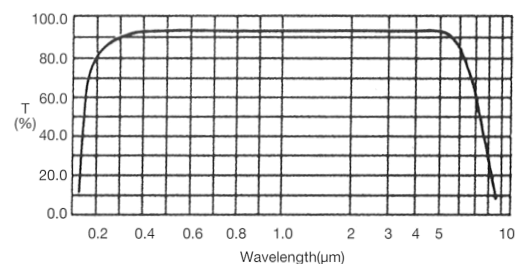
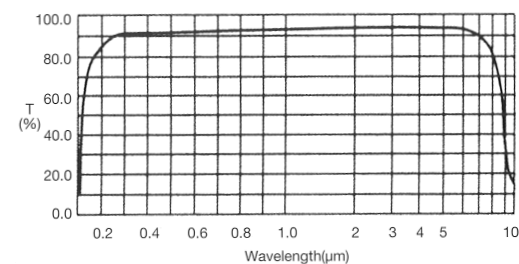
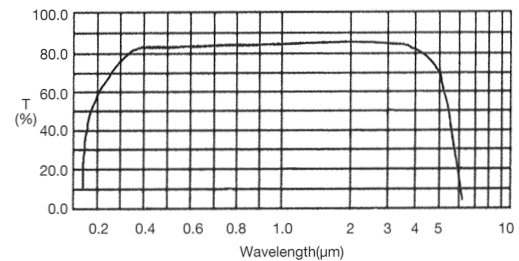
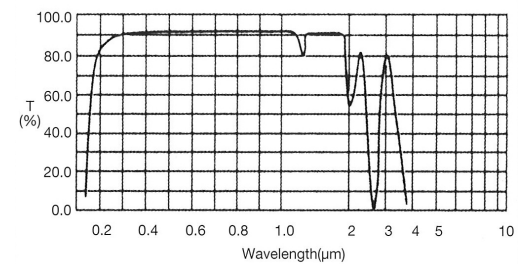
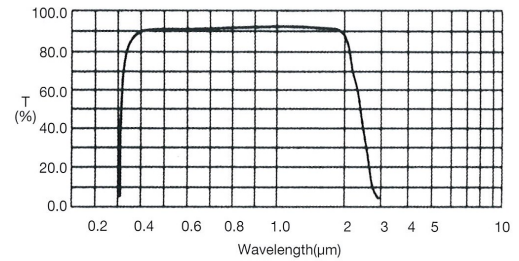


Optical Material

BOROSILICATE GLASS (BK7)	
Transmission Range (um)	0.35-2
Refractive Index@546.1nm	1.51872
Temperature Coefficient of Refractive Index, /°C	8.3×10^{-6}
Melting Point, °C	559
Density, g/cm ³	2.51
FUSED SILICA (SiO ₂)	
Transmission Range (um)	0.16-3
Refractive Index@5um	1.55-1.40
Hardness (Knoop), Kg/mm ²	500
Density, g/cm ³	2.201
Young's Modulus, GPa	73
BARIUM FLUORIDE (BaF ₂)	
Transmission Range (um)	0.15-12.5
Refractive Index@2.6um	1.4626
Temperature Coefficient of Refractive Index, /°C	18.1×10^{-6}
Melting Point, °C	1280
Hardness (Knoop), Kg/mm ²	82
Density, g/cm ³	4.89
Young's Modulus, GPa	53.07
CALCIUM FLUORIDE (CaF ₂)	
Transmission Range (um)	0.13-10
Refractive Index@5um	1.39908
Temperature Coefficient of Refractive Index, /°C	18.85×10^{-6}
Melting Point, °C	1360
Hardness (Knoop), Kg/mm ²	158.3
Density, g/cm ³	3.18
Young's Modulus, GPa	75.8
MAGNESIUM FLUORIDE (MgF ₂)	
Transmission Range (um)	0.11-7.5
Refractive Index, n _o /n _e @0.405um	1.3836/1.3957
Temperature Coefficient of Refractive Index, /°C	$13.7/8.48 \times 10^{-6}$
Melting Point, °C	1255
Hardness (Knoop), Kg/mm ²	415
Density, g/cm ³	3.177
Young's Modulus, GPa	138.5





Optics Leading the Light

RONAR-SMITH® Laser Optics & IR Imaging

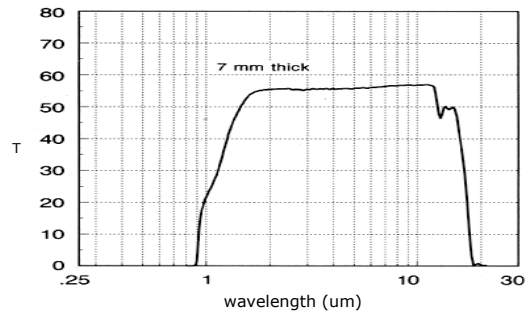


Introduction

RONAR-SMITH® Laser Optics

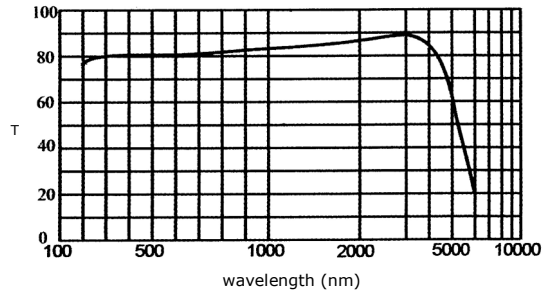
GALLIUM ARSENIDE (GaAs)

Transmission Range (um)	1-22
Refractive Index@10um	3.277
Temperature Coefficient of Refractive Index, /°C	149 x 10 ⁻⁶
Melting Point, °C	1600
Hardness (Knoop), Kg/mm ²	750
Density, g/cm ³	5.37
Young's Modulus, GPa	8.3



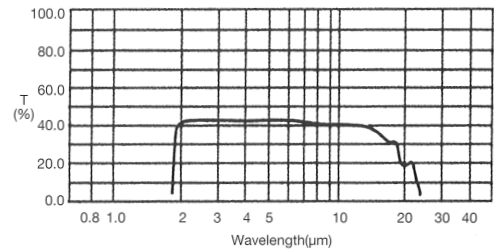
SAPPHIRE (Al₂O₃)

Transmission Range (um)	0.15-5.5
Refractive Index@1.0139um	1.755
Temperature Coefficient of Refractive Index, /°C	8.4 x 10 ⁻⁶
Melting Point, °C	2040
Hardness (Knoop), Kg/mm ²	2000
Density, g/cm ³	3.97
Young's Modulus, GPa	335



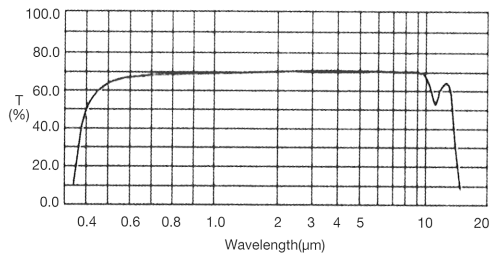
GERMANIUM (Ge)

Transmission Range (um)	1.8-23
Refractive Index@10um	4.0034
Temperature Coefficient of Refractive Index, /°C	5.5-6.1 x 10 ⁻⁶
Melting Point, °C	936
Hardness (Knoop), Kg/mm ²	780
Density, g/cm ³	5.327



ZINC SULPHIDE (ZnS)

Transmission Range (um)	0.37-14
Refractive Index@10um	2.2008
Temperature Coefficient of Refractive Index, /°C	50 x 10 ⁻⁶
Melting Point, °C	1830
Hardness (Knoop), Kg/mm ²	250
Density, g/cm ³	4.09
Young's Modulus, GPa	74.5



ZINC SELENIDE (ZnSe)

Transmission Range (um)	0.5-22
Refractive Index@10.6um	2.4028
Temperature Coefficient of Refractive Index, /°C	7.8 x 10 ⁻⁶
Melting Point, °C	1525
Hardness (Knoop), Kg/mm ²	120
Density, g/cm ³	5.27
Young's Modulus, GPa	67.22

