Optical signal in a hollow core photonic bandgap fiber is guided in an air core surrounded by a high air filling factor PBG microstructured region (>90%). Added to the low bend sensitivity due to the core high NA, this confers to this fiber design significantly reduced material nonlinearities since more than 95% of optical power is propagating in air.

In addition air/undoped silica provides excellent temperature immunity critical for high performance fiber sensing and metrology applications.

Partnership with Phononics Bretagne

**Key Features**
- Air core, ultra-low nonlinear coefficient
- Low background losses
- Low dispersion in the centre of the transmission band
- High damage threshold
- Nearly single mode guidance
- Ultra low dispersion in the transmission bands
- Faster light transmission

**Applications**
- Power delivery
- Fibre sensors
- Nonlinear applications
- Pulse compression and shaping
- Laser machining
- Gas-filled AR hollow core fibre laser
- Molecular tracing
- Gas detection
- High power delivery for pico and sub-picoseconds optical pulses
- Low latency data transmission

**Main Specifications**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Core diameter (μm)</th>
<th>Cladding diameter (μm)</th>
<th>Center wavelength (nm)</th>
<th>Minimum attenuation (dB/km)</th>
<th>Spectral transmission window (nm)</th>
<th>Maximum attenuation in transmission window (dB/km)</th>
<th>MFD (μm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXF-HCF-10-100-950</td>
<td>10 +/- 1</td>
<td>100 +/- 5</td>
<td>950 +/- 10</td>
<td>125</td>
<td>910 - 970</td>
<td>200</td>
<td>8 +/- 1</td>
</tr>
<tr>
<td>IXF-HCF-10-110-1060</td>
<td>10 +/- 1</td>
<td>110 +/- 5</td>
<td>1060 +/- 20</td>
<td>40</td>
<td>1010 - 1120</td>
<td>100</td>
<td>8.5 +/- 1</td>
</tr>
<tr>
<td>IXF-HCF-11-80-750</td>
<td>11 +/- 1</td>
<td>80 +/- 5</td>
<td>750 +/- 10</td>
<td>135</td>
<td>700 - 780</td>
<td>300</td>
<td>8.5 +/- 1</td>
</tr>
<tr>
<td>IXF-HCF-12-85-785</td>
<td>12 +/- 1</td>
<td>85 +/- 5</td>
<td>785 +/- 10</td>
<td>125</td>
<td>770 - 800</td>
<td>300</td>
<td>8.5 +/- 1</td>
</tr>
</tbody>
</table>

**Common specifications**
- Fibre material: synthetic silica
- Optical power fraction: > 90 %
- Effective modal index: 0.99
- Core concentricity error < 0.5 μm
- Coating outside diameter: 240 +/- 10
- Coating type: dual coat high index coating
- Proof test level: 75 kpsi

**Main Specifications of Anti Resonant Fiber**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Core diameter (μm)</th>
<th>Core NA</th>
<th>Cladding diameter (μm)</th>
<th>Coating diameter</th>
<th>Center wavelength (nm)</th>
<th>Attenuation (dB/km)</th>
<th>MFD (μm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXF-ARF-33-160</td>
<td>33 +/- 2</td>
<td>0.03</td>
<td>66 +/- 2</td>
<td>325 +/- 5</td>
<td>1064</td>
<td>&lt; 50 @ 1064 nm</td>
<td>26 @ 1064 nm</td>
</tr>
<tr>
<td>IXF-ARF-45-240</td>
<td>46 +/- 2</td>
<td>0.03</td>
<td>99 +/- 3</td>
<td>355 +/- 5</td>
<td>1550</td>
<td>&lt; 35 @ 1550 nm</td>
<td>37 @ 1550 nm</td>
</tr>
<tr>
<td>IXF-ARF-40-230</td>
<td>40 +/- 2</td>
<td>0.03</td>
<td>105 +/- 5</td>
<td>340 +/- 10</td>
<td>2000</td>
<td>&lt; 80 @ 2 μm</td>
<td>33.5 @ 2 μm</td>
</tr>
</tbody>
</table>

**Common specifications**
- Fibre material: air core
- Mode overlap with core: > 99.99 %
- Coating type: dual coat high index coating
- Proof test level: 50 kpsi