aisa EAGLE hyperspectral sensor

The best performance-to-cost efficiency for airborne hyperspectral imaging in the VNIR range (400 - 970 nm). AisaEAGLE system acquires full, high quality hyperspectral data with 1024 swath pixels and high image rates.

AisaEAGLE sensor
L: 146 mm
W: 145,5 mm
H: 347 mm
Mass: 6,5 kg

AisaEAGLE is an excellent analytical, detection and mapping tool that provides an exceptional performance in airborne and field use at an affordable cost.

The sensor has established its ability in a range of commercial, research and public service applications. The applications that AisaEAGLE has been involved in include forestry management, vegetation cultivation, environmental investigations, precision farming, target identification, water assessment and land use planning.

HIGH STABILITY

The newest AisaEAGLE sensor offers now even higher performance. With its temperature stabilized CCD camera, it provides the highest spectral stability and quality in varying operating conditions, both airborne and in the field.

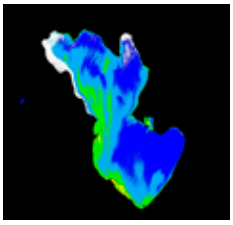
AisaEAGLE Airborne Hyperspectral Imaging System

SPECIM supplies the AisaEAGLE sensor with all the system components needed to make a turnkey, ready-to-use airborne imaging system. The complete AisaEAGLE system consists of

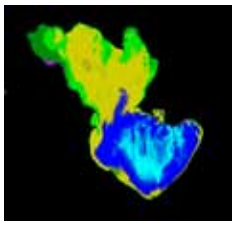
- The AisaEAGLE sensor
- Real time image acquisition computer with a user-friendly interface and image acquisition software (RSCube)
- High performance GPS/INS sensor
- Power supply
- CaliGeo post-processing software

For more information about the complete system, please see the AISA Systems brochure and CaliGeo brochure.

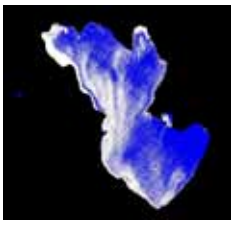
Rectified Reflectance Image



Lake Chlorophyll Map



Lake Total Suspended Solids Map



Lake Phycocyanin Map

AisaEAGLE usage on inland water application.
Target area is Pawnee Lake in Lincoln, Nebraska.
(Courtesy of CALMIT Center of Advanced Land Management Information Technologies, University of Nebraska, the Nebraska Game and Parks Commission and the Nebraska Department of Environmental Quality.)

Channel Systems
Telephone: 1-204-753-5190
Toll Free: 1-866-300-9799
Email: sales@channelsystems.ca
Website: www.spectralcameras.com

Spectral Imaging Ltd.
POB 110
Teknologiantie 18 A
FIN–90571 Oulu, Finland

Tel. +358 (0)10 4244 400
Fax +358 (0)8 551 4496
Email info@specim.fi
www.specim.fi

AisaEAGLE Sensor

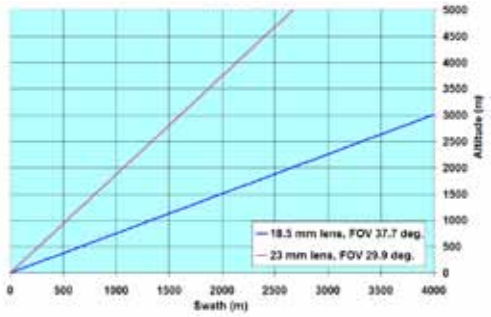
OPTICAL CHARACTERISTICS	TYPICAL SPECIFICATIONS
Spectrograph	High efficiency transmissive imaging spectrograph. Throughput practically independent of polarization. Smile and keystone < 2 microns.
F/#	F/2.4
Spectral range	400-970 nm
Spectral resolution	3.3 nm
Slit width	30 microns
FODIS (optional)	Diffuse down welling irradiance collector and fiber optic cable (5 m standard) with SMA connector
Calibration	Sensor provided with wavelength and radiometric calibration file.

FORE OPTICS			
Fore optics options	OLE23	OLE18,5	OLE9
Focal length	23 mm	18.5 mm	Wide FOV lens More specifications upon request
FOV	29.9 degrees	37.7 degrees	
IFOV	0.029 degrees	0.037 degrees	
Swath width	0.53 x altitude	0.68 x altitude	
Ground resolution @ 1000 m altitude	0.52 m	0.68 m	

ELECTRICAL CHARACTERISTICS				
Camera	Progressive scan CCD camera			
Spectral binning options	1x	2x	4x	8x
# of spectral bands	488	244	122	60
Spectral sampling/band	1.25 nm	2.3nm	4.6nm	9.2nm
Image rate, up to (images/s)	30	50	100	160
Spatial pixels, up to	1024, of which 70 - 80 FODIS pixels (optional)			
Output	12 bits digital			
SNR	350:1 - 1400:1 (depending on the band configuration) More detailed SNR data in various conditions available from SPECIM.			
Integration time	Adjustable, independent of image rate			
Shutter	Electromechanical shutter for dark background registration, user-controllable by software.			
Operating modes	Hyperspectral and multispectral The operator can create application specific band configurations, and quickly change from one mode or configuration to others in flight operation.			
Power consumption Complete system with rack PC Complete system with lightweight PC	 435 W 315 W			

Specifications subject to changes without prior notice.

Swath width vs altitude



Ground pixel size vs. altitude

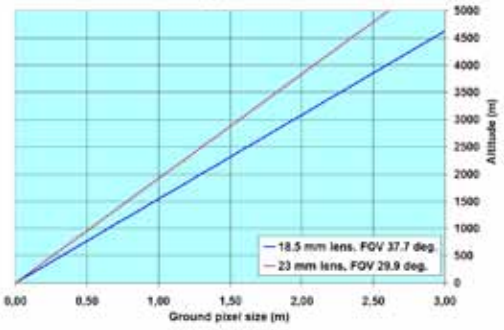
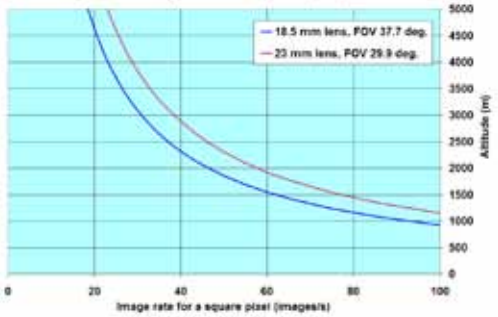
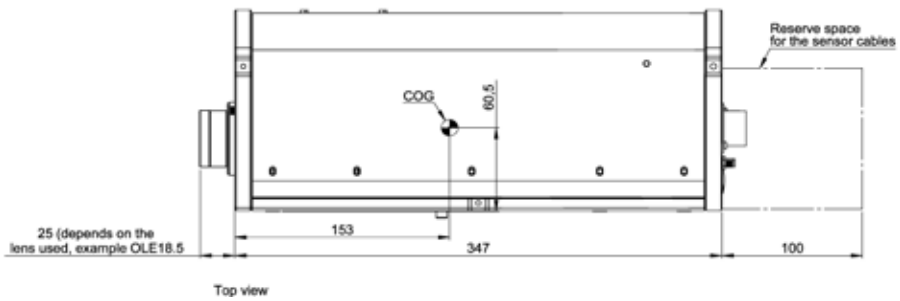
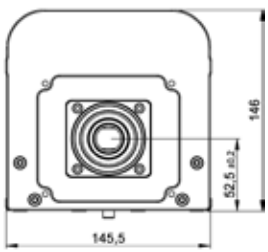


Image rate at aircraft velocity of 60 m/s (120 knots)





AisaEAGLE sensor, side view



AisaEAGLE sensor, front view

More detailed technical drawings available on request.