PendoTECH
Adding Value To Your Process

PendoTECH Single Use UV Flow Cell

Background

In bioprocess operations, the UV absorbance of a liquid solution can identify the absence or presence of the molecule of interest. The measurement, typically at 280nm, is made by a spectrophotometer or photometer either in-line or off-line in a cuvette. A collimated beam of light passes through a sample with a defined path length and the absorbance is determined as the ratio of the light applied from the source to what passed through the sample. The PendoTECH Single Use UV Flow Cell enables the measurement to be made non-invasively. The flow cell may be part of single use process assembly made up of tubing, bags, filters, and other sensors and the measurement is made by use of a compact photometer with fiber optic cables. This flow cell contains a special silica glass lens on the wall and compartments to attach the light source and detector. The stream to be measured flows between the lenses by way of tubing attached to the hose barb ends of the flow cell. Even though designed for single use, the design is robust enough to be re-used.

CE

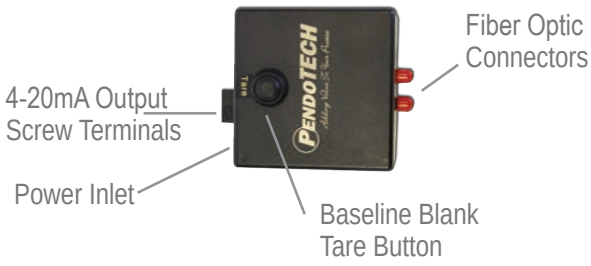
UV Flow Cell Technical Details

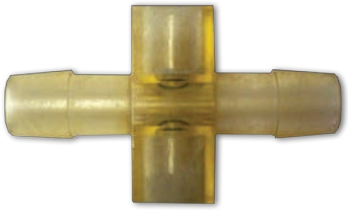
The flow cell with a 1cm path length is shown in the picture to the right with the tubing installed on the ½ inch hose barb fitting. The optical interface couplers are inserted into the receptacles so the measurement can be made on the sample flowing through the cell. All polymeric materials in fluid path meet USP Class VI and it is assembled in an ISO13485 facility. The flow cell may be autoclaved to 121°C or gamma irradiated up to 50KGy.

There is no display or readout on the compact photometer because via its transmitter function, it is designed to be integrated to a monitor with data acquisition capability or a control system. The raw output of the transmitter output in is a 4-20mA signal spanned to 0-2 AUs. The standard wavelength is 280 nm but other wavelengths from 240-1000 nm may be specified in 10 nm increments, but may not be interchanged by user.

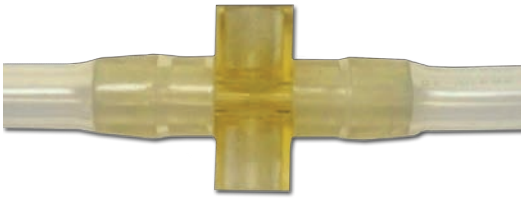
PendoTECH also offers data acquisition capability with it PC based PressureMAT Software or it may be integrated to other PendoTECH products.

Compact Photometer and Transmitter (SPEC-280L)





Flow Cell



Flow Cell Installed with Tubing

Optical Couplers Installed to Flow Cell

Product Information

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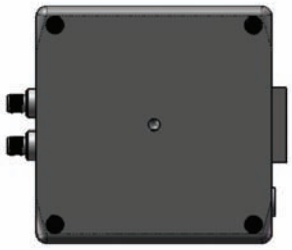
Models Available:

SPEC-280L

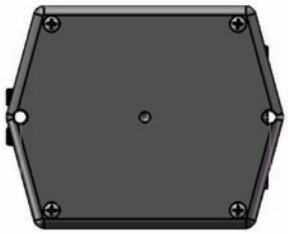
Screw Terminal Connect to mA Output Only



Rubber Feet for Benchmount

SPEC-280P

Screw Terminal Connect For:
-Power
-Baseline Tare
-mA Output



Flange for Panel Mount

Specifications:

Optical Configuration:	Absorbance, with 280nmUV LED Light Source (CWL=277nm) and UV Silicone Photodiode; Internal Source Reference (other wavelengths available from 240-1000 in 10nm increments) LED llifetime > 5 years
Flow Cell Properties:	Material: Polysulfone and fused silica with silicone -ring Absorbance Path length: 1cm Tubing fittings: ½ inch hose barb Rated for pressure up to 75psi (5bar)
Transmitter Box	Optical connectivity via SMA905 Power by 12mm plug (bench mount) or screw terminals (flange mount) Dimensions (WxDxH): L version 3.095 x 3.110 x 2.098 inch (not including connectors/buttons) L version 78.61 x 78.99 x 53.29 mm (not including connectors/buttons) P version 3.862 x 3.110 x 2.098 inch (not including connectors/buttons); 3.500 inch between center line of mounting holes with hole diameter of 0.188 inch P version 98.09 x 78.99 x 53.29 mm (not including connectors/buttons); 88.90 mm between center line of mounting holes with hole diameter of 4.775 mm Weight: .75 lbs (340 g)
Power requirement	20-30 Volts DC (100-250VAC to 24VDC supply included)
Output signal	4-20mA sourcing with 400ohm maximum at 24VDC via screw terminals Scaled to 0-2 AU with repeatability of 1% of full scale (0.02 AU) Typical Response Time: 1 second Maximum Zero Shift: < 2% of full scale (<0.040AU) Long Term Output Drift: <5% per month of full scale (<0.100 AU)

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Ordering Information:

SPEC-280L	Photometer with 280nm light source, 4-20mA output, 2 fiber optic cables, 2 optical couplers to connect to flow cell, 24VDC power supply
SPEC-280P	Photometer with 280nm light source, 4-20mA output, 2 fiber optic cables, 2 optical couplers to connect to flow cell, panel mount
SPECPS-N-050	Single Use UV Flow Cell, 1cm path length, non-sterile, polysulphone, 1/2 inch hose barb

Power Supply for SPEC-280L