Nd:Ce:YAG

Introduction

In double doped Nd:Ce:YAG crystals Cerium are chosen as sensitizer for Nd^{3+} ions because of its strong absorption in UV spectral region at flash lamp pumping and efficient energy transfer to the Nd^{3+} excited state. As a result - thermal distortion in Nd: Ce:YAG is appreciably less and the output laser energy is greater than that in Nd:YAG at the same pumping. Therefore it is possible to realize high power lasers with good beam quality. Lasing wavelength at 1064 nm, laser damage threshold and thermal conductivity of the Nd: Ce:YAG crystals are the same as for Nd:YAG.

Advantages of Nd:Ce:YAG Crystal

1、High efficiency
2、Low threshold
3、Good anti-violet radiation property
4、Good thermal stability
5、High optical quality

Optical and Spectral Properties of Nd:Ce:YAG Crystal

Laser Transition	$^4F_{3/2} \rightarrow {}^4I_{11/2}$
Laser Wavelength	1.064 μm
Photon Energy	1.86×10^{-19}J@1.064μm
Emissi on Linewidth	4.5Å @1.064 μm
Emission Cross Section (Nd 1at%)	$2.7\sim8.8\times 10^{-19}cm^2$
Fluorescence Lifetime (Nd1at%)	230μs
Index of Refraction	1.8197@1064nm

Specifications of Nd:Ce:YAG crystal from CASTECH

Dopant Concentration	Nd:1.1～1.4at%,Ce:0.05～0.1at%
Wavefront Distortion	≤ 0.2λ/inch
Extinction Ratio	≥ 28 dB
Rod Sizes	Diameter:3～6mm,Length:40～80mm, Upon request of customer
Dimensional Tolerances	Diameter+0.000"/ - 0.002",Length ± 0.02"
Barrel Finish	Ground Finish: 400# Grit
Parallelism	≤ 10"
Perpendicularity	≤ 5′
Flatness	λ/10
Surface Quality	10 - 5(MIL-PRF-13830B)
Chamfer	0.006" ± 0.002" at 45°± 5°
AR Coating Reflectivity	≤ 0.25% (@1064nm)

公司简介
INTRODUCTION

CASTECH INC. (CASTECH) was founded by Fujian Institute of Research on the Structure of Matter, Chinese Academy of Science in 1988. Thanks to long term interactive partnership with the leaders in laser system manufacturing industry and ongoing efforts of our employees, we have established the largest mass production lines in the world for LBO,BBO,Nd:YVO_4 and TGG crystals, and implemented a complete quality control system for our products.

CASTECH is now a worldwide leading supplier of nonlinear optical crystals,laser crystals,precision optics, and a variety of laser components. In CASTECH, there are Flux/Czochralski/Water Solution/Bridgman Crystal Growth production lines, Crystal Orientation and Dicing workshop, Optical Polishing workshop and Optical Coating workshop with IBS, IAD, MS and EB coating technique. Our commitments are backed by our huge manufacturing capacity.

CASTECH's quality system is IATF 16949:2016 and ISO 9001:2015 certified. We have established a complete system for outgoing parts inspection. Our optical testing equipments include Zygo Interferometers, Agilent Cary 7000, Perkin-Elmer Lambda 950, Nikon Microscope, Photo-Thermal Common-Path Interferometers, Zygo Newview 8300, Taylor Hobson LuphoSan 260, Extinction Ratio Measurement and Ellipsometers.These equipments along with many others, ensure that we comply with all specifications for our products.

Today, over 60% of CASTECH's products are exported to USA, Japan, Europe and other Asia Market. We have established a global sales network. We have set up our agencies and distributors in the main industrial countries and districts.

Our mission is to deliver the best products and solutions to our customers in photonics industry, and help them to realize their full potential in business. Here at CASTECH, we value comity, integrity, honesty, and innovation.