ZnSe Lenses

Features:

- Transmission Range: High transmission from 3 -12μm
- Low dispersion and low absorption coefficient
- Ideal for thermally demanding environments
- Applications: thermal imaging, CO2 lasers, military and medical applications

Descriptions:

Zinc Selenide (ZnSe) lenses is an excellent choice for any IR applications due to its broad wavelength range (3 μm to 16 μm). Zinc selienide is a chemically vapor deposition (or CVD) material commonly used in thermal imaging, CO2 lasers, military and medical systems. Zinc selenide (ZnSe) has a high index of refraction which normally requires an anti-reflection coating to achieve high transmission. Zinc selenide is relatively soft with low scratch resistance thus not recommended for use in harsh environment. Extra caution is required during cleaning, handling, and mounting.

Specifications:

Materials	CVD ZnSe crystals	Diameter Range	~200mm
Diameter Tolerance	+0.0/-0.2mm	Thickness Tolerance	+/-0.2mm
Surface Quality	60/40 S/D	Frings (N)	3
Irregularity (delta N)	1	Centration	3'
Chamfer	0.1-0.3mmx45 degree	Coatings	AR/AR@7-14micro BBAR/BBAR@3-12 micro

Physical and Optical Properties:

Transmission Range	0.6 to 21.0μm	Refractive Index	2.4028 at 10.6μm
Reflection Loss	29.1% at 10.6μm (2 surfaces)	Absorption Coefficient	0.0005 cm^{-1} at 10.6μm
Reststrahlen Peak	45.7μm	dn/dT	+61 x 10^{-6}/°C at 10.6μm at 298K
dn/dμ = 0	5.5μm	Density	5.27 g/cc
Melting Point	1525°C (see notes below)	Thermal Conductivity	18 W m-1 K-1 at 98K
Thermal Expansion	7.1 x 10^{-6} /°C at 273K	Hardness	Knoop 120 with 50g indenter
Specific Heat Capacity	339 J Kg-1 K-1	Dielectric Constant	n/a
Youngs Modulus (E)	67.2 GPa	Shear Modulus (G)	n/a

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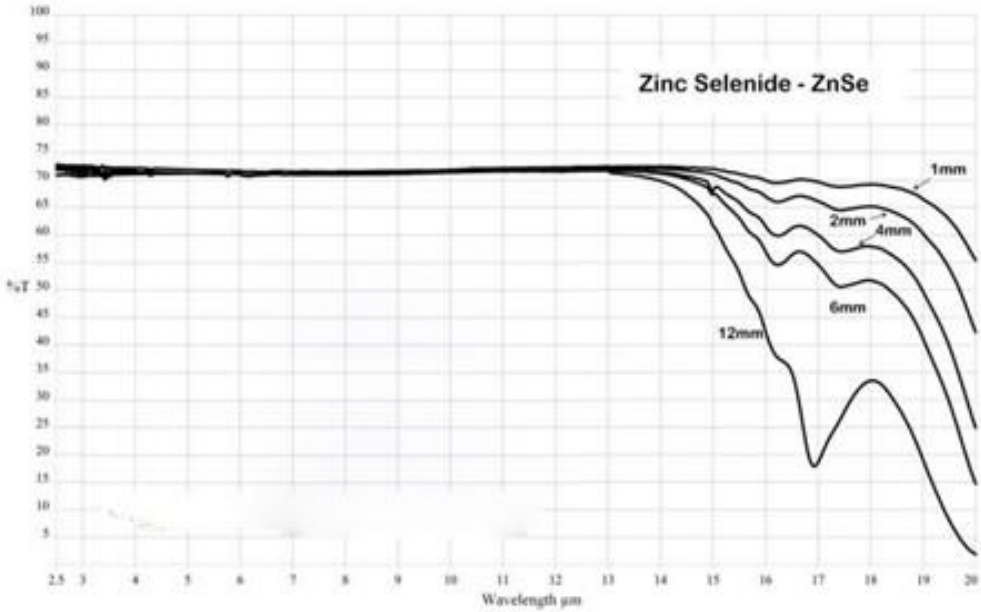
Bulk Modulus (K)	40 GPa	Elastic Coefficients	Not Available
Apparent Elastic Limit	55.1 MPa (8000 psi)	Poisson Ratio	0.28
Solubility	0.001g/100g water	Molecular Weight	144.33
Class/Structure	HIP polycrystalline cubic,ZnS, F43m		

Technical images:

1. Transmission curve of the ZnSe windows no coating



2. Transmission curve of ZnSe windows with BBAR/BBAR coating

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Related products:

1) Infrared lenses -> Ge lenses
2) Infrared lenses -> Chalcogenide lenses and balls
3) Infrared windows -> ZnSe windows

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