

aisa **OWL** *hyperspectral sensor*

SPECIM's high performance thermal airborne hyperspectral sensor AisaOWL covers the full spectral range 8 to 12 μm and acquires full, contiguous hyperspectral data with 84 spectral channels and 384 swath pixels.



AisaOWL sensor

AisaOWL is designed to provide the remote sensing market with the first LWIR hyperspectral imager which is compact for installation in the smallest aircrafts, even in UAVs, and can be operated and maintained without special technical expertise.

AisaOWL's performance meets the most demanding remote sensing applications in the thermal spectral region from 8 to 12 μm . The AisaOWL push-broom type sensor integrates SPECIM's proprietary temperature stabilized

imaging spectrograph with the highest sensitivity cooled MCT camera. This state-of-the-art technology together with the sensor's advanced internal background monitoring and calibration solution provide high and stable performance during flight missions.

Like all SPECIM's hyperspectral imaging sensors, AisaOWL is an off-the-shelf product. It makes AisaOWL a cost-efficient deployment not only for defense users, but also for commercial remote sensing companies and academic clients.

AisaOWL Airborne Hyperspectral Imaging System

SPECIM provides AisaOWL as a full, turnkey system. The complete AisaOWL system consists of:

- The AisaOWL sensor
- Image acquisition computer with a user-friendly interface and image acquisition software (RSCube)
- High performance GPS/INS sensor
- Power supply
- CaliGeo pre-processing software

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

Key benefits

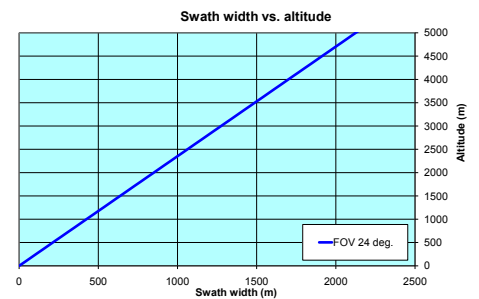
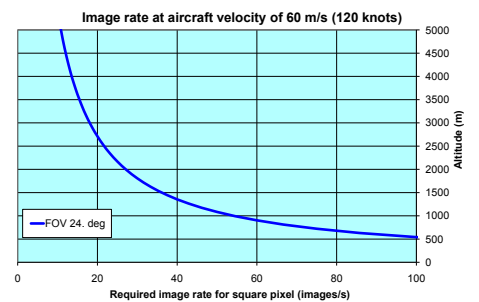
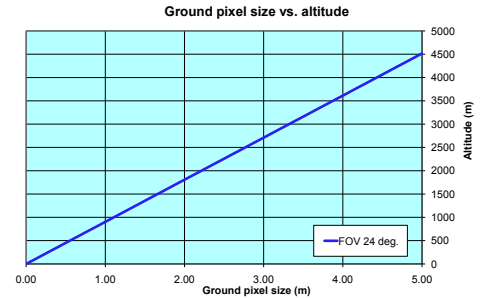
- Sensor size without fore lens ca. 175 x 285 x 200 mm, 13.1 kg
- No special maintenance requirements
- High sensitivity
- Superb spectral and spatial imaging performance
- Covers full LWIR 8 to 12 μm with 84 spectral bands



Part of a flight line mosaic over Cuprite, Nevada

AisaOWL

OPTICAL CHARACTERISTICS		TYPICAL SPECIFICATIONS		
Spectrograph	High efficiency imaging spectrograph. Smile and keystone < 0.1 pixels			
Numerical aperture	F/2.0			
Spectral range	8 - 12 μm			
Spectral resolution	100 nm**			
Calibration	Sensor provided with wavelength and radiometric calibration file			
FORE OPTICS				
FOV	24 °			
I FOV	0.063 °			
Swath width	0.425 x altitude			
Ground resolution at 1000 m altitude	1.1 m			
ELECTRICAL CHARACTERISTICS				
Detector	MCT with stirling-cycle cooler			
Number of spectral bands	84			
Spectral sampling/band	48 nm			
Frame rate	Up to 100 frames/s			
Spatial pixels	384 pixels			
Output	14-bit LVDS			
SNR (target 300 K)*	At 8 μm	At 10 μm	At 12 μm	
NESR (mW/m ² s μm)*	450	580	230	
	21	18	40	
Integration time	Adjustable, independent of image rate			
Shutter/internal calibration	Yes			
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.			
Optics temperature	Stabilized			
Power consumption	< 200 W			
Mechanical characteristics				
Size	ca. 175 x 285 x 200 mm			
Weight	13.1 kg			
Environmental characteristics				
Storage	- 20 ... +50 °C			
Operating	+ 5 ... +40 °C, non-condensing			



Disclaimer: specifications are subject to change without prior notice. Any errors or omissions are unintentional.

* x 2 software binning

** Diffraction limited

