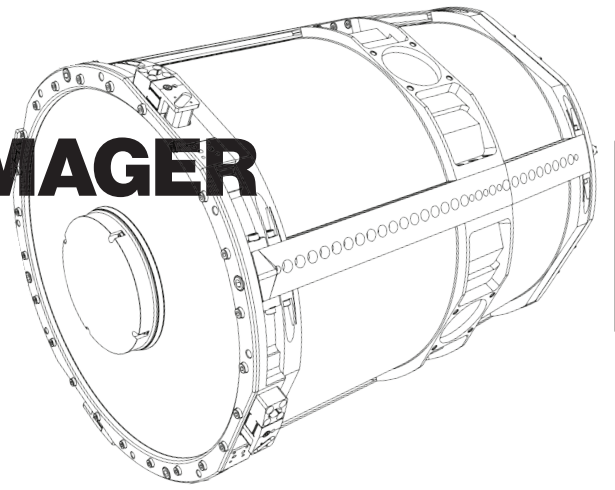


KSOI-300 OPTICAL IMAGER

DATASHEET

KSOI-300 is an optical imager with capability of in-orbit configurable GSD up to 1 meter in spectral bands up to 4 bands. It utilizes catadioptric optics, it is light weight and high performance imager ideal for any satellites above 50kg class. The development is expected to be finished by end of 2026.



KSOS-OI300-2605-1/1

Specifications

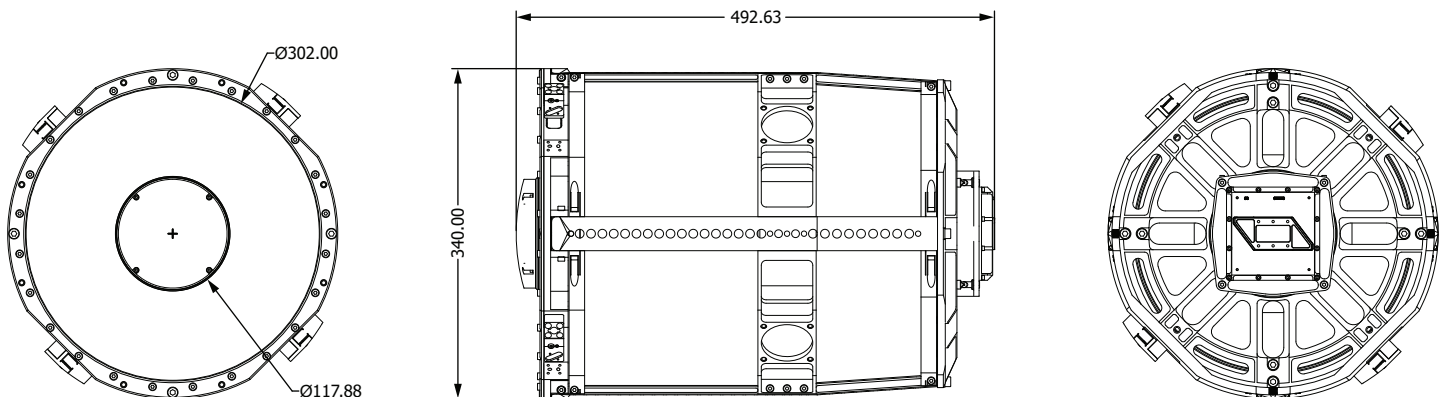
GSD @500km	1m
Swath width @500km	12 km
Continuous strip length @500km	up to 3000 km
Storage capacity	256 Gb
Image compression	JPEG (Optional)
Mass	< 16000 g
Dimensions	500 x 370 x 370 mm ³
Power supply	9 - 12 V / 18 - 36 V
Power consumption	< 12 W
Data interface	LVDS / ETHERNET
Data rate	85 Mb/s
Data format	mono 8/10/12 bit
Control interface	2xCAN / 2xRS422 / 2xUART / TTL
Sync interface	PPS
Nominal pointing direction	Earth / Moon / Mars / Jupiter
Operating temperature	-10 °C ~ +60 °C
Surviving temperature	-80 °C ~ +85 °C
Sun facing duration	Sun can be within FoV for up to 30 seconds
Radiation (TID)	Lens up to 150 kRad Electronics up to 60kRad
Design life	3 years
Heritage / TRL	TRL 5
ITAR restriction / Export control	No

Optics

Aperture diameter	300 mm
Focal length	2500 mm
f number	f / 8.3
Field of View (horizontal x vertical)	1.43°
Optical transmission and vignetting	> 91 %

Detector

Type of detector	TDI
Lower/upper wavelength	450 - 900 nm (PAN)
Resolution (horizontal x vertical)	12480 x 256 pixels
Pixel size	5.0 μ m
Maximum pixel depth	12 bit
Spectral bands	PAN(R, G, B optional)
dTDI stages	Up to 64 per channel
Line rate	Up to 200000 Hz
SNR	>200
Instantaneous FoV (for a pixel)	0.42 x 0.42 arcsec
Min/Max exposure time	10 μ s / 100ms (per line)
Quantum efficiency, QE @ 600nm	> 50 % @ 600nm
Ensquared energy	> 86%
Full well capacity	35760 e-
Read-out noise electrons	3.5 - 5.7 e-
Dark current electrons per pixel per sec	< 10 @20°C (e-/s)
Accuracy of time tagging per picture	400 ns



*Units: Metric mm