**MATERIAL SPECIFICATIONS**

Coefficient of Thermal Expansion: 5 – 7 ppm/°C
(-75 °C to 200 °C)

Equibiaxial Flexure Strength*: 68.7 ksi [68,700 psi, 480 MPa]
(Tested in Ring-On-Ring Configuration)

Modulus of Elasticity: 54E+06 psi [372 GPa]
(Tested per ASTM C1259)

Knoop Hardness: 1500 – 1800
(Tested per ASTM C730)

Absorption: 80 – 150 ppm/cm
(1.064 um)

*Average strength value for testing is in accordance with ASTM C1499.
Value is representative of samples prepared via II-VI Optical Systems fabrication process.

**SIZES AVAILABLE**

A-plane:
Up to: 330mm Diameter x 150mm Thickness

C-plane, R-plane, M-plane:
Up to: 330mm x 150mm x 10mm
Thicker blanks possible with smaller cross-section

**TYPICAL MEASURED VALUES**

<table>
<thead>
<tr>
<th>Transmission (0.22&quot; thickness)</th>
<th>( \lambda )</th>
<th>( T )</th>
<th>( \lambda )</th>
<th>( n )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.70 ( \mu ) m</td>
<td>86.0%</td>
<td>0.70 ( \mu ) m</td>
<td>1.7627</td>
<td></td>
</tr>
<tr>
<td>1.06 ( \mu ) m</td>
<td>86.3%</td>
<td>1.06 ( \mu ) m</td>
<td>1.7543</td>
<td></td>
</tr>
<tr>
<td>1.57 ( \mu ) m</td>
<td>86.5%</td>
<td>1.57 ( \mu ) m</td>
<td>1.7455</td>
<td></td>
</tr>
<tr>
<td>3.00 ( \mu ) m</td>
<td>87.8%</td>
<td>3.00 ( \mu ) m</td>
<td>1.7121</td>
<td></td>
</tr>
<tr>
<td>4.00 ( \mu ) m</td>
<td>87.1%</td>
<td>4.00 ( \mu ) m</td>
<td>1.6751</td>
<td></td>
</tr>
<tr>
<td>5.00 ( \mu ) m</td>
<td>57.0%</td>
<td>5.00 ( \mu ) m</td>
<td>1.6240</td>
<td></td>
</tr>
</tbody>
</table>

%\( T \) - A-plane Sapphire - 0.220" thick

II-VI Optical Systems world-class material experts and growth operation produce A-plane, C-plane, R-plane, M-plane sapphire utilizing a method that provides extraordinary mechanical strength, high optical transmission and low Transmitted Wavefront Distortion (TWF). These attributes make sapphire boules a preferred material choice for many dome or windows defense and aerospace applications.

II-VI Optical Systems utilizes a vertically integrated sapphire product line, and has control of growth, window processing, rods, domes, coating and assembly.

II-VI Optical Systems has demonstrated sapphire characteristics consistent with known industry values, and has material experts on staff to answer any technical questions you may have.