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ARCOPTIX FIBER COUPLED FT-IR



The ARCoptix FT-IR spectrometer is an all-fibered alternative to our "Rocket" configurations. It features the same components as the FT-NIR or FT-MIR Rocket instruments, with the addition of an internally mounted optical source that enables to modulate light before coupling it to the output port of the device. This architecture is thus more robust to external perturbations such as background thermal emission, as such parasitic light would not go through the interferometer before reaching the detector. Our FTIR-FC is ideal for fibered applications such as reflection probes used for diffuse reflection measurements.



FTMIR-FC unit mounted with an MCT detector cooled by LN2

Features

- **Internal light source**
- **SMA905 fiber connectors**
- **Available with LN2 cooled MCT photodetector**
- **Robust to ambient light perturbation**
- **Dynamically adjustable resolution:**
  - **8cm^{-1}**
  - **4cm^{-1}**
  - **2cm^{-1}**
- **Wear free moving parts for extended lifetime**
- **No purging of the interferometer required**
- **Temperature controlled reference laser**
- **Low power consumption**
- **USB 2.0 connection**

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Specifications

Product code	FTNIR-FC-025-2TE	FTMIR-FC-060-2TE	FTMIR-FC-120-4TE	FTMIR-FC-160-LN2
Beam-splitter material	CaF_2		ZnSe	
Spectral Range [cm^{-1}]	11'000 - 4'000	5'000-1'660	5'000 – 830	5'000 – 650
Spectral Range [µm]	0.9-2.5	2-6	2-12	2-16
Detector Type	InGaAs (2-TE cooled)	MCT (4-TE cooled)		MCT (LN2 cooled)
Detector peak D* [cm $Hz^{1/2}W^{-1}$]	>2 $x10^{11}$	>1 $x10^{11}$	>4$x10^{9}$	>5$x10^{10}$
Signal-to-noise ratio	> 100'000 :1[i]	> 80'000:1 [ii]	> 40'000:1 [ii]	> 70'000:1 [ii]
Recommended fiber	Low-OH, multimode silica fiber	CIR (Chalcogenide) fibers, 1-6 µm	PIR (polycrystalline) fibers, 3-18µm	
Fibered interface	Fiber core up to Ø 1mm, NA=0.25, SMA 905 connector			
Internal reference laser	795nm	850nm		
Power requirement	40W @12VDC			30W @12VDC
Integrated light source	20W QTH lamp	20W SiC globar		
Interferometer type	Permanently aligned, double retro-reflector design			
Resolution (unapodized) [cm^{-1}]	2, 4, 8 (user selectable)			
Wavenumber repeatability	<10PPM			
Scan frequency	>4 hz @ 4cm^{-1}			
A/D Converter	24 bit			
Operating temperature	10°C-40°C			
Fiber optic interfaces	Fiber core up to Ø 1mm, NA=0.3, SMA 905 connector			
Silica gel compartment	Yes			
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	2200 g (excluding LN2 dewar)			

[i]Measured with a 20W halogen lamp in transmission mode, 60s measurement, around peak sensitivity wavelength, Norton-Beer weak apodization, linearly corrected baseline, resolution setting 4 cm^{-1}

[ii] Measured with a silicon carbide (SiC) source (~1550K) in transmission mode, 60s measurement, around peak sensitivity wavelength, 4cm-1, Norton-Beer weak apodization.

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

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