

# Ce:YAP

# Ce: YAlO<sub>3</sub>

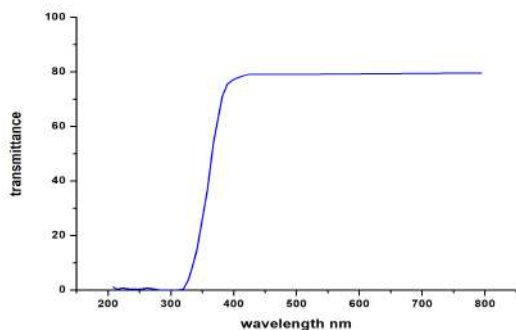


## Description

Yttrium aluminum perovskite activated by cerium is an excellent scintillator with fast decay time, fine physical and chemical characteristics. Mechanical properties enable precise machining and entrance windows can be made. These scintillators have very low energy secondary X-ray emission, which is an ideal choice for imaging applications.

## Features

- High light output
- Fast decay time
- High energy resolution
- low energy secondary X-ray emission
- Fine physical and chemical characteristics
- Good performance at high temperatures
- non-hygroscopic



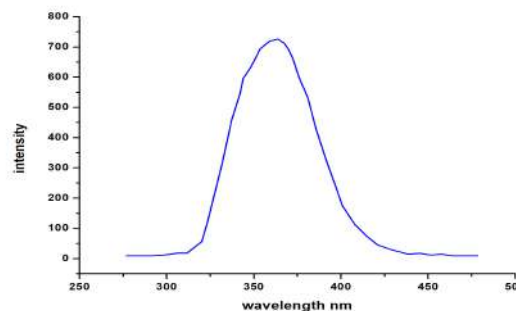
Transmittance spectra of Ce:YAP

## Applications

- CT,PET,SPECT
- electron and X-ray imaging screens
- ultra-thin screen applications
- electron microscopy
- gamma-camera

## Parameters

Property	Value
Chemical formula	Ce:YAlO <sub>3</sub>
Symmetry	Rhombic
Structure	Pnma
Mohs Hardness	8.6
Melting Point	1875°C
Density(g/cm <sup>3</sup> )	5.37
Refractive index(λ=1.079μm)	(na)1.931 (nb)1.923 (nc)1.909
Cell parameters(Å)	(a)5.329 (b)7.371 (c)5.180
Thermal conductivity(Wm <sup>-1</sup> K <sup>-1</sup> )	0.11
expanding coefficient (10 <sup>-6</sup> /°C)	(a)4.2 (b)11.7 (c)5.1
Emission peak	360nm
Light yield (Photons/MeV)	25000
Decay time	25-38 ns
Energy resolution	<5%
Z <sub>eff</sub>	40
Relative light output (%NaI:Tl)	40
Afterglow (% after 6ms)	<0.005



XEL spectra of Ce:YAP

Laser Crystals

Q switch Crystals

Nonlinear Crystals

Acousto Optical Crystals

Fara day Crystals

Optical Crystals

Scintillation Crystals

Piezoelectric Crystals

Birefringent Crystals

Laser Glass

# Ce:YAG

# Ce:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>

## Standard product

Dimensions, mm	Decay time, ns	Light yeild, photons/Mev	Refractive Index
5×5×0.5	<40	25000	1.91 - 1.93
5×5×1			
10×5×0.5			
10×5×1			
10×10×0.5			
10×10×1			
25×25×0.5			
25×25×1			
dia5×0.5			
dia5×1			
dia10×0.5			
dia10×1			

## Polishing specifications

Property	Value
Orientation Tolarence	<0.5°
Parallel	10"
Thickness/Diameter Tolerance	±0.05mm
Perpendicular	5´
Surface quality	10/5
Clear Aperture	>90%
Chamfer	<0.2×45°
Maximum dimensions	dia55mm



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