

## Evaluation of New PHOTON III Detectors for Chemical Crystallography Applications

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The new PHOTON III C14 and M28 detectors are based upon the latest CPAD (Charge integrating Pixel Array Detector) technology. The PHOTON III C14 detector has a large (104 x 139 mm<sup>2</sup>) active area, while the PHOTON III M28 detector has an even larger (208 x 139 mm<sup>2</sup>) active area. Both of these PHOTON III systems feature mixed mode photon counting operations, with no count-rate saturation and no charge-sharing noise and High Energy Event Discrimination (HEED) for rejection of spurious events from cosmic radiation and background radiation.

We have evaluated these new detectors in terms of their suitability for data collection on challenging chemical crystallography problems, using molybdenum, copper and gallium radiation. We will compare datasets collected on the same specimens with similar instruments equipped with PHOTON II detectors.