

Hyperspectral Imaging FT-Spectroradiometers

Radiometric Accuracy for Infrared Signature Measurements

Data acquisition and software

100 meter Ethernet and camera link / fiber optic link to remote control computer. Data saved to hard disk in real-time. Time stamped datacubes via GPS reference time.

Spectroradiometric Imaging Software

Acquisition and instrument configuration Data visualization and post-processing.

Spectroradiometric Characteristics

Spectral Technique

4-port Imaging Fourier Transform Interferometer

Spectral Range

Depending on selected detector(s) within
700 to 6660 cm^{-1} (1.5 – 14 μm)

Detectors

Several modules available for primary and secondary output port.

- Compact, simple and robust opto-mechanical assembly (Mid-infrared camera (2 to 5 μm) 256 x 256 pixels
- Compact, simple and robust opto-mechanical assembly (Long-wave camera (7.6 to 12 μm) 256 x 256 pixels

Other spectral ranges are available upon request

- Mono-pixel detectors and line scanning detectors LWIR and MWIR (1.5 to 13.5 μm)

Spectral Resolution (unapodized)

Spectral resolution (FWHM) selectable from 32 to 0.6 cm^{-1} .

Spectral Stability

Better than 0.01 cm^{-1}

Sensitivity

Depending on spectral range and setting. Peak NESR for 16 cm^{-1} resolution, 1 sec measurement. 300 K scene:

3 – 5 μm : NESR < 1×10^{-4} W/m²/sr/cm⁻¹

8 – 12 μm : NESR < 2.5×10^{-4} W/m²/sr/cm⁻¹



FPA Camera Single-pixel Field of View

Depending on telescope (0.48 to 0.13 mrad)

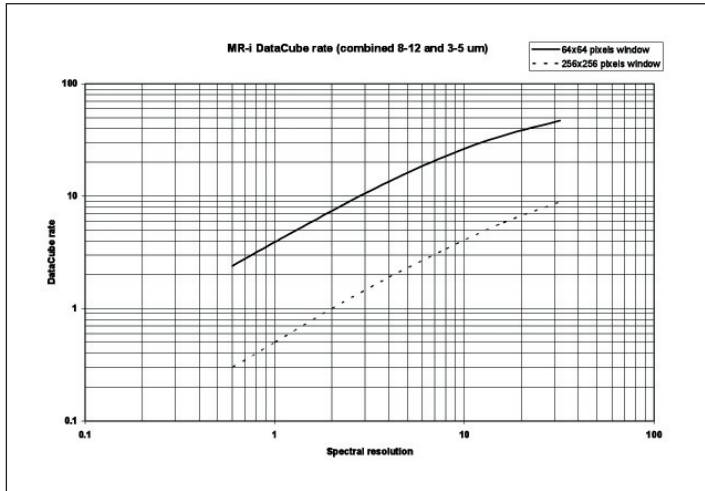
Image Size

Depending on detector (standard 256 × 256 full window).
Adjustable sub-windows from the control computer.

Detector Cooling

Mechanical closed cycle cooling.

Measurement Rate Per Second



About ABB

ABB Analytical Measurement continues to set the standards for FT-IR Spectroradiometry used in military, meteorological, and environmental applications. Building on more than 35 years of experience in Fourier spectrometers and optical instrumentation ABB's engineering department has the expertise and capabilities to efficiently serve customers interested in remote sensing aerospace applications. Its dedicated team of engineers offers the best solutions with reliable airborne and spaceborne instruments, infrared calibration systems, hyperspectral imagers, and software for ground segments and simulation.

Options and Accessories

Interchangeable Telescopes

- Wide angle: 307 mrad FOV (256x256 pixels window)
- Medium angle: 122 mrad FOV (256x256 pixels window)
- Narrow angle: 32 mrad FOV (256x256 pixels window)

Other Accessories

- Calibration Sources
- Boresighted visible camera
- Tripod

Physical and Electrical Characteristics

Mass (MR-i with one camera module & wide angle telescope)

45 kg

External power supply

8 kg

Dimensions (MR-i without telescope)

60 cm × 50 cm × 45 cm

Power Source

110 - 240 V AC, 50-60 Hz / 28 V DC

Operating Conditions

-20°C to +50°C, non-condensing humidity.

Contact us

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