AISA EAGLE *hyperspectral sensor*

The best performance-to-cost efficiency for VNIR hyperspectral imaging. AISA Eagle system acquires full, high quality hyperspectral data with 1000 swath pixels and high image rates.

Eagle sensor head
L: 146 mm
W: 146 mm
H: 347 mm
Mass: 7 kg

AISA Eagle 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 AISA Eagle has been involved in include forestry management, vegetation cultivation, environmental investigations, precision farming, target identification, water assessment and land use planning.

UPGRADED EAGLE SENSOR

The newest Eagle 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.

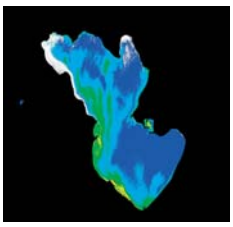
Total turnkey Eagle System

All our AISA systems provide an integrated turnkey solution, which is ready for installation and operation. The Eagle system consists of:

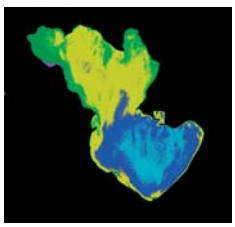
- the Eagle hyperspectral sensor
- Real time acquisition computer with a user-friendly interface and operation software
- GPS/INS sensor
- Power supply
- Galigeo post-processing software

For more information about system solutions and computer and GPS/INS options available, please see the AISA Systems brochure.

Rectified Reflectance Image



Lake Chlorophyll Map



Lake Total Suspended Solids Map

Lake Phycocyanin Map

AISA Eagle 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.)

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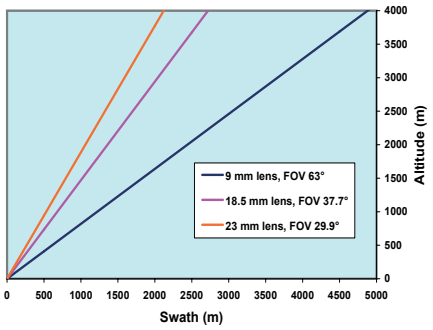
AISA Eagle Sensor head

SENSOR HEAD	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	2.9 nm				
Slit width	30 microns				
Spectral binning options	1x	2x	4x	8x	8x + sw2x
# of spectral bands	488	244	122	60	30
Spectral sampling/band	1.25 nm	2.3nm	4.6nm	9.2nm	18.4nm
Image rate, up to (images/s)	30	50	80	100	120
Spatial pixels, up to	1024, of which 70 - 80 FODIS pixels (optional)				
FORE OPTICS					
Fore optics options	OLE23		OLE18,5		OLE9
Focal length	23 mm		18.5 mm		9 mm
FOV	29.9 degrees		37.7 degrees		62,1 degrees
IFOV	0.029 degrees		0.037 degrees		0.060 degrees
Swath width	0.53 x altitude		0.68 x altitude		1.20 x altitude
Ground resolution @ 1000 m altitude	0.52 m		0.68 m		1.2 m
ELECTRICAL CHARACTERISTICS					
Camera	Progressive scan CCD camera				
Output	12 bits digital				
SNR	350:1 (peak) More detailed SNR data in various conditions available from SPECIM.				
Integration time	Settable independent of image rate				
Shutter	Electromechanical shutter for dark background registration, user controllable by software.				
FODIS	Diffuse down welling irradiance collector and fiber optic cable (5 m standard) with SMA connector				
Calibration	Sensor head comes with wavelength and radiometric calibration file.				
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.				

Swath width vs. altitude



Ground pixel vs. altitude

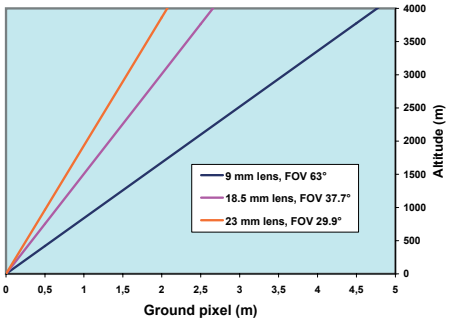
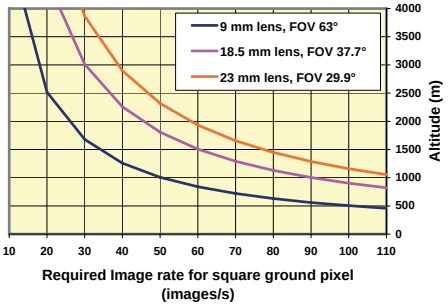
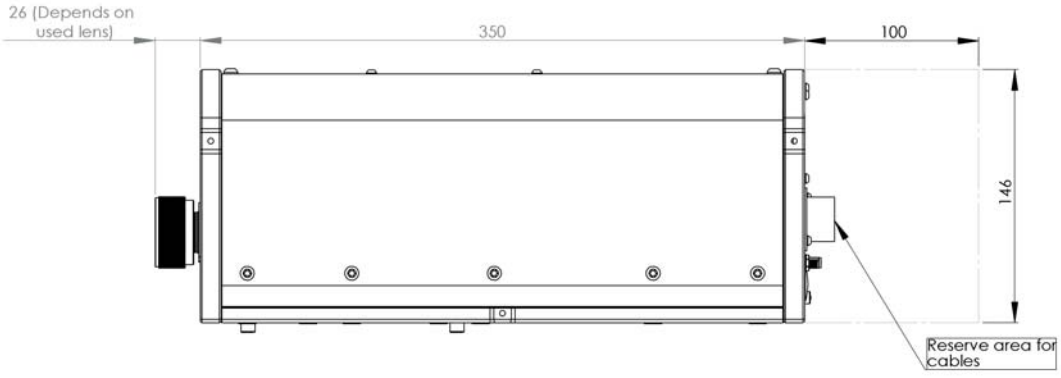
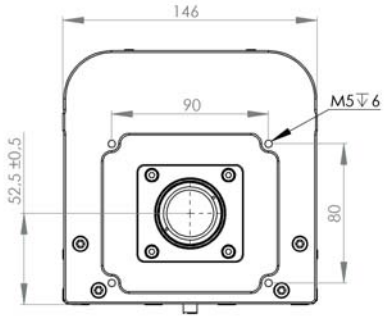


Image rate at aircraft velocity of 60 m/s (120 knots)





AISA Eagle sensor head, side view



AISA Eagle sensor head, front view

More detailed technical drawings available on request.