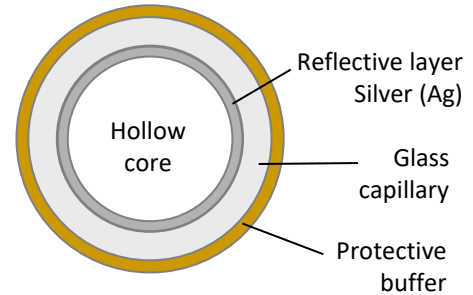




VNIR Hollow Fiber Optics



Hollow core fiber

Hollow fibers with a silver reflective coating enable convenient delivery of high energy pulsed lasers. Coupling efficiency can be near 100% and pulse dispersion is negligible.

Fiber Internal Diameter (ID)

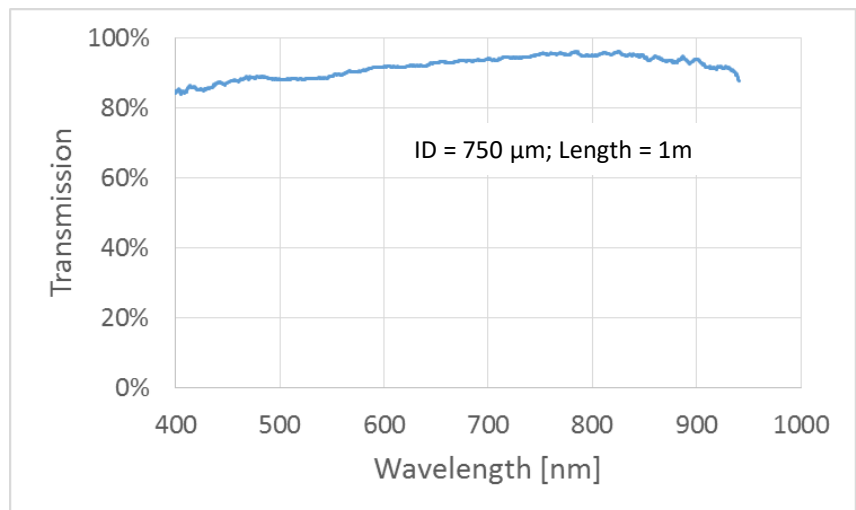
Overall transmission in hollow fibers depends strongly on the fiber internal diameter (ID). We offer three different standard ID size options ranging from ID = 500 μm to 1000 μm , and all of these fibers are multimode. Bending of the fiber will affect the beam quality and lead to higher loss. For best results, an input beam should be focused straight into the hollow fiber with a relatively long focal length optic such that the focused spot size is about $\frac{1}{2}$ the fiber ID.

Silver Reflective Layer

For the visible to NIR wavelength range ($\lambda = 400 - 1000 \text{ nm}$), a bare silver layer is deposited on the inside of glass capillary tubing. The surface quality of the silver layer is vitally important, and Guiding has developed coating techniques to minimize surface roughness enabling relatively high transmission.

Internal Diameter (ID)	500 μm	750 μm	1000 μm
Typical Loss (straight)	1.0 dB/m	0.4 dB/m	0.3 dB/m
Max Energy* ($\lambda = 532 \text{ nm}$; 5 ns)	20 mJ	50 mJ	75 mJ
Maximum Power *	30 W	50 W	100 W
Minimum Bend Radius	10 cm	20 cm	50 cm
Patch Cable Length	0.1 - 5.0 m		

* Assuming proper coupling. Initial alignment should always be done at reduced power.



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We are a spin-off from Opto-Knowledge Systems, Inc.