



YAG Crystal($Y_3Al_5O_{12}$) Optics - *Un-doped Crystal for Optical Windows ♦ Optical Mirrors ♦ Optical Prisms ♦ Optical Wedges*

Undoped YAG Crystal is an excellent material for UV-IR optical windows, prisms, or laser cavity couplers, particularly for high temperature and high energy density environment use. The mechanical and chemical stability is comparable to sapphire crystal, but YAG is unique with non-birefringence and available with higher optical homogeneity and surface quality. Up to 3" YAG boule grown by CZ method, as-cut blocks, windows, prisms and mirrors are available from PHOTONIK.

Main Features:

- Transmission in 250nm ~ 50,000nm, with no absorption in 2 ~ 3mm thickness;
- Extremely hard and durable;
- High thermal conductivity;
- High damage threshold;
- High refractive index and non-birefringence.

Basic Properties:

Crystal structure	Cubic
Density	4.5g/cm ³
Transmission Range	250-5000nm
Melting Point	1970°C
Specific Heat	0.59 W.s/g/K
Thermal Conductivity	14 W/m/K
Thermal Shock Resistance	790 W/m
Thermal Expansion	6.9x10 ⁻⁶ /K
dn/dt @ 633nm	7.3x10 ⁻⁶ /K -1
Mohs Hardness	8.5
Refractive Index	1.8245 @ 800nm 1.8197 @1000nm, 1.8121 @1400nm

Main Specifications of YAG Windows, Prisms and Mirrors:

Orientation	[111] ± 5°
Diameter	± 0.1mm
Thickness	± 0.2mm
Flatness	< λ/10 @633nm
Parallelism	< 30"
Perpendicularity	better than 5'
Scratch-Dig	10 - 5 per MIL-O-1383A
Wavefront Distortion	< λ/4 per inch @1064nm

For request on high precision optical windows, prisms or mirrors, user may specify AR and HR coating types.

Ordering Information:

Advise us of the applications or send us your recommended drawings for cost evaluation;

Contact Information:

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