

## DATASHEET

# ARCOptix FT-IR *Rocket*

## Mid-IR Fourier-transform spectrometer



If you are looking for high performance & compact Mid-IR spectrometer, that can operate both free-space or with IR optical fibers, the ARCOptix FT-IR Rocket is the instrument that you need. Thanks to its permanently aligned interferometer and solid-state reference laser, the FT-MIR Rocket offers excellent stability in both intensity and wavelength scales. Three spectral ranges are available, depending on the priority given to high sensitivity or broad spectral range.

### ■ Benefits

- Three spectral range choices: 2-6, 1.5-8.5 or 2-12 $\mu$ m
- Best available sensitivities (2-stage & 4-stage cooled MCT detectors)
- High resolution of 4 $\text{cm}^{-1}$
- Excellent stability in intensity and wavelength
- Removable fiber coupler for operation with fibers or free-space IR beams

### ■ Applications

- Mid-IR Optical Spectrum Analyzer (OSA) for MIR Lasers & LEDs
- Liquid, thin-film or gas measurement
- Material identification and quantification in various fields such as geology, food and beverage industry, ...

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### Specifications

Models	FTMIR-L1-060-2TE	FTMIR-L1-085-4TE	FTMIR-L1-120-4TE
Beam-splitter material	CaF <sub>2</sub>		ZnSe
Spectral Range [cm <sup>-1</sup> ]	5'000 – 1'660	6600-1'200	5'000 - 830
Spectral Range [μm]	2-6	1.5-8.5	2-12
Detector Type	MCT (2-TE cooled)	MCT (4-TE cooled)	MCT (4-TE cooled)
Detector Peak D*[cm Hz <sup>1/2</sup> W <sup>-1</sup> ]	>1x10 <sup>11</sup>	>8x10 <sup>9</sup>	>2.5x10 <sup>9</sup>
SNR	> 1:5'000 <sup>i</sup>	> 1:5'000 <sup>ii</sup>	> 1:3'000 <sup>ii</sup>
Removable fiber-optic coupler	Lensed (CaF <sub>2</sub> fiber coupler)		Reflective fiber coupler (90° off-axis parabolic mirror)
Recommended fiber	CIR (chalcogenide) fibers (1-6μm)	CIR (1-6μm) or PIR (3-18μm)	PIR (polycrystalline) fibers (3-18μm)
Fibered interface	Fiber core up to Ø 1mm, NA=0.25, SMA 905 connector		
Free-space interface	Ø 12.7mm collimated (max ~30mrad half angle)		
Interferometer type	Permanently aligned, double retro-reflector design		
Resolution (unapodized) [cm <sup>-1</sup> ]	4		
Wavenumber repeatability	<10PPM		
Scan frequency	1 spectrum / second		
Control laser	Temperature-stabilized solid-state laser @850nm		
A/D Converter	24 bit		
Amplifier	4 gain levels low noise trans-impedance amplifier		
Operating temperature	10°C-40°C		
Power requirement	12V / 10W max		
Communication Interface	USB 2.0		
Software Interface	Windows 7/10 API for controlling the instrument via our DLL		
Dimensions	180mm x 160mm x 80mm		
Weight	1800 g		

<sup>i</sup> Measured with a silicon carbide (SiC) source (~1400K) through a 500 μm core diameter CIR fiber, 5s measurement, around peak sensitivity wavelength, Norton-Beer weak apodization.

<sup>ii</sup> Measured with a silicon carbide (SiC) source (~1400K) with f=18mm reflector directly shining into the free-space input port, 5s measurement, around peak sensitivity wavelength, Norton-Beer weak apodization.

SPECIFICATIONS ARE SUBJECT TO CHANGES WITHOUT NOTICE.

Please contact [info@arcoptix.com](mailto:info@arcoptix.com) for more information.