



Phosphor Information Leaflet

GENERAL

Name	Lutetium borate Samarium
Chemical formula	$\text{LuBO}_3:\text{Sm}^{3+}$
Application areas	Optical marker
Optical transition	$[\text{Xe}]4f^5 (^4G_{5/2}) - [\text{Xe}]4f^5 (^6H_{5/2 \text{ to } 15/2})$

OPTICAL PROPERTIES

Excitation maxima @ 630 nm	374 nm (3.32 eV), 400 nm (3.1 eV)
Emission maximum @ 470 nm exc.	560 nm (2.21 eV), 598 nm (2.07 eV)
Centroid wavelength	609 nm (2.04 eV)
Full width @ half emission maximum	lines
Lumen equivalent	358 lm/W _{VIS}
CIE1931 chromaticity coordinates (x, y)	0.543; 0.429
Band edge of host lattice	194 nm (6.4 eV)
Reflection @ 254 nm	90%
Decay time $\tau_{1/e}$	-

PHYSICAL PROPERTIES

Body colour	white
Density	6.86 g/cm ³
Refractive index (at λ)	1.626 (543 nm)
Mineral type	Calcite
Crystal system	Trigonal
Space group (#)	R-3c (#167)



