



Phosphor Information Leaflet

GENERAL

Name	Aluminium Oxide Titanium (Sapphire)
Chemical formula	$\text{Al}_2\text{O}_3:\text{Ti}^{3+}$
Application areas	Solid State Laser, Gemstones

OPTICAL PROPERTIES

Excitation maxima @ 750 nm	496 nm (2.5 eV)
Emission maximum @ 495 nm exc.	708 nm (1.75 eV)
Centroid wavelength	720 nm (1.72 eV)
Full width @ half emission maximum	130 nm (0.3 eV)
Lumen equivalent	192 lm/W _{opt.}
CIE1931 chromaticity coordinates (x, y)	0.669, 0.331
Band edge of host lattice	8.8 eV
Reflection @ 470 nm	21 %
Decay time $\tau_{1/e}$	3.0 μs

PHYSICAL PROPERTIES

Body colour	Red
Density	3.99 g/cm ³
Refractive index (at λ)	1.77 (589.3 nm Na-D-Line)
Mineral type	Corundum
Crystal system	Trigonal
Space group (#)	R-3c h (#167)

