

## ZnSe Domes



### Features:

- High transmission at 3-12 $\mu$ m
- Ideal for thermally demanding environments

### Descriptions:

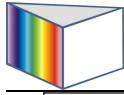
Zinc Selenide (ZnSe) domes is an excellent choice for its broad wavelength range (3  $\mu$ m to 16  $\mu$ m), which covers MWIR and LWIR wavelength range. Zinc selenide is a chemically vapor deposition (or CVD) materials commonly used in thermal imaging and medical systems. Zinc selenide (ZnSe) windows 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. ZnSe has an excellent thermal properties which is ideal for thermally demanding environment applications.

### Specifications:

Materials	Hot-pressed ZnSe	Diameter Range	~ 280mm
Thickness Tolerance	+/-0.2mm (Optional: +/-0.1mm and +/-0.05mm)	Surface Quality	60/40 S/D
Frings (N)	customized	Irregularity (delta N)	customized
Chamfer	0.1~0.3mmx45degree	Coating	AR/AR@7-12 $\mu$ m

### Physical and Optical Properties:

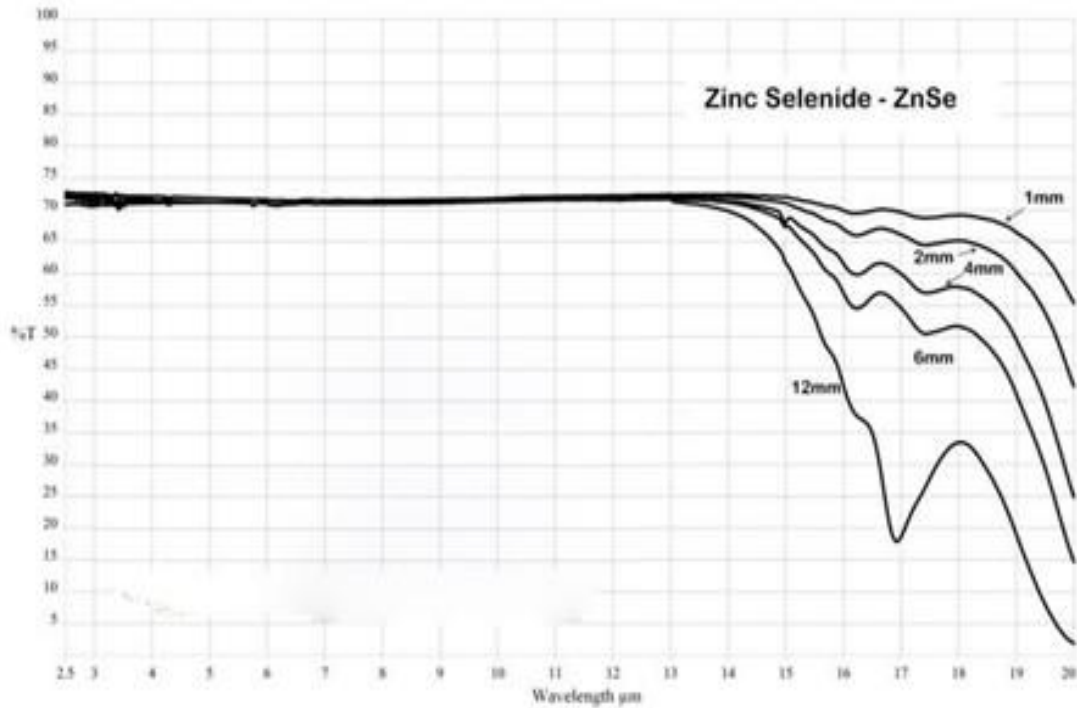
Transmission Range	0.6 to 21.0 $\mu$ m	Refractive Index	2.4028 at 10.6 $\mu$ m
Reflection Loss	29.1% at 10.6 $\mu$ m (2 surfaces)	Absorption Coefficient	0.0005 cm <sup>-1</sup> at 10.6 $\mu$ m
Reststrahlen Peak	45.7 $\mu$ m	dn/dT	+61 x 10 <sup>-6</sup> /°C at 10.6 $\mu$ m at 298K
dn/d $\mu$ = 0	5.5 $\mu$ m	Density	5.27 g/cc
Melting Point	1525°C (see notes below)	Thermal Conductivity	7.1 x 10 <sup>-6</sup> /°C at 273K

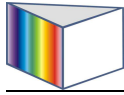


Hardness	Knoop 120 with 50g indenter	Specific Heat Capacity	339 J Kg <sup>-1</sup> K <sup>-1</sup>
Dielectric Constant	n/a	Youngs Modulus (E)	67.2 GPa
Shear Modulus (G)	n/a	Bulk Modulus (K)	40 GPa
Elastic Coefficients	Not Available	Apparent Elastic Limit	55.1 MPa (8000 psi)
Poisson Ratio	0.28	Solubility	0.001g/100g water
Molecular Weight	144.33	Class/Structure	HIP polycrystalline cubic, ZnS, F43m

**Technical Images:**

1. Transmission Curve of ZnSe Windows No Coating





2. Transmission Curve of ZnSe Windows with BBAR/BBAR Coating



**Related products:**

- 1) Infrared domes -> hot-pressed MgF2 domes
- 2) Infrared domes-> hot-pressed ZnS domes
- 3) Infrared windows -> ZnSe windows