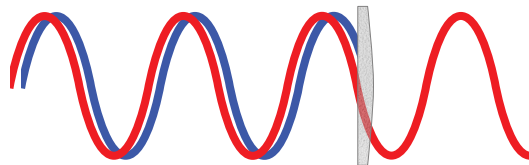


INFRARED MATERIALS

Germanium (Ge)



Germanium has remarkable transparency to infrared radiation. This characteristic makes it a useful material for infrared optics, enabling the development of cutting-edge thermal imaging systems, night vision devices, and spectroscopic instruments with unparalleled sensitivity and clarity.

Germanium's high refractive index and low dispersion properties make it an ideal choice for advanced optical components, such as lenses, prisms, and windows. These characteristics allow for superior image quality and resolution, with applications in astronomy, defense, and scientific research.

Applications beyond optics, include electronics, solar energy, and medical technologies, due to its exceptional semiconducting properties.

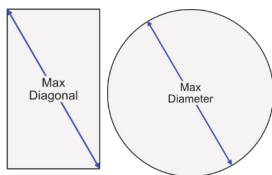


Size Availability: Our Ge substrates and finished parts are available in the following sizes

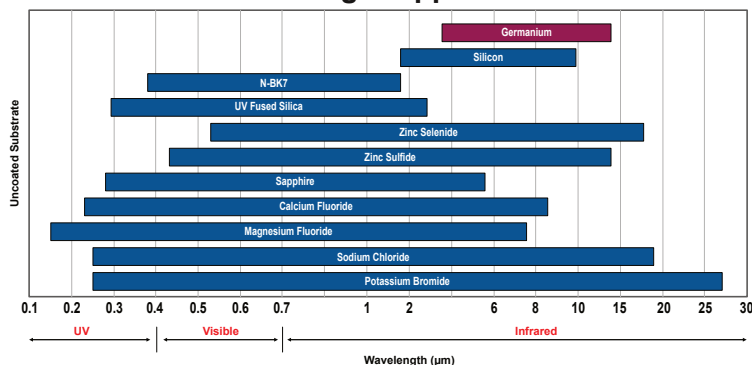
Diameter: Up to 200mm

Diagonal: Up to 200mm

Thickness: Up to 20mm



Wavelength Application



Germanium Characteristics

Typical Application:	IR Lens	Modulus of Rupture:	≥75
Resistivity:	1-50Ω, ≥50Ω	Hardness (kg/cm²):	800
Resistive Inhomogeneity:	10%	Density (g/cm³):	5.33
Orientation:	111	Youngs Modulus (Gpa):	103
Orientation Tolerance:	±0.5°	Poisson Ratio:	0.28
Crystal structure:	N	Thermal Conductivity: (Wm-1k-1³)	59
Refractive Index: (10µm)	4.0026	Coef of Therma Exp: (10⁻⁶/°C)	6.1
I Inhomogeneity:	<1 x 10⁻⁴	Heat Capacity: (cal/g k)	0.074
Refract Index T Coeff: (10.6µm, 10⁻⁶/°C⁻¹)	400	Melting Point (°C)	937
Absorption Coef : (10.6µm, cm⁻¹)	≤0.03	Dielectric Constant	16