

Refractive Index (n) vs Wavelength (λ)

Wavelength (μm)	n _o	n _e
0.193	1.9288	1.9174
0.213	1.8890	1.8784
0.222	1.8754	1.8650
0.226	1.8702	1.8599
0.244	1.8506	1.8407
0.248	1.8470	1.8372
0.257	1.8393	1.8297
0.266	1.8330	1.8236
0.280	1.8244	1.8151
0.308	1.8110	1.8020
0.325	1.8047	1.7958
0.337	1.8001	1.7921
0.351	1.7969	1.7882
0.355	1.7960	1.7883
0.442	1.7804	1.7721
0.458	1.7784	1.7702
0.488	1.7753	1.7671
0.515	1.7730	1.7649
0.532	1.7717	1.7636
0.590	1.7680	1.7600
0.633	1.7659	1.7579
0.670	1.7643	1.7563
0.694	1.7634	1.7554
0.755	1.7614	1.7535
0.780	1.7607	1.7527
0.800	1.7601	1.7522
0.820	1.7596	1.7517
0.980	1.7561	1.7482
1.064	1.7545	1.7466
1.320	1.7501	1.7423
1.550	1.7462	1.7384
2.010	1.7375	1.7297
2.249	1.7323	1.7243
2.703	1.7190	1.7110
2.941	1.7120	1.7110
3.333	1.7010	1.6930
3.704	1.6870	1.6790
4.000	1.6740	1.6660
4.348	1.6580	1.6500
4.762	1.6360	1.6280
5.000	1.6230	1.6150
5.263	1.6070	1.5990

Optical Properties

Refractive Index	N _o = 1.75449 N _e = 1.74663
Thermal co-efficient of Refractive Index	13.1 x 10 ⁻⁶
Transmission Range	0.2 – 5.2 μm

Thermal Properties

Thermal Conductivity	27.2 W m ⁻¹ K ⁻¹ at 300 K
Specific Heat Capacity	763 J Kg ⁻¹ K ⁻¹
Melting Point	2040 °C

Mechanical Properties

Density	3.97 g/cc
Knoop Hardness	1800 & 2200
Young Modulus	335 GPa
Shear Modulus	148.1 GPa
Bulk Modulus	240 GPa
Poisson Ratio	0.25

Sapphire

for 10mm Thickness

