

# HYPER-CAM THERMAL AIRBORNE HYPER SPECTRAL IMAGING

## HYPER-CAM AIRBORNE

T E L O P S

### HYPER SPECTRAL IMAGING FROM AN AIRPLANE

The Hyper-Cam, a hyperspectral imaging camera, mounted on the Telops' airborne platform, enables the production of hyperspectral maps of an area surveyed from an airplane.



### KEY BENEFITS

Acquiring hyperspectral images from an airplane allows to map vast areas and obtain important spectral information. Applications include:

**Target Detection, Identification and Surveillance:** The Hyper-Cam Airborne is ideal for wide area mapping, surveillance or target interrogation due to enhanced resolution and sensitivity.

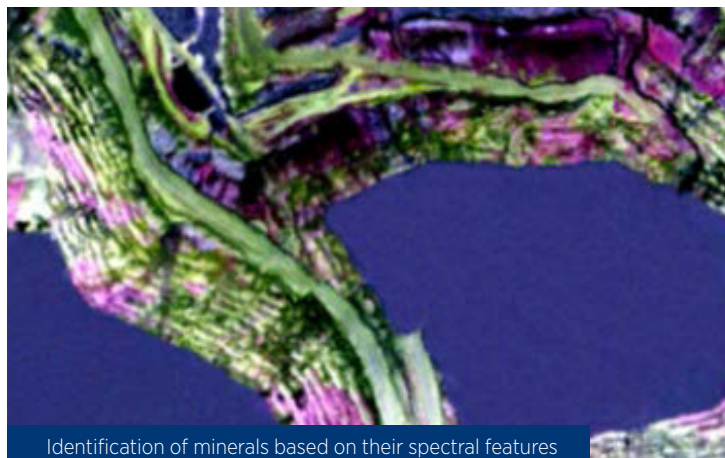
**Geology, Mining and Oil & Gas Exploration:** Mine face imaging using a Hyper-Cam Airborne allows to map the mineral content of a mine face from a distance and identify mineral concentrations and streaks. Detection of natural gas leaks from the air enables exploration of larger areas.

**Environmental Monitoring:** Hyperspectral data from an airborne configuration allows to detect and identify multiple substances simultaneously. Used to detect pipeline leaks or monitor substances in urban pollution, the Hyper-Cam Airborne is an imperative tool in environmental monitoring.

**Agriculture and Vegetation Surveys:** Soil and vegetation characterization can be easily performed on large areas.

### APPLICATIONS

- High sensitivity: Excellent signal-to-noise ratio (SNR) allowing detection of weak signals
- Spectral resolution is flexible and is user-selected to any value up to  $1\text{cm}^{-1}$  providing tens to hundreds of spectral bands
- Two (2) acquisition modes: mapping and targeting
- Dual-use for airborne and ground applications (useful for ground truthing)
- Provides georeferenced data
- Visible images acquired simultaneously with IR hyperspectral data
- Compatible with midwave ( $3\text{-}5\ \mu\text{m}$ ) and longwave ( $8\text{-}12\ \mu\text{m}$ ) Hyper-Cam sensors



PARAMETER	DESCRIPTION	UNITS	VALUE
<b>IMAGING CHARACTERISTICS (USING THE HYPER-CAM)</b>			
Spectral range	Midwave (MWIR) and longwave (LWIR)	µm	3-5 and 8-12
Geolocation accuracy	@1000 m altitude with internal GPS	m	5 (2*)
Ground pixel size @1000 m	Standard (6.4° × 5.1°)	m	0,35
	Using the 0.25× telescope (25° × 20°)	m	1.4
Aircraft speed	Typical cruising speed	kn	110
Aircraft altitude from sea level	Maximum operating altitude using unpressurized aircraft	m	3000
*High accuracy option			
<b>TYPICAL PERFORMANCES</b>			
Mass - Airborne sensing module	Airborne sensing module mass, excluding Hyper-Cam sensor	kg	m 77
Dimensions – Airborne sensing module	Airborne sensing module dimensions (length × width × height)	mm × mm × mm (in × in × in)	953 × 584 × 470 (37.5 × 23 × 18.5)
Airborne sensing module footprint	Compatibility with existing aircraft aperture & fixation characteristics of analog airborne visible camera	-	Leica PAV Series
Mass-Electronic equipment rack	Electronic equipment rack mass, including all rack mounted components	kg	68
Dimensions – Equipment rack	Electronic equipment rack dimensions (width × depth × height)	mm × mm × mm (in × in × in)	591 × 566 × 613 (23.2 × 22.3 × 24.2)
Operating Temperature Range	Operating temperature range	°C	0 - 40
<b>ELECTRICAL POWER</b>			
Input voltage	Range of input voltages, available from the aircraft under which the Hyper-Cam airborne system can operate	V	21 – 31 VDC
Steady-state power consumption	Typical Airborne module steady-state power consumption, including Hyper-Cam sensor	W	680
Peak power consumption	Airborne module peak power consumption, including Hyper-Cam sensor	W	740