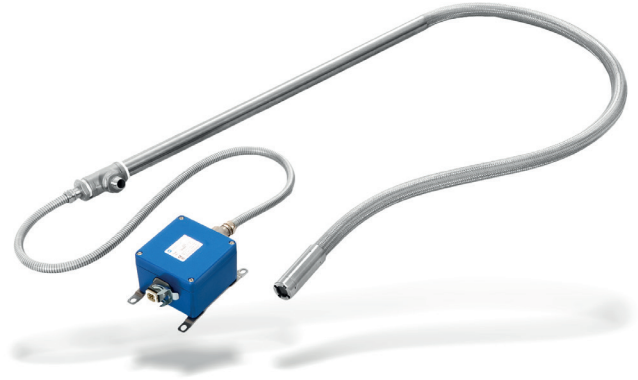


Fiber Optic Lance

Applications

- high temperatures at the viewing position
- in case of strong vibrations at the viewing position
- space problems at the viewing position
- tilting burners



The Fiber Optic Lances are an extension of the application range of our flame monitoring systems. They are characterized by their high temperature and vibration resistant and their robust design. This makes them ideal for applications where the installation or cooling of an electronic probe is difficult or impossible.

High-quality quartz fibers are used, which with their transmission spectra from the ultraviolet to the visible to the far infrared range are optimally matched to the semiconductor sensors of the flame sensor. This makes it possible to use it in different emission limits of flame radiation and thus an application for all types of fuel.

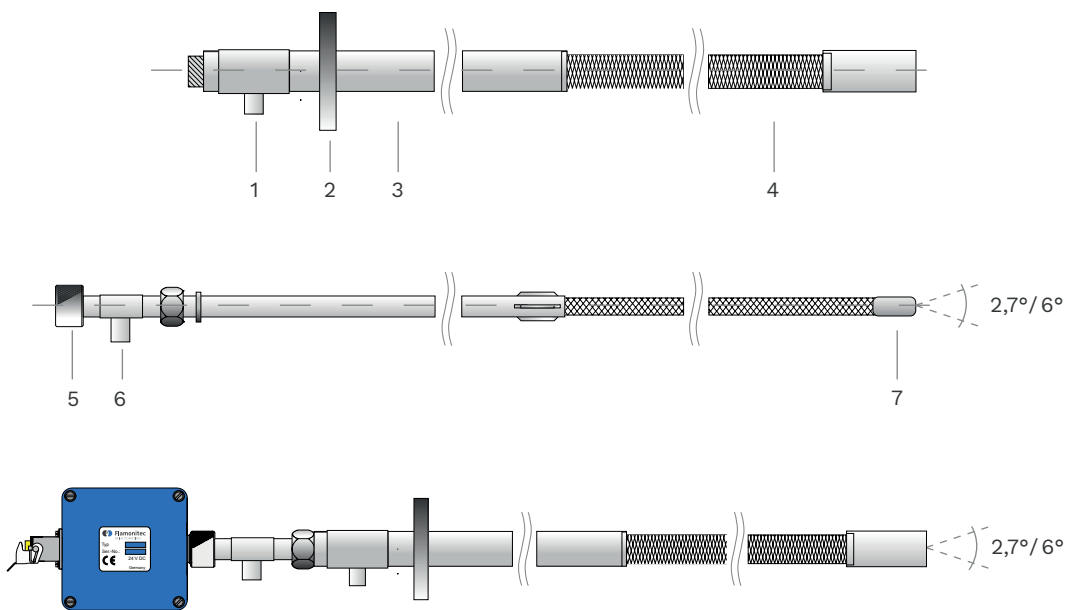
The glass fibers are integrated into a flexible, robust cable with stainless steel cladding and silicone jacket. The fiber optic cable is thus characterized by water and dust tightness, acid resistance and temperature stability.

The probe is equipped with optics that project light with a viewing angle of 2.7° or 6° onto a fiber optic cable. The probe has a ambient temperature stability of up to +600 °C. The lengths of the optical fibers depend on the local conditions and are selected for specific systems. The total length should not exceed 20 m.

1 | Design

Fiber Optic Lances are developed and manufactured on project- and customer-specific basis. The lance can be assembled from any combination of rigid and flexible sections, which allows for specific and individual solutions.

The rigid sections are usually used for fastening or for feeding purging and/or cooling air. Fiber Optic Lances laid in guide tubes are easy to maintain because they can be removed from the system and reinstalled.



1. ½" cooling air connection
2. Flange accor. customer specification
3. Rigid part of guide tube
4. Flexible part of guide tube
5. Connection for Scanner
6. ½" Purge air connection
7. Sensor head with lens

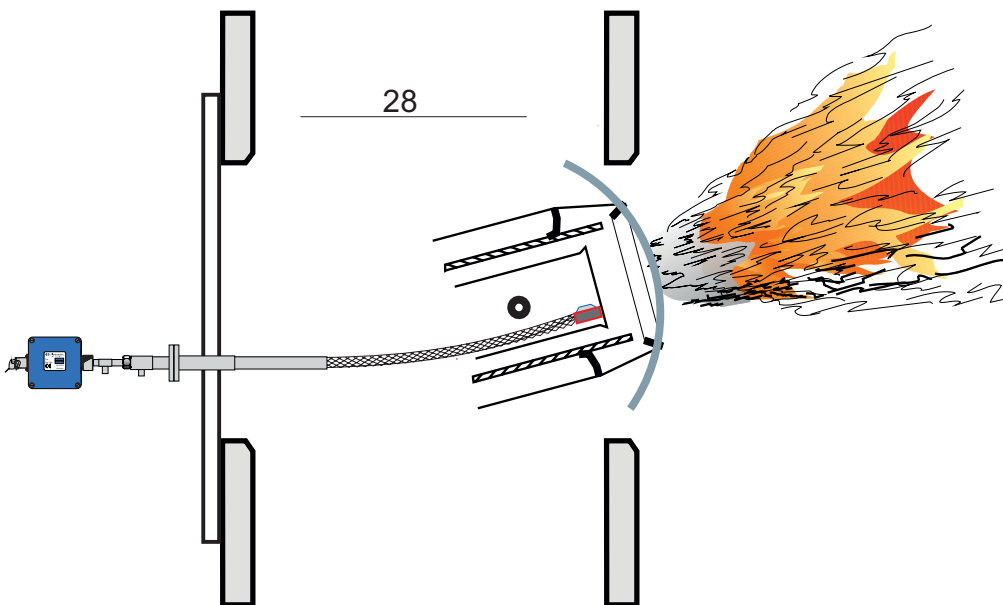
2 | Applications

Poorly accessible viewing positions through long burner designs

The radiation intensity of the flame monitoring is reduced significantly by long forms of burners. Fiber Optic Lances can be mounted directly at the fuel outlet of such burner design and thus detect the flame radiation from a short distance from the original flame. This increases not only the flame intensity but also the external light safety in multi-burner systems.

Tilting burner

Especially for tilting burners, the requirement for flame monitoring is very high, as the viewing position is dynamic. Monitoring is only possible if the flame monitoring follows this dynamic. The realization here is likewise effected with a Fiber Optic Lance, the Sensor Head of which is fixedly mounted on the tilting burner and thus ensures an always identical viewing position. Purging and cooling air prevent overheating of the Fiber Optical Lance and the deposition of combustion residues on the Sensor Head.





3 | Technical data

Spectral transmission range UV IR	190 to 1200 nm 300 to 2450 nm
Ambient temperature	-40 °C to +600 °C
Flange connection	ISO 228 G1
LWL-design	LWL-bundle
∅ Bundle with Agraf-tube	approx. 17 mm
Material	Stainless steel
Guide tube	∅ 33,7 mm
Bending radius	> 100 mm
Purge air connection	1/2 "
Purge air quantity	7 m ³ /h
Cooling air connection	1/2 "
Cooling air quantity	7 m ³ /h