



Category: Electronics & Optoelectronics

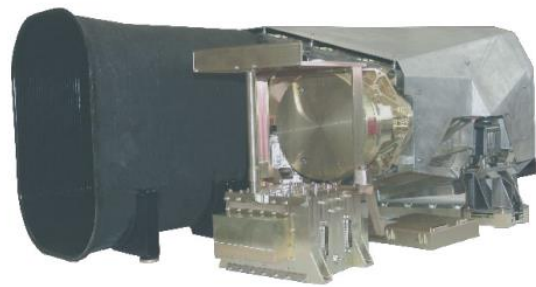
Reference: TD-DE-1034

Spaceborne multispectral imager

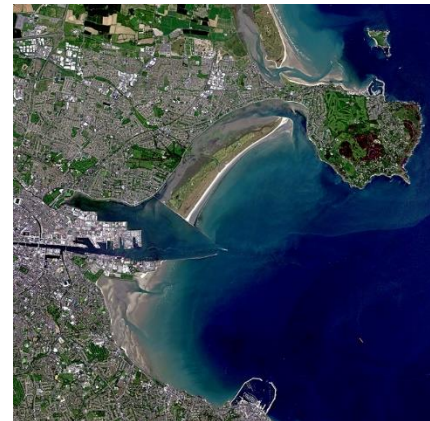
Description:

The company is considered as a pioneer in multispectral Earth observation. It applies modern imaging principles and components to build low-cost optical spaceborne scanners in the VIS/NIR and SWIR wavelength ranges.

The product is a compact, lightweight, long life and lowcost multispectral imager product applicable to all professional small satellite platforms. Covering the surface continuously line-by-line (pushbroom principle) the imager enables the precise data acquisition of planet Earth by five spectral bands (440 nm to 850 nm). The multispectral scanner weights approx. 45 kg and operates at a temperature range from -10 °c to 30 ° c.



This sensor technology is of high interest for being used on other platforms (UAVs, Airborne, HAPS, for example) and useful for various terrestrial applications, first of all, in agriculture.



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

Innovative Aspects:

The space proven technology is working in five spectral channels, providing pin sharp multi-spectral and high-resolution images and covering the wavelength range from visible to near infrared. This makes the sensor especially helpful for environmental monitoring, disaster management and digital farming.

The imager is part of the first constellation that is considered as the starting point for a new generation of small, high-performance Earth observation satellites, heralding the age of NewSpace.

The technology was also applied for capturing data within EU's Copernicus programme.

Application Areas:

Sensors for UAVs, Airborne, HAPS; digital farming applications.

Cooperation:

There is interest in cooperations and joint ventures as well as in customer-specific developments.