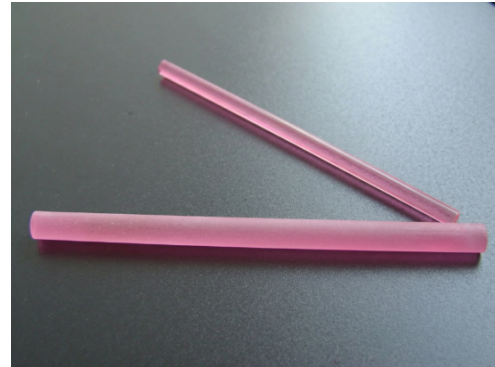


LASER CRYSTALS

Er:YAG Laser Crystal

Product Brochure & Technical Reference

Er:YAG gain crystals for laser systems operating in the published spectral range. Define dopant concentration, pumping, component geometry and optical-surface requirements.



Reference product image. Shown geometry is illustrative.

Material reference properties / options

Parameter	Typical Value / Option
Dopant concentration	20at% and 50at%
Orientation	[100] within 5 degrees
Wavefront distortion	$\leq 0.125 \lambda/\text{inch}$ at 1064 nm
Optical quality	Interference fringes $\leq 0.125/\text{inch}$
Extinction ratio	Dia. 3-6.35 mm: ≥ 28 dB; dia. 7-10 mm: ≥ 25 dB
Rod size	Dia. 3-10 mm x 30-180 mm length
Slab size	3-12 mm x 6-24 mm x 60-180 mm length
AR coating reflectivity	$\leq 0.25\%$ at 2940 nm

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

LASER CRYSTALS

Configuration & quotation

Define the component around your application

Application examples: Medical laser systems for controlled tissue ablation; Dental laser systems and hard-tissue interaction research; Dermatology, aesthetic, and skin resurfacing equipment

Specifications of Er:YAG Laser Crystal

Parameter	Typical Value / Option
Custom size	Available upon customer request
Diameter tolerance	+0.00/-0.05 mm
Length tolerance	+/-0.5 mm; chamfer <0.15 +/-0.05 mm at 45 degrees
Parallelism	<= 10 arcsec
Perpendicularity	<= 5 arcmin
Flatness	lambda/10 at 632.8 nm
Surface quality	10-5, MIL-O-13830A
Damage threshold	>= 500 MW/cm ² , 10 ns, 1 Hz at 1064 nm

Specifications of Er:YAG Laser Crystal

Property	Typical Value
Crystal structure	Cubic
Lattice parameter	12.01 Å
Melting point	Approx. 1970 °C
Mohs hardness	8.5
Density	4.56 +/- 0.04 g/cm ³
Specific heat	Approx. 0.59 J/(g K), 0-20 °C
Thermal expansion coefficient	[100] direction: $8.2 \times 10^{-6}/^{\circ}\text{C}$, 0-250 °C
Thermal conductivity	14 W/(m K) at 20 °C; 10.5 W/(m K) at 100 °C
Laser transition	4I11/2 to 4I13/2
Laser wavelength	2940 nm
Emission cross section	Approx. $3 \times 10^{-20} \text{ cm}^2$
Index of refraction	Approx. 1.79 at 2940 nm

Prepare your quotation

RFQ Item	Information to Provide
Material requirement	Er:YAG dopant concentration, target wavelength, and application.
Geometry	Rod diameter and length, slab dimensions, chamfer, or complete drawing.
Orientation and tolerance	Crystal orientation, dimensional tolerance, parallelism, perpendicularity, and flatness.
Surface and coating	Surface quality, polishing, AR coating at 2940 nm, or custom coating requirement.
Laser design	Pump source, operating mode, pulse requirement, cavity design, cooling method, and expected output.
Order information	Prototype quantity, batch quantity, inspection criteria, delivery schedule, and packaging requirement.

Reference values and options for selection. Confirm the material grade, geometry, test conditions and acceptance criteria for the quoted configuration.

Send drawings for engineering review

sales@atrscintillator.com | +86 17796747312

[Open product and inquiry page](#) | Hangzhou, Zhejiang, China