Attalon

Attalon
Sapphire Boules

Attalon 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.

Attalon utilizes a vertically integrated sapphire product line, and has control of growth, window processing, rods, domes, coating and assembly.

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

MATERIAL SPECIFICARIONS

Coefficient of Thermal Expansion (a-plane & c-plane) (-75 c to 200°c)	**5 - 7 ppm/C°**
Euibiaxial 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: (a-plane & c-plane) (Tested per ASTM C730)	**1500 - 1800**
Absorption: (1.064 um)	**35+2 pom/cm**
BRDF. BTDF (1.064 um)	**< 10-3/sr** (0 - 60° AOI)

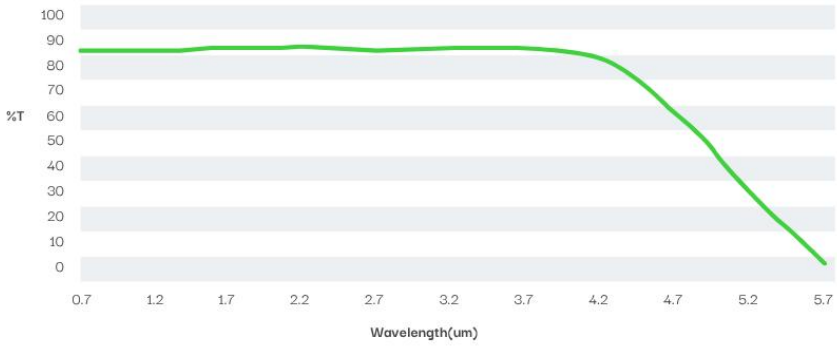
SIZES AVAILABLE

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

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

*Average strength value for testing is in accordance with ASTM C1499. Value is representative of samples prepared via Attalon's fabrication process.

%T - A-PLANE SAPPHIRE - 0.220" THICK



TYPICAL MEASURED VALUES

Transmission: (0.220" thickness) Index of Refraction

λ	T	λ	η
0.70 µm	86.0%	0.70 µm	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