



PS-FFV-K (11-28-16)

FFV Series Fiber-Optic Coupled Transmission Cells

*Variable and fixed path cells for
demanding applications*

... Near-IR through UV



FFV Series transmission cells are designed to provide uncompromising performance for a wide variety of process development and on-line applications. They combine high optical transmission with an unimpeded flow path and a wide range of available pathlengths -- which can be set to a desired value with a high degree of accuracy. These capabilities are made possible by the use of a pair of precisely engineered optical plungers which face each other across the flow path. These are mounted on a choice of two different cell bodies, providing features such as pathlengths ranging from 0.5 mm to 12 mm, a flow diameter of 12.7 mm, temperature control capability, and a clean-out port. Each of the models is available in versions optimized for near-IR, visible, or UV operation.

CHOICE OF VARIABLE OR FACTORY CALIBRATED PATHLENGTH

The pathlength of each FFV series cell is determined by the dimensions of its cell body and by the depth of penetration of its two plungers. The latter is controlled by a pair of knurled adjustment collars having a pitch of 1 mm per rotation. Cells having the suffix "V" are provided with fully adjustable collars, allowing the user to set the pathlength.



Once set, the position of each collar can be locked by tightening four clamping screws. The pathlength can be made "permanent" by applying locking adhesive to the threads. FFV Series cells can also be obtained with pre-calibrated and locked pathlengths. In this case the model number suffix is X where X designates the pathlength in mm increments.

FFV-310 BASIC CELL

Model FFV-310 provides the fundamental FFV features in a basic package. It provides a straight-through 12.5 mm diameter flow path and a range of pathlengths from 0.5 to 12 mm.

FFV-320 TEMPERATURE CONTROLLED CELL

The FFV-320 features the same flow characteristics and pathlength selection as the FFV-310 but with the addition a channel for either a cartridge heater or fluid temperature control, a temperature sensor fitting, and a clean-out port at right angles to both optical and flow paths.

FOI-5R FIBER-OPTIC SAMPLE COMPARTMENT INTERFACE

Some Near-IR and UV-Visible spectrometers are not provided with optical fiber connections. FFV Series cells can be coupled to such instruments by employing the Model FOI-5R Fiber-Optic Sample Compartment Interface.

MULTIPLEXING

FMX Series Fiber-Optic Multiplexers enable up to sixteen FFV cells to be coupled to a single spectrometer. (See Data Sheet: PS-FMX)

OTHER FFV OPTIONS

Specifications for standard model FFV cells are given in the accompanying table. In addition to these, a number of options are available. These include materials of construction such as Hastelloy C-276, non-standard pathlengths and higher temperature operation. Inquire with Hellma Axiom regarding specifics.

FEATURES:

- Robust construction
- High transmission
- Unrestricted flow path
- Variable or factory-set pathlength
- Pathlengths from 0.5 mm to 12 mm
- Near-IR, Visible, or UV spectral range
- Choice of SMA or FC fiber connectors



SPECIFICATIONS:

<i>Model Designations:</i>	<i>FFV-310R-X and FFV-320R-X</i>
Standard Pathlengths (Fixed pathlength models):	X = 0.5, 1, 2, 5, or 10 mm
Pathlength Range Variable Pathlength models, X = VP)	0.5 to 12 mm
Seal Type:	Kalrez® 6375
Window Material ² :	Sapphire
Wetted Metal:	316L Stainless steel
Optical Transmission:	Typical 30%
Maximum Temp.:	180°C (max. temperature at fiber optic connector 150 °C)
Maximum Pressure:	30 bar
Flow Path Diameter:	12.7 mm
Fiber-Optic Connectors:	SMA-905 female, std., FC optional
Fittings:	3/8 NPT Female Ports

Spectral Range: Specify **R = N** (800 – 2500 nm), **R = V** (350 – 2000 nm), **R = U** (200 – 800 nm, optimized for 230 – 250 nm)

Notes: 1. Other pathlengths are available. 2. Window material for the UV range is UV grade fused silica. 3. Transmission is pathlength dependent.