Ge

Germanium optical components

Del Mar Photonics offers precision Germanium optical components, which are widely used for infrared applications. Its useful transmission range is from 1.8 µm to 17 µm. Due to wide transmission range and opaque in visible Ge is well suited for manufacturing of optical components for IR applications in lasers and optical systems. Its high index of refraction (greater than 4) makes it of particular interest for lens design.

Germanium absorption increases with temperature. At 2000 °C it becomes non - transmissive. Germanium components are used with AR coatings because of high surface reflectivity of substrate.

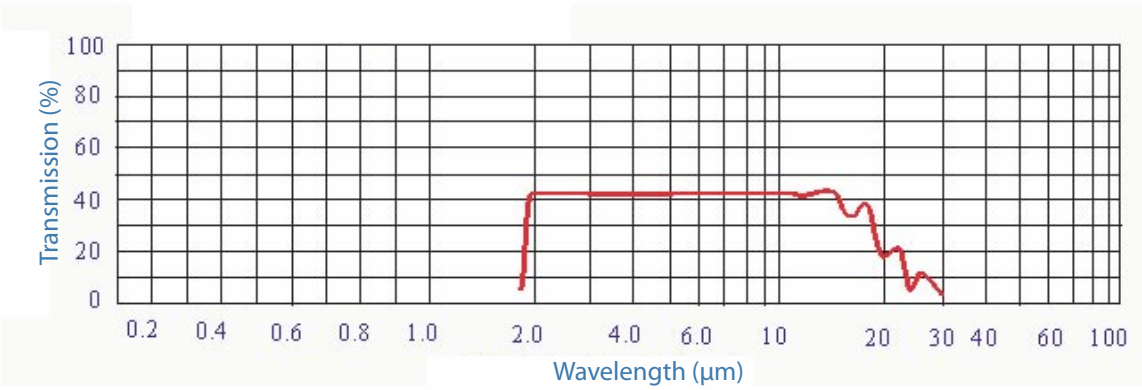
Physical Properties

Crystal type	cubic
Lattice constant	a=5.657Å
Density	5.33g/cm^3
Melting point	937 °C
Refractive index	n=4.0034 @ 10.6 µm
Transmission band	1.8 - 17 µm

General Specifications of Germanium Optical Components

Material	optical quality Ge $\Delta n/cm < 0.5*10^{-5}$
Surface Quality	60-40 scratch & dig
Clear aperture	80% of diameter
Diameter tolerance	+0.0, -0.1 mm
Thickness tolerance	+1.0, -0.1 mm
Flatness	<1.5 λ per inch @ 633 nm

Transmission Spectrum of Germanium



DEL MAR PHOTONICS

4119 Twilight Ridge, San Diego, CA 92130, USA Tel:: (858) 876-3133 Fax:: (858) 630-2376
E-mail:: sales@dmphotonics.com URL:: www.dmphotonics.com