$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$ $(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even, p even, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, m odd, p odd, q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even, m odd, p odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, m odd, p even, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m odd, p odd, q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m even, p odd, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$				
(hlh) $(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$				
	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even, p even, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, m odd, p odd, q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even, m odd, p odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, m odd, p even, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m odd, p odd, q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m even, p odd, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$				
$(\bar{h}lh)$ $(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$				
	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even, p even, q odd	$Cc11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even, m odd, p odd, q even	$Bb11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even, m odd, p odd, q odd	$Ib11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd, m odd, p even, q odd	$Ic11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m odd, p odd, q even	$Bn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd, m even, p odd, q odd	$Cn11$	$[s\mathbf{d}, (s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$				

$$\mathcal{G} = P\tfrac{4}{m}\overline{3}\tfrac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$				
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$				
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$				
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$				
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$				
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$	$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$		$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$				
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$				
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$				
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$				
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$				
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$				
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$				
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$						

$$\mathcal{G} = P\tfrac{4}{n}\overline{3}\tfrac{2}{n} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

$\mathcal{G} = P\frac{4}{n}\overline{3}\frac{2}{n}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

$\mathcal{G} = P\frac{4}{n}\bar{3}\frac{2}{n}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

Continued

$\mathcal{G} = P\frac{4}{n}\overline{3}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

$\mathcal{G} = P\frac{4}{n}\overline{3}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

$\mathcal{G} = P\frac{4}{n}\overline{3}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12

Continued

$\mathcal{G} = P\frac{4}{n}\bar{3}\frac{2}{n}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L12
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\bar{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\frac{4_2}{m}\overline{3}\frac{2}{n}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$		$P2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$p2/m11$	L14
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$			$[s\mathbf{d}, -s\mathbf{d}]$	$pm11$	L11
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})+m\mathbf{c}$	$-p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})+m\mathbf{a}$	$-p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$					
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$					
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$					
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$					
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	l odd $\Rightarrow n=l, m=2h$; l even $\Rightarrow n=l/2, m=h$							

$$\mathcal{G} = P\tfrac{4_2}{n}\overline{3}\tfrac{2}{m} \quad \text{origin 1}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\overline{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}$ $\mathbf{b}$	n $\mathbf{a}$ $\mathbf{b}$ $m\mathbf{c}$	p $\mathbf{a}$ $\mathbf{b}$ $q\mathbf{c}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(3\mathbf{a}+\mathbf{b}+\mathbf{c})/4$ or $(\mathbf{a}+3\mathbf{b}+\mathbf{c})/4$			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

Continued

$\mathcal{G} = P\frac{4_2}{n}\overline{3}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\overline{h}\overline{h})$	$\mathbf{b}\quad\mathbf{c}$	$n\,\mathbf{b}\quad\mathbf{c}\quad m\mathbf{a}$	$p\,\mathbf{b}\quad\mathbf{c}\quad q\mathbf{a}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(\mathbf{a}+3\mathbf{b}+\mathbf{c})/4$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
or			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
$(\mathbf{a}+\mathbf{b}+3\mathbf{c})/4$					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/4$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(\mathbf{a}+\mathbf{b}+3\mathbf{c})/4$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
or			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
$(3\mathbf{a}+\mathbf{b}+\mathbf{c})/4$					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

Continued

$\mathcal{G} = P\frac{4_2}{n}\bar{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\bar{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\bar{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\bar{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\bar{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\bar{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\bar{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$P2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$ $(\mathbf{b}'/4)$	L08
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n even	m odd				
			p odd	q even				
			p odd	q odd	$P2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p\bar{1}$	L02
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p211$	L08
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p1$	L01
			n odd	m odd	$P2/b11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$p2/b11$	L16
						$[s\mathbf{d}, -s\mathbf{d}]$	$pb11$	L12
(hhl)	$\mathbf{a}-\mathbf{b}$	$n(\mathbf{a}+\mathbf{b})-m\mathbf{c}$	$p(\mathbf{a}+\mathbf{b})+q\mathbf{c}$					
$(\bar{h}\bar{h}l)$	$\mathbf{a}$ $\mathbf{b}$	n $\mathbf{a}$ $\mathbf{b}$ $m\mathbf{c}$	p $\mathbf{a}$ $\mathbf{b}$ $q\mathbf{c}$					
			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hhl)	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})-m\mathbf{c}$	$p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\bar{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n(\mathbf{b}-\mathbf{a})+m\mathbf{c}$	$-p(\mathbf{b}-\mathbf{a})+q\mathbf{c}$					
$(\mathbf{a}/2$ or $\mathbf{b}/2)$			n odd		$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd			$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd		$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd			$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

Continued

$\mathcal{G} = P\frac{4_2}{n}\bar{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n(\mathbf{b}+\mathbf{c})-m\mathbf{a}$	$p(\mathbf{b}+\mathbf{c})+q\mathbf{a}$				
$(l\bar{h}\bar{h})$	$\mathbf{b}\quad\mathbf{c}$	$n\,\mathbf{b}\quad\mathbf{c}\quad m\mathbf{a}$	$p\,\mathbf{b}\quad\mathbf{c}\quad q\mathbf{a}$				
			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(lh\bar{h})$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})-m\mathbf{a}$	$p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(l\bar{h}h)$	$\mathbf{b}+\mathbf{c}$	$n(\mathbf{c}-\mathbf{b})+m\mathbf{a}$	$-p(\mathbf{c}-\mathbf{b})+q\mathbf{a}$				
$(\mathbf{b}/2$ or $\mathbf{c}/2)$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
(hlh)	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})-m\mathbf{b}$	$p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
$(\bar{h}l\bar{h})$	$\mathbf{c}-\mathbf{a}$	$n(\mathbf{c}+\mathbf{a})+m\mathbf{b}$	$-p(\mathbf{c}+\mathbf{a})+q\mathbf{b}$				
			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
$(\bar{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})-m\mathbf{b}$	$p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(hl\bar{h})$	$\mathbf{c}+\mathbf{a}$	$n(\mathbf{a}-\mathbf{c})+m\mathbf{b}$	$-p(\mathbf{a}-\mathbf{c})+q\mathbf{b}$				
$(\mathbf{c}/2$ or $\mathbf{a}/2)$			n odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even $\quad q$ odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even $\quad m$ odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
			p odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
			n odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11

l odd $\Rightarrow n = l, m = 2h$; l even $\Rightarrow n = l/2, m = h$

$$\mathcal{G} = F\tfrac{4}{n}\overline{3}\tfrac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$			h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$$\mathcal{G} = F\,{}^{4}_{n}\overline{3}\,{}^{2}_{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even, m odd; p odd, q even				
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd, m even; p even, q odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even, m odd; p odd, q even				
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
(lhh)	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
$(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even; p even, q odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even, m odd; p odd, q even				
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

Continued

$$\mathcal{G} = F\tfrac{4}{n}\overline{3}\tfrac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\overline{h})$ $(l\overline{h}h)$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd, m even; p even, q odd; or n even, m odd; p odd, q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(hlh) $(\overline{h}l\overline{h})$	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$				
	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even; p even, q odd; or n even, m odd; p odd, q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\overline{h}lh)$ $(hl\overline{h})$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$				
	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd, m even; p even, q odd; or n even, m odd; p odd, q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			p odd, q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd, m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

$$\mathcal{G} = F\,{}^{4}_{n}\bar{3}\,{}^{2}_{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(\bar{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(\bar{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$			h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0\bar{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(0\bar{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$			h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$			
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(k0\bar{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$				
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
$(h0\bar{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$			h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$			h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$			

Continued

$$\mathcal{G} = F\tfrac{4}{n}\overline{3}\tfrac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{hh}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$$\mathcal{G} = F\tfrac{4}{n}\overline{3}\tfrac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(lh\overline{h})$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$$\mathcal{G} = F\tfrac{4}{n}\overline{3}\tfrac{2}{c}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hlh)	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(\overline{h}lh)$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\overline{h})$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$			
	$\widehat{\mathbf{b}} = (\mathbf{a}+\mathbf{b})/2$				h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$				h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$			
	$\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$				h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$			

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11$ $(\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$ $(\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11$ $(\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$ $(\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{a})/2$							
	$\widehat{\mathbf{b}} = (\mathbf{c}+\mathbf{a})/2$							

h even, k odd or h odd, k even $\Rightarrow n = h+k$, $m = h-k$
h, k odd $\Rightarrow n = (h+k)/2$, $m = (h-k)/2$

Continued

$\mathcal{G} = F\frac{4}{d}\bar{3}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$
(hhl) $(\bar{h}\bar{h}l)$ $(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$	$(\mathbf{a}-\mathbf{b})/2$ $(\mathbf{a}-\mathbf{b})/2$	$n\hat{\mathbf{a}}-m\mathbf{c}$ $n\hat{\mathbf{a}}+m\mathbf{c}$	$p\hat{\mathbf{a}}+q\mathbf{c}$ $-p\hat{\mathbf{a}}+q\mathbf{c}$			
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ L15 $pm11$ L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $(\mathbf{a}'/4)$ L15 $pm11$ L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ L18 $cm11$ L13
	$\hat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\bar{h}l)$ $(\bar{h}hl)$ $(\mathbf{a}+3\mathbf{b}+3\mathbf{c})/8$ or $(3\mathbf{a}+\mathbf{b}+3\mathbf{c})/8$	$(\mathbf{a}+\mathbf{b})/2$ $(\mathbf{a}+\mathbf{b})/2$	$n\hat{\mathbf{a}}-m\mathbf{c}$ $n\hat{\mathbf{a}}+m\mathbf{c}$	$p\hat{\mathbf{a}}+q\mathbf{c}$ $-p\hat{\mathbf{a}}+q\mathbf{c}$			
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ L15 $pm11$ L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $(\mathbf{a}'/4)$ L15 $pm11$ L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ L18 $cm11$ L13
	$\hat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
(lhh) $(l\bar{h}\bar{h})$ $(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$	$(\mathbf{b}-\mathbf{c})/2$ $(\mathbf{b}-\mathbf{c})/2$	$n\hat{\mathbf{a}}-m\mathbf{a}$ $n\hat{\mathbf{a}}+m\mathbf{a}$	$p\hat{\mathbf{a}}+q\mathbf{a}$ $-p\hat{\mathbf{a}}+q\mathbf{a}$			
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ L15 $pm11$ L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ L14 $p2_1/m11$ $(\mathbf{a}'/4)$ L15 $pm11$ L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ L18 $cm11$ L13
	$\hat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

Continued

$\mathcal{G} = F\frac{4}{d}\bar{3}\frac{2}{m}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$ $(l\bar{h}h)$ $(3\mathbf{a}+\mathbf{b}+3\mathbf{c})/8$ or $(3\mathbf{a}+3\mathbf{b}+\mathbf{c})/8$	$(\mathbf{b}+\mathbf{c})/2$ $(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$ $n\widehat{\mathbf{a}}+m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$ $-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(hlh) $(\bar{h}l\bar{h})$ $(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$	$(\mathbf{c}-\mathbf{a})/2$ $(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\bar{h}lh)$ $(hl\bar{h})$ $(3\mathbf{a}+3\mathbf{b}+\mathbf{c})/8$ or $(\mathbf{a}+3\mathbf{b}+3\mathbf{c})/8$	$(\mathbf{c}+\mathbf{a})/2$ $(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$ $n\widehat{\mathbf{a}}+m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$ $-p\widehat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$							
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$							

h even, k odd or h odd, k even $\Rightarrow n = h + k$, $m = h - k$
h, k odd $\Rightarrow n = (h + k)/2$, $m = (h - k)/2$

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{h}\overline{h}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$				
$(\mathbf{a}+\mathbf{c})/4$ or $(\mathbf{b}+\mathbf{c})/4$			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
(lhh)	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$				
$(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$				
			n odd m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or		$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even m odd				
			p odd q even				
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
					$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
					$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
					$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

Continued

$\mathcal{G} = F\frac{4}{d}\bar{3}\frac{2}{m}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$	Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(lh\bar{h})$ $(l\bar{h}h)$	$(\mathbf{b}+\mathbf{c})/2$ $(\mathbf{b}+\mathbf{c})/2$	$n\hat{\mathbf{a}}-m\mathbf{a}$ $n\hat{\mathbf{a}}+m\mathbf{a}$	$p\hat{\mathbf{a}}+q\mathbf{a}$ $-p\hat{\mathbf{a}}+q\mathbf{a}$				
$(\mathbf{b}+\mathbf{a})/4$ or $(\mathbf{c}+\mathbf{a})/4$			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\hat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
(hlh) $(\bar{h}l\bar{h})$	$(\mathbf{c}-\mathbf{a})/2$ $(\mathbf{c}-\mathbf{a})/2$	$n\hat{\mathbf{a}}-m\mathbf{b}$ $n\hat{\mathbf{a}}+m\mathbf{b}$	$p\hat{\mathbf{a}}+q\mathbf{b}$ $-p\hat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\hat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\bar{h}lh)$ $(hl\bar{h})$ $(\mathbf{c}+\mathbf{b})/4$ or $(\mathbf{a}+\mathbf{b})/4$	$(\mathbf{c}+\mathbf{a})/2$ $(\mathbf{c}+\mathbf{a})/2$	$n\hat{\mathbf{a}}-m\mathbf{b}$ $n\hat{\mathbf{a}}+m\mathbf{b}$	$p\hat{\mathbf{a}}+q\mathbf{b}$ $-p\hat{\mathbf{a}}+q\mathbf{b}$				
			n odd m even p even q odd or n even m odd p odd q even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$ $pm11$	L14 L15 L11
			p odd q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$p2/m11$ $p2_1/m11$ $(\mathbf{a}'/4)$ $pm11$	L14 L15 L11
			n odd m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$c2/m11$ $cm11$	L18 L13
	$\hat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$			h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{b})/2$							
	$\widehat{\mathbf{b}} = (\mathbf{a}+\mathbf{b})/2$							
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{c})/2$							
	$\widehat{\mathbf{b}} = (\mathbf{b}+\mathbf{c})/2$							

h even, k odd or h odd, k even $\Rightarrow n = h+k, m = h-k$
h, k odd $\Rightarrow n = (h+k)/2, m = (h-k)/2$

Continued

$\mathcal{G} = F\,{}^{4}_{d}\overline{3}\,{}^{2}_{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{a})/2$							
	$\widehat{\mathbf{b}} = (\mathbf{c}+\mathbf{a})/2$							

h even, k odd or h odd, k even $\Rightarrow n = h+k,\ m = h-k$
h, k odd $\Rightarrow n = (h+k)/2,\ m = (h-k)/2$

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}+3\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
or			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
$(3\mathbf{a}+\mathbf{b}+\mathbf{c})/8$						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(lh\overline{h})$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(\mathbf{a}+\mathbf{b}+3\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
or			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
$(\mathbf{a}+3\mathbf{b}+\mathbf{c})/8$						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 1

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hlh)	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
$3(\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			
$(\overline{h}lh)$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\overline{h})$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(3\mathbf{a}+\mathbf{b}+\mathbf{c})/8$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
or			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
$(\mathbf{a}+\mathbf{b}+3\mathbf{c})/8$						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$				h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$			

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(hk0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(\overline{h}k0)$	$\mathbf{c}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(kh0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} + n\mathbf{b}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(\overline{k}h0)$	$\mathbf{c}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a} - \mathbf{b})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{a} + \mathbf{b})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			
$(0hk)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0\overline{h}k)$	$\mathbf{a}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(0kh)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(0\overline{k}h)$	$\mathbf{a}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b} - \mathbf{c})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{b} + \mathbf{c})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F\,{}^{4}_{d}\overline{3}\,{}^{2}_{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(k0h)$	$\mathbf{b}$	$n\widehat{\mathbf{a}} - m\widehat{\mathbf{b}}$	$p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(k0\overline{h})$	$\mathbf{b}$	$n\widehat{\mathbf{a}} + m\widehat{\mathbf{b}}$	$-p\widehat{\mathbf{a}} + q\widehat{\mathbf{b}}$					
$(h0k)$	$\mathbf{b}$	$m\widehat{\mathbf{a}} - n\widehat{\mathbf{b}}$	$q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
$(h0\overline{k})$	$\mathbf{b}$	$m\widehat{\mathbf{a}} + n\widehat{\mathbf{b}}$	$-q\widehat{\mathbf{a}} + p\widehat{\mathbf{b}}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}' + \mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c} - \mathbf{a})/2$				h even, k odd or h odd, k even $\Rightarrow n = h + k, m = h - k$			
	$\widehat{\mathbf{b}} = (\mathbf{c} + \mathbf{a})/2$				h, k odd $\Rightarrow n = (h + k)/2, m = (h - k)/2$			

Continued

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{hh}l)$	$(\mathbf{a}-\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(h\overline{h}l)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$(\mathbf{a}+\mathbf{b})/2$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\mathbf{a}+\mathbf{c})/4$ or $(\mathbf{b}+\mathbf{c})/4$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$(\mathbf{b}-\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(lh\overline{h})$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$(\mathbf{b}+\mathbf{c})/2$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(\mathbf{b}+\mathbf{a})/4$ or $(\mathbf{c}+\mathbf{a})/4$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$\mathcal{G} = F\frac{4}{d}\overline{3}\frac{2}{c}$ origin 2

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hlh)	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$(\mathbf{c}-\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		
$(\overline{h}lh)$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\overline{h})$	$(\mathbf{c}+\mathbf{a})/2$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\mathbf{c}+\mathbf{b})/4$ or $(\mathbf{a}+\mathbf{b})/4$			n odd	m even	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c})/2$					h odd $\Rightarrow m=h, n=2l$; h even $\Rightarrow m=h/2, n=l$		

$$\mathcal{G} = I\frac{4}{m}\overline{3}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
			or			$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n even	m odd				
			p odd	q even				
			p odd	q odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
						$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
			n odd	m odd	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
						$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $[(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11$ $(\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

Continued

$$\mathcal{G} = I\frac{4}{m}\overline{3}\frac{2}{m}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}\overline{h})$	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
(hlh)	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(\overline{h}lh)$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
$(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C2/m11$	$0\mathbf{d}$, $\frac{1}{2}\mathbf{d}$	$c2/m11$	L18
				q odd		$[s\mathbf{d}, -s\mathbf{d}]$	$cm11$	L13
				m odd	$I2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
				q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
				m odd	$B2/m11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/m11$	L14
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/m11\ (\mathbf{a}'/4)$	L15
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pm11$	L11
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$$\mathcal{G} = I\tfrac{4}{a}\overline{3}\tfrac{2}{d}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
$(mn0)$	$\mathbf{c}$	$n\mathbf{a}-m\mathbf{b}$	$p\mathbf{a}+q\mathbf{b}$					
$(\overline{m}n0)$	$\mathbf{c}$	$n\mathbf{a}+m\mathbf{b}$	$-p\mathbf{a}+q\mathbf{b}$					
$(nm0)$	$\mathbf{c}$	$m\mathbf{a}-n\mathbf{b}$	$q\mathbf{a}+p\mathbf{b}$					
$(\overline{n}m0)$	$\mathbf{c}$	$m\mathbf{a}+n\mathbf{b}$	$-q\mathbf{a}+p\mathbf{b}$					
$(0mn)$	$\mathbf{a}$	$n\mathbf{b}-m\mathbf{c}$	$p\mathbf{b}+q\mathbf{c}$					
$(0\overline{m}n)$	$\mathbf{a}$	$n\mathbf{b}+m\mathbf{c}$	$-p\mathbf{b}+q\mathbf{c}$					
$(0nm)$	$\mathbf{a}$	$m\mathbf{b}-n\mathbf{c}$	$q\mathbf{b}+p\mathbf{c}$					
$(0\overline{n}m)$	$\mathbf{a}$	$m\mathbf{b}+n\mathbf{c}$	$-q\mathbf{b}+p\mathbf{c}$					
$(n0m)$	$\mathbf{b}$	$n\mathbf{c}-m\mathbf{a}$	$p\mathbf{c}+q\mathbf{a}$					
$(n0\overline{m})$	$\mathbf{b}$	$n\mathbf{c}+m\mathbf{a}$	$-p\mathbf{c}+q\mathbf{a}$					
$(m0n)$	$\mathbf{b}$	$m\mathbf{c}-n\mathbf{a}$	$q\mathbf{c}+p\mathbf{a}$					
$(m0\overline{n})$	$\mathbf{b}$	$m\mathbf{c}+n\mathbf{a}$	$-q\mathbf{c}+p\mathbf{a}$					
			n odd	m even	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m odd	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n odd	m even	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12

Continued

$$\mathcal{G} = I^4_a\overline{3}^2_d$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hhl)	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}\overline{h}l)$	$\mathbf{a}-\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}+\mathbf{b}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(h\overline{h}l)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}-m\mathbf{c}$	$p\widehat{\mathbf{a}}+q\mathbf{c}$					
$(\overline{h}hl)$	$\mathbf{a}+\mathbf{b}$	$n\widehat{\mathbf{a}}+m\mathbf{c}$	$-p\widehat{\mathbf{a}}+q\mathbf{c}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}-\mathbf{a}+\mathbf{c})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

$$\mathcal{G} = I\tfrac{4}{a}\overline{3}\tfrac{2}{d}$$

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(lhh)	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{hh})$	$\mathbf{b}-\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{b}+\mathbf{c}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(lh\overline{h})$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}-m\mathbf{a}$	$p\widehat{\mathbf{a}}+q\mathbf{a}$					
$(l\overline{h}h)$	$\mathbf{b}+\mathbf{c}$	$n\widehat{\mathbf{a}}+m\mathbf{a}$	$-p\widehat{\mathbf{a}}+q\mathbf{a}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}-\mathbf{b}+\mathbf{a})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					

Orientation orbit (hkl)	Conventional basis of the scanning group $\mathbf{a}'$	$\mathbf{b}'$	$\mathbf{d}$		Scanning group $\mathcal{H}$	Linear orbit $s\mathbf{d}$	Sectional layer group $\mathcal{L}(s\mathbf{d})$	
(hlh) $(\overline{h}l\overline{h})$	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
	$\mathbf{c}-\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{c}+\mathbf{a}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					
$(\overline{h}lh)$ $(hl\overline{h})$	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}-m\mathbf{b}$	$p\widehat{\mathbf{a}}+q\mathbf{b}$					
	$\mathbf{c}+\mathbf{a}$	$n\widehat{\mathbf{a}}+m\mathbf{b}$	$-p\widehat{\mathbf{a}}+q\mathbf{b}$					
			n odd	m even	$C2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
			n even	m odd	$B2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ (\mathbf{a}'/4)$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n even	m odd	$I2/b11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2/b11$	L16
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2_1/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L17
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11$	L12
			n odd	m odd	$I2/c11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p even	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ [(\mathbf{a}'+\mathbf{b}')/4]$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m odd	$B2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p2_1/b11$	L17
			p odd	q even		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p2/b11\ (\mathbf{a}'/4)$	L16
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$pb11\ (\mathbf{a}'/4)$	L12
			n odd	m even	$C2/n11$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$\widehat{p}\overline{1}$	L02
			p odd	q odd		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$c211\ (\mathbf{b}'/4)$	L10
						$[\pm s\mathbf{d}, (\pm s+\frac{1}{2})\mathbf{d}]$	$\widehat{p}1$	L01
	$\widehat{\mathbf{a}} = (\mathbf{a}-\mathbf{c}+\mathbf{b})/2$		l odd $\Rightarrow n=2l, m=2h+l$; l even $\Rightarrow n=l, m=h+l/2$					