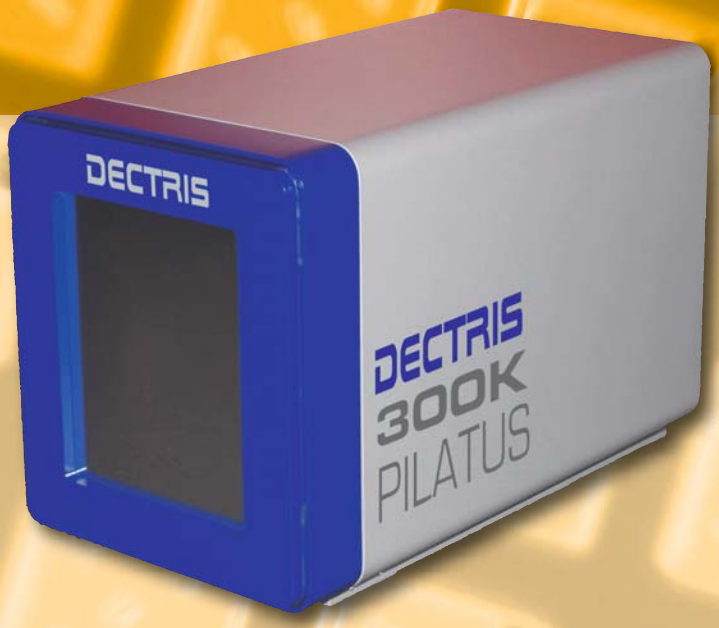
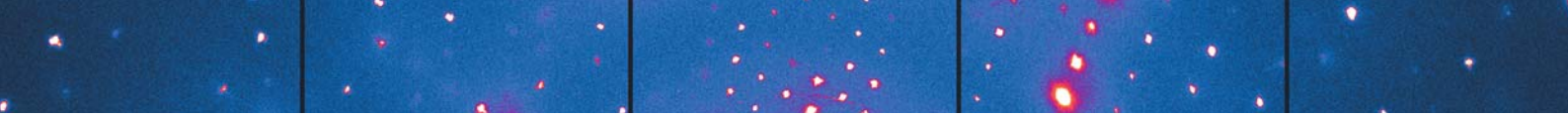
DECTRIS
Next Generation X-Ray Detectors

PILATUS 300K

Unrivalled data quality for time resolved experiments





PILATUS 300K

The PILATUS 300K detector system combines the high frame rate of a PILATUS 100K with the large area of 85 mm x 106 mm^2. It is perfectly suited for all applications where you require a medium sized area detector combined with a high frame rate.
It is based on the newly developed CMOS hybrid-pixel technology and operates in single-photon-counting mode. It excels with its compact size, high frame rate and the outstanding capabilities which are common to all DECTRIS detector systems.
The PILATUS 300K detector system is air-cooled and therefore very simple in its operation and handling. It is ready to use and comes as a complete system with detector, PC with Linux OS and the data acquisition and analysis software TVX.

Applications
- Material science (MS)
- X-ray diffraction (XRD)
- Surface diffraction (SD)
- Small-angle scattering (SAXS)
- Time-resolved experiments
- Non-destructive testing

Key features
- Direct detection of X-rays in single-photon-counting mode
- Radiation-tolerant design
- High dynamic range
- Short readout time
- High frame rates
- High counting rates
- No dark current or readout noise
- Adjustable threshold to suppress fluorescence
- Excellent point-spread function
- Electronically gateable
- Shutterless operation

Technical specifications

Number of modules	1 x 3
Sensor	Reverse-biased silicon diode array
Sensor thickness	320 µm
Pixel size	172 x 172 µm^2
Format	487 x 619 = 301,453 pixels
Area	83.8 x 106.5 mm^2
Intermodule gap	y: 17 pixels, 5.5% of total area
Dynamic range	20 bits (1:1,048,576)
Counting rate per pixel	> 2 x 10^6 X-ray/s
Energy range	3 – 30 keV
Quantum efficiency (calculated)	3 keV: 80% 8 keV: 99% 15 keV: 55%
Energy resolution	500 eV
Adjustable threshold range	2 – 20 keV
Threshold dispersion	50 eV
Readout time	3.6 ms
Framing rate	200 Hz
Point-spread function	1 pixel
Data formats	Raw data, TIF, EDF, CBF
External trigger/gate	5V TTL, 3 different modes
Software interface	Through socket connection; clients for EPICS, SPEC and stand-alone operation are available
Cooling	Air-cooled
Power consumption	50 W
Dimensions (WHD)	160 x 194 x 289 mm
Weight	Approx. 10 kg

DECTRIS Ltd.
Neuenhoferstrasse 107
5400 Baden
Switzerland
+41 56 500 2120 phone
+41 56 500 2101 fax
info@dectris.com
www.dectris.com

DECTRIS
Next Generation X-Ray Detectors