



The Hyper-Cam LW.

HYPERSPECTRAL IMAGING SYSTEMS.

The Hyper-Cam is an advanced infrared hyperspectral imaging system. This remote sensing instrument combines high spatial, spectral and temporal resolution providing unmatched performances. It is a versatile tool for remote detection, identification and quantification.

KEY BENEFITS

HIGH SPATIAL RESOLUTION AND IMAGING QUALITY:

The Hyper-Cam provides the highest spatial resolution on the market. Its 320 × 256-pixel FPA detector also ensures excellent 2D image quality.

HIGH SPECTRAL RESOLUTION:

The Hyper-Cam offers the best spectral resolution available. The spectral features of the targets can be well resolved providing good selectivity. It is user-selectable up to 0.25 cm⁻¹.

HIGH TEMPORAL RESOLUTION:

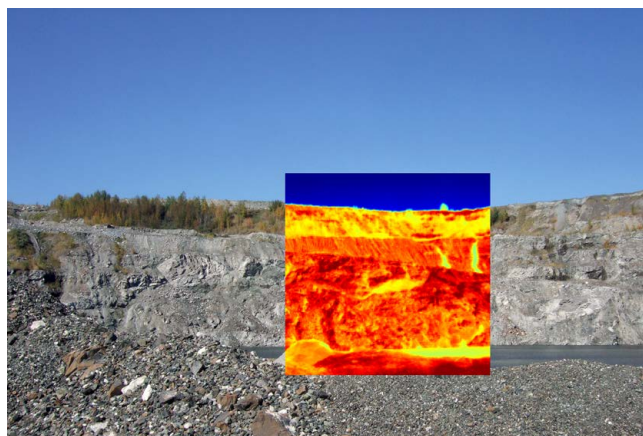
Hyperspectral cubes are recorded as a function of time allowing characterization of time-dependent events like gas cloud dispersion and combustion. Measurement time varies with acquisition parameters; this allows the fastest recording of dynamic events.

HIGH SENSITIVITY AND ACCURACY:

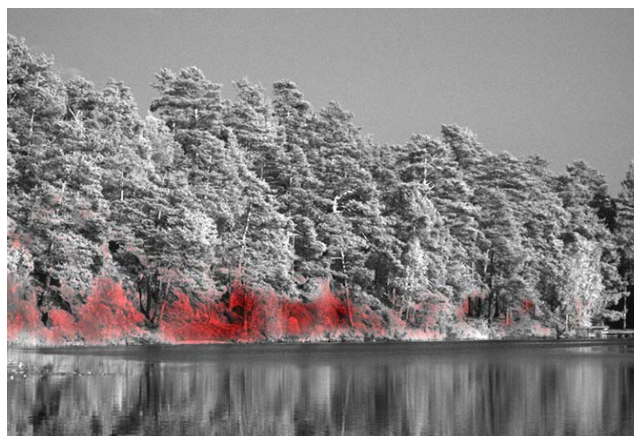
The high-sensitivity sensor combined with automated high-efficiency calibration sources ensure excellent radiometric measurements.

EXAMPLES OF TYPICAL USES

Hyperspectral imaging of minerals from an open-pit mine.



Hyperspectral imaging of methane emissions from a shallow lake scene.



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A WHOLE RANGE OF MARKETS & APPLICATIONS



DEFENSE AND SECURITY

- Spectral IR signatures
- Detection & Identification
- Flares & decoys
- Gas and aerosol clouds
- Camouflage



INDUSTRIAL RESEARCH

- Airborne mineral mapping
- Natural gas
- Oil sands



NATIONAL LABS

- Flares and smokestacks
- Pollution monitoring
- Landfills & greenhouse gases
- Urban heat islands



ACADEMIC RESEARCH

- Jet & rocket engine
- Toxic industrial chemicals (TICs)
- Combustion analysis
- Volcanology

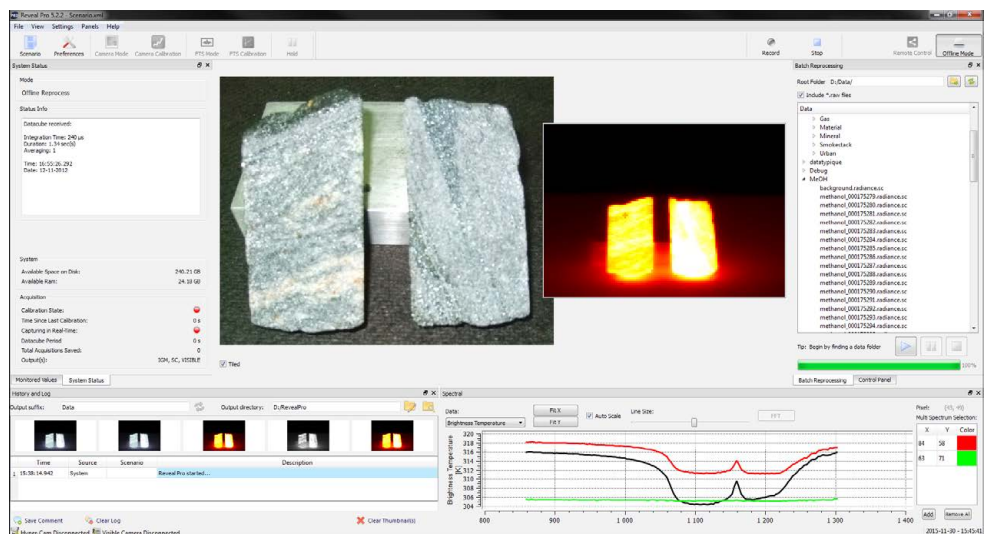
POWERFUL SOFTWARE TO SUIT YOUR APPLICATIONS

REVEAL PRO

Reveal Pro is a powerful research software for data acquisition with a maximum flexibility for advanced users.

REVEAL D&I

Reveal D&I is a real-time detection and identification software for experiments involving gas releases and leaks. Detection algorithms allow the chemical imaging of multiple gases simultaneously on an interactive interface.



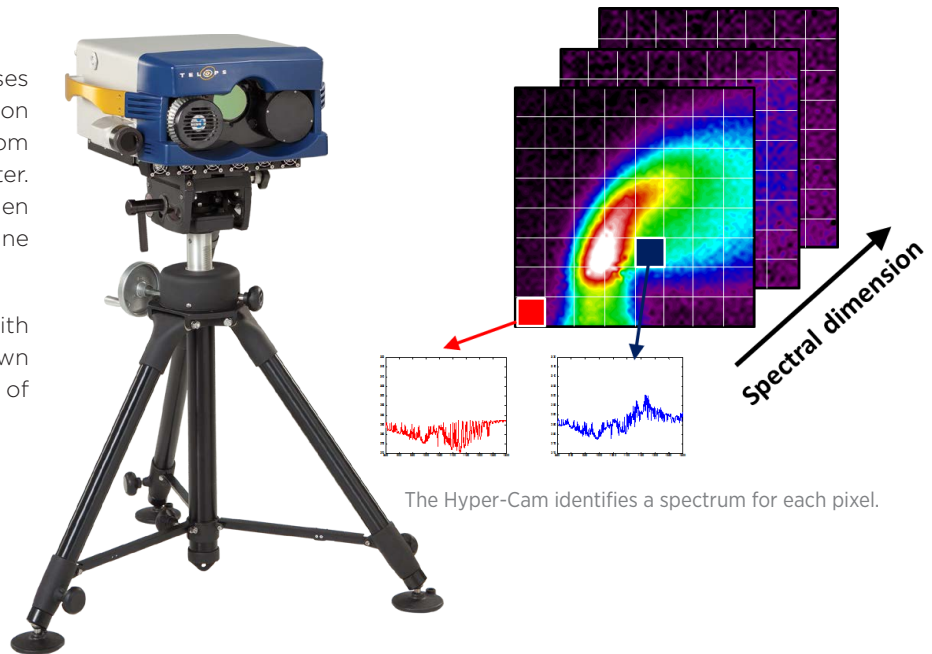
All hyperspectral data is readily compatible with Matlab and ENVI softwares.

HOW DOES IT WORK?

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The unique spectral features of gases and solids are obtained upon modulation of the incoming infrared radiation from the scene by a Michelson interferometer. A high resolution spectrum is then recorded at each pixel of a focal plane array (FPA) detector.

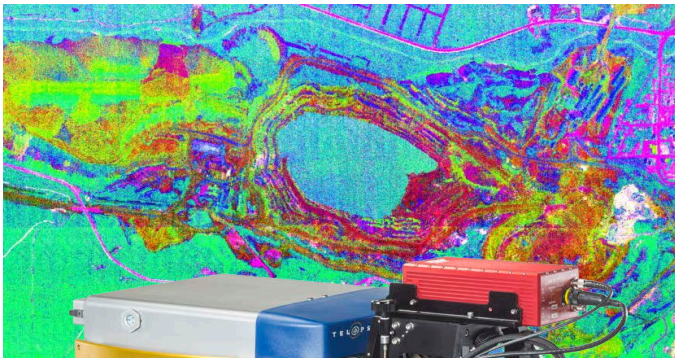
By comparing a measured spectrum with reference spectral signatures of known gases and solids, the constituents of a target can be easily identified.



The Hyper-Cam identifies a spectrum for each pixel.

USE IT IN AIRBORNE MODE

Airborne mineral mapping of an open-pit mine.



Generate georeferenced hyperspectral maps with the Hyper-Cam Airborne Platform.

The Airborne Platform is equipped with a stabilization system and an image motion compensation mirror, which allows you to use the Hyper-Cam from an airplane in order to map vast areas and obtain clear, high-quality spectral information.

Key specifications include:

- High sensitivity: Excellent signal-to-noise ratio (SNR) allows the detection of weak signals
- User-selectable spectral resolution up to 1 cm⁻¹
- Mapping and targeting acquisition modes

SPECIFICATIONS

PRODUCT NAME	SPECTRAL RANGE (μM)	SPECTRAL RESOLUTION (CM^{-1})	SPATIAL RESOLUTION (PIXELS)	FIELD OF VIEW (DEGREES)	TYPICAL NESR (NW/CM^2 SR CM^{-1})	RADIOMETRIC ACCURACY (K)
MIDWAVE SERIES						
HYPER-CAM MW	3 - 5	Up to 0.25	320 × 256	6.4 × 5.1	4 to 7	< 2.0
HYPER-CAM MWE	1.5 - 5	Up to 0.25	320 × 256	6.4 × 5.1	7	< 2.0
HYPER-CAM MW FAST	3 - 5	Up to 0.25	320 × 256	6.4 × 5.1	10	< 2.0
HYPER-CAM MWE FAST	1.5 - 5.4	Up to 0.25	320 × 256	6.4 × 5.1	9.5	< 2.0
LONG WAVE SERIES						
HYPER-CAM METHANE	7.4 - 8.3	Up to 0.25	320 × 256	6.4 × 5.1	6	< 1.0
HYPER-CAM LW NB	7.7 - 9.3	Up to 0.25	320 × 256	6.4 × 5.1	15	< 1.0
VERY LONG WAVE SERIES						
HYPER-CAM LW	7.7 - 11.8	Up to 0.25	320 × 256	6.4 × 5.1	20	< 1.0

These specifications are for illustrative purposes only. The exact specifications depend on each configuration.



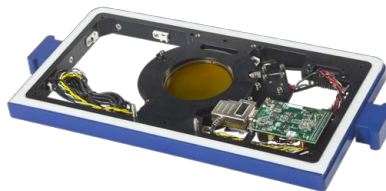
OTHER COMMON SPECS.

DATA TRANSFER	Camera Link
POWER CONSUMPTION	180 W
WEIGHT	31 kg
OPERATING TEMPERATURE	-20 to 40 °C

CUSTOMIZE YOUR HYPER-CAM

ACCESSORIES AND OPTIONS INCLUDE:

- Telescopes:
 - 0.25 x: FOV of 24 × 20°
 - 3.5 x: FOV of 1.8 × 1.5°
 - and more...
- Global Positioning System (GPS) and compass
- Motorized polarizer
- Long-range fiber optic data transfer
- Filter holder
- Customized spectral range detector



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