

## ▼ CHAPTERS

Fiber Patch  
Cables

Bare Fiber

Fiber  
OptomechanicsFiber  
ComponentsTest and  
Measurement

## ▼ SECTIONS

SM Fiber

PM Fiber

Doped Fiber

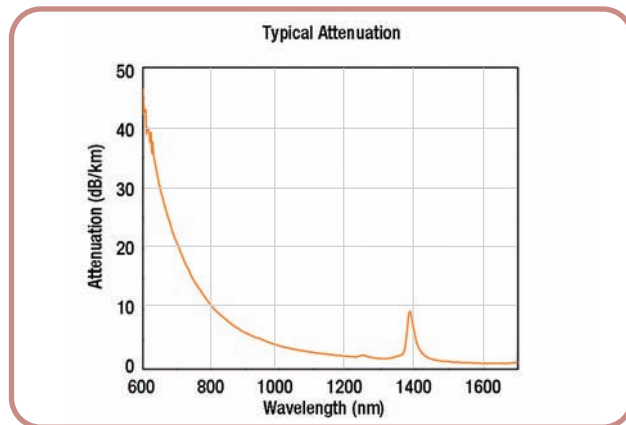
PCF

MM Fiber

Plastic Optical Fiber

## Endlessly Single Mode Photonic Crystal Fiber

A conventional single mode fiber is actually multimode for wavelengths shorter than the second-mode cutoff wavelength, limiting the useful operating wavelength range in many applications. In contrast, NKT Photonics' endlessly single mode Photonic Crystal Fibers (PCFs) are truly single mode at all wavelengths for which fused silica is transparent, regardless of the core size. In practice, the useful operating wavelength range is limited only by bend loss. Although the cladding possesses six-fold symmetry, the mode profile is very similar to the quasi-Gaussian fundamental mode of a conventional axially symmetric step-index fiber resulting in a form overlap that is >90%. Unlike conventional fibers, these fibers are fabricated from a single material – undoped high-purity fused silica glass.



### Specifications

ITEM #	ESM-12B
MFD	$10 \pm 1 \mu\text{m}$ @ 1550 nm
Attenuation	<4 dB/km @ 1060 nm <15 dB/km @ 1384 nm <1 dB/km @ 1550 nm
NA	$0.1 \pm 0.05$ @ 1550 nm
Core Diameter	$12 \pm 1 \mu\text{m}$
Cladding Diameter	$125 \pm 3 \mu\text{m}$
Coating Diameter	$240 \pm 15 \mu\text{m}$
Cladding Material	Pure Silica
Coating Material	Acrylate

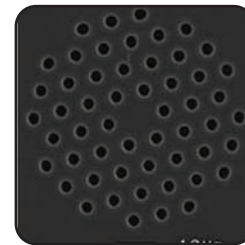
ITEM #	LENGTH	\$	£	€	RMB
ESM-12B	1 to 9 m	\$ 112.00	£ 80.64	€ 97.44	¥ 892.64
	10 to 49 m	\$ 89.60	£ 64.52	€ 77.96	¥ 714.12

### Features

- Single Mode at All Wavelengths
- Operating Wavelength Range: 600 - 2000 nm
- Near-Gaussian Mode Profile
- Single Material
- Attenuation <0.8 dB/km for ESM-12B @ 1550 nm
- Low Bend Loss
- Standard Core Sizes: 12  $\mu\text{m}$  (Other Sizes Available upon Request)
- Can be Provided with Connectors or Hermetically Sealed Ends

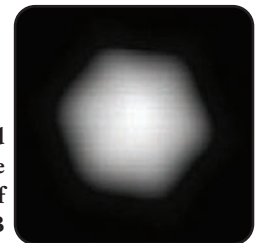
### Applications

- Delivery of High-Power Broadband Radiation in a Single Spatial Mode
- Short Wavelength Applications (Visible and UV)
- Sensors and Interferometers

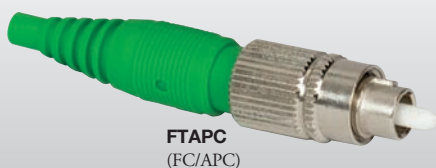


SEM of ESM-12B

Measured Near-Field  
Profile  
(log scale) of  
ESM-12B



## Have you seen our...



See page 1140

## Light Trap Connectors

- ◆ Reduce Back Reflection of Unused Feed Through Ports
- ◆ Back Reflection Better than -50 dB
- ◆ FC/PC, FC/APC, or SMA Connector
- ◆ 1260 - 1620 nm Wavelength Range

Thorlabs' Terminating Connectors are designed to be used with feed through ports that do not have an output fiber connected to them. Light coupled into them is diffused rather than reflected back into the source, reducing the back reflection by roughly 20 dB.