

## DATASHEET : FTIR-OEM010

# FTIR-OEM010

## Interferometers with integrated IR source & MCT detector for OEM applications

The Arcoptix FTIR-OEM Integrated is a compact and rugged interferometer module based on a permanently aligned, double-retro-reflector interferometer design. The balanced swinging arm of the interferometer rotates on wear-free flexure system, driven contactless by a magnetic actuator. The system uses a solid-state laser as internal reference, kept at constant temperature to keep the wavelength scale constant. The FTIR-OEM010 includes an internal high-brightness IR source glowing at approx. 1550K and a highly sensitive MCT detector. The system has been optimized to combine compactness and sensitivity.



- Fully equipped with IR light source and detector
- Super compact and robust design
- Ideal for system integrators
- Full SDK provided
- Available with different resolutions from 0.5 to 8 cm<sup>-1</sup>
- Highly sensitive MCT detector adapted for your application

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### General specifications

<b>Interferometer type</b>	Permanently aligned, double-retro-reflector design
<b>Interferometer mirror diameter</b>	12.7mm
<b>Beamsplitter material</b>	ZnSe (Spectral range 2-16 $\mu$ m / 5000-650 $\text{cm}^{-1}$ ) or CaF2 (Spectral range 0.9-8.5 $\mu$ m / 11'000-1200 $\text{cm}^{-1}$ )
<b>Reference laser</b>	Temperature-stabilized solid-state, 850nm
<b>A/D Converter</b>	24 bits
<b>Resolution</b>	Standard 2 $\text{cm}^{-1}$ (unapodized), optionally 1 and 0,5 $\text{cm}^{-1}$
<b>Resolution set range</b>	Resolution can be set by software to 8, 4 or 2 $\text{cm}^{-1}$ (optionally 1 and 0.5 $\text{cm}^{-1}$ )
<b>Wavenumber repeatability</b>	<10 PPM
<b>Scan frequency</b>	8-2 spectra / second (depends of resolution)
<b>Absorbants</b>	User- replaceable molecular sieves
<b>Infrared source</b>	Integrated SiC emitter (20W), T~1550 K, user replaceable
<b>Software interface</b>	Windows 7/10 software and API for controlling the instrument via custom software included
<b>Detector Type</b>	MCT (with different options of ranges and sensitivities)
<b>Detector active size</b>	1mm x 1mm
<b>Detector Cooling</b>	TE-cooled, 4 stages
<b>Detector Amplifier</b>	Transimpedance amplifier, 4 gain levels selectable via I2C bus.
<b>Operating ambient temperature</b>	5 °C to 40 °C
<b>Storage temperature</b>	-20°C to 60 °C
<b>Dimensions</b>	165mm x 145mm x 82mm
<b>Weight</b>	2.1kg
<b>Power consumption</b>	30W (without detector)

### Ordering Information

Product code	FTIR-OEM010-ZNSE-SIC	FTIR-OEM010-CAF2-SIC
<b>Description</b>	Interferometer module with ZnSe beamsplitter and integrated IR source	Interferometer module with CaF2 beamsplitter and integrated IR source

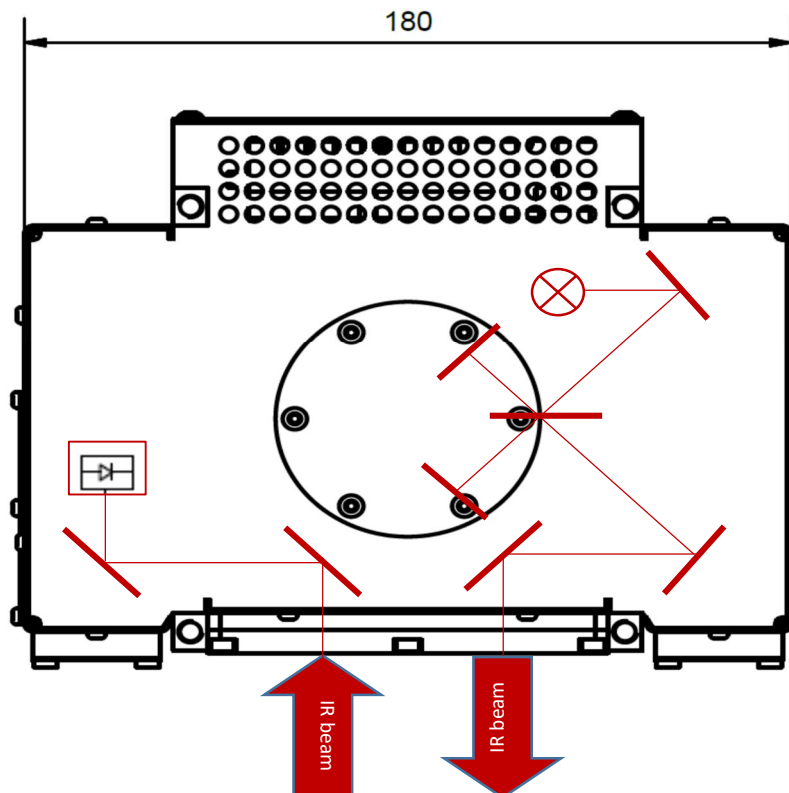
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### Detector spectral ranges & sensitivity

Detectors with different spectral ranges are available. When choosing, please consider that shorter cut-off detectors offer a better sensitivity (Peak D\*). Note that detectors with different spectral ranges or a different number of cooling stages are available on request.

Product code	FTIR-OEM100-060-2TE	FTIR-OEM100-090-4TE	FTIR-OEM100-120-4TE
Detector range [μm]	2-6	1.5-9	2-12
Detector range [cm-1]	5000-1700	5000-1100	5000-830
SNR (full dynamic 4cm-1, 1 min scan)	60'000	40'000	40'000
Peak D* [cm Hz <sup>1/2</sup> W <sup>-1</sup> ]	>1.0x10 <sup>11</sup>	>8x10 <sup>9</sup>	>2.5x10 <sup>9</sup>

### Drawings



Internal light path schematic

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