

## The Rigaku HyPix-Arc 150: The First Curved Photon Counting Detector

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The Rigaku HyPix-6000HE, a hybrid photon counting (HPC) detector is a very popular detector resulting from the properties: high sensitivity, almost no electronic noise, large dynamic range and single pixel top-hat point spread function. Available on all the Synergy-S diffractometers, it yields accurate and precise data in a reduced amount of time, while working in ambient conditions with no need of cooling or vacuum. The latest addition to the HyPix family, the HyPix-Arc 150 possesses 50% more pixels than the HyPix-6000HE, in addition to being curved. The curvature of the detector surface provide several benefits such as: - Greater data coverage while keeping the size and weight of the detector moderate. The HyPix-Arc 150 covers up to 150° of data in a single image. - Reduced data collection time and in turn reduced radiation decay for sensitive crystals. - Reduced reflection distortion, leading to more compact reflections. This, in turn, leads to better data quality and less overlaps between close-together reflections. In this work, we present results from both small molecule and protein data collected on the microfocus sealed tube equipped Rigaku XtaLAB Synergy-S: - Complete data to 0.837 Å on the Friedel mates on a crystal of chlorothiazide crystal in space group P1. - A charge density study. - Structure solution of lysozyme by S-SAD phasing.



Figure 1