

EIGER2 R 500K puts an end to compromises in laboratory XRD. So far, all detectors demanded trade-offs between pixel size, active area, maximum count rates, and the capability for low- and high-energy discrimination. The Hybrid Photon Counting EIGER2 R 500K detector combines small pixels for high resolution, a large active area for efficient data acquisition, and unsurpassed count rates for accurate measurements of highest intensities. Dual energy discrimination in combination with simultaneous read/write allows for extensive background suppression and high dynamic range at the same time. High frame rates enable instrument manufacturers to make sophisticated 0D, 1D, and 2D data acquisition modes available. All these benefits come in a maintenance-free detector with DECTRIS' proven reliability.

### Key Advantages

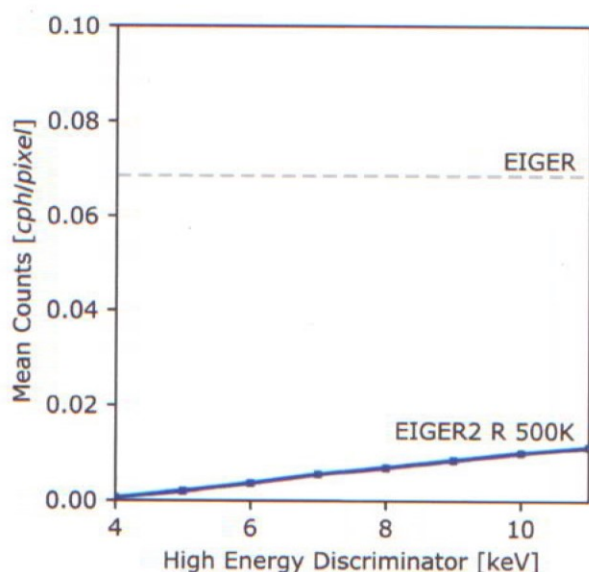
- Large active area with high spatial resolution
- Superior count rates
- Highest dynamic range
- Efficient suppression of fluorescence, cosmic and white radiation
- Maintenance-free

### Applications

- Single crystal diffraction
- X-ray powder diffraction
- SAXS/WAXS

### OEM-Partners

- Anton Paar
- Bruker AXS
- STOE



Dual energy discrimination achieves at least 5 times lower dark count rates. Blue: Dark counts for EIGER2 R 500K with low energy discriminator at 4 keV as function of high energy discriminator setting. Grey: Dark counts for EIGER with single energy discriminator set to 4 keV.

### Technical specifications EIGER2 R 500K

Pixel size [ $\mu\text{m}^2$ ]	75 X 75
Number of pixels	1030 x 514 = 529,420
Active area, width x height [ $\text{mm}^2$ ]	77.2 x 38.7
Silicon sensor thickness [ $\mu\text{m}$ ]	450
Point-spread function [pixel]	1 (FWHM)
Energy discriminating thresholds	2
Threshold range [keV]	4-11
Counter depth [bit/threshold]	2 x 16
Maximum count rate [cps/ $\text{mm}^2$ ]	$3.6 \times 10^8$
Acquisition mode	simultaneous read/write with zero dead time
Image bit depth [bit]	32
Maximum frame rate [Hz]	40
Detector size (WHD) [ $\text{mm}^2$ ]	100 x 140 x 93
Weight [kg]	1.8

All specifications are subject to change without notice.