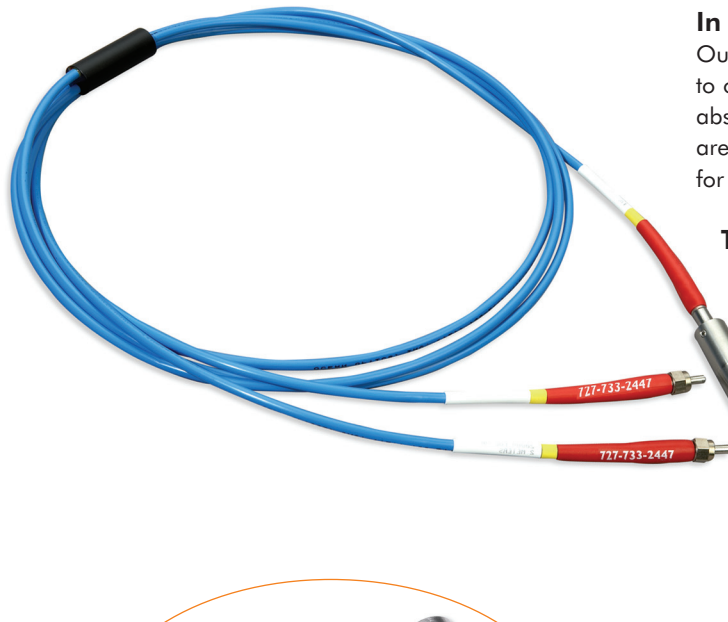




Transmission Dip Probes



The stainless steel RT-series tips screw onto the end of the T300-RT or T200-RT.

In Situ Monitoring

Our T300-RT and T200-RT Transmission Dip Probes couple to our spectrometers and light sources to measure absorbance and transmission in solutions. These probes are especially useful for embedding into process streams for in situ, real-time sample monitoring.

Theory of Operation

In transmission dip probes, light is transmitted from the illumination fiber through a plano-convex lens and through the sample compartment to a flat, second-surface mirror. The light reflects from this mirror and is focused by the lens onto the read fiber. The advantage of the transmission probe is its compact optical design, which fits into a 6.35-mm (1/4") outer diameter stainless steel body, or ferrule. The trade-offs with these probes are that they measure both transmitted light and backscattered light from the sample and have internal reflections that limit the dynamic range of the measurement. Still, at less than \$1,000, transmission probes are a cost-effective option for many on-line and lab applications.

T300-RT Design

The T300-RT-UV-VIS Transmission Dip Probe consists of two 300- μm solarization-resistant optical fibers -- one illumination optical fiber and one read optical fiber -- in a 3.175-mm (1/8") outer diameter stainless steel assembly that slides into a 127-mm long, 6.35-mm (1/4") outer diameter stainless steel ferrule. Each leg of the assembly has an SMA 905 termination so that one leg can be attached to a light source and the other to a spectrometer.

T200-RT Design

The T200-RT-VIS-NIR Transmission Dip Probe has the same optical design as the T300-RT-UV-VIS, but is made with two 200- μm VIS-NIR optical fibers in its assembly.

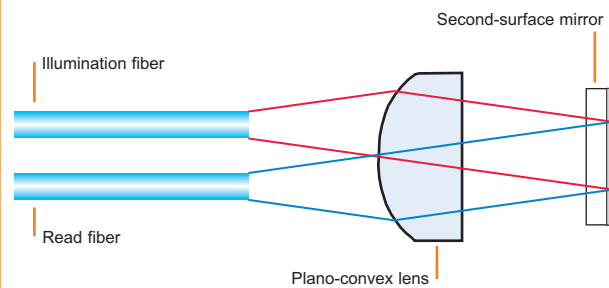
Process Applications

Both probes fit into a standard 1/4" Swagelok fitting for installation into a pipe or reactor. Probe optics are mounted with an epoxy that offers superior chemical resistance to most solvents and can tolerate high temperatures.

Screw-on Tips: Choose Your Pathlength

Available separately are the screw-on, interchangeable probe tips necessary to use either probe. The RT-series tips come in pathlengths of 2 mm, 4 mm, 5 mm or 10 mm so that sampling setups can be configured for optically dense or dilute solutions.

Transmission Dip Probe Operation



Specifications

Fiber type:	T300: 300 μm UV/SR fiber type (200-1100 nm) T200: 200 μm VIS-NIR fiber type (400-2500 nm)
Pressure limit:	100 psi
Temperature limit:	100 °C without sleeve
Outer diameter:	6.35 mm
Probe length:	127 mm
Fiber length:	2 meters
Breakout:	1.5 meters from the end of the probe
Optics:	Fused silica
Probe wetted materials:	Stainless steel, fused silica, EPO-TEK 353ND
Pathlength:	2, 4, 5 or 10 mm
Fiber jacketing:	PVC Monocoil
Connector:	SMA 905
Probe sleeve:	Stainless steel

