

Take offline analysis measurements online using inline flow cells.

Kemtrak optical flow cells provide a physical window to the flowing process—connect absorbance, transmission or scatter instrumentation to enable real time monitoring.

Benefits

- Avoid sample contamination issues
- Realtime data available for logging
- No internal dead volume
- Safer production & protection of environment
- Sanitary design
- Withstand high temperatures—fully sterilizable
- No moving parts
- No condensation problems
- Early breakdown warning
- Liquid-free validation/calibration option available

Applications

UV absorption

- Organic substances, BOD/TOC, Ozone
- Chromatographic separation
- Protein concentration

Concentration

- Chemical concentration
- Solvent/water gradient mixing
- Trace water analysis

Color

- Quality control
- Leak detection
- Standard color scales (PtCo, APHA, ASTM, AOCS, ICUMSA, Hazen etc.)

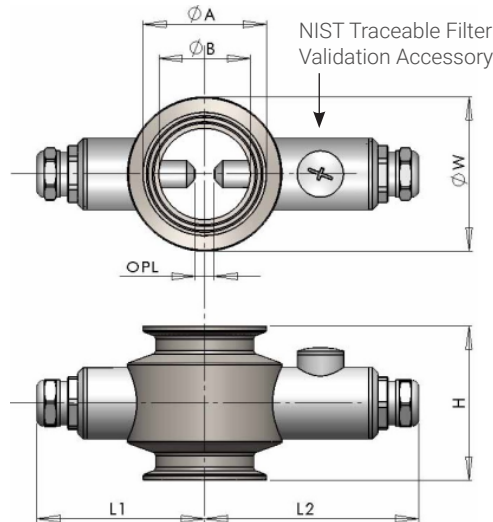
Turbidity/Solids

- Filtration breakthrough
- Separation performance
- Process clarity



General Specifications

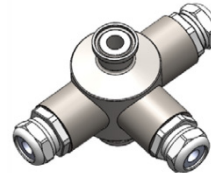
Applicable Design Standards	ISO 2852 & DIN 32676
Cell Material	Stainless steel EN 1.4435 / 316L (other materials available on request)
Surface Finish	Ra < 0.38 µm (electropolished)
Window	Sapphire or fused silica
Elastomers	FKM, (Viton®), EPDM (FDA/USP Class VI) Silicone FFKM (Kalrez® 6375) FFKM (Kalrez® 6230 FDA /USP Class VI)
Max. Temperature	250 °C (482 °F)
Max. Pressure	25 bar (at 140 °C up to DN50/2") 16 bar (at 140 °C DN80/3")
Operating Wavelength Range	Sapphire: >279nm UV Sapphire: >249nm Fused Silica: <250nm
Optical Pathlength Accuracy	1% of optical pathlength or ± 0.05mm (whichever is greater)
Connection	Standard SMA905 fiber optic connector
Standard Certificates	Certificate of Compliance according to EN 10204-2.1 Inspection certificate 3.1 according to EN 10204-3.1 for all wetted parts Statement of electro polishing Pressure test certificate



Drawing shows cell with NIST traceable validation filter accessory on the right side of the cell.

For cells without this accessory, the dimensions are symmetrical to those on the left side.

For cells with three ports, all dimensions are per the left side of the cell as shown



Dimensions

Triclamp® Size		L1 Length (std fiber conn.)	L2 Length (w/NIST filter acc.)	W Body Width	H Height	A Flange diam.	B Bore diam.
0.25"(n)	DN 6(n)	66mm [2.6"]	140mm [5.5"]	49mm [1.9"]	80mm [3.2"]	25mm [1"]	4.57mm [0.2"]
0.25"	DN 6	66mm [2.6"]	140mm [5.5"]	49mm [1.9"]	80mm [3.2"]	25mm [1"]	6.5mm [0.3"]
0.375"	DN 8	66mm [2.6"]	140mm [5.5"]	49mm [1.9"]	80mm [3.2"]	25mm [1"]	7.75mm [0.3"]
0.5"	DN 10	66mm [2.6"]	140mm [5.5"]	49mm [1.9"]	80mm [3.2"]	25mm [1"]	9.5mm [0.4"]
0.75"	DN 15	66mm [2.6"]	140mm [5.5"]	49mm [1.9"]	80mm [3.2"]	25mm [1"]	15.75mm [0.6"]
1"	DN 25	81mm [3.2"]	155mm [6.1"]	58mm [2.3"]	80mm [3.2"]	50.5mm [2"]	26.0mm [1"]
1.5"	DN 40	86mm [3.4"]	160mm [6.3"]	65mm [2.6"]	80mm [3.2"]	50.5mm [2"]	34.8mm [1.4"]
2"	DN 50	96mm [3.8"]	170mm [6.7"]	82mm [3.2"]	80mm [3.2"]	64mm [2.5"]	47.5mm [1.9"]
3"	DN 80	106mm [4.2"]	180mm [7.1"]	110mm [4.3"]	80mm [3.2"]	91mm [3.6"]	72.9mm [2.9"]
4"	DN100	121.5mm [4.8"]	145.5mm [5.7"]	—	80mm [3.2"]	119mm [4.7"]	97.4mm [3.8"]

All sizes follow the imperial (table C) for Triclamps® according to DIN 32676 with the following exceptions:

1. The DN25/1" size follows the metric table to allow a full 20mm optical pathlength in the cell
2. The DN6/0.25" size is available with two different bore sizes. The normal (n) size to DIN 32676 would be 4.57mm. However, because of window diameter, a bore of 6.5mm ensures there is no dead volume around the window entries. OPLs less than 5mm are supplied with the standard 4.57mm bore. A 5mm OPL is supplied with cells having a 6.5mm bore.

Pathlength and Volume

Triclamp® Size		Standard Optical Pathlength Availability (mm)										Vol. (mL)	
		0.5	1	1.5	2	5	7	10	20	40	60		80
0.25"(n)	DN 6(n)	✓	✓	✓	✓								1.5
0.25"	DN 6					✓							2.6
0.375"	DN 8	✓	✓	✓	✓	✓							3.7
0.5"	DN 10	✓	✓	✓	✓	✓	✓						5.4
0.75"	DN 15	✓	✓	✓	✓	✓	✓						14
1"	DN 25	✓	✓	✓	✓	✓		✓	✓				27.9
1.5"	DN 40	✓	✓	✓	✓	✓		✓	✓				71.3
2"	DN 50	✓	✓	✓	✓	✓		✓	✓	✓			135
3"	DN 80	✓	✓	✓	✓	✓		✓	✓	✓	✓		323
4"	DN100	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	582
Abs Range (OD)		50	25	16.7	12.5	5	6.4	2.5	1.25	0.75	0.5	0.35	

Volumes are approximate and will vary depending upon optical pathlength

OD range stated relates to linear absorbance performance with Kemtrak DCP007 analyzer. Approx 2x is possible but linearization may be necessary