FC Series
User-Configurable Spectroscopic Transmission Cells

Hellma® Analytics
Axiom Technology

Build your own fiber-optically coupled spectroscopic sampling system using robust FCP-020 probes and standard Swagelok™ components.

Hellma Analytics FC Series with Axiom Technology sampling systems bring high performance chemical composition monitoring to a wide range of demanding applications - on-line and in the lab. The systems consist of standard FCP-020 optical probes combined with either off-the shelf Swagelok components or one of the company's FCF Series flow fixtures.

FCP-020 OPTICAL PROBES

FCP-020 probes employ robust construction combined with the company's proprietary welded metal sealing technology, enabling them to withstand widely varying chemical conditions, high pressures, and extremes of both high and low temperature. Each probe is sealed, evacuated, and backfilled with high grade nitrogen, preventing contamination as well as condensation within the probe at low temperatures.

Beam direction adjustments allow the signal transmission of FC Systems to be optimized, even for quite long paths.

Probes are available for the near-IR, visible, and UV ranges. Since the probes employ standard Swagelok connections, they can easily be removed for cleaning or service.

USING STANDARD SWAGELOK™ COMPONENTS TO BUILD DIVERSE SYSTEMS

The use of Swagelok™ components enables the configuration of flow cells having path lengths from 2 mm to over 2 meters, providing for both liquid and gas phase analysis.

A Swagelok™ cross (SS-120-4) can be used to construct a robust liquid sample cell with a 2 mm path length. Gas phase cells can be assembled by using a pair of Swagelok "T"s and a length of straight tubing.

FCF SERIES FLOW FIXTURES

The FCP-020 probes can also be used with FCF Series Flow Fixtures. These typically provide precise fixed path lengths of 5 or 10 mm and a choice of flow diameters and fittings. In addition, we can provide custom flow fixtures for a wide range of applications. For example, fixtures for use between an extruder and a die are usually custom designed to match the requirements of the mating hardware.

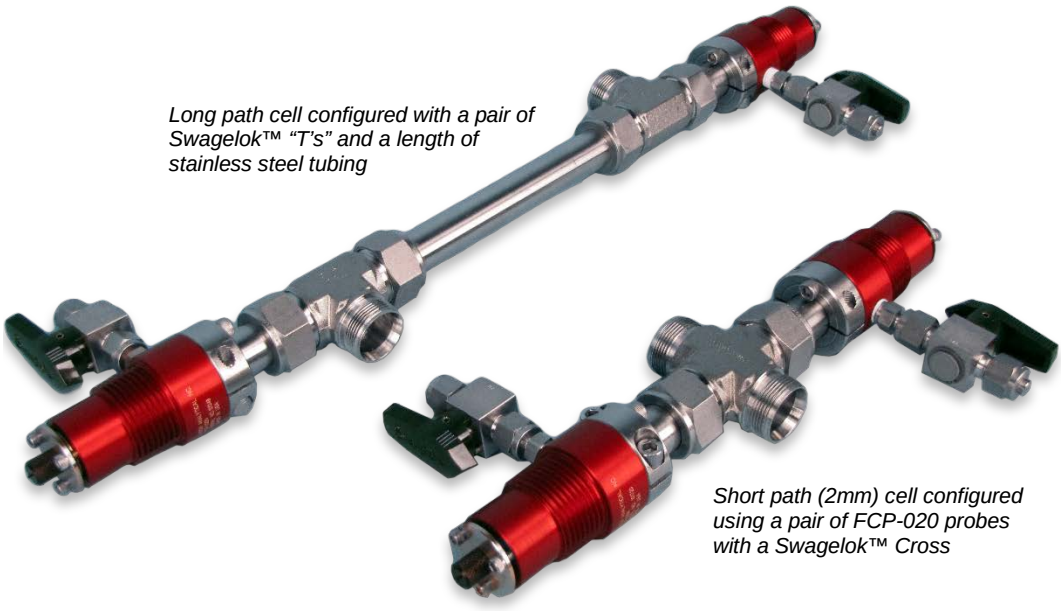
FC SERIES FEATURES:

- Configurable using standard Swagelok components
- Welded seals for extreme robustness
- Compatible with both high and low temperature as well as thermal shock
- Withstand high pressure and viscosity
- Excellent chemical resistance
- Minimum possible flow restriction
- Compatible with standard conduit termination housings
- Customized flow fixtures to meet individual needs

FCP-020 PROBE SPECIFICATIONS:

Window Material:	Sapphire (Fused silica for UV range)
Wetted Metal:	316L Stainless Steel (Hastelloy™ C-276 optional)
Window Seal:	Permanent PTFE coated Inconel™ 718 C-ring in welded structure
Probe Attachment:	¾" Swagelok™
Maximum Pressure:	250 bar*
Maximum Temperature:	200°C standard (300°C optional with gold coated Waspaloy™ seals)
Probe Length:	14 cm
Fiber-optic Connectors:	SMA-905 female, standard, FC optional
Recommended Fiber-optic Cables:	0.6 mm core diameter
Conduit Termination Fittings:	1" NPT, male
Spectral Range: (Specify R value)	R = N (800 – 4500 nm) R = V (400 – 2000 nm) R = U (230 – 800 nm, Optimized for 230 – 300 nm)

* *Maximum pressure for long cells may be limited by the ratings of the tubing used.*



Long path cell configured with a pair of Swagelok™ "T's" and a length of stainless steel tubing

Short path (2mm) cell configured using a pair of FCP-020 probes with a Swagelok™ Cross

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