HYPERSPECTRAL SPECTRO-RADIOMETER SYSTEMS

TELOPS
EXOSENS GROUP

HS-IR Family

VERSATILE SPECTRO-RADIOMETER (VSR)

KEY FEATURES

HIGH SPECTRAL RESOLUTION

HIGH TEMPORAL RESOLUTION

ULTRA-WIDE BANDWIDTH: WITH ITS UNIQUE 3 DETECTORS CONFIGURATION, THE VSR CAN COVER THE MWIR, LWIR AND SWIR RANGE (0.8 - 15 µm)

The Versatile Spectroradiometer (VSR) is a compact high sensitivity spectroradiometer which uses Fourier Transform Infrared (FT-IR) technology. Its high speed, robust operation is ideal for multi-scenario operation, from the laboratory to airborne applications even those with heavy vibrational constraints. The VSR can provide real-time high resolution spectral information on slow and fast occurring phenomena, as well as perform material and target signature analysis.

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APPLICATION FOCUS: SMOKE STACK EMISSION MONITORING

The Ministry of Environment of South Korea utilizes VSR spectroradiometers to monitor smokestack emissions as part of a national initiative to standardize and measure fugitive emissions at major industrial sites. This technology enables the quantification of the three primary greenhouse gases: CO_2, CH_4, and N_2O enhancing environmental monitoring and regulatory efforts.

SPECIFICATIONS	VSR SERIES
Detector Type	HgCdTe (MCT), InSb, InGaAS detector
Detector Format	Single-Pixel
Spectral Range	0.8 - 15 µm
Field of View (FOV)	90 mrad Telescope 0.5x magnification 45 mrad Instrument FOV without telescope 22 mrad Telescope 2x magnification 6.4 mrad Telescope 7x magnification
Max. Frame Rate	1 to 110 spectra/s
Typical NESR (At 16 cm^{-1} spectral resolution and 1s observation time)	2.5 @ 1300 cm^{-1} $nW/sr/cm^2/cm^{-1}$ 0.25 @ 2000 cm^{-1} $nW/sr/cm^2/cm^{-1}$ 0.03 @ 6300 cm^{-1} $nW/sr/cm^2/cm^{-1}$
Dimensions	46 x 65 x 32 cm (L x W x H)
Weight	< 28 kg (Without telescope)
Power Consumption	< 192 W (115 or 230 VAC)
Operational Temperature	-20 °C to +40 °C (Power consumption is increased when T < 20°C)

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