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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-MIR Rocket, 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 with the exception of diffuse reflectance probes, which benefit from the higher throughput provided by direct feeding from a standalone source such as our ARCLIGHT-MIR.


*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 | FTMIR-FC-060-4TE | FTMIR-FC-120-4TE | FTMIR-FC-160-LN2 |
|---|---|---|---|
| **Beam-splitter material** | $CaF_2$ | ZnSe | |
| **Spectral Range [$cm^{-1}$]** | 5'000-1'660 | 5'000 – 830 | 5'000 – 650 |
| **Spectral Range [µm]** | 2-6 | 2-12 | 2-16 |
| **Detector Type** | MCT (4-TE cooled) | | MCT (LN2 cooled) |
| **Detector peak D* [cm $Hz^{1/2}W^{-1}$]** | >1 $x10^{11}$ | >4$x10^{9}$ | >5$x10^{10}$ |
| **Signal-to-noise ratio** | > 80'000:1 [ii] | > 40'000:1 [ii] | > 70'000:1 [ii] |
| **Recommended fiber** | IFG (1-6 µm) | PIR (3-18µm) | |
| **Fibered interface** | Fiber core up to Ø 900µm, NA=0.3, SMA 905 connector | | |
| **Internal reference laser** | 850nm | | |
| **Power requirement** | 40W @12VDC | | 30W @12VDC |
| **Integrated light source** | 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 @ 4$cm^{-1}$ | | |
| **A/D Converter** | 24 bit | | |
| **Operating temperature** | 10°C-40°C | | |
| **Communication Interface** | USB 2.0 | | |
| **Software Interface** | Windows 7/10<br>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.