



## Phosphor Information Leaflet

### GENERAL

Name	Strontium barium boronitride praseodymium
Chemical formula	$\text{SrBa}_8[\text{BN}_2]_6:\text{Pr}^{3+}$
Application areas	Optical marker
Optical transitions	$[\text{Xe}]5f^2 ({}^3\text{P}_0) - [\text{Xe}]5f^2 ({}^3\text{H}_6)$ $[\text{Xe}]5f^2 ({}^3\text{P}_0) - [\text{Xe}]5f^2 ({}^3\text{F}_2)$

### OPTICAL PROPERTIES

Excitation maxima @ 635 nm	335 nm (3.7 eV), 384 nm (3.2 eV),
Emission maximum @ 385 nm exc.	615 nm (2.0 eV), 635 nm (2.0 eV)
Centroid wavelength	628 nm (2.0 eV)
Full width @ half emission maximum	12 nm
Lumen equivalent	201 lm/W <sub>vis</sub>
CIE1931 chromaticity coordinates (x, y)	0.628, 0.321
Band edge of host lattice	3.2 eV
Reflectance @ 300 nm	5 %
Decay time $\tau_{1/e}$	~ 10 $\mu\text{s}$

### PHYSICAL PROPERTIES

Body colour	white
Density	4.8 g/cm <sup>3</sup>
Refractive index (at $\lambda$ 589 nm)	
Mineral type	Superstructure type of $\text{LiCa}_4[\text{BN}_2]_3$
Crystal system	Cubic
Space group (#)	Im-3m (229)



