

DESCRIPTION

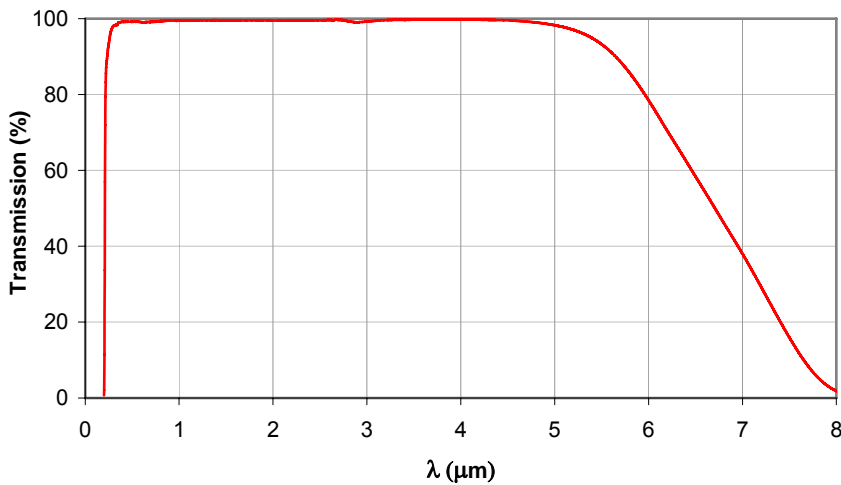
IRphotonics UVIR™ glass is a proprietary fluoride glass that offers a broad transmission from 200 nm to 6 μm . It is ideally suited for high volume applications in the UV and the infrared. It has a negative dn/dT and a low refractive index.

UVIR™ can be easily machined by diamond turning, grinding and polishing, molding and MRF. Its amorphous structure limits tool wear during diamond turning, which translates into cost savings.

UVIR™ glass can advantageously replace calcium fluoride because of its greater machinability and better surface roughness. It is an ideal material for aspherical lenses for both the UV and the IR.

UVIR INTERNAL TRANSMISSION

10mm thick window



UVIR Glass



FEATURES

- Moldable Amorphous Material
- Easier to Diamond Point Turn than CaF_2
- Low Refractive Index
- Negative dn/dT
- High Transmission from UV to Mid-Infrared

SPECIFICATIONS

$n_d = 1.49926$	$u_d = 76.61$	$n_F - n_C = 0.00652$
$n_e = 1.50081$	$u_e = 76.85$	$n_{F'} - n_{C'} = 0.00662$

Refractive Indices		
	λ (nm)	
n_{4500}	4500	1.46294
n_{3500}	3500	1.47427
$n_{2325.4}$	2325.4	1.48388
$n_{1970.1}$	1970.1	1.48614
$n_{1529.6}$	1529.6	1.48872
$n_{1060.0}$	1060.0	1.49179
n_t	1014.0	1.49217
n_s	852.1	1.49385
n_r	706.5	1.49616
n_C	656.3	1.49727
$n_{C'}$	643.8	1.49758
$N_{632.8}$	632.8	1.49787
n_D	589.3	1.49920
n_d	587.6	1.49926
n_e	546.1	1.50081
n_F	486.1	1.50379
$n_{F'}$	480.0	1.50420
n_g	435.8	1.50728
n_h	404.7	1.51018

Constants of Dispersion Formula: Sellmeier	
B_1	0.70858434
B_2	0.512822377
B_3	2.187149612
C_1	0.007915804
C_2	0.007298296
C_3	562.5368294

Internal Transmittance τ_i	
λ (nm)	τ_i (10 mm)
4500	0.996
3500	0.998
2500	0.995
2300	0.995
2000	0.995
1700	0.995
1550	0.996
1064	0.995
1014	0.995
852	0.995
768	0.992
706	0.991
656	0.992
643	0.991
589	0.991
546	0.992
485	0.992
435	0.992
404	0.992
350	0.989
300	0.981
270	0.963
250	0.933
230	0.889
220	0.856
210	0.569
200	0.007

Relative Partial Dispersion	
$P_{s,t}$	0.2573
$P_{C,s}$	0.5244
$P_{d,C}$	0.3052
$P_{e,d}$	0.2381
$P_{g,F}$	0.5349
$P_{h,g}$	0.4457
$P'_{s,t}$	0.2532
$P'_{C',s}$	0.5628
$P'_{d,C'}$	0.2534
$P'_{e,d}$	0.2342
$P'_{g,F'}$	0.4647
$P'_{h,g}$	0.4385

Deviations of Relative Partial Dispersions from "Normal"	
$\Delta P_{C,t}$	-0.1267
$\Delta P_{C,s}$	-0.0571
$\Delta P_{F,e}$	0.0101
$\Delta P_{g,F}$	0.0200

Other properties	
$\alpha_{20/200}^{\text{deg. C}}$ ($10^{-6}/K$)	18
T_g ($^{\circ}C$)	265
$T_{10} 13.0$ ($^{\circ}C$)	265
$T_{10} 7.6$ ($^{\circ}C$)	295
C_p (J/(g K))	0.53
λ (W/(m \cdot K))	0.6
Density (g/cm 3)	4.35
Young modulus E (GPa)	55
Poisson Ratio	0.31
Hardness (kg/mm 2)	250

Temperature Coefficients of Refractive Index					
Range of temperatures	dn/dT absolute ($10^{-6}/K$)				
	633 nm	1064	1550 nm	3500 nm	4500 nm
-60 $^{\circ}C$ to 60 $^{\circ}C$	-5.12	-5.26	-5.26	-5.02	-4.75
Sellmeier Thermal Index vs Temperature Coefficients (as used by SCHOTT®)					
D_0	D_1	D_2	E_0	E_1	λ_{TK}
-9.8×10^{-6}	2.05×10^{-8}	-3.5×10^{-11}	1×10^{-8}	1.5×10^{-10}	0.2

Contact IRphotonics for prices and availability or to obtain the name of your local representative.

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