

## For Radiometric Accuracy and Rapid Event Infrared Signature



Whether your applications call for a simple spectroradiometer or for a sophisticated optical measurement system, MR300 and MR170 instruments are a sound investment.

### Superior performance with rapidly evolving targets

FT-spectroradiometry has been established as an ideal technique for military target characterization, atmospheric composition, meteorological sounding and chemical agent detection. The MR Series spectroradiometers have earned an excellent reputation based on exceptionally high radiometric reproducibility, wavelength accuracy, sensitivity, and spectral resolution.

The MR300 Series was designed for very high sensitivity, superior time resolution and high homogeneity of response across its field of view. The low Noise Equivalent Spectral Radiance (NESR), combined with the fast scanning rate of acquisition and a stable instrument response function, allow the accurate measurement of low-emission and rapidly evolving targets. It is possible to obtain the precise IR signature of a target without compromising on time resolution. The MR300 Series is also a first-rate tool for the detection of toxic and pollutant gases.

The MR300 Series provides excellent field-of-view uniformity for improved measurement accuracy, whether the target is centered on the field of view or close to the edge. Its modular design and small footprint make it well suited for airborne applications, use on tracking systems or in other restricted areas.

The MR170 Series was designed with comprehensive time resolution and high sensitivity to meet the challenging demand of Atmospheric measurements, IR characterization of stable or relatively slow evolving targets and the detection of toxic and pollutant gases. The MR170 provides a sound Radiometric solution at a comprehensive price.

### Superior design

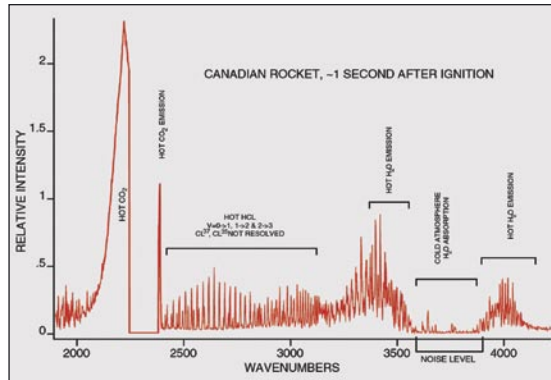
Robustness and durability differentiate the MR series spectroradiometers from other FT-IR spectroradiometers. Their most remarkable characteristic lies in their outstanding mechanical stability. The unique, patented rotary scanning mechanism uses frictionless flex-pivots and corner-cube-reflectors. The interferometer design has been proven with more than 3600 units produced and over 400 billions of scan cycles successfully achieved. The permanently aligned interferometer shows both outstanding stability of radiometric response and high reliability. Since it is balanced with respect to its center of rotation, the MR interferometer can be operated in any orientation.

Unlike filter spectroradiometers, which select spectral frequencies using optical filters, the MR300 instruments record the full spectral range measurable by the detector each time spectral data is acquired. No hardware modifications or changes in the optics are required.

The MR300 and MR170 features computer controlled adjustable spectral resolution up to 1  $\text{cm}^{-1}$  over its full spectral range as well as adjustable gains. The FTSW500 Radiometric Software allows easy instrument control and data acquisition through a 100 Mbit Ethernet link. FTSW500 provides all functionalities for data management and calibration.

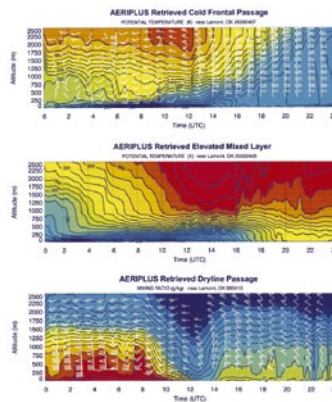
## The MR300 Series for kinetic studies of transient sources

The MR300 Series instruments are ideal for measuring the spectral signature of rocket motors, planes, helicopters, ships, ground vehicles and all other moving targets. They are well suited for characterizing flares and other rapidly evolving targets such as explosions. The fast-scanning capability of the MR300 Series provides time resolution down to 12 ms. This means that if the target emission spark lasts more than 12 ms, the MR300 Series instruments can measure its spectral signature. The high modulation rate provides immunity from acoustic noise and source fluctuations



## The MR Series for Atmospheric radiance measurements and Toxic Industrial Material detection

The MR170 spectroradiometer is ideal for Atmospheric sounding; configured as an AERI system it provides autonomous humidity and temperature atmospheric profiles with outstanding accuracy. The MR170 and MR300 series are the perfect tool for the detection of toxic industrial materials at industrial sites. To insure good coverage, the system can easily be made mobile by mounting it on a small truck or aircraft. Rapid coverage of the complete industrial site permits early detection of leaks before dispersion of the vapor cloud. The instrument can be used for pollution control, for detection of volatile organic compounds



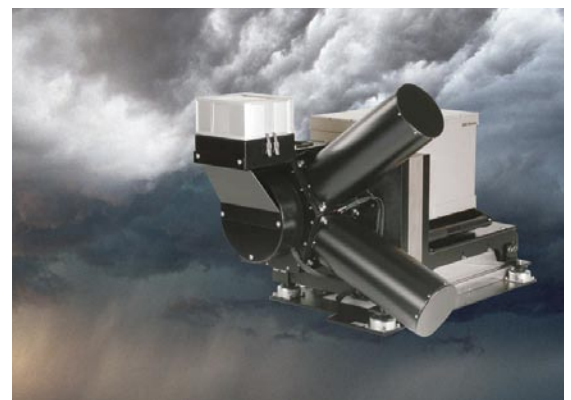
## Flexibility at its best

The secret of the MR Series' versatility is based on its ability to be configured with a vast choice of modular assemblies and accessories. ABB will help you configure your system to meet the special requirements of your most demanding applications.



## MR304 expandability at its best

- |   |  |
|---|--|
| 1 MR304 Spectroradiometer                     | 8 Medium angle telescope, 28 mrad, SMY05       |
| 2 Input collimator                            | 9 Narrow angle telescope, 5 mrad, SMY02        |
| 3 AC to DC universal power supply (not shown) | 10 Ocular                                      |
| 4 Computer and data processor                 | 11 CCD camera                                  |
| 5 Standard Ethernet connection                | 12 Monitor and CCD control                     |
| 6 Tripod                                      | 13 Atmospheric Emitted Radiance Interferometer |
| 7 Wide angle telescope, 75 mrad, SMY06        |  |



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# ABB

**ABB Analytical Business Unit**  
 585, boulevard Charest E., suite 300  
 Québec, Qc G1K 9H4  
 Canada  
 Phone: 418-877-2944  
 Fax: 418-877-2834  
 Email: ftir@ca.abb.com  
 www.abb.com/analytical

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