

AISA HAWK *hyperspectral sensor*

AISA Hawk is the smallest SWIR hyperspectral sensor on the market.



Hawk II sensor head
L: 220 mm
W: 310 mm
H: 600 mm
Mass: 21 kg

AISA Hawk is the first small and low maintenance SWIR (970-2450 nm) hyperspectral sensor, which provides sensitive high speed data acquisition.

The major advantage of the AISA Hawk sensor is its distinctive size; the smallest SWIR hyperspectral sensor on the market can be quickly installed into any aircraft with relative ease.

The sensors ability to capture short wave infrared wavelengths makes it an ideal tool for applications, which will benefit from data

acquisition on spectral signatures characteristic to chemical compounds in natural and man-made targets that can not be distinguished in the VNIR range.

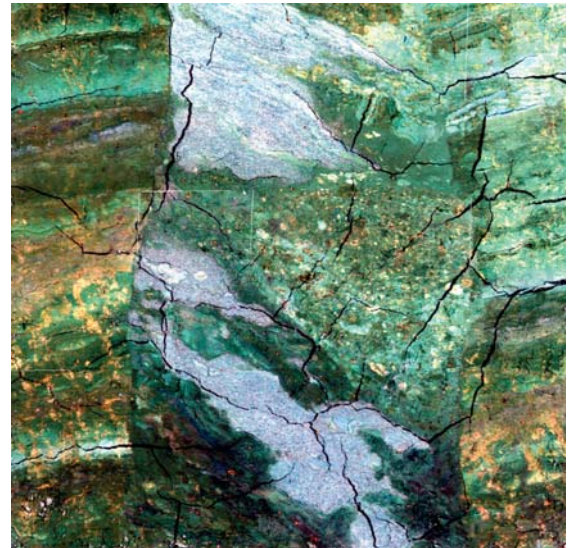
AISA Hawk sensor makes a high performance hyperspectral imaging system when integrated with AISA data acquisition computer, RSCube software, GPS/INS sensor, and power supply.

System Components

Besides a high performance sensor head, all AISA systems integrate the following basic system components:

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

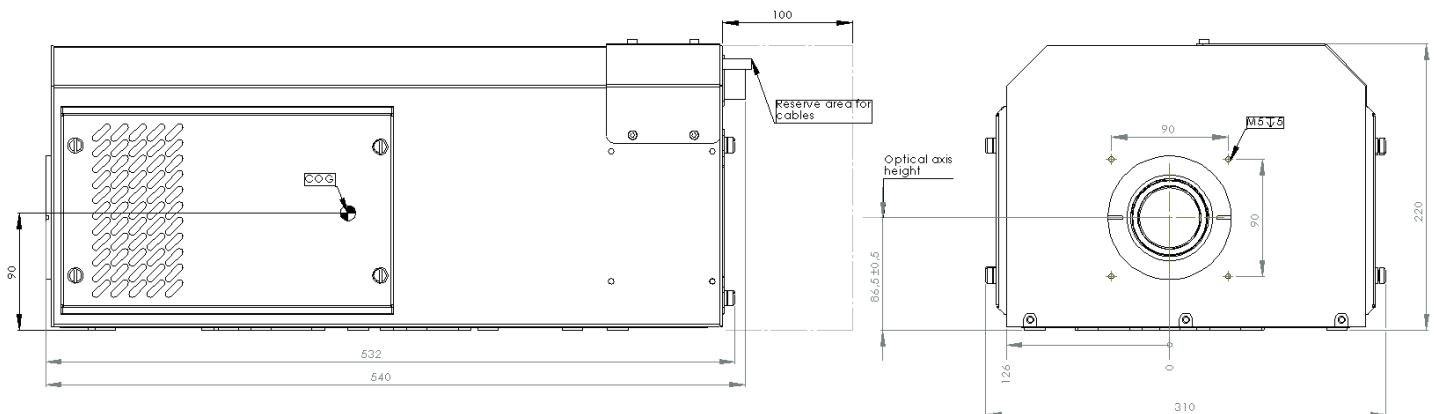
For more information, please see the AISA Systems brochure.



All AISA sensors can also be used for ground-based hyperspectral imaging. Ragona, D et al. have studied the classification of sediments of very similar composition and grain size using the SWIR sensor. (Courtesy of Ragona, D., Minster, B., Rockwell, T., Jasso, H.)

AISA Hawk Sensor head

SENSOR HEAD		TYPICAL SPECIFICATIONS		
Spectrograph	High efficiency transmissive imaging spectrograph. Throughput practically independent of polarization. Smile and keystone < 5 microns. Spectrograph is temperature stabilized.			
F/#				F/2.0
Pixel size				30 x 30 microns
Spectral range				970 - 2450 nm
Spectral pixels				254
Spectral sampling/pixel				5.8 nm
Spectral resolution				8.5 nm
Slit width				30 microns
Spatial pixels				320, of which 20-25 FODIS pixels (optional)
FORE OPTICS				
Standard fore optics	30 mm	22.5 mm	15 mm	
FOV	17.8 degrees	24.0 degrees	35.5 degrees	
Ifov	0.054 degrees	0.075 degrees	0.111 degrees	
Swath width	0.31 x altitude	0.43 x altitude	0.64 x altitude	
Ground resolution @ 1000 m altitude	0.97 m	1.34 m	2.0 m	
ELECTRICAL CHARACTERISTICS				
Camera	MCT camera with maintenance-free cooler			
Output				14 bits digital
SNR				800:1 (peak)
Integration time	Settable independent of frame rate			
Image rate				Up to 100 images/s
Shutter	Electromechanical shutter for dark background registration, user controllable by software.			
OPERATING MODES				
Hyperspectral				254 spectral bands with max speed
Programmable multispectral				Yes



AISA Hawk sensor head, side view

AISA Hawk sensor head, front view