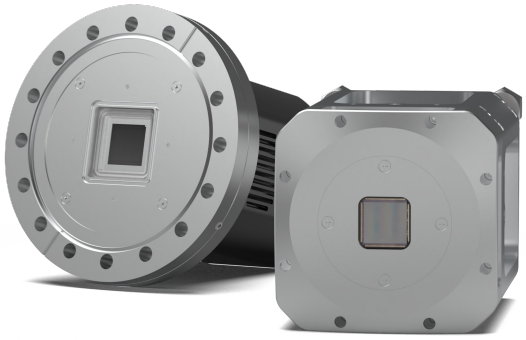
Dhyana XF95 / XV95

The Dhyana XF95 features a high quantum efficiency (QE) of nearly 100% within the 80 eV to 1000 eV range, utilizing advanced BSI sCMOS technology without an anti-reflection coating. This innovation enhances soft X-ray and EUV imaging performance while providing greater resistance to radiation damage. [1]



Key Features	Benefits
~100% Peak QE@80 eV-1000 eV	Excellent soft X-ray and extreme ultraviolet imaging performance.
85 Ke- Full Well Wapacity	High dynamic range for the measurement of bright and dim signals at the same time.
48 fps@4.2 MP	Dozens of times the speed of CCD cameras.
Reliable and Stable Cooling	Effectively suppresses dark current and signal fluctuation, ensuring system stability.

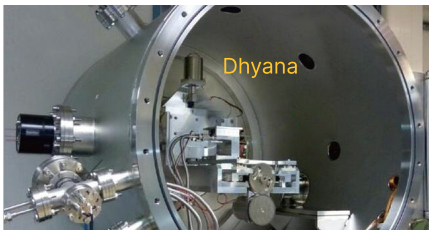
Typical Applications

- Soft X-ray Scattering / Spectroscopy
- Extreme Ultraviolet Spectroscopy
- Layered Diffraction Imaging
- High Harmonic Generation Radiation

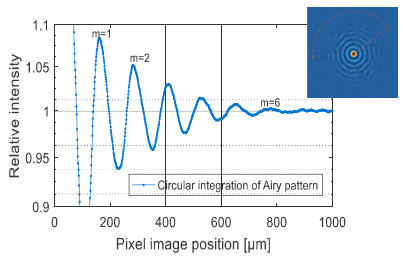
Noted Examples

[1] "Backside-illuminated sCMOS technology is very attractive for cost-adapting to specific applications, and overall shows good dynamic range, which can significantly reduce acquisition time for imaging applications compared to commonly used classical backside-illuminated CCD cameras ."

——Journal of Synchrotron Radiation, 2020.

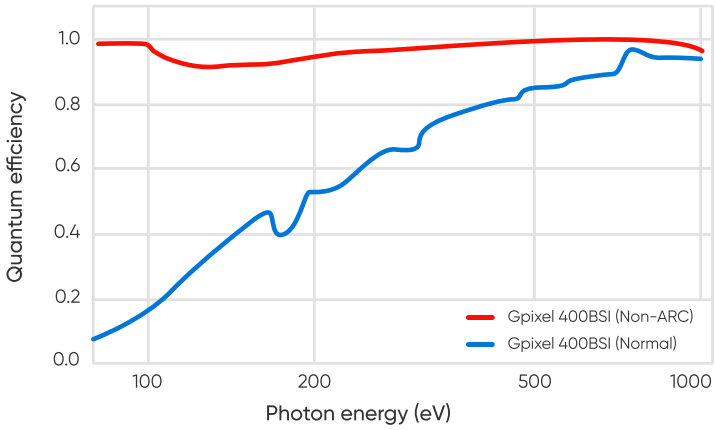


Beamline hutch at SOLEIL Synchrotron, France

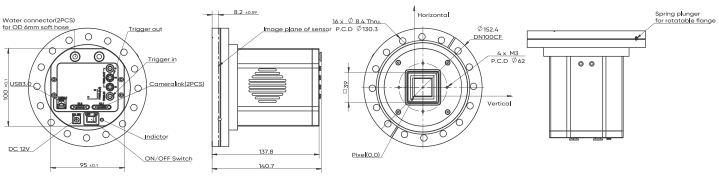


Diffraction pattern of 186 eV beam captured with Dhyana camera

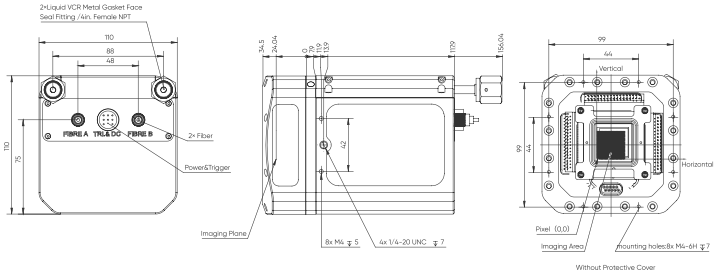
Quantum Efficiency



Dimensions (Unit: mm)



Dhyana XF95 (Open-Front)



Dhyana XV95 (In-Vaccum)

Specifications

Product Name	Dhyana XF95 (Open-Front)	Dhyana XV95 (In-Vaccum)
Model	XF95	XV95
Sensor Type	Non Anti-Reflection Coating / Standard BSI sCMOS	
Sensor Model	GSENSE 400BSI-PS / GSENSE 400BSI	
Peak QE	~100%	
Chrome	Mono	
Array Diagonal	31.9 mm	
Effective Area	22.5 mm x 22.5 mm	
Resolution	4.2 MP, 2048 (H) x 2048 (V)	
Pixel Size	11 μm x 11 μm	
Full Well Capacity	Typical: 85 Ke-	
Dynamic Range	90 dB	
Frame Rate	HDR: 24 fps; STD: 48 fps	
Readout Noise	Typical: 1.6 e- (Median)	
Shutter Mode	Rolling	
Exposure Time	21 μs~300 s	
Linearity	> 99%	
DSNU	0.2 e-	
PRNU	0.3%	
Bit Depth	12 bit, 16 bit	
Cooling Method	Air Cooling, Liquid Cooling	Liquid Cooling
Cooling Temp.	-30°C@25°C (Ambient Temp.), -50°C@20°C (Water Temp.)	-45°C@20°C (Water Temp.)
Dark Current	0.3 e-/p/s@-40°C chip Temp.	
Vacuum Compatibility	10^{-7} Pa (Max)	10^{-6} Pa
Binning	2 x 2, 4 x 4	
ROI	Support	
Timestamp Acc.	1 μs	
Trigger Mode	Hardware, Software	
Trigger Output	Exposure Start, Simulated Global, Readout End, High, Low	
Trigger Interface	SMA	Hirose
Data Interface	CameraLink, USB 3.0-Over-Fiber	USB 3.0-Over-Fiber
Flange Size	DN100CF / User Customization	Feedthrough DN100CF / Customization
Power Supply	12 V / 8 A	AC Power
Power Cons.	< 65 W	< 65 W (incl. ctrl. box)
Dimensions	152.4 mm (H)x 152.4 mm (W)x 140.7 mm (L)	110 mm (H)x 110 mm (W)x 191 mm (L)
Weight	~3700 g	~2600 g (camera body)
Software	Mosaic V3, Sample Pro, LabVIEW, MATLAB, Micro-Manager 2.0	
SDK	C / C++ / C#	C / C++ / C# / Python
Operating System	Windows, Linux	
Environment	Temp.: 0°C~40°C; HUM 0%~70%, non-condensing; Bake-out Temp.: < 70°C	

*Specifications in this manuat are subject to changes without prior notice.