LightPath Technologies

BDNL-4

Glass Datasheet

LightPath's BDNL-4 infrared glass is based on Naval Research lab's (NRL) NRL-4 licensed exclusively from NRL. The glass exhibits negative thermos-optic coefficients (dn/dT), making it ideal for a-thermalization of optical systems. LightPath produces the glass in boules with a diameter of 120mm, and the glass is available both for molded optics, as well as diamond turned or conventionally polished fabrication.

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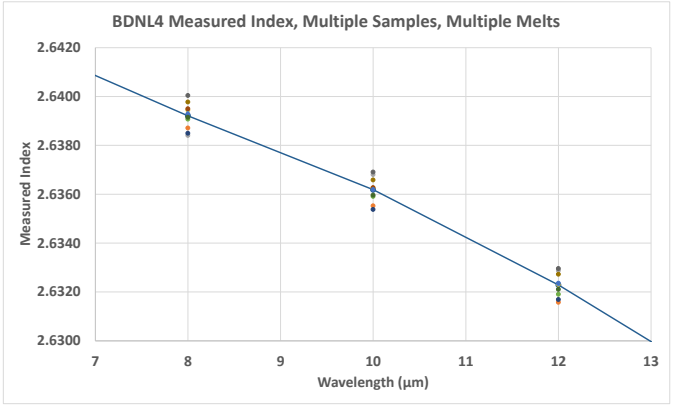
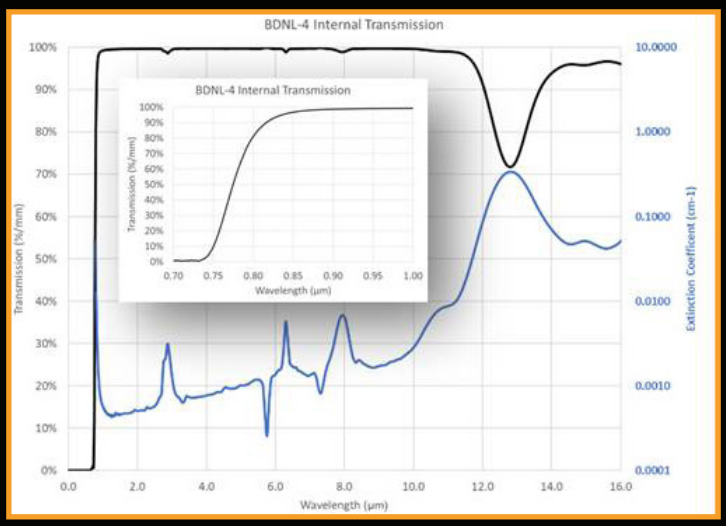
Wavelength (µm)	Refractive Index ± 0.001 (@20°C)
1	2.754
2	2.667
4	2.647
6	2.643
8	2.639
10	2.636
12	2.632
14	2.628

	@2 µm	@4 µm	@10 µm
dn/dT (ppm/°C) @22°C	-9.7	-14.3	-16.3

Material Properties	
Density	4.50 g/cm3
Thermal Expansion (20 – 100°C)	25.2 (ppm/°C)
Thermal Conductivity	0.17 (W/m*K)
Transition Temperature	205°C
Hardness (Vickers)	151 HV
Young's Modulus	14.2 GPa



To ensure consistency and repeatability, all data on this spec sheet is derived from measurements on multiple samples, from multiple production melts.



Wavelength	Transmission (%/mm)	Extinction Coefficient (cm-1)
1.0	99.29	0.00057
1.5	99.62	0.00046
2.0	99.68	0.00051
2.5	99.71	0.00058
3.0	99.44	0.00133
3.5	99.73	0.00074
4.0	99.76	0.00077
4.5	99.74	0.00091
5.0	99.75	0.00101
5.5	99.73	0.00118
6.0	99.72	0.00135
6.5	99.67	0.00172
7.0	99.76	0.00134
7.5	99.72	0.00169
8.0	98.95	0.00670
8.5	99.72	0.00187
9.0	99.76	0.00170
9.5	99.74	0.00198
10.0	99.64	0.00287
10.5	99.28	0.00608
11.0	99.01	0.00867
11.5	98.08	0.01775
12.0	91.59	0.08391
12.5	76.70	0.26351
13.0	73.92	0.31314
13.5	86.70	0.15332
14.0	93.69	0.07250
14.5	96.00	0.04711
15.0	95.81	0.05112
15.5	96.61	0.04249

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