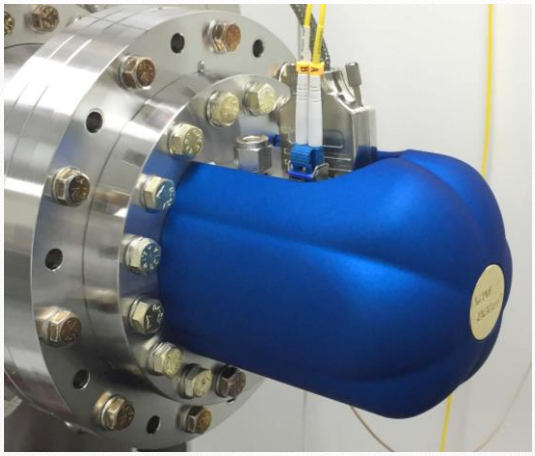
RIXSCam™ Mini

A Single-Detector System for High-Resolution RIXS Experiments

Introduction

XCAM's RIXSCam™ range of detector systems, originally designed in collaboration with scientists at the Paul-Scherrer Institute (PSI) for the Swiss Light Source ADRESS beamline, has been specifically developed for use on the latest coherent X-ray beamlines for resonant inelastic X-ray scattering (RIXS) experiments.

XCAM are proud to announce the launch of the new RIXSCam™ Mini - a single-detector system able to produce the same spatial resolution performance as the original RIXSCam™ system at a lower cost to the customer, for applications which do not require the high throughput of the existing triple or double-detector systems.

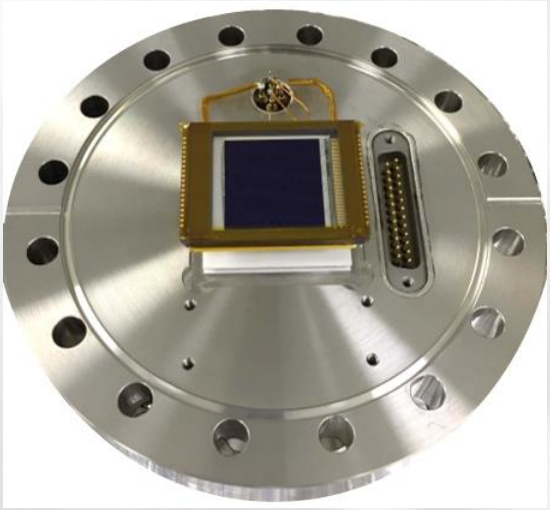


The RIXSCam™ Mini system is mounted on a 6" CF flange with the detector at a fixed gamma-angle chosen by the customer. The system has been designed to enable users to replace the detector as needed, offering a long-term, economically viable solution.

Centroiding technology gives the RIXSCam™ family of cameras an unbeatable spatial resolution, allowing energy to be resolved to an unprecedented degree. The use of EMCCDs gives rise to single-photon detection, increasing the intensity of photons detected.

Key Features

- Soft (250-3000 eV) X-ray detection
- <5 µm spatial resolution
- Single-photon detection
- Sub-electron read noise
- Large detector area
- XHV-compatible manufacture
- Back-Illuminated EMCCD detector
- Single detector with Peltier cooling
- Replaceable detector



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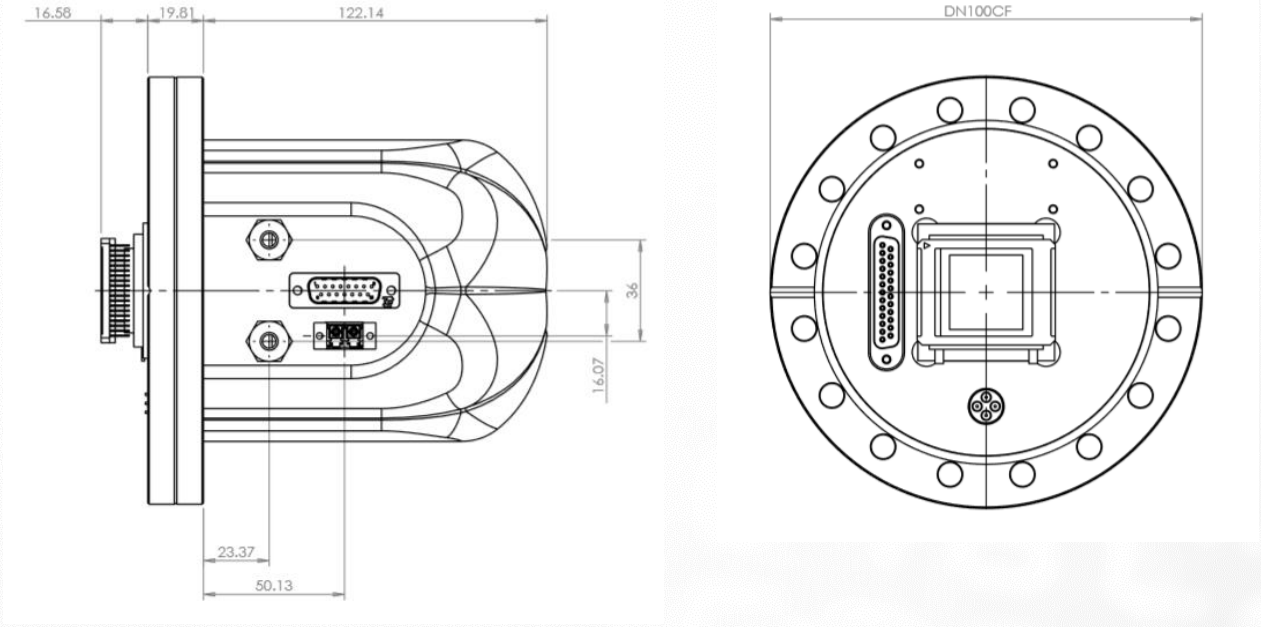
Technical Drawings



Specifications	
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	3 MHz
System noise (LS gain of 150)	≤1 e-
System noise (no LS gain)	≤140 e-
System noise HR output	≤25 e-
Detector angle of incidence	Fixed by customer's mounting arrangement
Vacuum compatibility	10^{-9} mbar
Detector temperature control	-70˚C to -50˚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

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