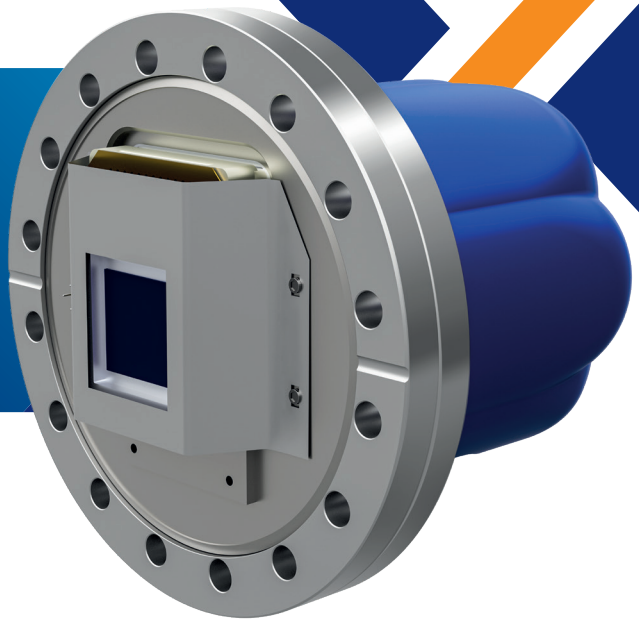
XCAM SCIENTIFIC

SOFT X-RAY DETECTION

RIXSCam Mini



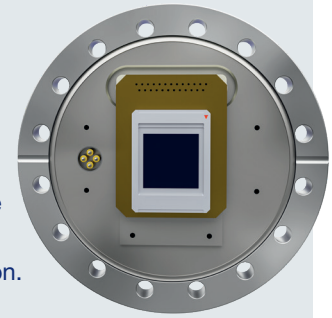
Single-detector photon counting camera to improve resolution of RIXS experiments

RIXSCam Mini is a high-precision x-ray detector designed for RIXS experiments, delivering **single-photon detection** with the same spatial resolution performance as the original RIXSCam but at a lower cost to the customer for applications which do not require the high throughput of a multi-detector system.

Ideal for scientists and researchers in x-ray spectroscopy and synchrotron facilities, RIXSCam Mini combines ultra-low read noise with advanced centroiding algorithms for **unbeatable spatial resolution**, allowing energy to be resolved to an unprecedented degree for super resolution imaging.

Replaceable Detector

Mounted on a 6” CF flange with the detector at a fixed gamma-angle chosen by the customer, the system is designed to enable users to replace or upgrade the detector as needed, offering a long-term, economic solution.

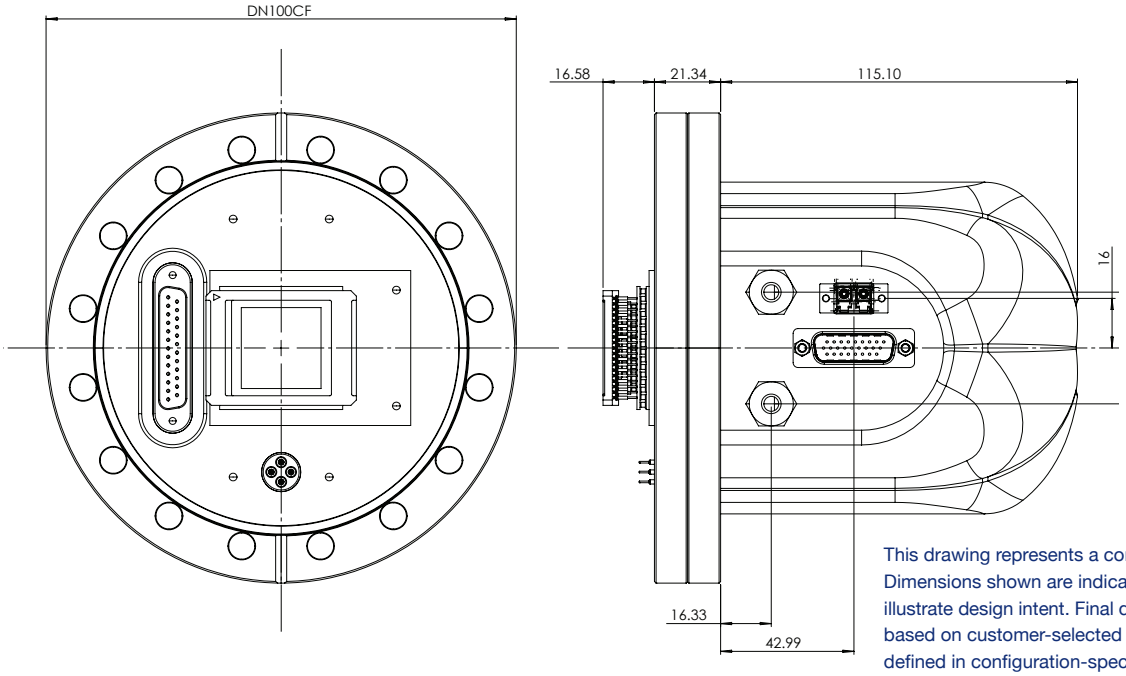


The RIXSCam range of detector systems were originally designed in collaboration with scientists at the Paul-Scherrer Institute (PSI) for the Swiss Light Source ADRESS beamline; specifically for use on the latest coherent x-ray beamlines for Resonant Inelastic X-ray Scattering (RIXS) experiments. They build on XCAM Scientific’s tradition of collaborative design, catering to the individual needs of customers who are working to the most demanding requirements, particularly where there is no existing solution available.

Features & Benefits

- **Soft X-ray Detection (250 - 3000 eV)** allows measurement of low-energy x-rays, covering important soft x-ray absorption and emission lines.
- **Exceptional <5 um Spatial Resolution** enables extremely precise imaging of x-ray scattering patterns for detailed analysis.
- **Single Photon Detection** improving signal sensitivity for experiments with very low x-ray intensities.
- **Sub-Electron Read Noise** minimises detector noise, increasing signal-to-noise ratio for detection of weak signals.
- **Back-Illuminated EMCCD Detector** increases quantum efficiency by allowing more photons to reach the active area.
- **XHV-Compatible Manufacture** necessary to avoid contamination and maintain beamline integrity.
- **Large Detector Area** captures more photons and wider scattering angles at once, improving efficiency.
- **Single Detector with Peltier Cooling** minimises thermal noise to improve image quality and support longer exposures.
- **Replaceable Detector** extends system lifetime and reduces long-term costs.

Sample Technical Drawing



This drawing represents a configurable product. Dimensions shown are indicative only and illustrate design intent. Final dimensions will vary based on customer-selected options and will be defined in configuration-specific manufacturing drawings issued after order confirmation.

Key Specifications

Parameter	RIXSCam Mini
Number of Detectors	1
Total Active Area	26.11 x 25.73 mm
Active Pixels (H x V)	1632 x 1608
Pixel Size	16 x 16 µm
Readout Rate	Offered at both 3 MHz and 10 MHz operational speeds
System Noise (LS gain of 150)	≤1 e-
System Noise (no LS gain)	≤100 e-
System Noise HR Output	Typically 15 e- rms
Detector Angle of Incidence	Fixed by customer's mounting arrangement
Vacuum Compatibility	10^{-9} mbar
Detector Temperature Control	-70°C to -40°C
Post-processed Resolution[1]	<5 µm
Weight	25 kg
Mechanical Interface	6" CF
Data Interface	Cameralink interface via fibre optic cables
Housing Material	304L stainless steel
Cooling	Peltier
Operating Environment	2°C to 35°C temperature 20% to 90% relative humidity (non-condensing)
Warranty	24 months
Certification	CE

1 The actual spatial resolution achieved will also depend on the local experimental set-up

T: +44 (0)1604 673 700
E: sales@xcamscientific.com
Part of Tibidabo Scientific Industries
www.xcamscientific.com