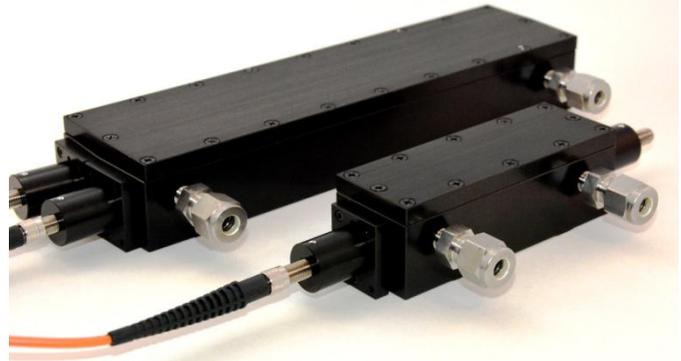


Gas Flow Cells For Deep UV - Mid-IR Spectroscopy

The FCM flow cells are optimized for spectrometers and FTIRs and can also be used with tunable laser systems. They are compatible with a fiber core diameter of up to 1mm and a NA of 0.37 with a SMA905 connector, to accommodate fibers commonly used in the industry. The cells use large diameter CaF2 lenses for efficient coupling over a 150nm to 9 micron wavelength range.

Housing is a rugged vacuum tight enclosure of either hard anodized aluminum or 316 stainless steel. Pressure handling capabilities of >400psi, inert wetted surfaces, >200°C operating temperature, and Swagelok fittings provide for versatile and durable applications.

The 10cm path cell is a single pass-through. The 40cm path version is a two pass with an internal front surface mirror (aluminum or gold) and connectors mounted on one side.



Specification

Parameter	Units	
Wavelength Range ¹	nm	150 to 9000
Fiber Interface		SMA905
Fiber Compatibility		To 1mm core and 0.37 NA
Actual path lengths	cm	10 (FCM-10), 40 (FCM-40)
Operating temperature	°C	-50 to +200
Fiber to fiber throughput ²	%	>50 FCM-10 >35 FCM-40
Fiber to fiber throughput over temperature	%	< 10% change from 25°C
Spectral ripple (P-P)	dB	<0.01 P-P in any 2nm span
Wetted surfaces FCM-10-AL ³		Hard anodized aluminum, 316 SS, gaskets, CaF2
Wetted surfaces FCM-40-AL ³		Hard anodized aluminum, 316SS, gaskets, CaF2, B270 glass, epoxy
Gasket material		Viton (viton extreme or Kalrez available)
Storage temperature	°C	-40 to +200
Swagelok® fitting style		1/4" or 1/8" tube, hose bib available
Leak rate	Atm-cc/sec	<10 ⁻⁶
Cell Pressure	MPa	0 to 3(430psi) FCM-10 0 to 2(290psi) FCM-40
Cell volume	cc	17 FCM-10 110 FCM-40

Notes:

- For FCM-40 we use a protected aluminum mirror for the UV-optimized cell and a protected gold mirror for the IR-optimized cell.
- At 25°C and 650nm using 200 micron core 0.22 NA fiber.
- FCM-SS has no anodized aluminum; only 316SS.

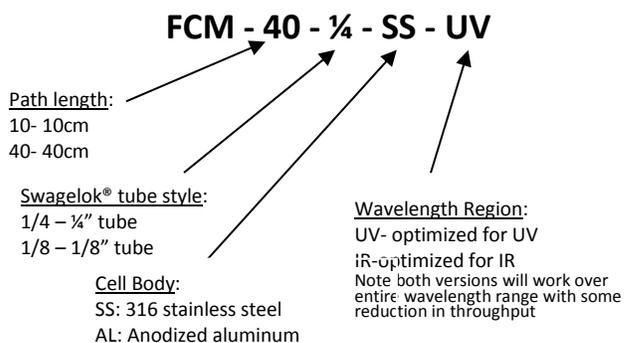
Features

- Wavelength operation from 150nm to 9 microns
- Designed for minimum optical interference artifacts
- Compact multi-pass design for low concentrations/weak absorption lines.
- Swagelok® fittings for easy integration
- Low cost

Applications

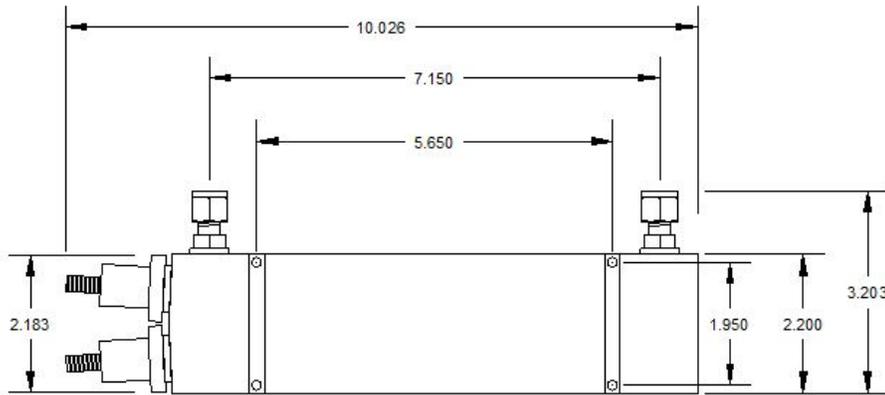
- Gas sensing systems from the deep UV to the Mid-IR
- Spectroscopic research
- Chemical detection systems

Ordering Information (example)



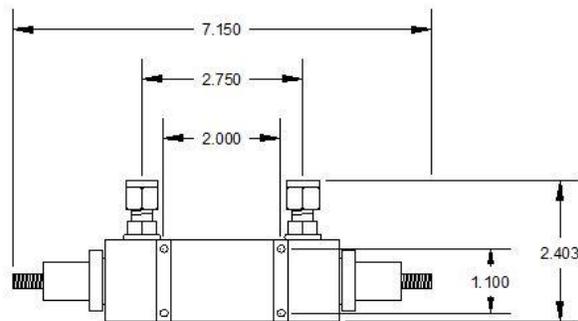
Package Drawings

40 cm path



Dimensions: inches

10 cm path



Dimensions: inches

Flowcell operation:

Wavelength References Flowcells are very simple to use. For best results, however, note the following:

1. The cell is provided with four mounting holes tapped with 4-40 threads on the bottom.
2. Do not apply mechanical stress on the endcaps. These hold the CaF₂ collimating lenses.
3. If you require valves on the cell inquire as these can be provided, we can offer high quality needle or diaphragm valves.
4. Prevent dust and condensation from entering the cell. Uniform heating can reduce condensation and aids in moisture removal from the cell surfaces. Initial pump down with some heating is very beneficial for low background water vapor.
5. If the cell optics are damaged due to contamination we can rework the cell for lifetime cost savings. Please contact factory.

Wide Wavelength Range Versatility of Gas Cell, Deep UV to Mid IR

