

KATANA XP

Optical Immersion Probe For Attenuated Total Reflection Measurements

Spectroscopic probe especially for the analysis of strongly absorbing or highly concentrated media

The Hellma **Katana XP** probe is ideal for attenuated total reflection (ATR) measurements in laboratory and process applications. It is characterized by the use of a conical ATR crystal at the probe tip. This probe model is particularly suitable for measuring highly absorbent media such as dyes, pastes or slurries in different spectral ranges.

POSSIBLE APPLICATION AREAS

- Determination of the color number
- Quality assurance of colorants, measurement of pigments in the paint and coatings industry
- Reaction monitoring or endpoint determination in chemical syntheses
- Monitoring the degree of homogeneity in dispersions and suspensions
- Determination of the TiO₂ concentration in the packaging industry
- Measurement of concentrations in the crystallization process of active ingredient suspensions

HYGIENIC DESIGN

Due to the special design, the probe does not have any dead volumes in which deposits could form. The risk of contamination is minimized, and the probe is easy to clean.



ROBUST CONSTRUCTION

The Katana XP 12 with a diameter of 12 mm is suitable for ATR measurements under difficult process conditions due to its robust design.

ALSO AVAILABLE IN SMALL DIAMETER

The Katana XP 6 probe model with a diameter of 6 mm enables simple and space-saving integration in the laboratory or pilot plant.

SOLDERED VARIANT AVAILABLE

This probe model has the option of soldering the sapphire windows to a titanium probe tube. This soldered version has a high temperature resistance of up to 300 °C and a high chemical resistance.

BENEFITS

- High mechanical stability and a wide range of options for process connections (Katana XP 12)
- Robust construction for maximum reliability
- Good chemical resistance
- Easy connection to all common spectrometers
- Available with small diameter

PRODUCT CONFIGURATION

Modell	Katana XP
Measurement Principle	ATR (Attenuated-Total-Reflection)
Outer Diameter	Katana XP 12: 12 mm Katana XP 6: 6 mm (sealed) / 6,35 mm (brazed)
Optical Path Length / Focus	Contact
Optical Material	Sapphire
Probe Material	Stainless Steel 1.4435/1.4404 (316L) Katana XP 6: Titanium
Sealing Technology	Kalrez 4079 / 6230 / 6375 Katana XP 6: brazed
Spectral Range	UV/Vis, for UV/Vis: 280 nm - 1100 nm; NIR: 400 nm - 2300 nm
Optical Connection	2x F-SMA socket / 2 m glass fiber PE coated and PMA housing (with socket NW23 /with ext. glass fibers NW17), glass fiber core 600 µm and NA 0.22
Fiber-Optic Technology	Standard Fiber Optic
Process Connection	Katana XP 12: Without Flange / Various EN, DIN and ASME flanges / according to customer requirements Katana XP 6: Without Flange
Maximum Pressure	Katana XP 6: 16 bar (Class 150, overpressure at RT, 11 bar at 200 °C, 10 bar at 300 °C, 6,5 bar at 400 °C) Katana XP 12: 40 bar (Class 300, overpressure at RT, 31 bar at 200 °C, 27 bar at 300 °C, 25 bar at 400 °C)
Maximum Immersion Depth	240 mm
Additional Functions	None
Temperature Restrictions	T max: optical connection 150 °C (without external light guide), Copex PMA 130 °C (85 °C for ATEX)
Temperature	5 °C to 180 °C
Pressure	-1 bar to 40 bar
Scope of Delivery	Optical immersion probe, user manual, customer technical drawing, certificate of pressure test, report of optical transmission test, transport packaging