

## ARCOPTIX FT-MIR ROCKET



The ARCOptix FT-MIR Rocket is a highly performant, compact and reliable spectrometer that is ideal for various applications in the mid-infrared. The concentration levels of CO<sub>2</sub> or H<sub>2</sub>O in the interferometer volume are conveniently minimized thanks to a homemade, replaceable dessicant capsule. Thanks to its permanently aligned interferometer and solid-state reference laser, the FT-MIR Rocket offers excellent stability in both intensity and wavelength scales.

With four available spectral ranges and adjustable spectral resolution down to 2cm<sup>-1</sup> (0.5cm<sup>-1</sup> on request), the FT-MIR Rocket is a highly flexible instrument that can be tailored to your application. Designed for convenience and ease-of-use, our FT-MIR spectrometer is readily operational with our ARCSpectroRocket software using a standard USB 2.0 connection.

### 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, ...*

### Features

- **4 spectral ranges :**
  - 2-6 μm (TEC-MCT)
  - 1.5-8.5 μm (TEC-MCT)
  - 2-12 μm (TEC-MCT)
  - 2-16 μm (LN2C-MCT or DLATGS)
- **Dynamically adjustable resolution:**
  - 8cm<sup>-1</sup>
  - 4cm<sup>-1</sup>
  - 2cm<sup>-1</sup>
  - 0.5cm<sup>-1</sup> (on request)
- **Compact design:**  
18cm X 16cm X 8 cm
- **Wear free moving parts for extended lifetime**
- **No purging of the interferometer required**
- **Removable fiber adapter**
- **Temperature controlled reference laser**
- **Low power consumption**
- **USB 2.0 connection**

## Specifications

Product code	FTMIR-L1-060-4TE	FTMIR-L1-085-4TE	FTMIR-L1-120-4TE	FTMIR-L1-160-LN2	FTMIR-L1-160-DLA
Beamsplitter material	CaF <sub>2</sub>		ZnSe		
Spectral Range [cm <sup>-1</sup> ]	5'000 – 1'660	6600-1'200	5'000 - 830	5'000 - 650	
Spectral Range [μm]	2-6	1.5-8.5	2-12	2-16	
Detector Type	MCT (4-TE cooled)			MCT (LN2 cooled)	DLATGS
Detector Peak D* [cm Hz <sup>1/2</sup> W <sup>-1</sup> ]	>1x10 <sup>11</sup>	>8x10 <sup>9</sup>	>4x10 <sup>9</sup>	>5x10 <sup>10</sup>	>2.5x10 <sup>8</sup>
Signal-to-noise ratio	> 80'000:1 <sup>i</sup>	> 40'000:1 <sup>i</sup>	> 40'000:1 <sup>i</sup>	>70'000:1 <sup>i</sup>	>8000:1 <sup>i</sup>
Removable fiber-optic coupler	Lensed (CaF <sub>2</sub> fiber coupler)		Reflective fiber coupler (90° off-axis parabolic mirror)		
Recommended fiber	IFG (1-6μm)	IFG (1-6μm) or PIR (3-18μm)	PIR (polycrystalline) fibers, 3-18μm		
Fibered interface	Fiber core up to Ø 900μm, NA=0.3, 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> ]	0.5 <sup>ii</sup> , 2, 4, 8 (user selectable)				
Wavenumber repeatability	<10 PPM				
Scan frequency	>4 Hz @ 4cm <sup>-1</sup>				>0.4Hz @ 4cm <sup>-1</sup>
Internal reference laser	Temperature-stabilized solid-state laser @850nm				
A/D Converter	24 bit				
Operating temperature	10°C-40°C				
Power requirement	12V / 10W max			12V / 6W max	
Communication Interface	USB 2.0				
Software Interface	Windows 10/11 API for controlling the instrument via our DLL				
Dimensions	180mm x 160mm x 80mm (without Dewar)				
Weight	1800 g (without Dewar)				

<sup>i</sup> Measured with a silicon carbide (SiC) source (~1550°K) with f=18mm reflector directly shining into the free-space input port, 60s measurement, around peak sensitivity wavelength, 4cm<sup>-1</sup>, Norton-Beer weak apodization.

<sup>ii</sup> Available on request only.

SPECIFICATIONS ARE SUBJECT TO CHANGES WITHOUT NOTICE.