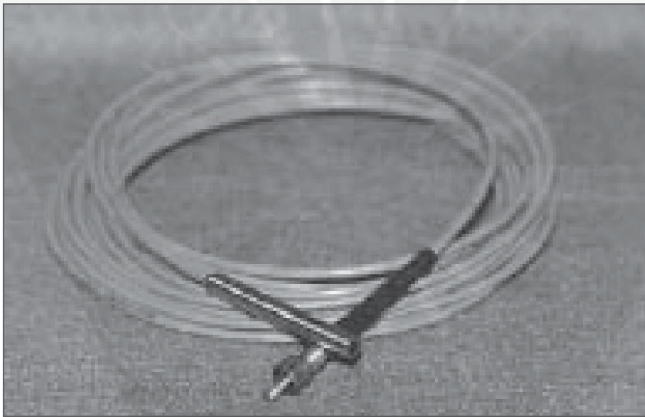


## Product Data Sheet

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### Tapered Optical Waveguides - FO-T Series



FO-T Series products incorporate a fiberoptic taper which is a dielectric waveguide that has a radii that varies with length. They can be used as high power laser input devices and as such would have an input core diameter that is larger than the output core diameter. However they can also be used in the opposite direction either as output devices to lower the emerging NA or fabricated as an "up" taper on a standard fiberoptic to increase the accepting NA which is useful in Laser Diode and sensing applications.

**Sizes:** FO-T Series products are available in input to output core ratios of 10:1 or 1:10 depending on whether it is an "down" or "up" taper.

**Lengths:** Down tapers are made separately, and fused to the desired fiber, if a fiber pigtail is desired, while "up" tapers are fabricated directly onto the fiber selected. In either case, virtually any length unit can be provided.

**Materials:** Fused Silica or Borosilicate Glass.

**Power Capabilities:** It has been shown that fused silica taper assemblies such as this can achieve 2 X 10<sup>9</sup> Watts/cm<sup>2</sup> at the output end of a 600µm core fiber at 1060nm using 15ns pulses.

#### Features & Benefits

- Lower surface energy density reduces surface damage.
- Reduces dielectric breakdown of the air.
- Folded focal point reduces the potential of self-focusing.
- Allows for simpler input optics and easier alignment.
- Increase or decrease NA.
- Optimum shape for high pressure optical feedthroughs.
- Laser ignition.
- High power laser coupling.
- Laser diode coupling.
- Laser calibration systems.
- LIDAR and other low divergence, low energy, detection systems.
- Diffuse signal collection in sensing systems such as bio-fluorescence.
- High pressure optical feedthroughs.

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QUALITY FIBER COMPONENTS, EQUIPMENT, & SUPPLIES

## Product Data Sheet

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### Ordering Information

FO-T Series products need to be specified with regard to their sizes, lengths, fiber type and end terminations.

The input size is the core diameter of the taper input.

The output size is the core diameter of the taper output. If the taper is part of - or to be pigtailed to - a fiberoptic, the output size will be the fiber core size.

The fiber type is the same as the material type for the taper and can be fused silica (UV-VIS, VIS-NIR, Other) or Borosilicate Glass.

The end terminations will be a 3/8" or 1/4" diameter ferrule or any of the standard fiberoptic connectors that are available.

FO-TAB/CDEF

Sheathing: 1=BX 2=PVC 3=Other

Overall Length (meters): Ex: 1=1 meter

Termination Style (Input/Output):

1 = SMA                      2 = AT&T Type ST  
3 = 1/4" Ferrule          4 = 3/8" Ferrule

Input/Output Size:

Ex: 02 = 200µm, 20 = 2mm  
2002 = 2mm to 200µm

Fiber Type:

1 = Silica (UV/VIS)    2 = Silica (Vis/NIR)  
3 = Borosilicate Glass