Phase One Space Hardened Camera iXM-SP150

Designed and built to operate in Low Earth Orbit in Space, iXM-SP150 is a snapshot matrix camera, easy to integrate with third party space telescopes and other satellite hardware.

Using a mix of COTS and radiation hardened components, combined with an embedded real-time FDIR system for radiation protection, the iXM-SP150 is your perfect choice for cost-effective New Space projects with high demand for performance, quality and robustness.

iXM-SP150 offers unmatched wide area, very high resolution, high sensitivity and low noise imaging capabilities for Earth Observation and Space Domain Awareness applications.

iXM-SP150 can be delivered with achromatic and color sensor options and as Engineering or Flight model.



Key benefits and features



Collect more data in every frame with our 150 MP, snapshot matrix camera

- 14,204 x 10,652 pixels simultaneously exposed and acquired
- Fast acquisition rate for motion detection
- \bullet Fine pixel pitch of 3.76 μm with BSI technology



Proven for use in Low Earth Orbit

- Designed for 5-year LEO missions
- Radiation hardened with built-in redundancy
- Space heritage since mid-2022



Straightforward integration with satellite hardware

• Sensor and electronics engine in a single space hardened enclosure

- High precision and rigidity mounting for telescope
- Fiber-optic 10G Ethernet control and data-link

• Eliminating complicated calibration process, associated with TDI scanners





Taking Space imaging to new heights

Imaging specifications	Sensor model	Sony IMX411	
	Sensor type	Back-Illuminated CMOS	
	Color Variants	Achromatic, Bayer color	
	Resolution (pixels)	14,204 x 10,652	
	Pixel size (μm)	3.76	
	Sensor size (mm)	53.4 x 40	
	Pixel depth (bit)	16, 14, 12	
	Full well capacity (e-)	50,000	
	Dark current	1.2 e-/s @ 40°C	
	Read noise (e-)	3.4	
	Integration time (ms)	225 at 14 bit/pixel	
	Min. exposure time (ms)	0.25	
	Dynamic range (dB)	83	
	Capture rate (fps)	Up to 4*	

System specifications	Metadata	Embedded in image file	
	Interface (data & control)	10GigE over fiber	
	Image buffer size (MB)	3,000	
	Hardware signals	Trigger input, camera status output	
	Software interface	Phase One SDK over Linux	
	Power supply	15 V DC	
	Max. power consumption (W)	17	
	Mass (g)	865	
	Dimensions (mm)	100 x 100 x 67	
	Thermal interface	Cold plate	

Radiation hardening iXM-SP150 uses a mixture of COTS and radiation hardened components. An embedded Fault Detection Isolation and Recovery (FDIR) system manages in real-time potential critical errors caused by radiation.





Environmental specifications	Operating temperature range (°C)			-10 to +40 (camera body)	
	Survival temperature range (°C)			-30 to +65 (camera body)	
Technology readiness	2020	2021	2022	2023	2025
	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9

*Dependent on image size and compression used.