



FV 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 path lengths -- 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 path lengths 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 path length 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 path length. Once set, the position of each collar can be locked by tightening four clamping screws. The path length can be made "permanent" by applying locking adhesive to the

threads. FFV Series cells can also be obtained with pre-calibrated and locked path lengths. In this case the model number suffix is X where X designates the path length in mm increments.

FFV-310 BASIC CELL

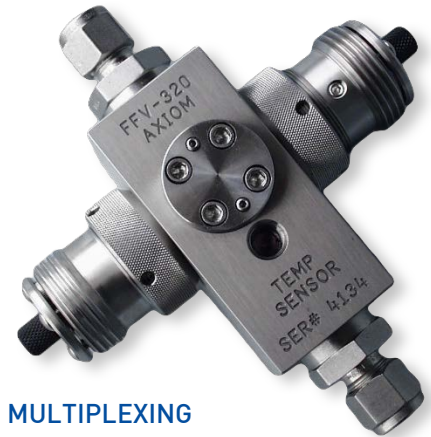
Model FFV-310 provides the fundamental FFV features in a basic package. It provides a straight-through 12.5 mm diameter flow path and a range of path-lengths from 0.5 to 12 mm.

FFV-320 TEMPERATURE CONTROLLED CELL

The FFV-320 features the same flow characteristics and path length 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 path lengths and higher temperature operation. Inquire with us regarding specifics.

FEATURES:

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



SPECIFICATIONS:

Model Designations:	FFV-310R-X and FFV-320R-X
Standard Path lengths (Fixed path length models):	X = 0.5, 1, 2, 5, or 10 mm
Path length Range Variable Path length 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 path lengths are available. 2. Window material for the UV range is UV grade fused silica. 3. Transmission is path length dependent.