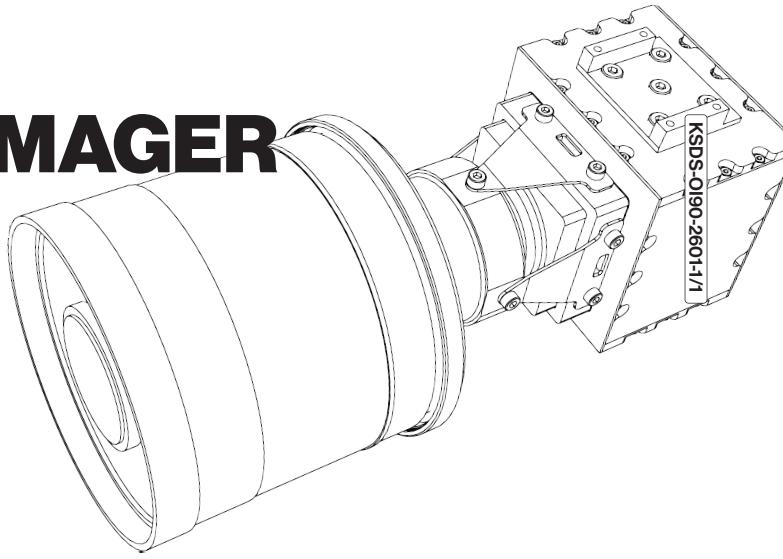


# KSOI-90 OPTICAL IMAGER

## DATASHEET

High-aperture optics for solving any commercial and scientific tasks of remote sensing. This camera has been specially optimized in terms of size, weight and data rate for use on space platforms such as CubeSat. Any CubeSat class larger than 6U is capable of utilizing this payload at full capacity.



### Specifications

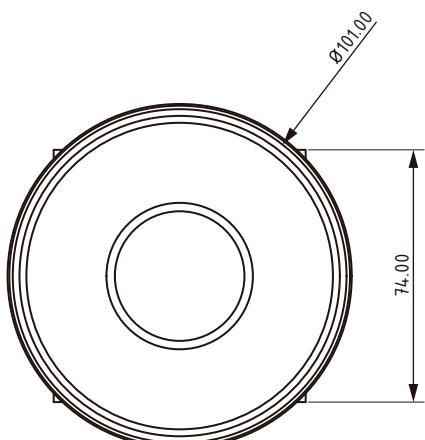
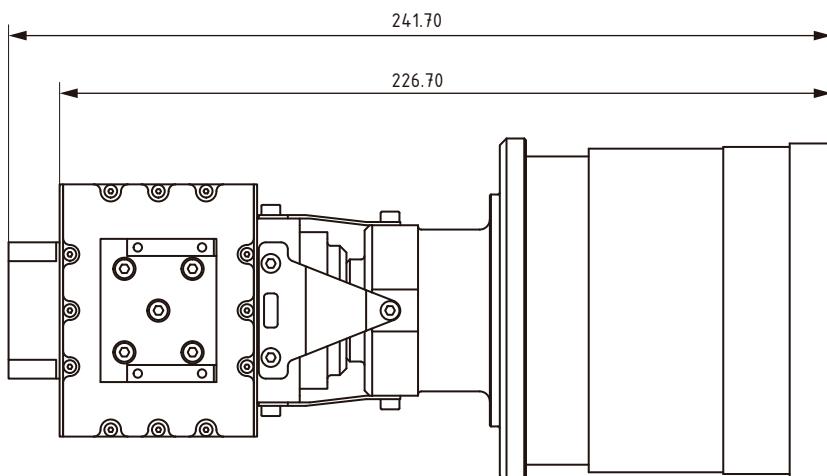
GSD	5 m PAN @600 km
Swath width	81.9 km @600 km
Continuous strip length	Up to 2500 km
Storage capacity	512 Gigabyte EDAC protected NAND Flash
Image processing	Binning, Thumbnails
Image compression	CCSDS 122.0-B-2 Lossy/Lossless
Mass	1.4 kg ± (100 g)
Dimensions	Ø101 x 243 mm
Power supply	5V DC ± 150 mV
Power consumption	Peak: 8 W
Data interface	RS422 / RS485 / CAN
Data rate	CAN: 2Mbit RS: up to 5Mbit
Data format	Mono 8/10/12/ bit
	RGB 8/10/12 bit
Control interface	UART (default) / CAN/ RS422 / RS232
Nominal pointing direction	Earth / Space
Operating temperature	-60 °C ~ +60 °C, vacuum
Sun facing duration	Sun can be within FoV for up to 3 minutes
Radiation (TID)	Tested beyond 25 kRad, without shielding, using a 60Co source
Design life	3 years in LEO
Heritage / TRL	TRL 8
ITAR restriction / Export control	None

### Optics

Aperture diameter	90 mm
Focal length	500 mm
F number	f / 5.55
Field of View (horizontal x vertical)	1.6° (across-track); 1.2° (along-track)
Optical transmission and vignetting	> 95 %

### Detector

Type of detector	CMOS matrix
Lower/upper wavelength	400 - 900 nm (PAN)
Resolution (horizontal x vertical)	4096 × 3072 pixels
Pixel size	2.8 µm
Maximum pixel depth	12 bit
Spectral bands	Up to 6 (RGB, Red Edge, NIR, PAN)
SNR	> 250
Instantaneous FoV (for a pixel)	6.8 arcsec
Quantum efficiency, QE	> 70 % @ 600nm
Full well capacity	7200 e-
Read-out noise electrons	< 13.5 e-
Dark current	< 23 @20C (e-/s)
Accuracy of time tagging per picture	463 ns



\*Units: Metric mm