

**FlexiSpec®** product line presents Fiber Optic Probes for the wide spectral range:

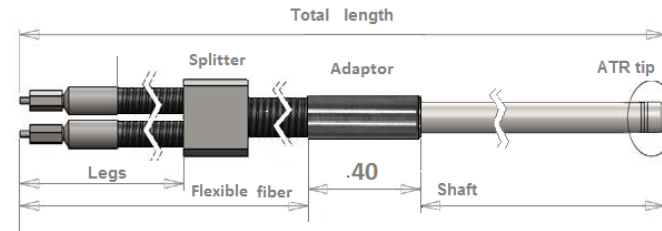
- the latest generation of Attenuated Total Reflection **Mid-IR ATR-Probes** work with any type of FT-IR and other IR-spectrometers, photometers and IR-LED or QCL spectral sensors.

ATR immersion fiber optic probes with patented design are suitable for reaction monitoring in lab, pilot plant and for full automated process control.

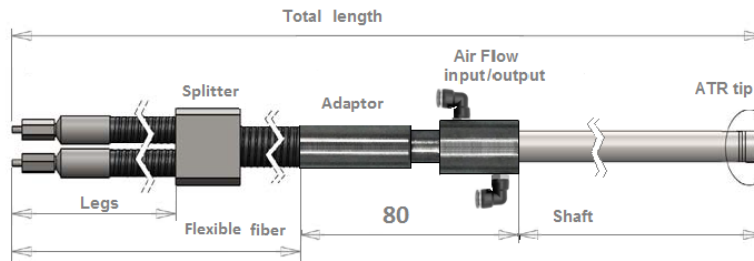
- High sensitivity **Transflection Probes** with collimated beam design are used with any fiber optic spectrometer or photometer for UV-Vis or Vis-NIR range - see P.14.

- **Raman Probes** are available in two options – multi-wavelength excitation (630-785 nm) and single-wavelength excitation (532 and 785 nm) - see P.13.

## Probe Dimensions Diagrams



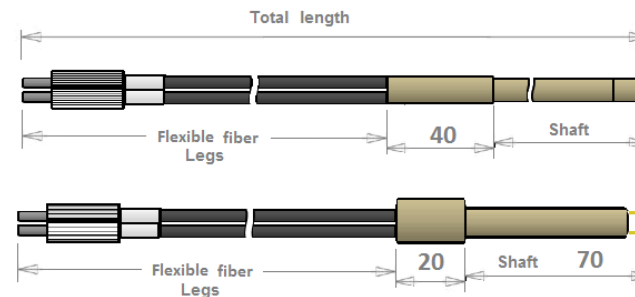
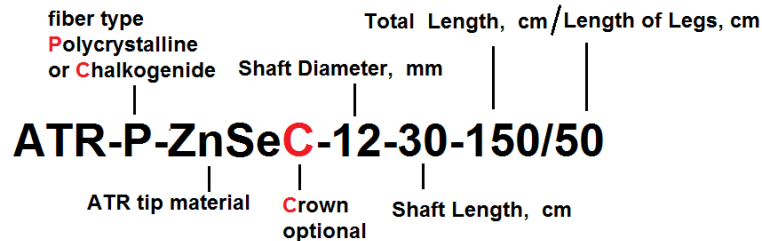
Standard ATR Probe



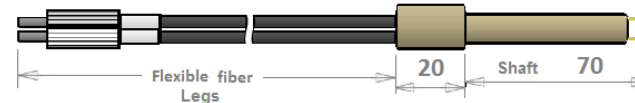
Sterilizable ATR Probe

High Temperature ATR Probe

### Building blocks for ATR Probe Code



ATR Probe Lab



Detachable Loop ATR Probe

Mid-IR ATR Probes	PIR fiber 900/1000, 30cm shaft Hastelloy C22, 150cm total, LTP conduit with SMA 905 connectors		PIR fiber 900/1000, 15cm shaft PEEK, 150cm total, PEEK protective tubing with SMA 905 connectors		PIR fiber 900/1000, 30cm shaft Hastelloy C22, 200cm total, LTP conduit with SMA 905 connectors, air flow cooling		PIR fiber 900/1000, 30cm shaft, 150cm total, LTP conduit with SMA 905 connectors, detachable fiber	
Design	Standard		PEEK Lab	High Temperature		Sterilizable		
Shaft Ø	Ø 6,3mm		Ø 12mm	Ø 6,3mm		Ø 12mm		Ø 6,3mm
ATR crystal	Ø 12mm		Ø 6,3mm		Ø 12mm		Ø 12mm	
Diamond, 600-1900cm <sup>-1</sup>	200Bar, -150°C +140°C	200Bar, -150°C +140°C		200Bar, -150°C +250°C		200Bar, -150°C +140°C	200Bar, -150°C +140°C	
Si 600-3100cm <sup>-1</sup>	100Bar, -150°C +140°C	100Bar, -150°C +140°C	7Bar, -100°C +140°C	100Bar, -150°C +250°C		100Bar, -150°C +140°C	100Bar, -150°C +140°C	
Ge, 600-3100cm <sup>-1</sup>	10Bar, -150°C +80°C	10Bar, -150°C +80°C	7Bar, -100°C +80°C			10Bar, -150°C +80°C	10Bar, -150°C +80°C	
ZnSe, 600-3100cm <sup>-1</sup>		10Bar, -150°C +140°C	7Bar, -100°C +140°C	10Bar, -150°C +250°C				
ZrO2 with CIR 500/550 fiber, 1550-9000cm <sup>-1</sup>	100Bar, -150°C +90°C	100Bar, -150°C +90°C	7Bar, -100°C +90°C	100Bar, -150°C +200°C		100Bar, -150°C +90°C	100Bar, -150°C +90°C	
Detachable Loop	PIR fiber 900/1000, 10cm shaft PEEK, 110cm total, PEEK tubing with SMA 905 connectors, 600-2500cm <sup>-1</sup> , -50°C +90°C Disposable ATR-Loop Tip							
	CIR fiber 500/550, 10cm shaft PEEK, 110cm total, PEEK tubing with SMA 905 connectors, 1550-6500cm <sup>-1</sup> , -50°C +90°C Disposable ATR-Loop Tip							

Chemical resistance of ATR crystals:

Diamond: stable in any liquid; check restriction for use of PEEK (sealing material) prior to operating.

Silizium: pH = -1÷10

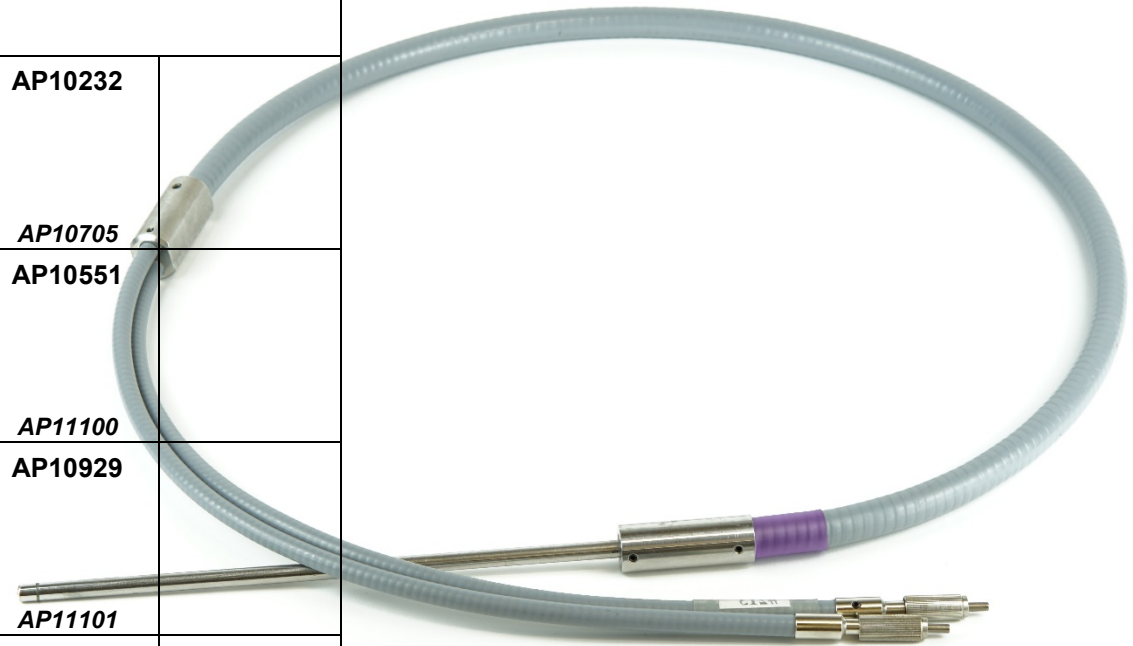
Germanium: pH= 1÷14 (without oxidizing agents in alkalies)

ZnSe: pH = 5÷9; note, that some complexing agents can damage the crystal.

ZrO2: any medium, prior to operating, check restriction for use of PEEK (sealing material).

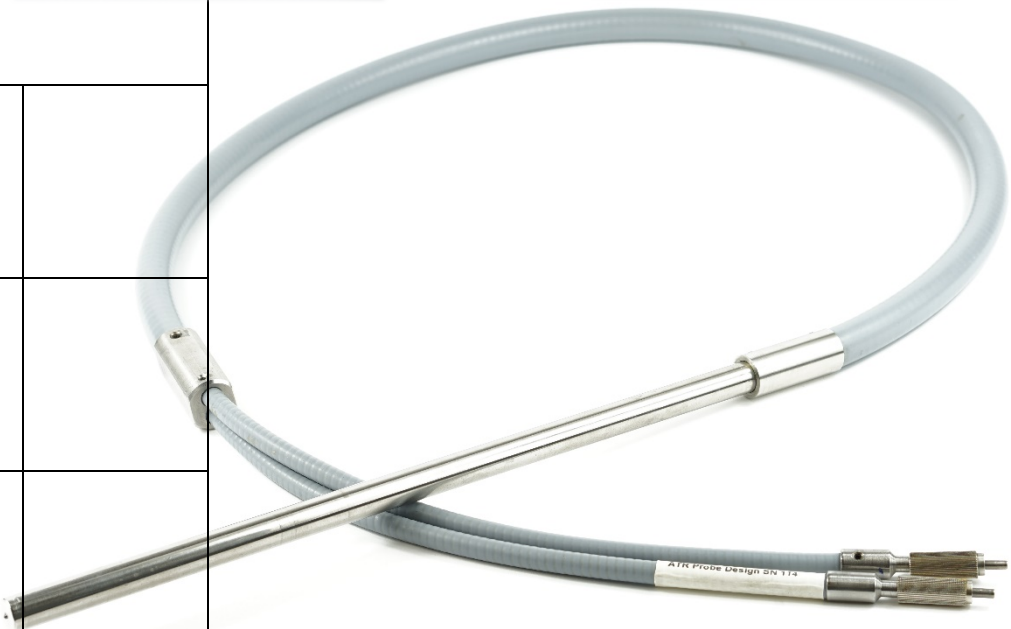
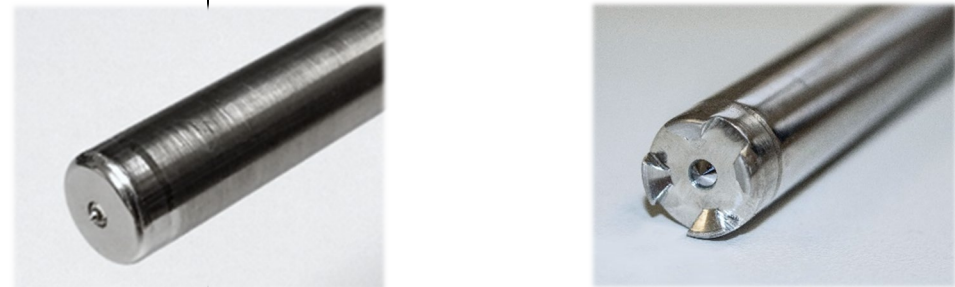
Check the chemical compatibility of ATR crystals with medium if you have any doubts. We are always ready to answer your questions.

Pos.	Description	Article-No.
<b>1.</b>	<b>Standard ATR-Fiber Probes with 6.3mm OD Shaft</b> Probe Type: ATR-probe Spectral Range: <i>see separate probe specification</i> Fiber Type: <i>see separate probe specification</i> Tip Material: <i>see separate probe specification</i> Sealing Material: <i>see separate probe specification</i> Shaft Material: Hastelloy C22 Shaft Size: OD = 6.3mm, length = 300±5mm Flexible Fiber: 0.7m length + 2 legs of 0.5m each Total Length: shaft + fiber = 1.5±0.05m Termination: x 2 Long SMA Protection: Liquid Tight Protection (LTP)	
<b>1.1.</b>	<b>ATR-P-D-6-30-150/50*</b> Spectral Range: 5.2-17µm (600-1900cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Diamond IIIA, 2.5mm Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-P-DC-6-30-150/50</i>	<b>AP10232</b>  <b>AP10705</b>
<b>1.2.</b>	<b>ATR-P-Si-6-30-150/50*</b> Spectral Range: 3.2-17µm (600-3100cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Silicon Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-P-SiC-6-30-150/50</i>	<b>AP10551</b>  <b>AP11100</b>
<b>1.3.</b>	<b>ATR-P-Ge-6-30-150/50*</b> Spectral Range: 3.2-17µm (600-3100cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Germanium Sealing Material: PTFE <i>Optional: Tip Protection: crown sized – ATR-P-GeC-6-30-150/50</i>	<b>AP10929</b>  <b>AP11101</b>
<b>1.4.</b>	<b>ATR-C-ZrO2-6-30-150/50*</b> Spectral Range: 1.1-6.5µm (1550-9000cm <sup>-1</sup> ) Fiber Type: CIR 500/550 Tip Material: Cubic Zirconia Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-C-ZrO2C-6-30-150/50</i>	<b>AP10423</b>  <b>AP11102</b>



\*Optional modifications and dimensions – see Page 10

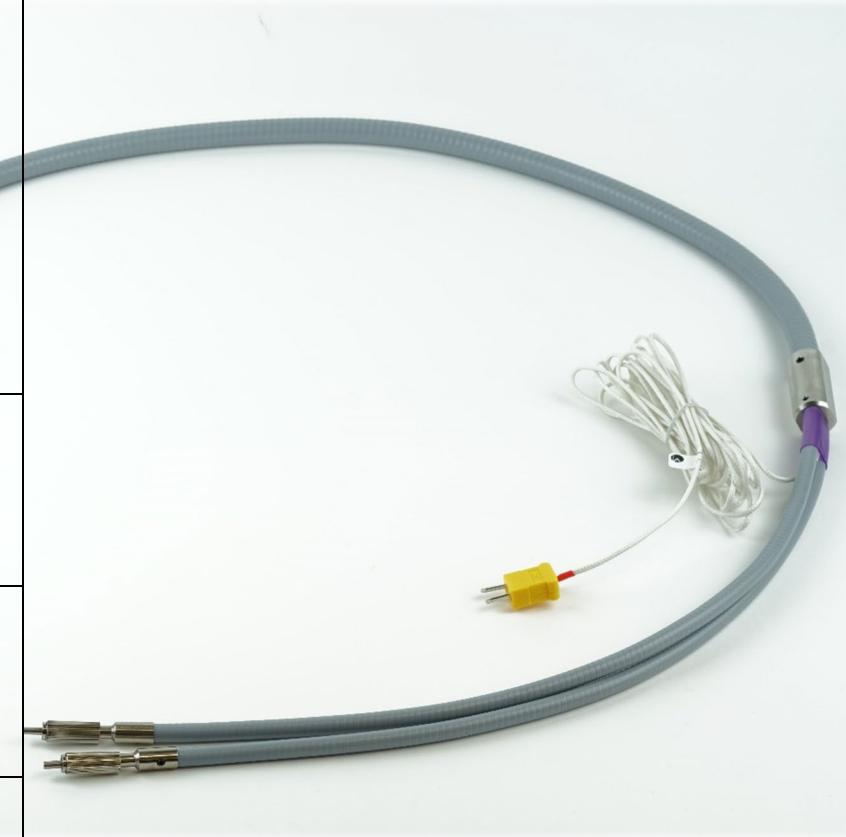
Pos.	Description	Article-No.
<b>2.</b>	<b>Standard ATR-Fiber Probes with 12mm OD Shaft</b> Probe Type: ATR-probe Spectral Range: <i>see separate probe specification</i> Fiber Type: <i>see separate probe specification</i> Tip Material: <i>see separate probe specification</i> Sealing Material: <i>see separate probe specification</i> Shaft Material: Hastelloy C22 Shaft Size: OD = 12mm, length = 300±5mm Flexible Fiber: 0.7m length + 2 legs of 0.5m each Total Length: shaft + fiber = 1.5±0.05m Termination: x 2 Long SMA Protection: Liquid Tight Protection (LTP)	
<b>2.1.</b>	<b>ATR-P-D-12-30-150/50*</b> Spectral Range: 5.2-17µm (600-1900cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Diamond IIIA, 2.5mm Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-P-DC-12-30-150/50</i>	<b>AP10241</b>          <b>AP10323</b>
<b>2.2.</b>	<b>ATR-P-Si-12-30-150/50*</b> Spectral Range: 3.2-17µm (600-3100cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Silicon Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-P-SiC-12-30-150/50</i>	<b>AP10920</b>          <b>AP10916</b>
<b>2.3.</b>	<b>ATR-P-Ge-12-30-150/50*</b> Spectral Range: 3.2-17µm (600-3100cm <sup>-1</sup> ) Fiber Type: PIR 900/1000 Tip Material: Germanium Sealing Material: PTFE <i>Optional: Tip Protection: crown sized – ATR-P-GeC-12-30-150/50</i>	<b>AP10930</b>          <b>AP10931</b>
<b>2.4.</b>	<b>Alternative: ATR-P-ZnSe-12-30-150/50*</b> Tip Material: Zinc Selenide <i>Optional: Tip Protection: crown sized – ATR-P-ZnSeC-12-30-150/50</i>	<b>AP10399</b>          <b>AP10425</b>
<b>2.5.</b>	<b>ATR-C-ZrO2-12-30-150/50*</b> Spectral Range: 1.1-6.5µm (1550-9000cm <sup>-1</sup> ) Fiber Type: CIR 500/550 Tip Material: Cubic Zirconia Sealing Material: PEEK <i>Optional: Tip Protection: crown sized – ATR-C-ZrO2C-12-30-150/50</i>	<b>AP10400</b>          <b>AP10424</b>



\*Optional modifications and dimensions – see Page 10

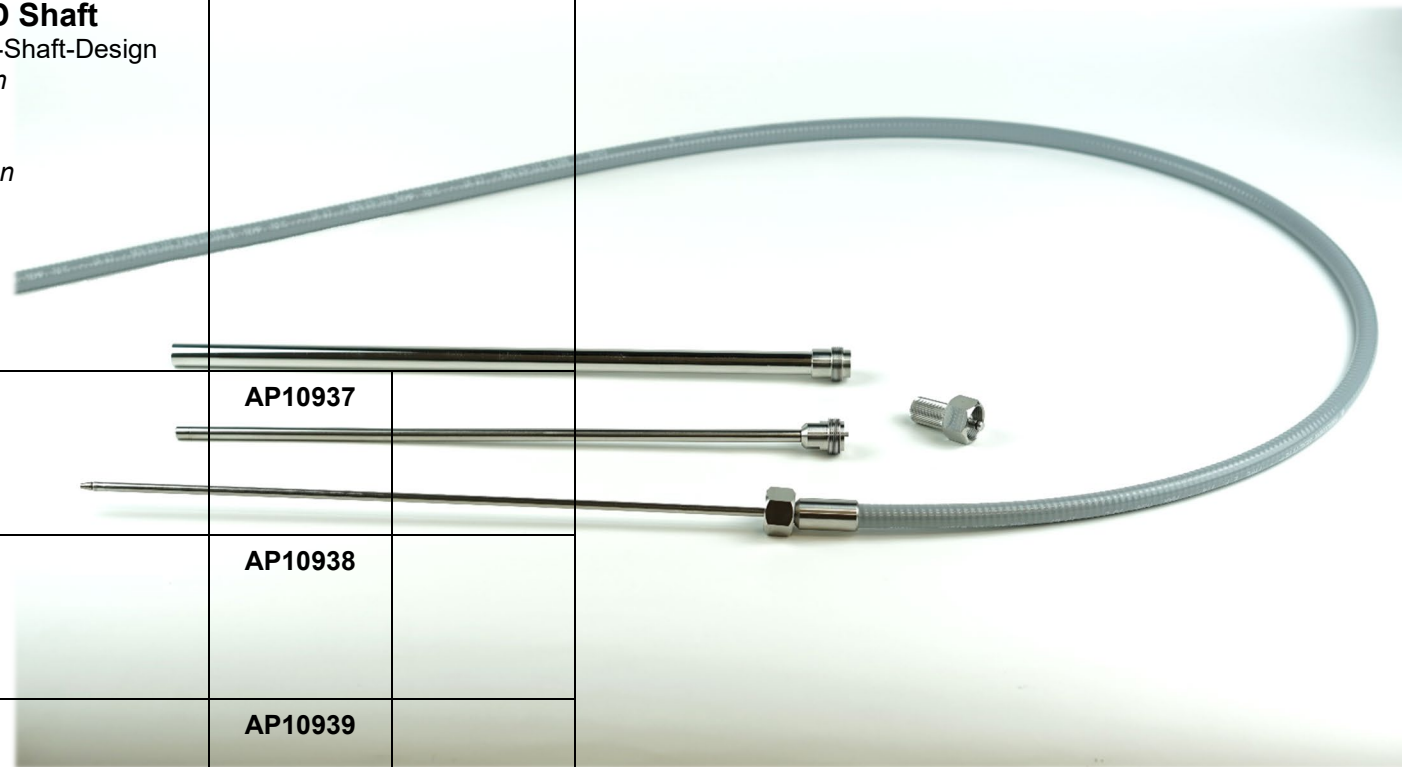
Pos.	Description	Article-No.
3.	<p><b>HighTemperature ATR-Probe</b>            Probe Type: ATR-probe with gas cooling design for HighTemperature applications &lt; 250°C            Spectral Range: <i>see separate probe specification</i>            Fiber Type: <i>see separate probe specification</i>            Tip Material: <i>see separate probe specification</i>            Sealing Material: PEEK            Shaft Material: Hastelloy C22            Shaft Size: OD = 12mm, length = 300±5mm            Flexible Fiber: 1.2m length + 2 legs of 0.5m each            Total Length: shaft + fiber = 2±0.05m            Termination: x 2 Long SMA            Protection: Liquid Tight Protection (LTP) with thermo-couple fixed at distal end inside shaft for fiber temperature control and with in-/out gas/air flow            Digital Voltmeter included</p>	
3.1.	<p><b>ATR-P-D-12-30-200/50-HT*</b>            Spectral Range: 5.2-17µm (600-1900cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Diamond            200Bar; -150°C/+250°C  <i>Optional: Tip Protection: crown sized – ATR-P-DC-12-30-200/50-HT</i></p>	<p><b>AP10344</b></p> <p><b>AP10928</b></p>
3.2.	<p><b>ATR-P-Si-12-30-200/50-HT*</b>            Spectral Range: 3.2-17µm (600-3100cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Silicon            100Bar; -150°C/+250°C  <i>Optional: Tip Protection: crown sized – ATR-P-SiC-12-30-200/50-HT</i></p>	<p><b>AP10932</b></p> <p><b>AP10512</b></p>
3.3.	<p><b>ATR-C-ZrO2-12-30-200/50-HT*</b>            Spectral Range: 1.1-6.5µm (1550-9000cm<sup>-1</sup>)            Fiber Type: CIR 500/550            Tip Material: Cubic Zirconia            100Bar; -150°C/+200°C  <i>Optional: Tip Protection: crown sized – ATR-C-ZrO2C-12-30-200/50-HT</i></p>	<p><b>AP10935</b></p> <p><b>AP10936</b></p>

\* Optional modifications and dimensions – see Page 10



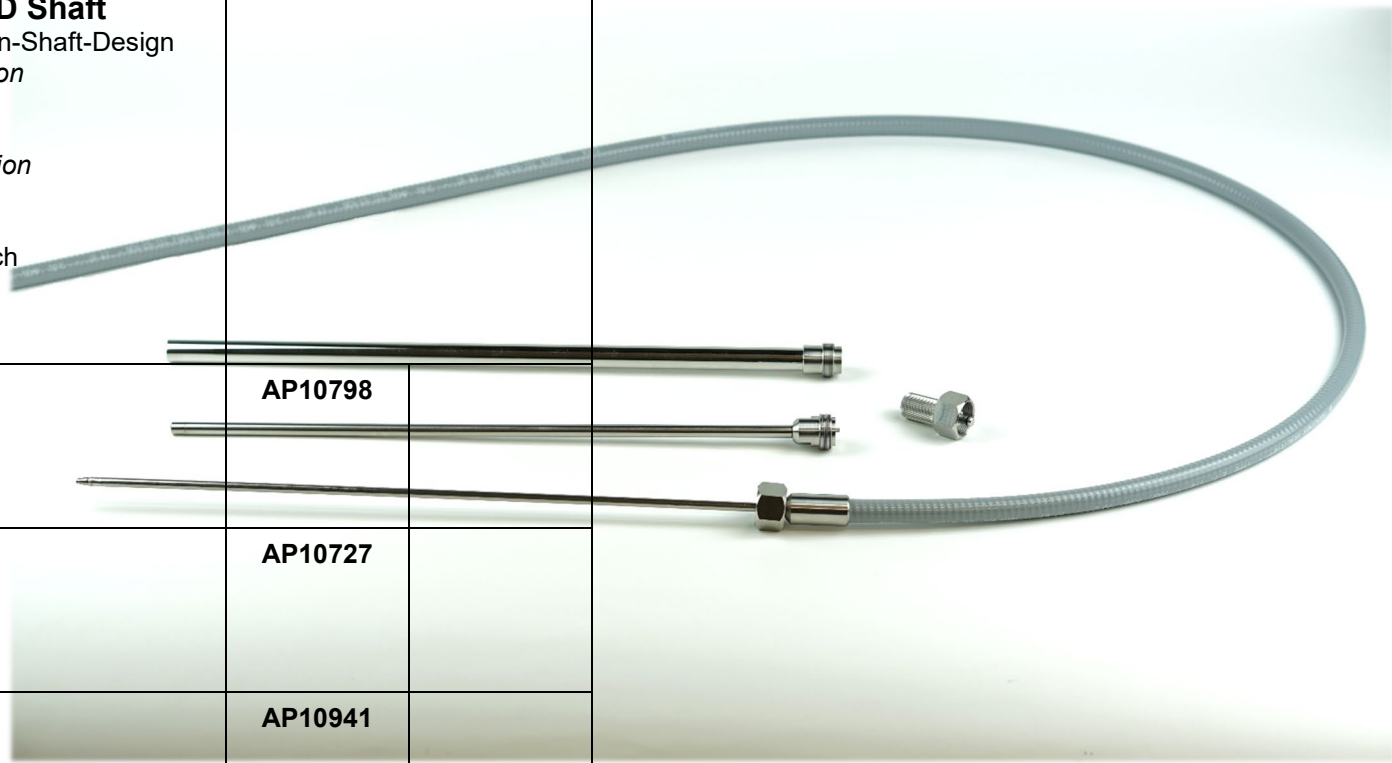


Pos.	Description	Article-No.
4.	<p><b>Sterilizable ATR-Probe with 6.3mm OD Shaft</b></p> <p>Probe Type: sterilizable ATR-probe with Shaft-in-Shaft-Design            Spectral Range: <i>see separate probe specification</i>            Fiber Type: <i>see separate probe specification</i>            Tip Material: <i>see separate probe specification</i>            Sealing Material: <i>see separate probe specification</i>            Shaft Material: Hastelloy C22            Shaft Size: OD = 6.3mm, length = 300±5mm            Flexible Fiber: 0.7m length + 2 legs of 0.5m each            Total Length: shaft + fiber = 1.5±0.05m            Termination: x 2 Long SMA            Protection: Liquid Tight Protection (LTP)</p>	
4.1.	<p><b>ATR-P-D-6-30-150/50-SiS*</b></p> <p>Spectral Range: 5.2-17µm (600-1900cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Diamond            Sealing Material: PEEK</p>	AP10937
4.2.	<p><b>ATR-P-Si-6-30-150/50-SiS*</b></p> <p>Spectral Range: 3.2-17µm (600-3100cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Silicon            Sealing Material: PEEK</p>	AP10938
4.3.	<p><b>ATR-P-Ge-6-30-150/50-SiS*</b></p> <p>Spectral Range: 3.2-17µm (600-3100cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Germanium            Sealing Material: PTFE</p>	AP10939
4.4.	<p><b>ATR-C-ZrO2-6-30-150/50-SiS*</b></p> <p>Spectral Range: 1.1-6.5µm (1550-9000cm<sup>-1</sup>)            Fiber Type: CIR 500/550            Tip Material: Cubic Zirconia            Sealing Material: PEEK</p>	AP10940




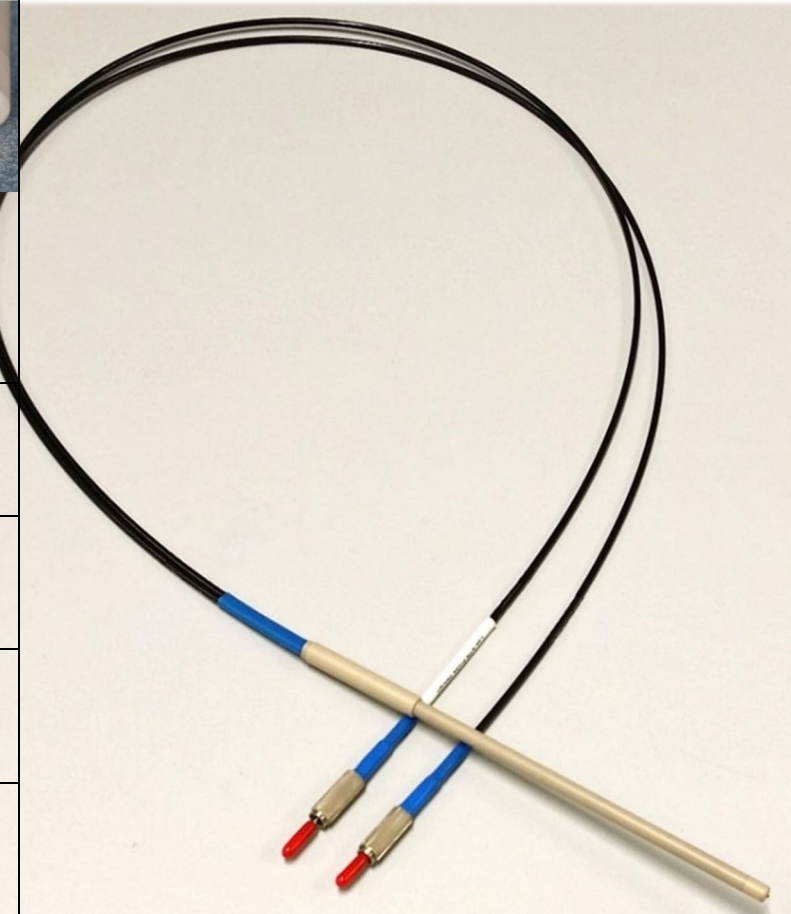
\* Optional modifications and dimensions – see Page 10

Pos.	Description	Article-No.
<b>5.</b>	<p><b>Sterilizable ATR-Probe with 12mm OD Shaft</b>            Probe Type: sterilizable ATR-probe with Shaft-in-Shaft-Design            Spectral Range: <i>see separate probe specification</i>            Fiber Type: <i>see separate probe specification</i>            Tip Material: <i>see separate probe specification</i>            Sealing Material: <i>see separate probe specification</i>            Shaft Material: Hastelloy C22            Shaft Size: OD = 12mm, length = 300±5mm            Flexible Fiber: 0.7m length + 2 legs of 0.5m each            Total Length: shaft + fiber = 1.5±0.05m            Termination: x 2 Long SMA            Protection: Liquid Tight Protection (LTP)</p>	
<b>5.1.</b>	<p><b>ATR-P-D-12-30-150/50-SiS*</b>            Spectral Range: 5.2-17µm (600-1900cm-1)            Fiber Type: PIR 900/1000            Tip Material: Diamond            Sealing Material: PEEK</p>	<b>AP10798</b>
<b>5.2.</b>	<p><b>ATR-P-Si-12-30-150/50-SiS*</b>            Spectral Range: 3.2-17µm (600-3100cm-1)            Fiber Type: PIR 900/1000            Tip Material: Silicon            Sealing Material: PEEK</p>	<b>AP10727</b>
<b>5.3.</b>	<p><b>ATR-P-Ge-12-30-150/50-SiS*</b>            Spectral Range: 3.2-17µm (600-3100cm-1)            Fiber Type: PIR 900/1000            Tip Material: Germanium            Sealing Material: PTFE</p>	<b>AP10941</b>
<b>5.4.</b>	<p><b>ATR-C-ZrO2-12-30-150/50-SiS*</b>            Spectral Range: 1.1-6.5µm (1550-9000cm-1)            Fiber Type: CIR 500/550            Tip Material: Cubic Zirconia            Sealing Material: PEEK</p>	<b>AP10942</b>



\* Optional modifications and dimensions – see Page 10

Pos.	Description	Article-No.	
<b>6.</b>	<p><b>Standard Lab ATR-Probe</b>            Probe Type: ATR-probe for Laboratory            Spectral Range: <i>see separate probe specification</i>            Fiber Type: <i>see separate probe specification</i>            Tip Material: <i>see separate probe specification</i>            Sealing Material: FKM o-ring            Shaft Material: PEEK            Shaft Size: OD = 6.3mm, length = 150±5mm            Flexible Fiber: 2 legs of 1.35m length each            Total Length: shaft + fiber =1.50±0.05m            Termination: x 2 Long SMA            Protection: PEEK tubing</p>		
<b>6.1.</b>	<p><b>ATR-P-Si-6-15-150-Lab*</b>            Spectral Range: 3.2-16µm (600-3000cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Silicon</p>	<b>AP10906</b>	
<b>6.2.</b>	<p><b>ATR-P-Ge-6-15-150-Lab*</b>            Spectral Range: 3.2-17µm (600-3100cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Germanium</p>	<b>AP10917</b>	
<b>6.3.</b>	<p><b>ATR-P-ZnSe-6-15-150-Lab*</b>            Spectral Range: 3.2-17µm (600-3100cm<sup>-1</sup>)            Fiber Type: PIR 900/1000            Tip Material: Zinc Selenide</p>	<b>AP10812</b>	
<b>6.4.</b>	<p><b>ATR-C-ZrO2-6-15-150-Lab*</b>            Spectral Range: 1.1-6.5µm (1550-9000cm<sup>-1</sup>)            Fiber Type: CIR 500/550            Tip Material: Cubic Zirconia</p>	<b>AP10799</b>	

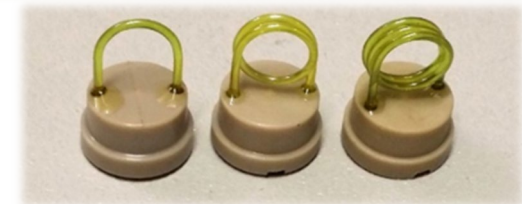
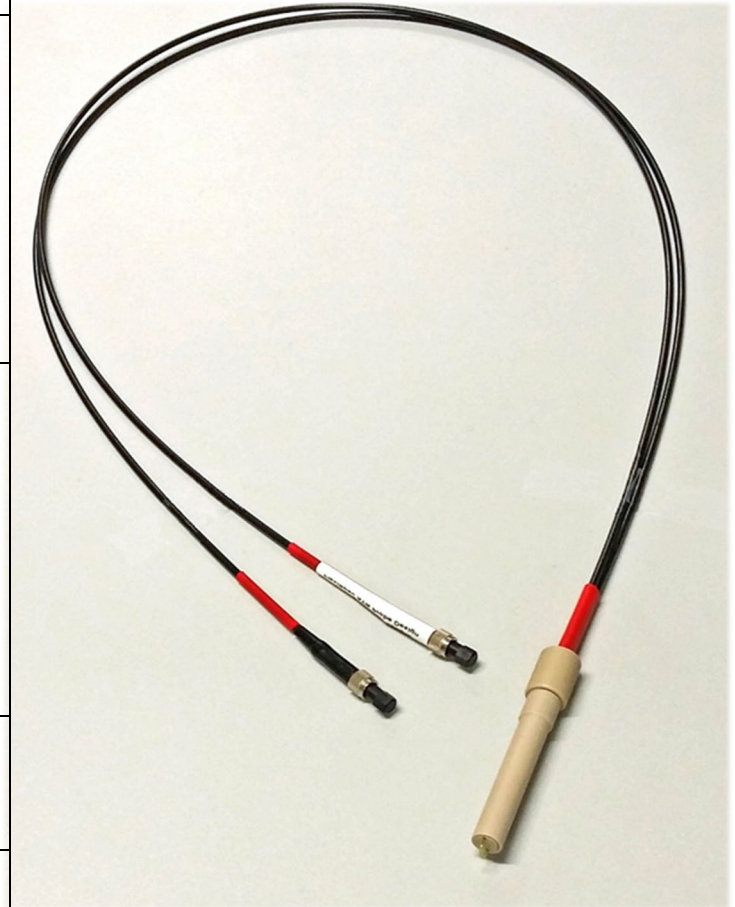


\* Optional modifications and dimensions – see Page 10



Pos.	Description	Article-No.
<b>7.</b>	<b>Standard ATR-Detachable Loop Probe</b>	
7.1.	<b>ATR-DLP-P-10-7-110 (4-17<math>\mu</math>m)*</b> Probe Type: ATR for Detachable-PIR-Loops Fiber Type: PIR 900/1000 Tip Material: Detachable PIR-fiber loop Shaft Material: PEEK Shaft Size: OD = 10mm, length = 70mm -0/+5mm (incl. Loop) Flexible Fiber: 2 legs of 1.0m length each Total Length: shaft + fiber = 1.1 $\pm$ 0.05m Termination: x 2 Long Ti-SMA Protection: PEEK tubing Marking: Blue	<b>AP10100</b>
7.2.	<b>ATR-DLP-C-10-7-110 (1.5-6.0<math>\mu</math>m)*</b> Probe Type: ATR for Detachable-PIR-Loops Fiber Type: CIR 500/550 Tip Material: Detachable PIR-fiber loop Shaft Material: PEEK Shaft Size: OD = 10mm, length = 70mm -0/+5mm (incl. Loop) Flexible Fiber: 2 legs of 1.0m length each Total Length: shaft + fiber = 1.1 $\pm$ 0.05m Termination: x 2 Long SMA Protection: PEEK tubing Marking: Red	<b>AP10106</b>
7.3.	<b>Detachable Single PIR-Loops for DL-Probe</b> sealed in PEEK-flange; Loop length: 5 $\pm$ 0,5mm <b>Package of 5 pcs.</b> <b>Package of 10 pcs.</b>	<b>AP10109</b> <b>AP10031</b>
7.4.	<b>Detachable Dual PIR-Loops for DL-Probe</b> sealed in PEEK-flange; Loop length: 7 $\pm$ 0,5mm <b>Package of 5 pcs.</b> <b>Package of 10 pcs.</b>	<b>AP10110</b> <b>AP10111</b>
7.5.	<b>Detachable Triple PIR-Loops for DL-Probe</b> sealed in PEEK-flange; Loop length: 7 $\pm$ 0,5mm <b>Package of 5 pcs.</b> <b>Package of 10 pcs.</b>	<b>AP10191</b> <b>AP10238</b>

\* Optional modifications and dimensions – see Page 10



## Optional Modifications for ATR Probes\*:

Dimension limits\*:

**Hastelloy Shaft:** 50mm – 500mm\*

**Legs:** 200mm – 500mm\*

**Total:** 1m – 5m\* (DLP and Lab-ATR 1m – 3m)

## Customizing\*:

**Connector:** e.g. BQC\*

**Tubing:** e.g. Kopex\*



**Compatibility to Fiber Optic System:** e.g. flange; Ceramat\*

**Others:** ATEX conform design including certification

\*other options upon request

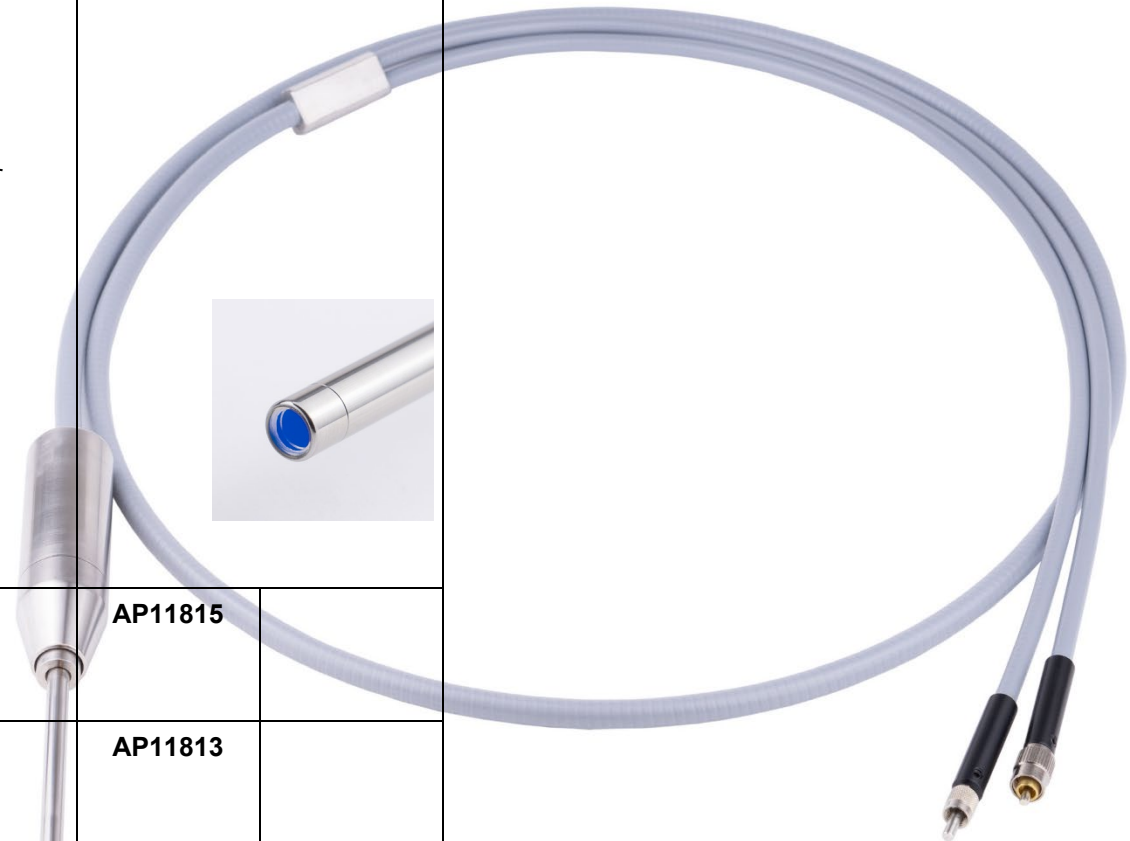
**Customized probe example**



Pos.	Description	Article-No.	
<b>8.</b>	<b>Fiber Probe Couplers</b>		
8.1.	<b>Fiber Probe Coupler FPC-2M for iS5</b> Mirror & lens design suitable for iS5 FTIR spectrometer SMA-905 connectors unit can be purged	AP10285	
8.2.	<b>Fiber Probe Coupler FPC-2M for iS5N</b> Mirror design suitable for iS5N FTIR spectrometer SMA-905 connectors unit can be purged	AP11394	

<p><b>8.3.</b></p>	<p><b>Fiber Probe Coupler FPC-6M</b></p> <p>All mirror design with beam height position 88mm compatible with Nicolet 5700, 6700, iS10, iS50, Avatar 360 SMA-905 connectors The unit can be purged</p>	<p><b>AP10307</b></p>		
<p><b>8.4.</b></p>	<p><b>Fiber Probe Universal Coupler</b></p> <p>All mirror design with flexible beam height position can be adapted into any FTIR spectrometer SMA-905 connectors The unit can be purged</p>	<p><b>AP11380</b></p>		

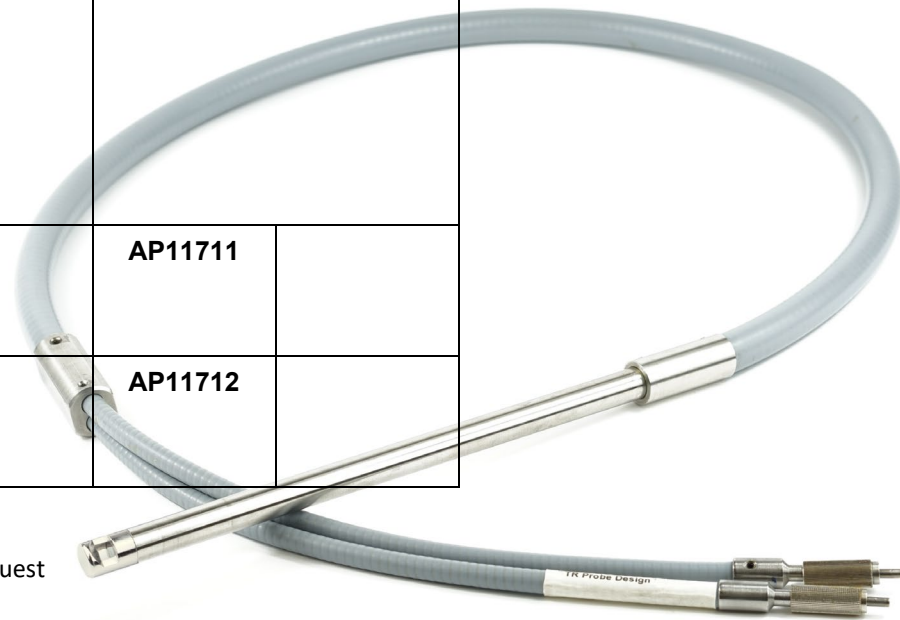
Pos.	Description	Article-No.	
9.	<p><b>Raman Scattering probe</b></p> <p>Probe Type: Raman probe            Laser Wavelengths: 621-787nm            Laser Spot: <i>see separate probe specification</i>            Spectral Range Cut-Off: 800nm (240cm-1 @ 785nm Laser)            Filter Efficiency: OD&gt;6 for Laser rejection; Transmission&gt;95% for Raman shift            Laser Transmission: &gt;80%            Fiber Type: Laser - NIR105/125 NA=0.22;                              Detector - NIR200/220 NA=0.22            Window Material: Sapphire AR coated (600-1050nm)            Window Sealing Material: Epoxy glue            Shaft Material: Stainless Steel 1.4301            Shaft Sealing Material: FPM            Shaft Size: <i>see separate probe specification</i>            Flexible Fiber: 1.2m length + 2 legs of 0.5m each            Total Length: shaft + fiber = 2.00±0.05m            Termination: Laser - FC/PC; Detector - SMA905            Protection: Liquid Tight Protection (LTP)</p>		
9.1.	<p><b>RSP-DoS-12-20-200/50-FS*</b></p> <p>Laser Spot: ~0.2mm at 2-3mm from the tip            Shaft Size: OD = 12mm, length = 200±5mm</p>	<b>AP11815</b>	
9.2.	<p><b>RSP-DoS-12-20-200/50-CL*</b></p> <p>Laser Spot: collimated beam ~3mm OD            Shaft Size: OD = 12mm, length = 200±5mm</p>	<b>AP11813</b>	
9.3.	<p><b>RSP-DoS-6-10-200/50-FS *</b></p> <p>Laser Spot: ~0.2mm at 2-3mm from the tip            Shaft Size: OD = 6mm, length = 100±5mm</p>	<b>AP11819</b>	
9.4.	<p><b>RSP-DoS-6-10-200/50-CL*</b></p> <p>Laser Spot: collimated beam ~3mm OD            Shaft Size: OD = 6mm, length = 100±5mm</p>	<b>AP11818</b>	



\* Modifications (laser wavelength) and optional dimensions are available on request



Pos.	Description	Article-No.	
10.	<p><b>Transflection Probe</b></p> <p>Probe Type: Transflection  Spectral range: 400-2200nm (lens AR coated in 1050-1700nm)  Fiber type: 2xNIR600/660PI, NA=0.20±0.02  Optical path: <i>see separate probe specification</i>  Probe shaft: stainless steel 1.4301 (AISI304), OD=12mm, L=200±5mm  Total length: 2±0.05m; Leg length: 0.5±0.05m  Optical materials: Sapphire, Fused Silica  Termination: 2xSMA905  Protection: Liquid Tight Protection (LTP)</p>		
10.1.	<p><b>Transflection Probe 1+1-NIR600/660-200-2xSMA Ver.0.2 *</b></p> <p>Optical path: 4mm (gap 2mm)</p>	AP11711	
10.2.	<p><b>Transflection Probe 1+1-NIR600/660-200-2xSMA Ver.0.2 *</b></p> <p>Optical path: 10mm (gap 5mm)</p>	AP11712	



\* Modifications (UV-Vis range) and optional dimensions are available on request

Pos.	Description	Article-No.
<b>11.</b>	<b>Reference Cables</b>	
<b>11.1.</b>	<p><b>Fiber Cable PIR400/500-50-TI/SMA-TI/SMA-MP37</b></p> <p>Fiber: Standard PIR AgCl:AgBr polycrystalline fiber, core <math>410\pm 15\mu\text{m}</math> clad <math>500+0/-15\mu\text{m}</math>, <math>\text{NA}=0.30\pm 0.03</math>            Length: <math>0,5\pm 0,05\text{m}</math>            Termination 1: SMA 905 connector, titanium ferrule            Termination 2: SMA 905 connector, titanium ferrule            Protective Tubing: metal, PVC coated, OD 3.7mm marked with blue</p>	<b>AP10680</b>
<b>11.2.</b>	<p><b>Fiber Cable CIR250/300-50-SMA-SMA-MP37</b></p> <p>Fiber: CIR As-S glass fiber, core <math>250\pm 10\mu\text{m}</math> clad <math>300+10/-20\mu\text{m}</math> double polymer coating <math>400\pm 30\mu\text{m}</math>, <math>\text{NA}=0.30\pm 0.03</math>            Length: <math>0,5\pm 0,05\text{m}</math>            Termination 1: SMA connector            Termination 2: SMA connector            Protective Tubing: metal, PVC coated, OD 3.7mm marked with red</p>	<b>AP11124</b>
<b>11.3.</b>	<p><b>Fiber Cable NIR200/220-50-SMA-SMA-MP37</b></p> <p>Fiber: NIR silica/silica, core <math>200\mu\text{m}</math> clad <math>220\mu\text{m}</math>, <math>\text{NA}=0,22\pm 0,02</math>            Length: <math>0.5\pm 0,05\text{m}</math>            Termination 1: SMA 905 connector            Termination 2: SMA 905 connector            Protective Tubing: metal, PVC coated, OD 3.7mm marked with yellow</p>	<b>AP11140</b>



\* Cables of different fiber diameters and designs are available