

# Black Diamond 2 (BD2)

## OPTICAL

Refractive Index at 2.5 $\mu\text{m}$	2.630
Thermal Coefficient of Refractive Index at 3.39 microns for +/-60 deg C	$91 \times 10^{-6} / ^\circ\text{C}$

## THERMAL

Thermal Linear Expansion, deg C-1 for +/-60 deg C	$14 \times 10^{-6} / ^\circ\text{C}$
Thermal Conductivity, W/(m x deg C) at 27 deg C	100 W/cm <sup>2</sup> (1064 nm, CW)
Specific Heat Capacity, J/(kg x deg C)	0.1 J/cm <sup>2</sup> (1064 nm, 10 ns)
Melting Point, deg C	278
Absorbance $\mu$ ( $\lambda$ ), cm <sup>-1</sup> at 10.6 microns	0.027

## MECHANICAL

Density, g/cm <sup>3</sup> at 25 deg C	4.67 g/cm <sup>3</sup>
Mohs Hardness	3
Young Modulus (E), Pa	22.1 GPa

## CHEMICAL

Composition	$\text{Ge}_{28}\text{Sb}_{12}\text{Se}_{60}$
Solubility in water, gram/100 cm <sup>3</sup>	insoluble

## Refr. Index n vs. Wavelength $\lambda$

WAVELENGTH, MICRONS	REFRACTIVE INDEX
3.0	2.6266
4.0	2.621
5.0	2.6173
6.0	2.6142
7.0	2.6117
8.0	2.6088
9.0	2.6055
10.0	2.6023
11.0	2.5983
12.0	2.5942
13.0	2.5892
14.0	2.5843

Transmittance  $\tau$  ( $\lambda$ ) vs. Wavelength  $\lambda$

