



## Phosphor Information Leaflet

### GENERAL

|                   |  |
|-------------------|--|
| Name              | Yttrium oxide sulphide ytterbium thulium |
| Chemical formula  | $Y_2O_2S:Yb^{3+},Tm^{3+}$                |
| Application areas | Up-conversion for NIR detection          |

### OPTICAL PROPERTIES

|   |  |
|---|--|
| Excitation maxima @ 481 nm em.          | 260 nm (4.77 eV), 980 nm (1.27 eV)   |
| Emission maximum @ 980 nm exc.          | 476 nm (2.61 eV)   |
| Centroid wavelength                     | -  |
| Full width @ half emission maximum      | Lines  |
| Lumen equivalent                        | 117 lm/W <sub>opt.</sub>   |
| CIE1931 chromaticity coordinates (x, y) | 0.12, 0.14   |
| Band edge of host lattice               | 270 nm (4.6 eV)  |
| Reflection @ 260 nm                     | 5 %  |
| Decay time 1/e                          | 954 $\mu$ s ( $\lambda_{Exc}$ 476 nm), 120 $\mu$ s ( $\lambda_{Exc}$ 980 nm) |

### PHYSICAL PROPERTIES

|                                  |                       |
|----------------------------------|-----------------------|
| Body colour                      | White                 |
| Density                          | 4.9 g/cm <sup>3</sup> |
| Refractive index (at $\lambda$ ) | 2.1 - 2.3             |
| Mineral type                     |                       |
| Crystal system                   | Trigonal              |
| Space group (#)                  | P-3m1 (164)           |



