



## STADIVARI

THE FASTEST AND  
MOST FLEXIBLE  
WAY TO EXPLORE  
RECIPROCAL SPACE



### SINGLE CRYSTAL DIFFRACTOMETRY

- Flexible goniometer (Eulerian cradle and various fixed chi, horizontal & vertical setups)
- Sphere of confusion < 0.005 mm (radius)
- State of the art interface
- Various sources (Microfocus BDS etc.)
- Ultrafast hybrid pixel detectors

YOUR PARTNER IN X-RAY DIFFRACTION

STOE & Cie GmbH | WWW.STOE.COM

# STADIVARI

## RAPID, COMPREHENSIVE AND EXTREMELY VERSATILE ANALYSIS OF A WIDE VARIETY OF MATERIALS

### SOURCES

- Standard sealed tubes (Ag, Mo, Cu)
- Conventional & High Performance Microfocus sources (Ag, Mo, Cu)
- Metaljet liquid-metal-jet anode x-ray source
- Rotating anodes or synchrotron

### OPEN EULERIAN CRADLE

- High precision
- Sphere of confusion < 0.005 mm (radius)
- Virtually maintenance-free
- State of the art interface
- Sufficient completeness up to 150°

### NEW DETECTOR GENERATION

- Dectris Pilatus 100K, 200K, 300K and Eiger pixel detectors
- CMOS hybrid-pixel technology
- Single-photon-counting mode
- No dark current
- Ultra-fast data collection as well as ultra-long exposure times



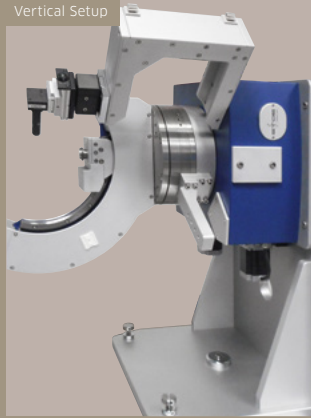
With the possibility to be set-up vertically as well as horizontally, the **STADIVARI** increases its scope of application. The **STADIVARI** can be used for single crystal and powder diffraction. The Open Eulerian Cradle offers enough space to add high

pressure cells, high- or low-temperature devices or other chambers. As the youngest member of the long line of STOE diffractometers, the **STADIVARI** is fully integrated in the well-established STOE X-Area software package.

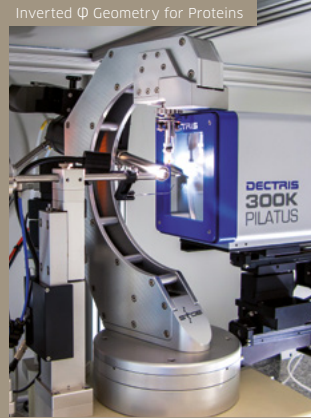
## FLEXIBLE GONIOMETER SETUP

- Eulerian Cradle
- Horizontal
- Vertical
- Inverted  $\phi$
- Fixed Chi

Vertical Setup



Inverted  $\phi$  Geometry for Proteins



Fixed Chi



## DOUBLE BEAM SETUP

Various combinations possible:

- Standard Sealed Tubes
- Conventional Microfocus Sources
- High Performance Microfocus Sources

Dual Microfocus Setup with Cryostream



## HEATSTREAM

- Temperature range from RT to 1000K
- Temperature accuracy within  $\pm 1^\circ$
- Heating medium N<sub>2</sub> (open flow)
- Vertical gas flow for optimal sample heating

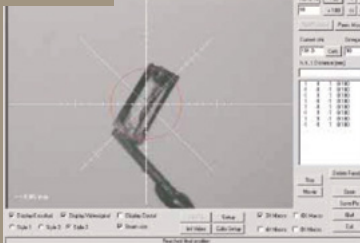
Heatstream Setup



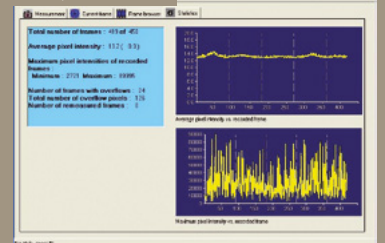
## X-Area

- Software for easy data collection and evaluation
- Powerful solution for complicated situations (multi-domain and modulated crystals)
- Support for DACs

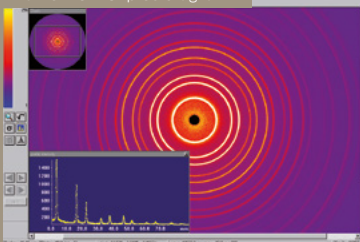
Facet Video



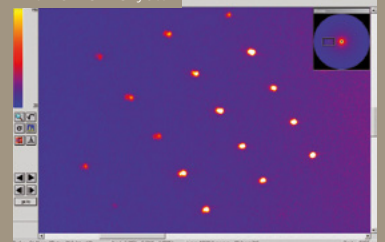
WinXpose-Statistic



Frame from Si plus diagram



Frame from Crystal





## SYSTEM SPECIFICATIONS

Dimensions (including system cabinet, max.)	1680 x 1150 x 2050 mm
Weight (complete system)	480 kg (depending on configuration)
Sphere of confusion	< 0.01 mm
Goniometer (utilized angular regions)	2 $\theta$ : 240° / $\omega$ : 205° / X: 90° / $\Phi$ : 360°
Detector distance	40 - 140 mm (automatically set)
X-ray sources	Standard sealed tubes (Ag, Mo, Cu), Conventional and High Performance Microfocus sources (Ag, Mo, Cu), MetalJet, rotating anodes or synchrotron

## DETECTOR SPECIFICATIONS

	PILATUS3 R 200K-A	PILATUS3 R 300K
Sensor	Reverse-biased silicon diode array	Reverse-biased silicon diode array
Sensor thickness	450 $\mu$ m / 1000 $\mu$ m	450 $\mu$ m / 1000 $\mu$ m
Pixel size	172 x 172 $\mu$ m <sup>2</sup>	172 x 172 $\mu$ m <sup>2</sup>
Number of modules	1 x 2	1 x 3
Format	487 x 407 = 198,209 pixel	487 x 619 = 301,453 pixel
Area	83.8 x 70.0 mm <sup>2</sup>	83.8 x 106.5 mm <sup>2</sup>
Dynamic range	20 bits (1:1,048,576)	20 bits (1:1,048,576)
Counting rate per pixel	> 2 x 10 <sup>6</sup> cps	> 2 x 10 <sup>6</sup> cps
Energy range	3 - 30 keV	3 - 30 keV
Readout time	7 ms	7 ms
Maximum frame rate	20 Hz	20 Hz
Cooling	Air-cooled	Water-cooled

Specifications without obligation and subject to change without notice.

Also available with DECTRIS EIGER2 and PILATUS3 CdTe-Detectors.



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