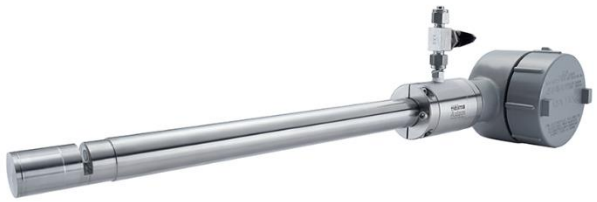
Excalibur HD FPT Fiber-Optic Coupled Transmission Probes

Heavy Duty Spectroscopic Probes for Process Analysis in Near-IR, Visible, UV.



Excalibur HD FPT transmission probes provide highest robustness in combination with high photometric transmission and accuracy for a wide range of process applications, especially for most demanding process applications in rough environments. These probes employ a single pass through the sample gap. This provides two important advantages compared to double pass transflectance probes. First, it eliminates the possibility of stray light offset caused by backscatter from either the sample or the probe windows. Second, it provides twice the distance of the windows for a given optical pathlength, greatly enhancing sample flow between the windows.

A distinguishing characteristic of the Excalibur HD FPT probes is the usage of light guides instead of internal optical fibers[1]. This has a significant benefit in terms of temperature stability and allows both very high and low process temperature.

EXCALIBUR HD FPT HEAVY DUTY PROBE TAKES THE RISK OUT OF SPECTROSCOPIC PROCESS ANALYSIS

The Excalibur HD FPT offers maximum long-term reliability under the extreme conditions of high temperature, thermal shock, and aggressive chemistries encountered in many online process applications[2].

The sapphire to metal sealing technique in conjunction with innovative production processes provide significant advantages over other sealing techniques[3, 4, 5]. A high degree of chemical resistance and pressure resistance is assured using superior materials such as gold coated metal sealing and sapphire windows. The compliance required to withstand extreme temperature cycling without additional flushing of the probe internal is ensured by the nitrogen pressurization and of the probe inner parts, beside the cost saving effect for low temperature applications.

A second barrier ensures highest safety. The risk of leakage is greatly reduced by this.

Finally, the elimination of elastomeric seals provides for reliable long-term operation and is free from any maintenance.

BENEFITS

- Extreme chemical resistance
- Long-term use without additional operation costs
- Resistant to extreme temperatures and thermal shock
- Freedom from stray light and fringing
- ATEX or NEMA-4 classification

PRODUCT CONFIGURATION

Model series	**Excalibur HD FPT 26**
Measuring principle	TRANSMISSION
Outer Diameter	26 mm (1,02 inch) / 25 mm (1 inch)
Optical Path Length / Focus	2 mm / 3 mm / 4 mm / 5 mm / 10 mm
Optical Material	Sapphire
Probe Body Material	Stainless Steel 1.4435/1.4404 (316L) / Hastelloy C-276
Sealing Technology	Gold coated High-Nickel Alloy C-Ring
Spectral Range	UV / Vis / NIR
Wavelength	for UV: 200 - 800 nm (opt. >230 nm) Vis: 350 - 2000 nm; NIR: 800 - 2500 nm
Optical Connection	F-SMA or FC/PC socket with different connections for protective hoses
Fiber Optic Technology	Light guides
Process Connection	EN/DN 40 to 80 or ASME B 16,5 NPS 1 to 2 or flange according to customer requirements
Probe Barrel	Not suitable for Swagelok
Maximum Pressure	to 300 bar (Hastelloy, depending on the flange)
Maximum Immersion Depth	bis 300 bar (Hastelloy, abhängig vom Flansch)
Minimum Immersion Depth	940 mm (without flange)
Length of Probe Barrel	Without flange: 250, 450, 650 or 950 mm, with flange: depending on max. immersion depth, allow 50 mm space for flange
Additional Functions	Back filled with inert gas (N2)
Temperature Restrictions	T max: secondary confinement 290 °C, optical connector 150 °C, Copex PMA 130 °C (85 °C for ATEX)
	The FPT provides a safety barrier and inerting with shielding gas (unless internal flushing is selected)
Temperature	-30 °C to 400 °C
Pressure	-1 bar to 250 bar
Delivery Scope	Optical immersion probe, manual, customer information drawing, certificate of pressure test, protocol of transmission test, transport packaging