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ARCOPTIX FT-MIR ROCKET

The ARCoptix FT-MIR Rocket is a highly peformant, compact and reliable spectrometer that is ideal for various applications in the mid-infrared. The concentration levels of CO_2 or H_2O 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 $2cm^{-1}$ ($0.5cm^{-1}$ 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:**
  - **$8cm^{-1}$**
  - **$4cm^{-1}$**
  - **$2cm^{-1}$**
  - **$0.5cm^{-1}$ (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**

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Specifications

Product code	FTMIR-L1-060-4TE	FTMIR-L1-085-4TE	FTMIR-L1-120-4TE	FTMIR-L1-160-LN2	FTMIR-L1-160-DLA
Beam-splitter material	CaF_2		ZnSe		
Spectral Range [cm^{-1}]	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 $Hz^{1/2}W^{-1}$]	>1x10^{11}	>8x10^{9}	>4x10^{9}	>5x10^{10}	>2.5x10^{8}
Signal-to-noise ratio	> 80'000:1[i]	> 40'000:1[i]	> 40'000:1[i]	>70'000:1[i]	>8000:1[i]
Removable fiber-optic coupler	Lensed (CaF2 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^{-1}]	*0.5*[ii], 2, 4, 8 (user selectable)				
Wavenumber repeatability	<10 PPM				
Scan frequency	>4 Hz @ 4cm^{-1}				>0.4Hz @ 4cm^{-1}
Internal reference 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			12V / 6W max	
Communication Interface	USB 2.0				
Software Interface	Windows 7/10/11 API for controlling the instrument via our DLL				
Dimensions	180mm x 160mm x 80mm (without Dewar)				
Weight	1800 g (without Dewar)				

[i] 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-1, Norton-Beer weak apodization.
[ii] Available on request only, please contact us at info@arcoptix.com for details

SPECIFICATIONS ARE SUBJECT TO CHANGES WITHOUT NOTICE. Please contact info@arcoptix.com for more information.