Fiber Optic ATR-Probes for Harsh Environment

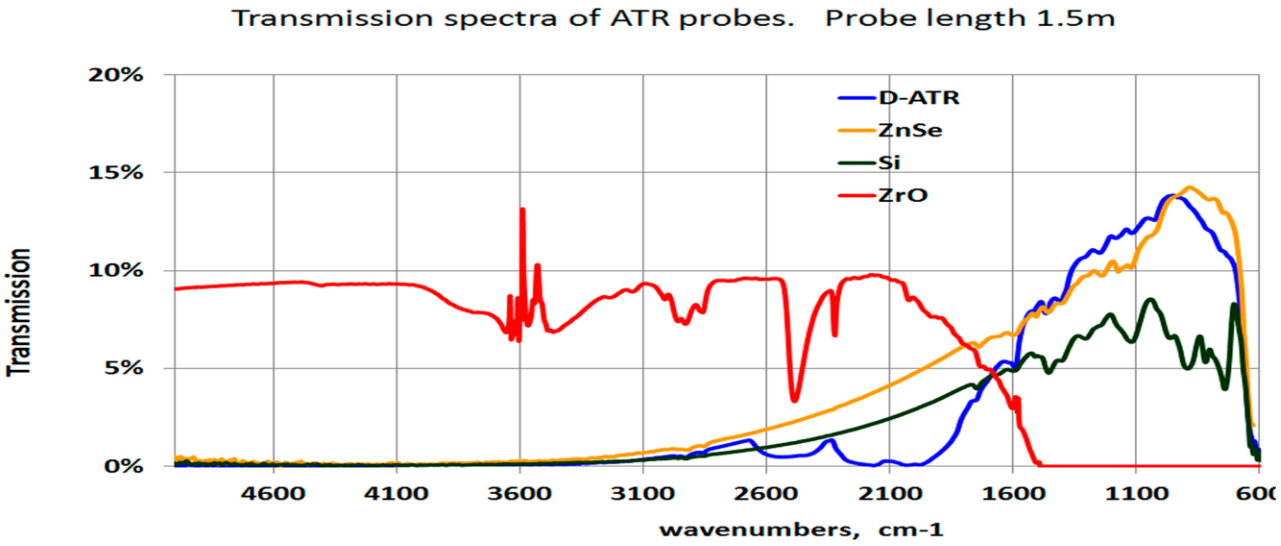
art photonics



FlexiSpec® probes from ***art photonics*** include new type of Attenuated Total Reflection (ATR-) probes designed for harsh application conditions.
HT-ATR immersion IR-fiber probes can be used for process-spectroscopy in Near & Mid IR range to monitor reactions in-line in a broad temperature range from -100° to +250°C. They can resist to high pressures up to 200Bar and used with FTIR or any other IR-spectrometers and spectral sensors in automated process control with process-interfaces

Applications:

- Remote Reaction Monitoring in-line in temperature range -100/+250°C
- PAT applications in lab, pilot plant or industry with process-interfaces for automated process control
- Polymerization Process Control
- In-situ IR-Spectroscopy for PAT in Chemical, Petrochemical, Atomic, Biopharmaceutical & Food Industry

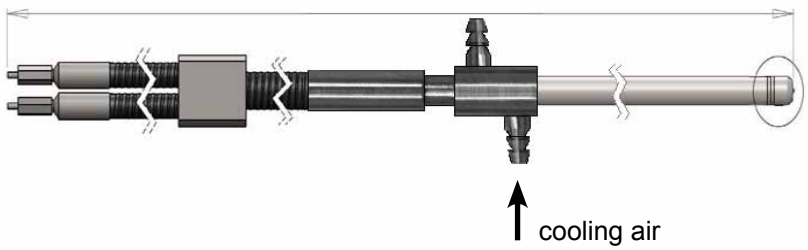


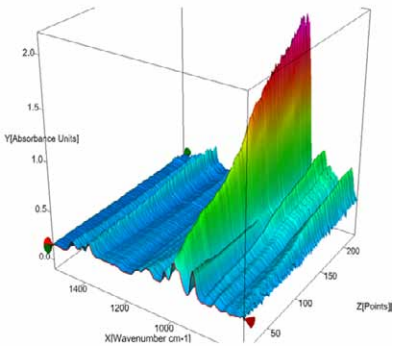
Specification of IR-Fiber HT-ATR-Probes for High Temperatures *FlexiSpec*®

Probe type	**Diamond ATR**	**Silicon ATR**	**Cubic Zirconium ATR**
Transmission range	5.2-17µm (600-1900cm $^{-1}$) + 3.2-4.5µm (2300-3100cm $^{-1}$)	5.2-17µm (600-3100cm $^{-1}$)	1.5-6.5µm (1550-6650cm $^{-1}$)
Fiber type	PIR-900/1000 Silver Halide	PIR-900/1000 Silver Halide	Chalcogenide glass (As-S)
Temperature range	-150°C / + 250°C	-150°C / + 250°C	-150°C / + 200°C
Pressure (max)	200Bar	100Bar	100Bar

Common Parameters of HT-ATR-Probes for High Temperatures *FlexiSpec*®

Total Length	1.5m (opt.: 1m to 5m)*
Shaft Length	300 mm (opt.: 300-700 mm)*
Shaft Diameter	12mm
Shaft Material	Hastelloy C22
Length of Legs	500mm (opt.: 200mm to 500mm)
Protective Tube Material	Liquid Tight SS-Conduit, KOPEX-Tube
Minimal Bending Radius	130mm
Input / Output Connectors	Long SMA (opt.: any other type)
Cooling Air Flow Parameters	Excess pressure 0.5Bar, Flow 2300l/h
Inner temperature control	Inside the shaft to control ATR tip temperature





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