

Infrared Optical Materials Datasheet

ZnSe / ZnS / Germanium (Ge)

Felix Glass – Precision IR Optics

1. CVD ZINC SELENIDE (ZnSe)

Transmission Range: 0.6 μm – 16 μm

Main Working Wavelength: 10.6 μm (CO2 Laser)

Features: Ultra-low absorption, excellent uniformity, no thermal lensing

Typical Transmittance (Uncoated): $\geq 97\%$

Typical Transmittance (AR Coated): $\geq 99.2\%$

Hardness: Low, requires careful handling

Best Application: High-power CO2 laser cutting, welding, marking windows

2. CVD ZINC SULFIDE (ZnS)

Transmission Range: 0.4 μm – 14 μm

Features: High mechanical hardness, vibration resistant, temperature stable

Weather Resistance: Excellent for outdoor deployment

Typical Transmittance: $\geq 95\%$

Best Application: Multispectral IR domes, night vision, outdoor thermal imaging

3. SINGLE CRYSTAL GERMANIUM (Ge)

Working Band: 8 μm – 14 μm (LWIR)

Features: High refractive index, stable thermal infrared performance

Application Match: Uncooled thermal imaging detectors

Coating Option: AR + DLC dual layer for anti-scratch & moisture resistance

4. General Technical Specification

Surface Quality: Custom optical grade

Flatness: $\lambda/10$, $\lambda/20$ available

Tolerance: Custom diameter, thickness, clear aperture

Processing: Polished, chamfered, cleanroom cleaned, vacuum sealed

5. Disclaimer

All data represent typical performance under standard conditions.

Final parameters are determined by project DFM review.