

# BARIUM FLUORIDE (BaF<sub>2</sub>)

## Refrac Index (n) vs Wavelength (λ)

Wavelength (μm)	Refractive Index
0.1408	1.8150
0.1452	1.7820
0.1477	1.7670
0.1500	1.6780
0.2000	1.5570
0.2652	1.5122
0.2803	1.5066
0.2893	1.5039
0.2967	1.5019
0.3021	1.5000
0.3130	1.4978
0.3254	1.4952
0.3403	1.4925
0.3466	1.4915
0.3610	1.4894
0.3663	1.4887
0.4046	1.4844
0.5461	1.4759
0.5893	1.4744
0.6438	1.4730
0.6563	1.4727
0.7065	1.4718
0.8521	1.4699
0.8944	1.4694
1.0140	1.4685
1.1287	1.4678
1.3673	1.4667
1.5295	1.4661
1.6810	1.4656
1.7012	1.4655
1.9701	1.4647
2.3254	1.4636
2.6738	1.4623
3.2434	1.4602
3.4220	1.4594
5.1380	1.4501
5.5490	1.4473
6.2380	1.4422
6.6331	1.4390
7.0442	1.4353
7.2680	1.4331
9.7240	1.4051
10.346	1.3936

## Optical Properties

Refractive Index	1.45
Thermal co-efficient of Refractive Index	-15.2 x 10 <sup>-6</sup>
Transmission Range	0.2 – 12.0 μm

## Thermal Properties

Thermal Linear Expansion	18.1 x 10 <sup>-6</sup> /K at 273 K
Thermal Conductivity	11.72 W m <sup>-1</sup> K <sup>-1</sup> at 286 K
Specific Heat Capacity	410 J Kg <sup>-1</sup> K <sup>-1</sup>
Melting Point	1386 °C

## Mechanical Properties

Density	4.89 g/cc
Knoop Hardness	82
Young Modulus	53.07 GPa
Shear Modulus	25.4 GPa
Poisson Ratio	0.343

## Barium Fluoride

for 10mm Thickness

