

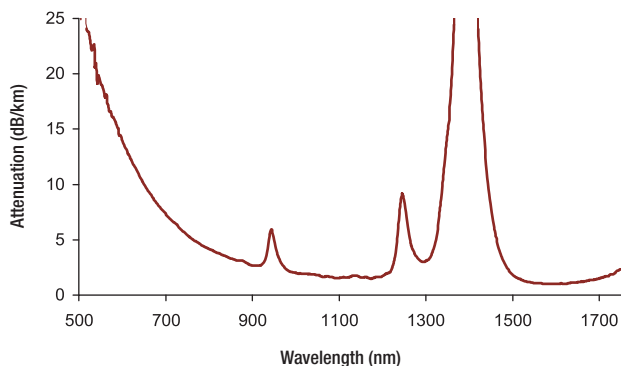
## Endlessly Single Mode Photonic Crystal Fiber

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, Crystal Fibre's 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.

### Features

- Single Mode at All Wavelengths
- Operating Wavelength Range of 350 - 1800 nm
- Near-Gaussian Mode Profile
- Single Material
- Attenuation <0.8 dB/km for ESM12-01 @ 1550 nm
- Low Bend Loss
- Standard Core Sizes 12 μm with Other Sizes upon Request
- Can be Provided with Connectors or Hermetically Sealed Ends

Loss vs Wavelength of ESM-12-01

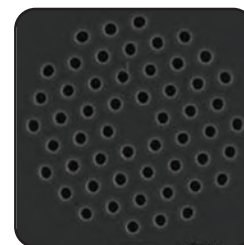


### Applications

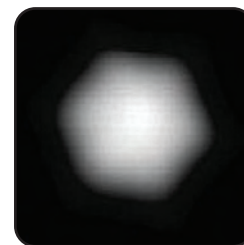
- Delivery of High-Power Broadband Radiation in a Single Spatial Mode
- Short Wavelength Applications (Visible Light and UV)
- Sensors and Interferometers

### Specifications

- **Mode Field Diameter:** 6.4 μm @ 1550 nm
- **Attenuation:** <1.0 dBm/km
- **Chromatic Dispersion @ 1550 nm:** 30 ps/nm/km
- **Chromatic Dispersion Slope @ 1550 nm:** 0.7 ps/nm<sup>2</sup>/km
- **Pitch, Λ (Spacing Between Holes):** 8.0 μm
- **d/Λ (Hole Diameter Relative to Pitch):** 0.46
- **Core Diameter:** 12.0 μm
- **Diameter of Holey Region:** 60 μm
- **Outside Diameter:** 125 ± 1 μm
- **Coating Diameter (Single Layer Acrylate):** 220 μm



SEM of ESM-12-01



Measured Near-Field Profile (log scale) of ESM-12-01

| ITEM#      | LENGTH      | \$        | £       | €       | ¥       |
|------------|-------------|-----------|---------|---------|---------|
| ESM-12-01* | 1 - 9 m     | \$ 112.00 | £ 77.30 | € 99,70 | ¥945.30 |
|            | 10 - 49 m   | \$ 70.00  | £ 48.30 | € 62,30 | ¥590.80 |
|            | 50 m and Up | \$ 60.00  | £ 41.40 | € 53,40 | ¥506.40 |

\*This fiber is experimental and may be subject to modification, production limitations or cancellation

