



## METAL-COATED SILICA FIBERS

(Excellent long life fibers for harsh environmental applications)

Hermetically sealed metal-coated optical fibers have all the benefits of silica-silica fibers. Additional significant improvements include increased mechanical strength and greater fatigue resistance compared to non-hermetic and polymer-clad fibers (PCS). Their transmittance covers a spectral range of 200 to 2400 nm, and also remains stable in corrosive chemicals that normally react to silica glass. The temperature range is from -196°C to +600°C and a humidity range of up to 100%. Hermetically metal-coated optical fibers are the optimum candidate when used in high vacuum and harsh environmental conditions

### **Features:**

- ❖ Greatly enhanced resistance to high power laser radiation.
- ❖ Higher core-to-clad ratio and enlarged NA optimised for coupling to high-energy lasers.
- ❖ Better fiber cooling due to the heat-conducting metal coating.
- ❖ Excellent mechanical strength and flexibility compared to polymer coated fibers.
- ❖ Radiation resistant construction.
- ❖ Sterilizable using ETO, steam, e-beam or gamma radiation methods.
- ❖ Capability to feed the fibers into a high vacuum: the metal coating can be soldered and will not outgas.

### **Fiber Specifications**

Core material	pure synthetic silica (low OH or high OH)
Clad material	doped silica
Clad/core ratios	1.05; 1.1; 1.2; 1.4
Numerical Aperture (NA)	0.22 ± 0.02 (another on request)
Minimal bend radius	40 times the fiber radius (long term)
Material of additional polymer jacket	on request

### **Material of hermetic protective coating (Coating material)**

	Al	Cu
Coating thickness, µm	15 to 150	15 to 150
Fiber diameter, µm	100 to 1200	100 to 800
Static fatigue parameter n	>100	>100
Min operating temperature, °C	-196	-196
Max operating temperature		600

*Other parameters are available on the request*