



# Phosphor Information Leaflet

## GENERAL

|                    |   |
|--------------------|---|
| Name               | Gadolinium Aluminium Perovskite Chromium  |
| Chemical formula   | GdAlO <sub>3</sub> :Cr <sup>3+</sup> (1%)   |
| Application areas  | NIR phosphor, medical imaging and therapy   |
| Optical transition | 3d <sup>3</sup> ( <sup>4</sup> A <sub>2</sub> )-3d <sup>3</sup> ( <sup>4</sup> T <sub>2</sub> , <sup>2</sup> E) |

## OPTICAL PROPERTIES

|   |   |
|---|---|
| Excitation maxima @ 726 nm emission     | 275 nm (451 eV), 313 nm (3.96 eV), 415 nm (2.99 eV), 563 nm (2.20 eV) |
| Emission maxima @ 415 nm excitation     | 702 (1.77 eV), 726 nm (1.71 eV), 735 nm (1.69 eV)                     |
| Centroid wavelength                     | 723 nm (1.71 eV)  |
| Full width @ half emission maximum      | Lines   |
| Lumen equivalent                        | 10 lm/W <sub>VIS</sub>  |
| CIE1931 chromaticity coordinates (x, y) | 0.664, 0.581  |
| Band edge of host lattice               | 200 nm (6.20 eV)  |
| Reflectance @ 415 nm                    | 67 %  |

## PHYSICAL PROPERTIES

|                         |                        |
|-------------------------|------------------------|
| Body colour             | Pale green             |
| Density                 | 6.02 g/cm <sup>3</sup> |
| Refractive Index (at λ) | 1.90 (589.3 nm)        |
| Mineral type            | Perovskite             |
| Crystal system          | Orthorhombic           |
| Space group (#)         | Pnma (62)              |



