



Zinc Sulfide (FLIR)

Optical

Transmission Range :	1.0 μm to 13 μm
Refractive Index :	2.192 at 10.6 μm
Reflection Loss :	24.6% at 10.6 μm (loses from two surfaces)
Absorption Coefficient :	0.02 cm^{-1} at 3.8 μm

Physical

Density :	4.08 g/cm^3
Melting Point :	1827 $^{\circ}\text{C}$
Thermal Conductivity :	16.7 $\text{W m}^{-1} \text{K}^{-1}$ at RT
Linear CTE :	$6.6 \times 10^{-6} /^{\circ}\text{C}$ at RT
Specific Heat Capacity :	469 $\text{J Kg}^{-1} \text{K}^{-1}$

Mechanical

Youngs Modulus (E) :	74.5 GPa
Shear Modulus (G) :	29.1 Gpa
Rupture Modulus :	103.4 MPa
Hardness :	240 Knoop (50g indenter)
Poisson Ratio :	0.29

Chemical

Chemical Formula:	ZnS
Solubility :	$65 \times 10^{-6} \text{g}/100\text{g H}_2\text{O}$
Molecular Weight :	97.43 g /mole

Notes

ZnS FLIR grade is harder than ZnS multispectral grade.
Zinc Sulfide windows should not be used above 250 $^{\circ}\text{C}$ in air.