

EXCALIBUR XP

Precise Transmission

Probe for Spectroscopic

Measurements



The Excalibur XP process probe is the perfect choice when accuracy and reproducibility of measurement results are top priorities. It can be used for transmission measurements of liquids for analysis and quality determination in a wide range of applications. This probe is available with diameters of 12, 20 mm and 25 mm.

WIDE RANGE OF APPLICATIONS

The main areas of application for probes in the »Extremely Precise« category are in the chemical, petrochemical, biotechnology and pharmaceutical industries. Among other things, the probe is used for incoming goods inspection, immediate and very precise reaction tracking, concentration measurements of ingredients or fractionation control.

Examples of parameters that often play a decisive role in manufacturing processes and can be precisely determined with the Excalibur XP are:

- Amine value
- OH-number
- Acid number
- Iodine number
- Peroxide number
- API content
- Water content
- Nutrient concentration
- Octane number

EASY TRANSFER OF MODELS

The Hellma »Excalibur XP« is built up of standardized components from a modular building block. The same optical design is also available for laboratory probes.

HIGH PRECISION AND HIGH REPRODUCIBILITY

The probe has an elastomer-sealed, monolithic measuring head made of quartz or sapphire, in which several functions are combined in one optical component by bonding. Bonding is a unique technology used only by Hellma. Transitions between the bonded individual parts are no longer optically detectable.

The number of phase transitions of the measuring beam is reduced to a minimum, resulting in a high light yield. This guarantees very high transmission and thus particularly reliable and reproducible measurement results.

Due to the high reproducibility of the results, the transfer of methods between identical probes is simple.

HIGH FLEXIBILITY AND ADAPTABILITY

The Hellma »Excalibur XP« can be installed in reactors as well as in pipelines. With the help of the [Hellma Online Configurator](#) the pre-configured basic version of the probe can be easily adapted to individual process conditions depending on the application. The probe is fully compatible with all common NIR spectrometers.

HIGHER AVAILABILITY

The components of this probe model are kept in stock. This ensures rapid availability of spare parts. Repairs can be carried out quickly. This leads to higher process reliability and plant efficiency.

MAINTENANCE AND REPAIRSERVICE

Hellma offers a maintenance and repair service for elastomer-sealed process probes and measurement cells. As a result, the product service life can be extended and downtime avoided.

Maintenance-free probe models with metal seals are also available if required.

Benefits:

- Very high path length accuracy and very high transmission
- High reproducibility
- High adaptability of the products
- High temperature resistance

PRODUKT STANDARD SPECIFIKATION

Model series	Excalibur XP
Measuring principle	Transmission
Outer Diameter	12, 20 or 25 mm
Optical Path	1, 2, 5, 10 or 20 mm)
Path-length Tolerance	Quartz $\pm 0,01$ mm, sapphire $\pm 0,05$ mm
Optical Material	Quartz Glass
Probe Body Material	Stainless Steel 1.4571 (316Ti)
Spectral Range	NIR
Optical Connection	F-SMA Socket and ATEX PMA Housing NW 23
Fiber Optic Technology	Standard fiber optic
Process Connection	Without Flange
Probe Barrel	Not suitable for Swagelok
Maximum Pressure	40 bar (Class 300, overpressure at RT, 31 bar at 200 °C, 27 bar at 300 °C, 25 bar at 400 °C
Minimum Immersion Depth	30 mm + optical path length
Length of Probe Barrel	Without flange: Immersion depth + 10 mm, with flange: Immersion depth + 50 mm
Additional Functions	None
Temperature Restriction	T max: optical connector 150 °C (without ext. fiber), Copex PMA 130 °C (85 °C for ATEX)
Temperature	5 °C to 180 °C
Pressure	0 bar to 40 bar
Delivery	Immersion Probe, Manual, Customer's Drawing, Certificate of the pressure test, Protocol of transmission test, Transport case

For more configurations, please refer to our [online configurator](#)