PHASEONE

iXM-SP150

Taking Space imaging
to new heights

An advanced 150 megapixels snapshot matrix camera for Earth Observation and Space Domain Awareness applications

The Phase One iXM-SP150 is a 150 megapixels (MP) snapshot matrix camera for high-demand Earth Observation and Space Domain Awareness applications. Its snapshot matrix imaging technology provides high photogrammetric precision, eliminating errors associated with line TDI scanning cameras. It is specifically engineered to endure the harsh conditions of Low Earth Orbit, providing high resolution, sensitivity, and noise reduction for multispectral, panchromatic and color imaging applications.

The iXM-SP150 camera utilizes Phase One's trusted iXM architecture, which has been demonstrated to be highly reliable, rigid, and efficient through the successful operation of thousands of cameras since 2018. This architecture has been utilized in a variety of aerial imaging applications and in a wide range of environmental conditions. The iXM-SP150 has been designed and constructed space radiation hardened and with fiber optic 10G Ethernet interface. It is ready for integration with space telescopes and satellite buses.

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

Unlock the power of seamless image capture with our technology, allowing you to effortlessly capture large area images with pixel-perfect precision. Thanks to the small pixel size of our sensors our design allows for the use of smaller and more cost-effective components, such as compact telescopic lenses, to achieve the same high-quality imaging results. By eliminating precision errors associated with line TDI scanners, you can ensure maximum accuracy and efficiency in your data collection.

With the ability to capture multiple images of the same large area and achieve full motion video at a 4 fps capture rate, our technology significantly increases the signal-to-noise ratio and overall image quality for a truly immersive imaging experience.

Proven for use in Low Earth Orbit

iXM-SP150 was originally designed for space, incorporating system redundancy and containing radiation hardened electronic components. An early unit has been operating in space since mid-2022, proving its high quality Earth Observation imaging capabilities, reliability and durability in Low Earth Orbit.

Straight forward integration with satellite hardware

Phase One's space-hardened enclosure combines a sensor and imaging engine, optional sensor alignment with space telescopes. With a fiber optic 10G Ethernet data interface, you can ensure high speed and reliable data transfer for your space applications.

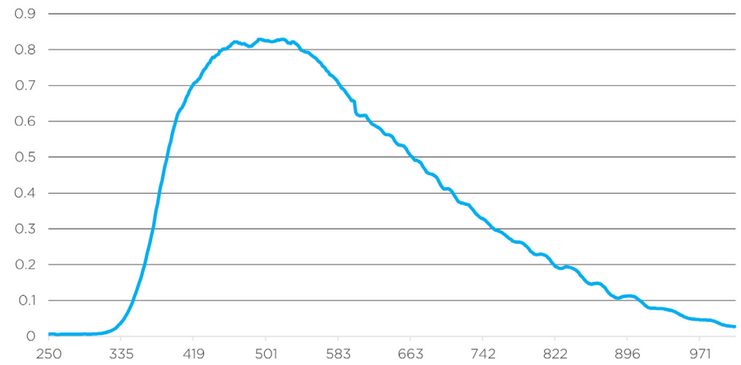
iXM-SP150
Technical specifications

Imaging specifications	Resolution (pixels)	14,204 x 10,652
	Pixel size (µm)	3.76
	Pixel depth (bit)	16, 14, 12
	Color variants	Achromatic, Bayer color
	Full well capacity (e-)	50,000
	Read noise (e-)	3.4
	Dark current	1.2 e-/s @ 40°C
	Region of interest	Definable
	Binning option	2x2 in digital domain (37.7 MP)
	Integration time	250 µs to 1s
	Telescope mount	Customizable
System specifications	Compression	Lossless (~1 B/ pixel), Smart (~0.7 B/ pixel)
	Metadata	In image
	Interface	Optical Ethernet 10G
	Image buffer size (MB)	1,500
	Image transfer rate to host (MB/s)	500
	Hardware signals	Trigger input, camera ready output
	Camera control interface	Proprietary over camera SDK, provided
	Camera states	Ready, armed, busy
	Power supply	15 V DC
	Max. power consumption (W)	20
	Mass (g)	865
	Dimensions (mm)	100 x 100 x 67
	Thermal interface	Rear plate

Environmental specifications	Operating temperature range	-10°C to +50°C (on rear plate)
	Survival temperature range	-30°C to +65°C (on rear plate)

Technology readiness	2020	2021	2022	2023	2024
	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9

Quantum efficiency



iXM-SP150
Additional benefits and features

Geotagged images

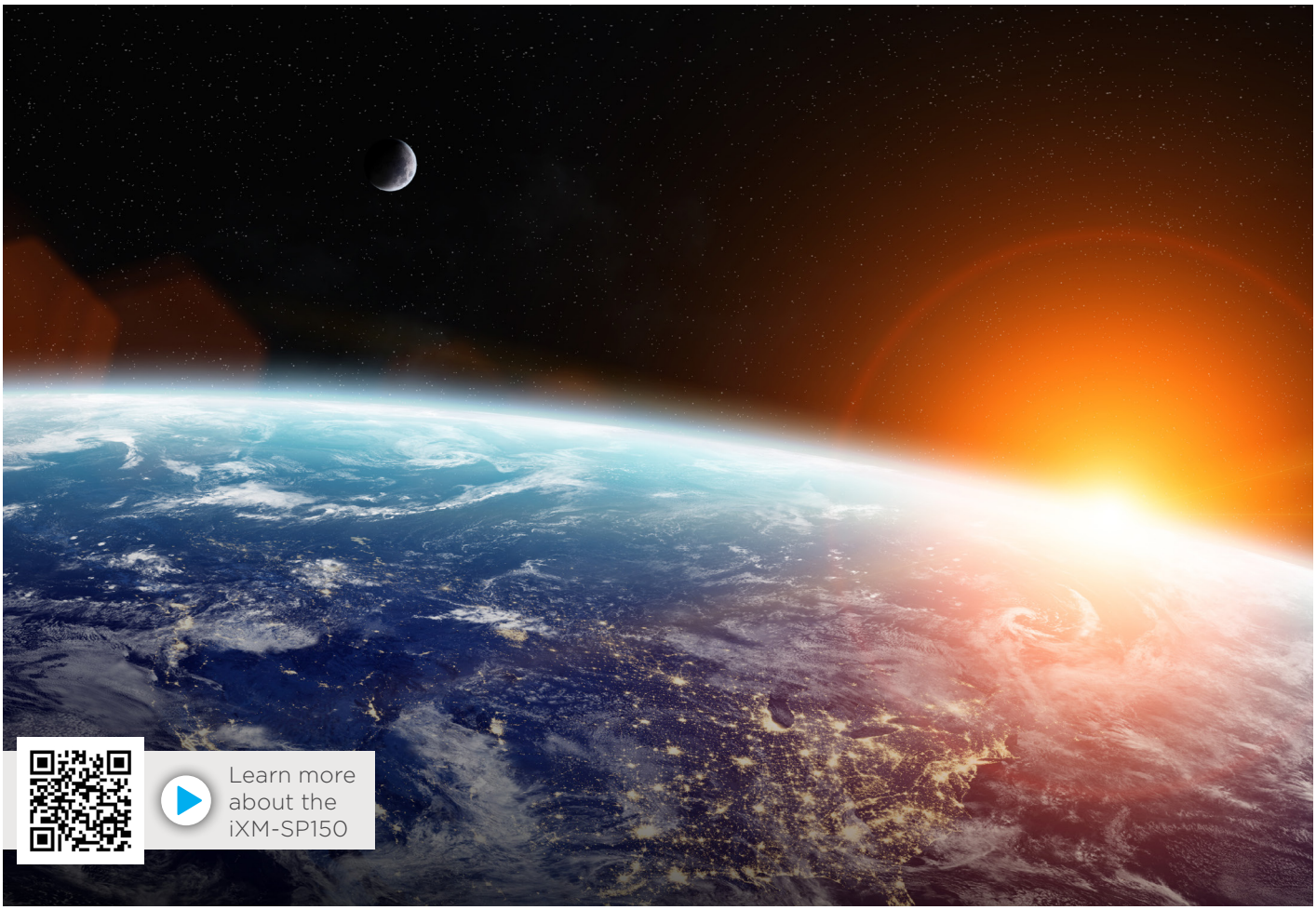
Camera control and image processing SDK

Ready for remote update

Lightweight and compact

Low power consumption

Redundant operating system



About Phase One

Phase One A/S is a leading researcher, developer and manufacturer of medium format and large format digital cameras, software, and imaging solutions.

Founded in 1994, Phase One is a pioneer of digital photography and has developed core imaging technologies and a range of digital cameras and imaging modules. Phase One provides the world's highest image quality in terms of resolution, dynamic range, color fidelity and geometric accuracy. As such, the company has grown to become the leading provider of high-end imaging technology across many business segments. This includes both hardware and software for aerial mapping, industrial inspection, and cultural heritage digitization, as well as serving the world's most demanding photographers.

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