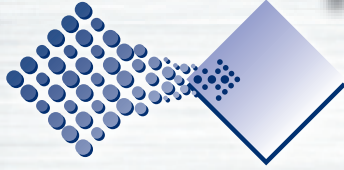


Fiber Optic Fluorescence Probes



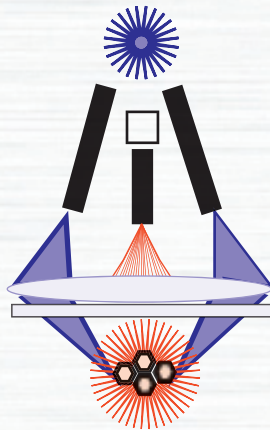
3300, 3400-FLU Series Process Fiber Optic Probes

Custom Sensors & Technology has been supplying process probes for the process industry for over 20 years. Recently we have introduced our front surface fluorescence probe* for demanding applications in the chemical, petrochemical, pulp & paper, food/beverage and pharmaceutical industries. Our standard designs will withstand 3000 psig and/or 300°C process conditions. Working in the UV-VIS regions of the spectrum, these probes are used when extractive sampling strategies are either environmentally or economically cost prohibitive and insitu information is critical.

*Patent Pending

Fluorescence Probe Description

FSFP Ray Trace



Front surface
probe



Fluorescence Probe Applications

Typical applications for the insitu fluorescence probe are;

- Cell viability
- Presence/absence of analyte
- Oil Water Separators
- API in pharmaceutical powders
- Biofouling onset
- Dye markers in fuels
- Oil in Water
- Surface fluorescence
- Fluorescence of liquids/solids/slurries

Theory of Operation

A narrow band of excitation energy is optically coupled into multiple fibers that strike a sample and cause the target compounds to emit radiation at a different wavelength region. The emitted radiation is collected by a fiber optic cable which transmits the energy back to highly sensitive detectors.

Traditional fluorescence measurements are made by sending a light beam into a sample and collecting the excited energy at 90° perpendicular. This approach is subject to the inner filter effect and can produce misrepresentation of data from either reabsorption of the excitation/emission energy or scattering of the excitation or emission energy if particles are present in the stream.

Custom Configurations

While the 3300 series probe is strictly used for fluorescence measurements, the 3400 series probe is just a different sizes of the same product. All probe models are patent pending.

The CST front surface probe can work in slurries, paste, or liquids as well as on solid surfaces.

Custom Sensors & Technology is a manufacturer of process photometric and electrochemical based process transmitters

Product Specifications

Mechanical	Fluorescence Probe, P/N 3300 & 3400
Weight	1, 2, 4 lbs depending on length and materials of construction
Body diameter	1/2", 12mm
Materials of construction	316SS Std, Other materials are available upon request
Temperature rating (Max)	300°C
Pressure rating ¹	3,000 psig
Optical materials	Quartz or Sapphire
Seals	Viton (standard), Chemraz™, Kalrez™, Buna, FDA Class 6 Epoxy can be combined with any elastomer seal
Optical	
Wavelength regions	230-2200nm
Fiber connection	SMA-905
Fiber optic type	UV-VIS-NIR
Sensing depth	<1 mm from from distal tip of probe
Options	
Automatic/Manual retraction	Pneumatic or external
Body Material	Hastelloy C, Monel, Titanium, others available please consult factory

*Notes:

1. Pressure test performed by independent 3rd party vendor. Results available upon request. Probes have been pressure tested to 3,000 psig. For pressure ratings at specific temperatures please consult the factory.
2. Conduit connection connects to 1' flexible conduit.
3. Probes used in Bioprocessing applications are supplied with Electropolished finishes of 12RA or better.

Custom Sensors & Technology is a full service provider. We also supply photometric transmitters, fiber optic probes & flow cells, O₂ transmitters, sample handling systems, and services including: application engineering, commissioning & start-ups, product validation, factory acceptance testing, process stream GAP Analysis, and in-house repair.