

# Phosphor Information Leaflet

## GENERAL

Name	Calcium scandate chromium
Chemical formula	$\text{CaSc}_2\text{O}_4:\text{Cr}^{3+}$
Application areas	NIR phosphor, optical marker

## OPTICAL PROPERTIES

Excitation maxima ( $\lambda_{\text{Em}} = 800 \text{ nm}$ )	470 nm (2.64 eV), 680 nm (1.82 eV)
Emission maximum ( $\lambda_{\text{Ex}} = 470 \text{ nm}$ )	830 nm (1.49 eV)
Centroid emission wavelength	840 nm (1.48 eV)
FWHM	164 nm ( 0,30 eV)
Lumen equivalent	7 lm/W <sub>opt.</sub>
CIE1931 chromaticity coordinates (x   y)	(0.537   0.461)
Luminescence lifetime $\tau_{1/e}$	40 $\mu\text{s}$ (at 2.7 K)
$T_{1/2}$	-
Reflection @ 254 nm	16 %
Band edge of host lattice	3.44 eV

## PHYSICAL PROPERTIES

Body colour	Greyish
Density	3.9 g/cm <sup>3</sup>
Refractive index ( $n_D$ )	
Mineral type	Calcium ferrate (III)
Crystal system	Orthorhombic
Space group	Pnam (62)

