

Optical Fiber Specifications

The tables below provide specifications of the optical fiber used in each of our optical fiber assemblies.

Boot Collars

(indicates fiber type)

• Gray	Solarization-resistant	UV/SR-VIS	190-800 nm (most efficient)
• Blue	High OH content	UV-VIS	300-800 nm (most efficient)
• Red	Low OH content	VIS-NIR	400-2100 nm (most efficient)

Specifications

Fiber & Probe Assemblies	8 μm assemblies	50 μm assemblies	100 μm assemblies
Fiber Type	wavelength-specific	••	••
Core Size Diameter	8 μm +/-0.5 μm	50 μm +/-5 μm	100 μm +/-3 μm
Cladding Thickness	58 μm +/-3 μm	35 μm +/-0.5 μm	12 μm +/-5 μm
Buffer Thickness	60 μm +/-5 μm	17 μm +/-5 μm	17 μm +/-3 μm
Buffer Material	Acrylate	Polyimide	Polyimide
Maximum OD Total	250 μm	155 μm	155 μm
Operating Temperature	-50 to 85 °C	-65 to 300 °C	-65 to 300 °C
Long-term Bend Radius	4 cm	4 cm	4 cm
Short-term Bend Radius	2 cm	2 cm	2 cm

Fiber & Probe Assemblies	200 μm assemblies	200 μm assemblies	300 μm assemblies	300 μm assemblies
Fiber Type	•	••	•	•
Core Size Diameter	200 μm +/-4 μm	200 μm +/-4 μm	300 μm +/-6 μm	300 μm +/-6 μm
Cladding Thickness	10 μm +/-3 μm	10 μm +/-4 μm	15 μm +/-7 μm	15 μm +/-3 μm
Buffer Thickness	45 μm +/-21 μm	10 μm +/-5 μm	20 μm +/-10 μm	45 μm +/-21 μm
Buffer Material	Aluminum	Polyimide	Polyimide	Aluminum
Maximum OD Total	331 μm	243 μm	380 μm	441 μm
Operating	-269 to 400 °C	-65 to 300 °C	-65 to 300 °C	-269 to 400 °C

Temperature				
Long-term Bend Radius	4 cm	8 cm	12 cm	6 cm
Short-term Bend Radius	2 cm	4 cm	6 cm	3 cm

Fiber & Probe Assemblies	400 μm assemblies	400 μm assemblies	500 μm assemblies
Fiber Type	•	••	••
Core Size Diameter	400 μm +/-8 μm	400 μm +/-8 μm	500 μm +/-10 μm
Cladding Thickness	20 μm +/-3 μm	20 μm +/-3 μm	25 μm +/-3 μm
Buffer Thickness	45 μm +/-21 μm	20 μm +/-7 μm	20 μm +/-10 μm
Buffer Material	Polyimide	Polyimide	Polyimide
Maximum OD Total	441 μm	487 μm	600 μm
Operating Temperature	-269 to 400 $^{\circ}\text{C}$	-65 to 300 $^{\circ}\text{C}$	-65 to 300 $^{\circ}\text{C}$
Long-term Bend Radius	6 cm	16 cm	20 cm
Short-term Bend Radius	3 cm	8 cm	10 cm

Fiber & Probe Assemblies	600 μm assemblies	1000 μm assemblies	1000 μm assemblies
Fiber Type	•••	•	•
Core Size Diameter	600 μm +/-10 μm	1000 μm +/-20 μm	1000 μm +/-3 μm
Cladding Thickness	30 μm +/-3 μm	25 μm +/-3 μm	50 μm +/-3 μm
Buffer Thickness	25 μm +/-10 μm	50 μm +/-40 μm	50 μm +/-40 μm
Buffer Material	Polyimide	Acrylate	Acrylate
Maximum OD Total	720 μm	1065 μm	1120 μm
Operating Temperature	-65 to 300 $^{\circ}\text{C}$	-50 to 85 $^{\circ}\text{C}$	-50 to 85 $^{\circ}\text{C}$
Long-term Bend Radius	24 cm	30 cm	30 cm
Short-term Bend Radius	12 cm	15 cm	15 cm

Numerical Aperture

The numerical aperture of our optical fibers and probes is 0.22 ± 0.02 and yields an acceptance angle of 25.4° in air.

