

Axial Process Flow Cell

Efficient Long Path Flow Cell for Process UV / VIS / NIR Photometry

Flow cell performance strongly affects the overall system performance of a process photometer. High optical efficiency and low sensitivity to environmental factors are essential to sensitive, reliable measurements. Best system performance requires a flow cell that is insensitive to vibration, temperature and pressure changes. Stable performance is especially difficult to achieve when a long-path flow cell is dictated by low limits of detection. Guided Wave's Axial Flow Cell gives path-lengths of 30mm to 100 mm with exceptional immunity to environment.

Resistance to Environmental Influences

The standard Axial Flow Cell is constructed from 316L stainless steel. It can also be made from other materials depending upon specific application requirements, such as Hastelloy C-276. Elastomeric seals prevent leakage and protect the Axial Flow Cell's vital internal optics. The process and processing environment dictate the actual o-ring material that is best suited for the application. Suitable o-ring materials must be specified to meet your process chemistry and safety requirements. Common materials, such as Viton, Kalrez®, EPDM, etc., are readily available.

Effective For Low Level Detection

High optical throughput and exception stability make the Axial Flow Cell particularly effective in achieving low levels of detection. For example, water levels less than 100 ppm can be routinely measured in organics when the Axial Flow Cell is used with a good quality photometer or spectrophotometer. Similarly, the lowest APHA color values are easily measured and onset of yellowness is easily detected.

Exceptional Light Transmission

Like other Guided Wave optical probes, the Axial Flow Cell provides exceptional optical performance. Typically, the longer the pathlength the lower the transmission. Where the Axial Flow Cell is concerned, its peak transmission exceeds 30% which is considerably higher than the competition. That means more signal, lower measurement noise and lower limits of detection!



Features — A Simple, Serviceable Design

- High optical throughput for low noise spectroscopy.
- Suitable for liquids and vapors.
- Cleanout ports at each window make cell maintenance a snap.
- Collimated beam for consistently accurate measurements.
- Reproducible pathlength permits servicing in the field.
- Compatible with 200 through 600 micron fiber.
- Compatible with all fiber optic based UV-VIS-NIR instruments.
- 9 mm diameter optics minimize divergence losses.
- O-ring sealed optics to prevent ambient moisture infiltration.

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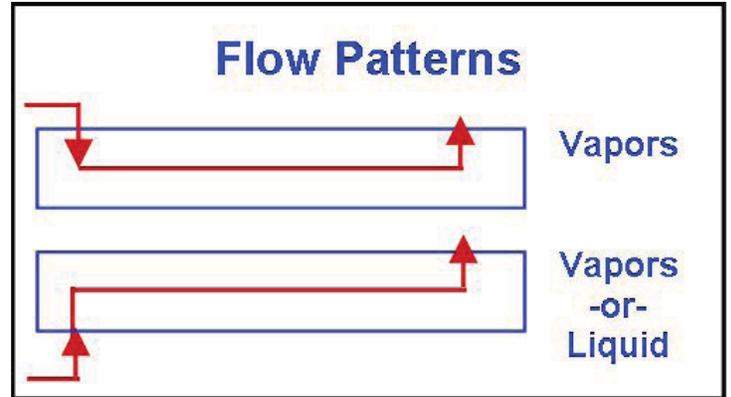
Why Choose An Axial Flow Cell

Perhaps the most critical decision in designing a successful on-line analyzer system is the selection of the sample interface.

While an insertion probe approach can often reduce installation costs, sometimes safety, servicing, and/or sample conditioning requirements make it necessary to integrate a sampling loop or slip stream. Guided Wave's Axial Flow Cell is preferred whenever (a) direct insertion probes are inappropriate and (b) the required optical path length is 30 mm or greater.

The Axial Flow Cell is a convenient, compact, rugged sample interface that is easy to install and even easier to service.

The Axial Flow cell is available in our standard pathlengths 30, 50, 75, and 100 mm.



Specifications

Pathlength, mm:	30; 50; 75; 100
Spectral Range:	UV-Vis (200 – 600 nm); Vis-NIR (380 – 2100 nm)
Optics:	Fused Silica (UV); BK7 (Vis-NIR)
Connector Type:	SMA 905
Process Connection:	Nominal 1/4 inch tube connection. Swagelok fittings standard.
Optical Efficiency (%T):	≥35% transmission from 800 to 1650 nm for pathlengths ≤50 mm. ≥30% transmission from 800 to 1650 nm for pathlengths >50 mm. ≥25% transmission from 200 to 500 nm for pathlengths ≤50 mm. ≥20% transmission from 200 to 500 nm for pathlengths >50 mm.
Temperature range:	-20 °C to 170 °C* limited by the o-ring material
Pressure Range:	0 to 500 psig
Body Material:	316L SS standard; 316SS, Hastelloy C-276, Monel, and Tantalum available on request
Window Material:	Sapphire; 6mm thickness (230 - 2100 nm) or Fused Silica (Deep UV) (200 -600 nm)
Window Seal:	Polymer o-ring material options include: Kalrez® compounds [#s 6375, 4079, 2035, LF1050], Viton, EPDM



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