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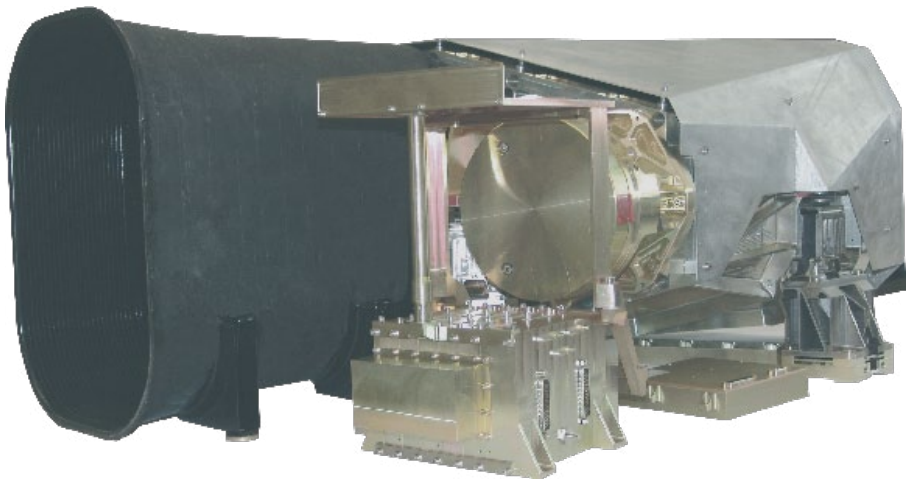
Jena Spaceborne Scanner JSS 56

Jena-Optronik applies modern imaging principles and components to build low-cost optical spaceborne scanners in the VIS/NIR and SWIR wavelength ranges.



The JSS 56 is a compact, lightweight, long life and low cost multispectral imager product applicable to all professional small satellite platforms. Covering the Earth's surface continuously line-by-line (pushbroom principle) the imager of Jena-Optronik enables the precise data acquisition of an 77 kilometres wide strip of land with a pixel size of 6.5 metres out of 630 kilometres orbit height.

Space proven technology

The first JSS 56 are the payload of the RapidEye satellites. Composed of five identical Earth observation satellites, this worldwide unique constellation, is equipped with one multi-spectral imager from Jena-Optronik on each satellite. Launched on 29th of August 2008, the German company RapidEye AG established with the help of the imagers from Jena-Optronik, a commercial geo-information service (GIS) able to gather over 4 million km² of high resolution, multi-spectral imagery per day.

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Jena Spaceborne Scanner Performance

Dimensions	
Imager	641 mm x 385 mm x 865 mm
Electronic Box	280 mm x 253 mm x 232 mm
Mass	
	46 kg [including Imager & Electronic Box]
Temperature Range	
Operational	-10 °C...+30 °C [depending on satellite configuration and orbital data]
Power Consumption	
	93 W [peak simultaneous image take & downlink]
Spectral Bands in VIS and NIR range	
Blue	440 nm ... 510 nm
Green	520 nm ... 590 nm
Red	630 nm ... 685 nm
Red edge	690 nm ... 730 nm
Near infrared	760 nm ... 850 nm
Image Field	
Swath width at 630 km	77 km
Ground sampling distance	6.5 m
Resolution	
	end-to-end system modulation transfer function [MTF] in VIS range of ≥ 11% ACT, >25% ALT at Nyquist sampling rate
Revisit Capability	
	nominally off-nadir imaging
Digital Data	
	12 bit signal digitisation Data storage capability of 48 GBit
Data Compression	
Lossy compression	DCT
Lossless compression	Differential Huffman

EN 9100 certified AIRCERT Certification of Management Systems

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