

INFRA RED TRANSMITTING GLASS

9754

CORNING 9754 is a clear germanate glass composition material with excellent transmitting capabilities from ultraviolet to infrared. Good optical qualities combine with good environmental durability.

Excellent transmittance UV to NIR

50% UV cutoff at .33 microns to 50% IR cut off at 5.33 microns (1.346 mm Thickness).

Good environmental durability without coatings

Good optical quality

Striae Grade A
Low inclusion count.

Service to high heat to 650°C

Low refractive Index

nd = 1.6601

Near net shapes

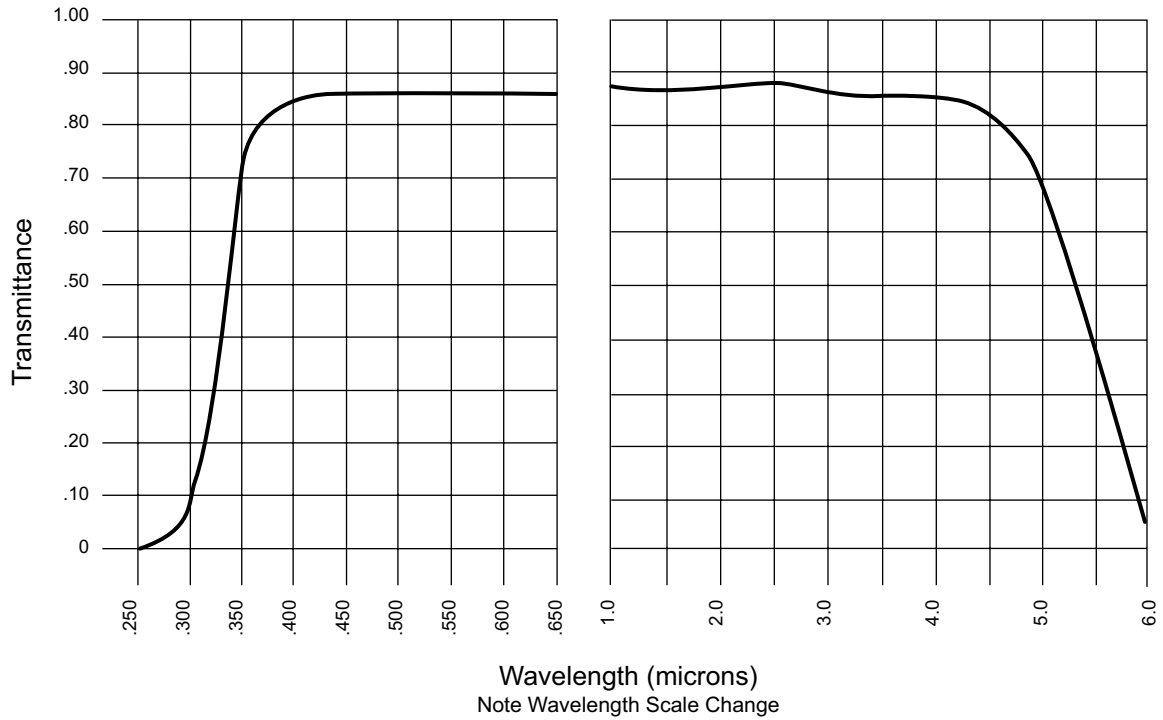
Offered in bars, cut plates or discs, molded blanks, and even polished blanks (in size up to 4" / 101.6 mm – for larger dimensions please contact us.)



OPTICAL PROPERTIES

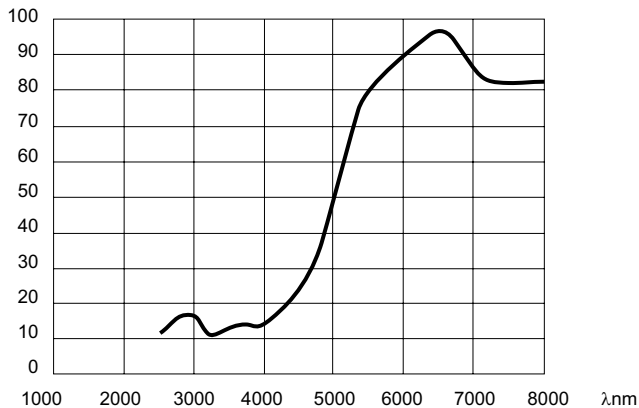
TRANSMITTANCE OF 9754

1.346 mm THICKNESS INCLUDING SURFACE LOSSES

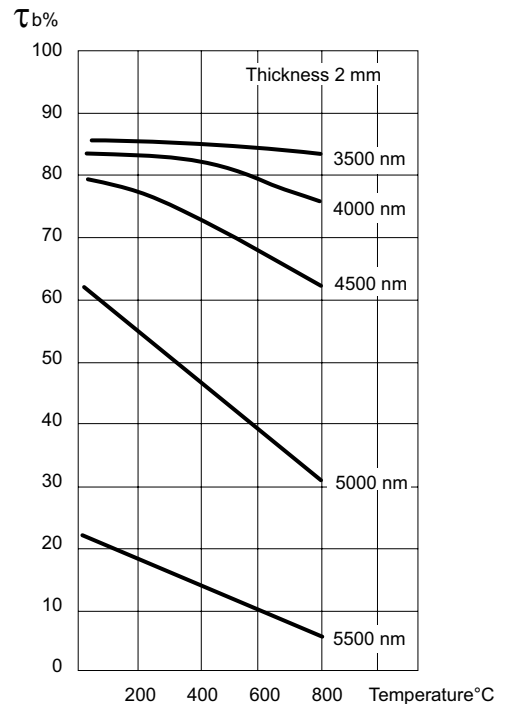


SPECTRAL EMMITTANCE (ARBITRARY UNIT)

(T= + 200°C, 3.2 mm thick)



TRANSMISSION VARIATIONS vs TEMPERATURE



REFRACTIVE INDEX

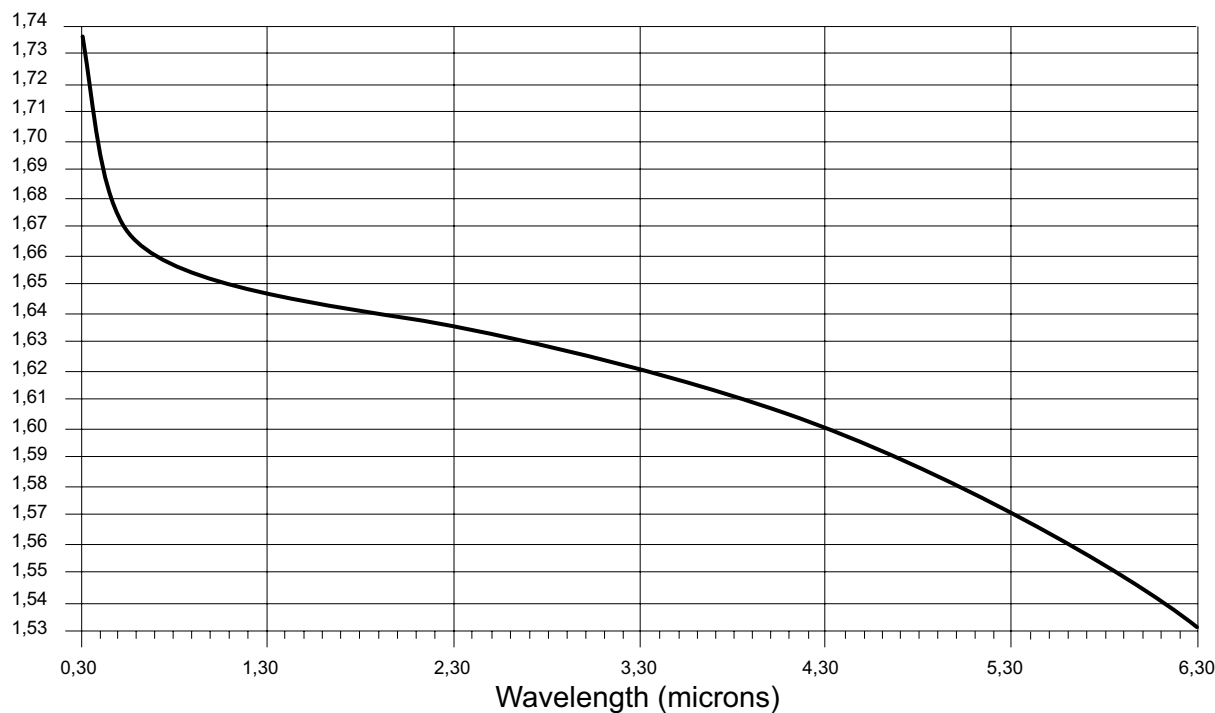
(+20°C)

nF (486.1 nm) 1.6702 nC (656.3 nm) 1.6560 Dispersion vd 46.5
 nd (589.3 nm) 1.6601 n (3.5 microns) 1.617

λ (nm)	Index	λ (nm)	Index	λ (nm)	Index
400	1.69093	775	1.65511	2250	1.63505
425	1.68502	800	1.65431	2500	1.63203
450	1.68020	825	1.65358	2750	1.62874
475	1.67621	850	1.65289	3000	1.62514
500	1.67285	875	1.65226	3250	1.62119
525	1.67000	900	1.65167	3500	1.61686
550	1.66754	925	1.65112	3750	1.61214
575	1.66542	950	1.65060	4000	1.60698
600	1.66356	975	1.65011	4250	1.60135
625	1.66192	1000	1.64964	4500	1.59521
650	1.66046	1250	1.64595	4750	1.58853
675	1.65916	1500	1.64310	5000	1.58125
700	1.65800	1750	1.64049	5250	1.57332
725	1.65694	2000	1.63758	5500	1.56569
750	1.65599				

REFRACTIVE INDEX vs WAVELENGTH

CODE 9754 GLASS



THERMAL COEFFICIENT OF REFRACTIVE INDEX

Absolute coefficient

Relative coefficient

Temper- atures °C	Wavelength (nm)					Wavelength (nm)				
	1060.0	643.8 C'	546.1 e	480.0 F	435.8 g	1060.0	643.8 C'	546.1 e	480.0 F'	435.8 g
-40	7.9	8.8	9.3	10.2	11.1	10.3	11.2	11.7	12.7	13.5
0	8.7	9.6	10.1	11.0	11.9	10.4	11.4	11.9	12.8	13.6
100	10.7	11.6	12.1	13.0	13.9	11.6	12.5	13.1	14.0	14.8

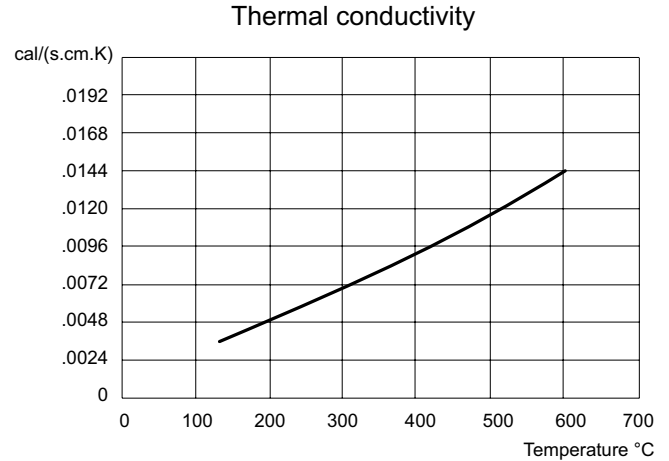
STRESS OPTICAL COEFFICIENT 262 nm/cm/kg/mm²

MECHANICAL PROPERTIES

Specific gravity	3.51 g/cm ³	
Young's modulus, 25°C	12.2 x 10 ⁶ psi	8577 kg/mm ²
Shear modulus, 25°C	5.14 x 10 ⁶ psi	
Modulus of rupture, 25°C, abraded	6370 psi	3613 kg/mm ²
Poisson's ration, 25°C	0.290	
Knoop hardness, 100 g load	560 kg/mm ²	

THERMAL PROPERTIES

Softening point	874°C
Annealing point	735°C
Strain point	697°C
Service Temperatures:	
normal	650°C
extreme	680°C
Thermal conductivity	0.01 W/cm°C



ELECTRICAL PROPERTIES

Dielectric Constant		
350°C	100 C thru 10 Kc	9.95
400°C	100 c	10.08
400°C	1 Kc	10.08
400°C	10 Kc	10.05
550°C	100 c	10.61
550°C	1 Kc	10.41
550°C	10 Kc	10.35
Loss Tangent		
25°C	100 c	0.00137
25°C	1 Kc	0.00137
25°C	10 Kc	0.00170
300°C	100 c	0.00115
300°C	1 Kc	0.00130
300°C	10 Kc	0.00150
550°C	100 c	0.072
550°C	1 Kc	0.013
550°C	10 Kc	0.0039
Log DC resistivity		
350°C		14.9 ohm.cm
450°C		12.5 ohm.cm
550°C		10.5 ohm.cm

CHEMICAL PROPERTIES / WEATHERING

Acid durability	
10% HCL, 25°C, 30 seconds	no detectable weight loss or appearance change
10% HCL, 25°C, 10 minutes	0.648 mg/cm ² weight loss; very slightly surface frosting
Weathering	
98% relative humidity, 2 weeks	Deposit visible only with intense illumination
98% relative humidity, 4 weeks	Deposit readily apparent in ordinary light