

**LLF1**  
**548458.294**

$n_d = 1.54814$	$v_d = 45.75$	$n_F - n_C = 0.011981$
$n_e = 1.55099$	$v_e = 45.47$	$n_{F'} - n_{C'} = 0.012118$

Refractive Indices		
	$\lambda$ [nm]	
$n_{2325.4}$	2325.4	1.51865
$n_{1970.1}$	1970.1	1.52354
$n_{1529.6}$	1529.6	1.52884
$n_{1060.0}$	1060.0	1.53470
$n_t$	1014.0	1.53541
$n_s$	852.1	1.53845
$n_r$	706.5	1.54256
$n_C$	656.3	1.54457
$n_{C'}$	643.8	1.54513
$n_{632.8}$	632.8	1.54566
$n_D$	589.3	1.54803
$n_d$	587.6	1.54814
$n_e$	546.1	1.55099
$n_F$	486.1	1.55655
$n_{F'}$	480.0	1.55725
$n_g$	435.8	1.56333
$n_h$	404.7	1.56911
$n_i$	365.0	1.57932
$n_{334.1}$	334.1	1.59092
$n_{312.6}$	312.6	
$n_{296.7}$	296.7	
$n_{280.4}$	280.4	
$n_{248.3}$	248.3	

Internal Transmittance $\tau_i$		
$\lambda$ [nm]	$\tau_i$ (10mm)	$\tau_i$ (25mm)
2500	0.758	0.500
2325	0.821	0.610
1970	0.933	0.840
1530	0.996	0.990
1060	0.998	0.996
700	0.999	0.997
660	0.998	0.996
620	0.998	0.996
580	0.999	0.997
546	0.999	0.997
500	0.998	0.996
460	0.998	0.996
436	0.998	0.996
420	0.998	0.995
405	0.998	0.994
400	0.997	0.993
390	0.997	0.992
380	0.995	0.988
370	0.994	0.984
365	0.992	0.981
350	0.982	0.955
334	0.919	0.810
320	0.618	0.300
310	0.240	0.010
300	0.024	
290	0.002	
280		
270		
260		
250		

Relative Partial Dispersion	
$P_{s,t}$	0.2537
$P_{C,s}$	0.5108
$P_{d,C}$	0.2983
$P_{e,d}$	0.2376
$P_{g,F}$	0.5660
$P_{i,h}$	0.8520
$P'_{s,t}$	0.2508
$P'_{C',s}$	0.5516
$P'_{d,C'}$	0.2484
$P'_{e,d}$	0.2349
$P'_{g,F'}$	0.5017
$P'_{i,h}$	0.8424

Deviation of Relative Partial Dispersions $\Delta P$ from the "Normal Line"	
$\Delta P_{C,t}$	0.0025
$\Delta P_{C,s}$	0.0012
$\Delta P_{F,e}$	-0.0003
$\Delta P_{g,F}$	-0.0009
$\Delta P_{i,g}$	-0.0062

Constants of Dispersion Formula	
$B_1$	1.21640125
$B_2$	0.13366454
$B_3$	0.883399468
$C_1$	0.00857807248
$C_2$	0.0420143003
$C_3$	107.59306

Constants of Dispersion $dn/dT$	
$D_0$	$3.25 \cdot 10^{-7}$
$D_1$	$1.74 \cdot 10^{-8}$
$D_2$	$-6.12 \cdot 10^{-11}$
$E_0$	$6.53 \cdot 10^{-7}$
$E_1$	$2.58 \cdot 10^{-10}$
$\lambda_{TK} [\mu m]$	0.233

Color Code	
$\lambda_{80}/\lambda_5$	33/31
(*= $\lambda_{70}/\lambda_5$ )	

Remarks	
lead containing glass type	

Other Properties	
$\alpha_{-30/+70^\circ C} [10^{-6}/K]$	8.1
$\alpha_{+20/+300^\circ C} [10^{-6}/K]$	9.2
$T_g [^\circ C]$	431
$T_{10}^{13.0} [^\circ C]$	426
$T_{10}^{7.6} [^\circ C]$	628
$c_p [J/(g \cdot K)]$	0.650
$\lambda [W/(m \cdot K)]$	0.990
$\rho [g/cm^3]$	2.94
$E [10^3 N/mm^2]$	60
$\mu$	0.208
$K [10^{-6} mm^2/N]$	3.05
$HK_{0.1/20}$	450
$HG$	3
$CR$	1
$FR$	0
$SR$	1
$AR$	2
$PR$	1

Temperature Coefficients of Refractive Index						
[ $^\circ C$ ]	$\Delta n_{rel}/\Delta T [10^{-6}/K]$			$\Delta n_{abs}/\Delta T [10^{-6}/K]$		
	1060.0	e	g	1060.0	e	g
-40/ -20	1.5	2.4	3.4	-0.6	0.3	1.3
+20/ +40	1.9	2.9	3.9	0.6	1.5	2.5
+60/ +80	2.0	3.0	4.1	1.0	2.0	3.0