

SAPPHIRE CRYSTALS

As the hardest of oxide crystals, sapphire has a combination of optical and physical properties that make it the best choice for a variety of demanding online_orderings. Sapphire maintains its strength even at high temperatures. It has good thermal properties, excellent electrical and dielectric properties and is resistant to chemical attack. These properties encourage the use of sapphire in aggressive environments where reliability, optical transmission and strength are required.

■ Physical and Optical Properties:

Properties	Values
Crystal structure	Hexagonal System
Lattice	a=4.785?, C=12.991?
Density	3.98g/cm ³
Transmission Range	150-5500nm
Melting Point	2040°C
Specific Heat	0.418 W.s/g/K
Thermal Conductivity	25.12 W/m/K
Thermal Shock Resistance	790 W/m
Thermal Expansion Coefficient	5.8x10 ⁻⁶ /K
dn/dt, @633nm	13x10 ⁻⁶ /K
Mohs Hardness	9
Refractive Index	1.83 @0.26 mm, 1.76 @0.63 mm, 1.58 @5.57 mm

■ Our Manufacture Technical Capabilities:

Properties	Values
Diameter	+/-0.0, -0.1mm
Thickness	+/-0.2mm
Flatness	better than 1 per 25 @633nm
Parallelism	better than 3'
Perpendicularity	better than 5'
Scratch-Dig	80-50 per MIL-O-13830A
Wavefront Distortion	less than 1 /2 per inch(1 @1064nm)

Please Contact [ultiQuest](#) for more information and technical supports.

NOTES!

- ➔ Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.