

MATERIAL SPECIFICATIONS

Coefficient of Thermal Expansion: (-75 °C to 200 °C)	5 – 7 ppm/°C
Equibiaxial Flexure Strength*: (Tested in Ring-On-Ring Configuration)	68.7 ksi [68,700 psi, 480 MPa]
Modulus of Elasticity: (Tested per ASTM C1259)	54E+06 psi [372 GPa]
Knoop Hardness: (Tested per ASTM C730)	1500 – 1800
Absorption: (1.064 μm)	80 – 150 ppm/cm

*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

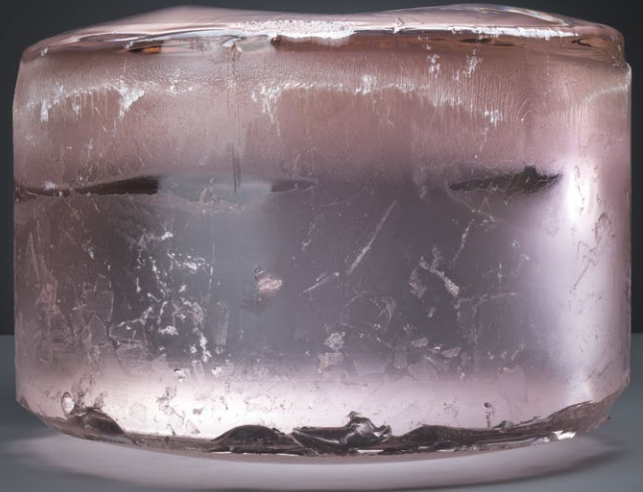
C-plane, R-plane, M-plane:
Up to: 330mm x 150mm x 10mm
Thicker blanks possible with smaller cross-section

Sapphire Boules | HEM

II-VI Optical Systems world-class material experts and growth operation produce A-plane, C-plane, R-plane, M-plane and sapphire boules utilizing a Heat Exchange Method (HEM) that provides extraordinary mechanical strength, high optical transmission and low Transmitted Wavefront Distortion (TWF). These attributes make HEM sapphire 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.



TYPICAL MEASURED VALUES	Transmission: (0.22" thickness)	λ	0.70 μm	T	86.0%	Index of Refraction:	λ	0.70 μm	n	1.7627
			1.06 μm		86.3%			1.06 μm		1.7543
			1.57 μm		86.5%			1.57 μm		1.7455
			3.00 μm		87.8%			3.00 μm		1.7121
			4.00 μm		87.1%			4.00 μm		1.6751
			5.00 μm		57.0%			5.00 μm		1.6240

