Hollow-core fibers enable a large variety of applications which require performances that cannot be met using traditional solid-core fibers.

In hollow-core photonic bandgap fibers, a microstructured silica cladding with air holes confines the light inside a hollow core.

Applications

- Power delivery
- Pulse shaping and compression
- Gas spectroscopy
- Nonlinear optics
- Fiber optic gyroscopes
- Sensors
- Narrow linewidth delivery
Unique properties
The hollow core allows control of the gas composition and pressure, enabling extremely long interaction lengths between the light and the gas.

The weak interaction between the fundamental mode and the surrounding silica also makes these fibers radiation insensitive.

Reduced non-linearities
Since only a small fraction of the light propagates in silica, the effect of material non-linearities is significantly reduced compared to solid core fibers.

Our standard products cover three wavelength ranges around the wavelengths: 800 nm, 1060 nm, and 1550 nm. Talk to us about custom wavelengths.

Features
• > 98% of the optical power is located in the hollow core
• Can be gas or particle filled
• Ultra-low bend loss
• Low Fresnel reflections at end faces
• Group index close to unity
• Radiation insensitive
• Pure silica

Schematic fiber cross section

Typical near field intensity profile
## SPECIFICATIONS

### Optical

<table>
<thead>
<tr>
<th>Model</th>
<th>HC-800</th>
<th>HC-1060</th>
<th>HC-1550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design wavelength [nm]</td>
<td>820</td>
<td>1060</td>
<td>1550</td>
</tr>
<tr>
<td>Operating wavelength loss threshold [dB/km]</td>
<td>250</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>Operating wavelengths [nm]</td>
<td>780-860</td>
<td>1030-1090</td>
<td>1490-1680</td>
</tr>
<tr>
<td>Mode field diameter @ design wavelength [µm]$^1$</td>
<td>5.5 ± 2.0</td>
<td>6.7 ± 1.0</td>
<td>9.0 ± 1.0</td>
</tr>
</tbody>
</table>

$^1$ Full 1/e² width of the near field intensity distribution

### Physical properties

<table>
<thead>
<tr>
<th>Model</th>
<th>HC-800</th>
<th>HC-1060</th>
<th>HC-1550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core diameter [µm]</td>
<td>7.5 ± 1.5</td>
<td>9.0 ± 1.5</td>
<td>11.5 ± 1.0</td>
</tr>
<tr>
<td>Cladding diameter [µm]</td>
<td>130 ± 5</td>
<td>120 ± 5</td>
<td>120 ± 2</td>
</tr>
<tr>
<td>Coating diameter (single-layer acrylate) [µm]</td>
<td>220 ± 50</td>
<td>240 ± 40</td>
<td>220 ± 30</td>
</tr>
</tbody>
</table>

### Typical attenuation

![Attenuation graph](image-url)