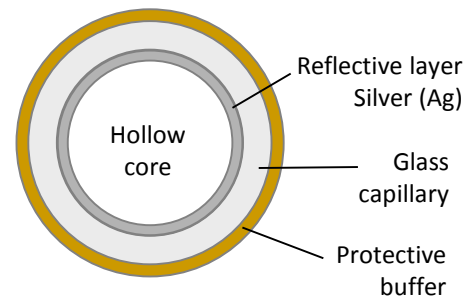


## VNIR Hollow Fiber Optics



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.

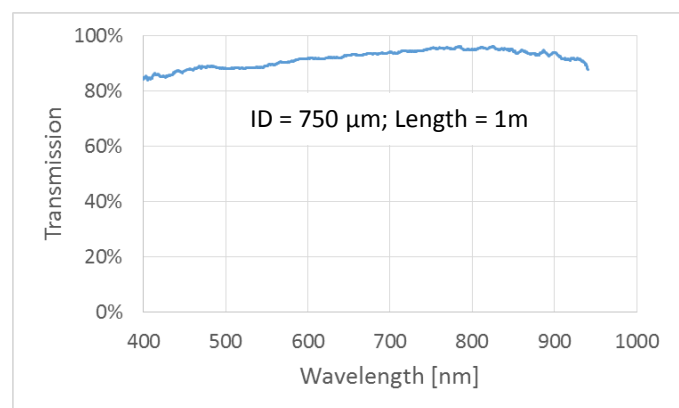
### Fiber Internal Diameter (ID)

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  $\mu\text{m}$  to 1000  $\mu\text{m}$ , 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.

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

### 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 OKSI has developed coating techniques to minimize surface roughness enabling relatively high transmission.



### Related Products

Related hollow fiber optics are available for additional wavelength regimes from UV up to THz including a full line of hollow fiber optics products designed specifically for mid-infrared (Mid-IR) applications ( $\lambda = 2 - 14 \mu\text{m}$ ). Note: the coating structure for such fibers, includes a dielectric layer with composition and thickness tuned specifically for a given wavelength range.

Opto Knowledge

Recipient of the 2011 Tibbetts Award

