Er:YAG Crystals and Components

Lasers powered by Er:YAG (erbium substituted: yttrium aluminum garnet), operating at 2.94 microns, crystals couple well into water and body fluids. This is especially useful for applications in the fields of laser medicine and dentistry.

The output of Er:YAG enables the painless monitoring of blood sugar levels, while safely reducing the risk for infection. It is also effective for laser treatment of soft tissue, such as cosmetic resurfacing. It is equally useful for treating hard tissue such as tooth enamel.

Er:YAG enjoys an advantage over other laser crystals in the 2.94 micron range in that it employs YAG as the host crystal. The physical, thermal and optical properties of YAG are widely known and well understood. Laser designers and operators can apply their depth of experience with Nd:YAG laser systems to achieve superior performance from 2.94 micron laser systems using Er:YAG crystals.

Advantages of Er:YAG Crystal

* High slope efficiency
* Operate well at room temperature
* Operate in a relatively eye-safe wavelength range

Er:YAG Crystals was designed for 2.94 μm output wavelength Er:YAG is an excellent choice for Medical Laser Systems and Dental Laser Systems.

Optical and Spectral Properties of CTH::YAG

Properties	Values
Laser Transition	*4I11/2 to 4I13/2*
Laser Wavelength	*2940nm*
Photon Energy	*6.75×10-20J(@2940nm)*
Emission Cross Section	*3×10-20 cm2*
Index of Refraction	*1.79 @2940nm*
Pump Bands	*600~800 nm*

Standard Processing SpecificationsS of Er:YAG Crystals

Specifications	Capability
Nd Doping Level	*0.8% or 1.1%*
Orientation	*<111> crystalline direction*
Surface Flatness	*up to λ/10 at 633 nm*
Parallelism	*< 10 arcsec*
Surface quality	*10/5 scratch/dig* *as per MIL-O-13830A*
Perpendicularity	*< 5 arcmin*
Angle tolerance	*< 30 arcmin*

Aperture tolerance	*± 0.1 mm*
Clear aperture	*90% of full aperture*
Chamfers	*0.1 mm at 45 deg*
Coating	*both sides coated AR @ 1064 nm, R < 0.2%, AOI = 0 deg*

Notes

»| Our inspection standard is comply with MIL standard and ISO9001 standard

»| OEM Specifications are available upon requested

Standard Product List

Code	Size,mm	Coating	Price
ERYG-101	Ø3x60	AR/AR@2940nm	Contact us
ERYG-102	Ø4x80	AR/AR@2940nm	Contact us
ERYG-103	Ø5x90	AR/AR@2940nm	Contact us
ERYG-104	Ø6x110	AR/AR@2940nm	Contact us
ERYG-105	Ø7x125	AR/AR@2940nm	Contact us
ERYG-106	Ø8x130	AR/AR@2940nm	Contact us
ERYG-107	Ø9x150	AR/AR@2940nm	Contact us
ERYG-108	Ø10x160	AR/AR@2940nm	Contact us

Notes

»| Custom size is available upon requested.