ガラスレンズ用プレス品硝種
Glass Lens Pressed Blanks

ガラス研磨レンズ用硝種
Glass Polished Lens

推奨硝種
Recommended Glass Type

NBFD38

653-395 $n_d = 1.65253$ $\nu_d = 39.48\ (\ 39.480\ )$ $n_F - n_C = 0.016528$
$n_e = 1.65645$ $\nu_e = 39.24\ (\ 239.240\ )$ $n_{F'} - n_{C'} = 0.016729$

屈 折 率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.62572
$n_{1128.64}$	1128.64	1.63265
n_t	1013.98	1.63501
n_s	852.11	1.63922
$n_{A'}$	768.195	1.64215
n_r	706.519	1.64487
n_C	656.273	1.64762
$n_{C'}$	643.847	1.64839
n_{633}	632.8	1.64912
n_D	589.294	1.65238
n_d	587.562	1.65253
n_e	546.074	1.65645
n_F	486.133	1.66415
$n_{F'}$	479.991	1.66512
n_g	435.834	1.67362
n_h	404.656	1.68179
n_i	365.015	1.69646

分 散 式 の 定 数 Constants of dispersion formula	
A_0	2.6646621
A_1	$-1.3407305 \times 10^{-2}$
A_2	2.2265180×10^{-2}
A_3	7.8184254×10^{-4}
A_4	$-2.1893122 \times 10^{-5}$
A_5	4.1616232×10^{-6}

部 分 分 散 Partial dispersions	
$n_C - n_t$	0.012609
$n_d - n_C$	0.004910
$n_F - n_d$	0.011618
$n_g - n_F$	0.009473
$n_{C'} - n_t$	0.013384
$n_e - n_{C'}$	0.008056
$n_{F'} - n_e$	0.008673
$n_g - n_{F'}$	0.008497

部分分散比 Partial dispersion rates			
P_{C_t}	0.7629	$P'_{C'\_t}$	0.8000
P_{d_C}	0.2971	$P'_{d\_C'}$	0.2472
P_{e_d}	0.2372	P'_{e_d}	0.2344
P_{F_e}	0.4657	$P'_{F'\_e}$	0.5184
P_{g_F}	0.5731	$P'_{g\_F'}$	0.5079
P_{h_g}	0.4941	P'_{h_g}	0.4881
P_{i_h}	0.8879	P'_{i_h}	0.8773

異常分散性 Anomalous dispersions	
ΔP_{C_t}	0.0325
$\Delta P_{C\_A'}$	0.0061
ΔP_{g_d}	−0.0058
ΔP_{g_F}	−0.0041
ΔP_{i_g}	−0.0096

光弾性定数 Photoelastic Constant	
B (10^{-12}/Pa)	3.49

比 重 Specific Gravity	
d	2.96

化 学 的 性 質 Chemical Properties	
D_W	1
D_A	3
T_{Blue}	3
D_{NaOH}	1
D_{STPP}	1
D_O	2
D_H	

熱 的 性 質 Thermal Properties	
T_g (℃)	561
T_s (℃)	617
$T_{10^{14.5}}$ (℃)	530
$T_{10^{13}}$ (℃)	558
$T_{10^{7.6}}$ (℃)	671
$\alpha_{-30/+70℃}$ (10^{-7}/℃)	56
$\alpha_{100/300℃}$ (10^{-7}/℃)	73
λ [W/(m·K)]	0.826
C_p [kJ/(kg·K)]	0.673

機 械 的 性 質 Mechanical Properties	
H_K	585(6)
F_A	90
E (GPa)	84
G (GPa)	33.7
μ	0.250
σ_b (MPa)	116

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.879	0.723	0.523
2400	0.916	0.804	0.646
2200	0.960	0.903	0.816
2000	0.990	0.975	0.951
1800	0.996	0.989	0.979
1600	0.997	0.994	0.987
1550	0.998	0.994	0.988
1500	0.997	0.993	0.985
1400	0.995	0.988	0.977
1300	0.999	0.999	0.998
1200	0.999	0.999	0.999
1100	0.999	0.999	0.999
1060	0.999	0.999	0.999
1050	0.999	0.999	0.999
1000	0.999	0.999	0.999
950	0.999	0.999	0.999
900	0.999	0.999	0.999
850	0.999	0.999	0.999
830	0.999	0.999	0.999
800	0.999	0.999	0.998
780	0.999	0.999	0.999
750	0.999	0.999	0.998
700	0.999	0.999	0.997
650	0.999	0.998	0.996
600	0.998	0.995	0.990
550	0.996	0.991	0.982
500	0.999	0.997	0.993
480	0.998	0.995	0.990
460	0.997	0.993	0.986
440	0.996	0.991	0.982
420	0.995	0.988	0.976
400	0.992	0.981	0.962
390	0.989	0.972	0.946
380	0.985	0.962	0.925
370	0.976	0.942	0.888
360	0.958	0.899	0.807
350	0.918	0.807	0.651
340	0.793	0.560	0.314
330	0.448	0.135	0.018
320	0.060	0.001	
310	0.001		
300			
290			
280			

屈折率の温度係数 dn/dT (×10^{-6}/℃) Temperature Coefficient of Refractive Index
アッベ数の温度係数 dν/dT (×10^{-3}/℃) Temperature Coefficient of Abbe-number

	(℃)	dn/dT										dν/dT	
		n_h	n_g	$n_{F'}$	n_F	n_e	n_d	n_{633}	$n_{C'}$	n_C	n_r	ν_e	ν_d
		404.66	435.84	479.99	486.13	546.07	587.56	632.80	643.85	656.27	706.52	546.07	587.56
dn/dT & dν/dT (rel.)	-40 / -20	6.5	5.9	5.3	5.2	4.7	4.5	4.2	4.2	4.2	4.0	-2.2	-2.3
	-20 / 0	6.5	5.8	5.2	5.1	4.6	4.4	4.2	4.1	4.1	3.9	-2.3	-2.3
	0 / 20	6.5	5.8	5.2	5.1	4.6	4.4	4.2	4.1	4.1	3.9	-2.3	-2.3
	20 / 40	6.5	5.9	5.3	5.2	4.7	4.4	4.2	4.1	4.1	3.9	-2.3	-2.3
	40 / 60	6.6	6.0	5.3	5.3	4.7	4.5	4.3	4.2	4.2	4.0	-2.3	-2.3
	60 / 80	6.8	6.1	5.5	5.4	4.8	4.6	4.3	4.3	4.3	4.1	-2.4	-2.4
	80 / 100	6.9	6.2	5.6	5.5	4.9	4.7	4.5	4.4	4.4	4.2	-2.4	-2.4
	100 / 120	7.1	6.4	5.7	5.6	5.1	4.8	4.6	4.5	4.5	4.3	-2.4	-2.5
	120 / 140	7.3	6.6	5.9	5.8	5.2	4.9	4.7	4.7	4.6	4.5	-2.5	-2.5
	140 / 150	7.4	6.7	6.0	5.9	5.3	5.1	4.8	4.8	4.7	4.6	-2.5	-2.5
dn/dT & dν/dT (abs.)	-40 / -20	4.2	3.6	3.0	2.9	2.4	2.2	2.0	2.0	1.9	1.8	-2.3	-2.3
	-20 / 0	4.5	3.9	3.3	3.2	2.7	2.5	2.3	2.2	2.2	2.0	-2.3	-2.3
	0 / 20	4.8	4.1	3.5	3.5	3.0	2.7	2.5	2.5	2.4	2.3	-2.3	-2.3
	20 / 40	5.1	4.4	3.8	3.7	3.2	3.0	2.8	2.7	2.7	2.5	-2.3	-2.3
	40 / 60	5.3	4.7	4.1	4.0	3.5	3.2	3.0	3.0	2.9	2.7	-2.4	-2.4
	60 / 80	5.6	4.9	4.3	4.2	3.7	3.4	3.2	3.2	3.1	3.0	-2.4	-2.4
	80 / 100	5.9	5.2	4.6	4.5	3.9	3.7	3.5	3.4	3.4	3.2	-2.4	-2.4
	100 / 120	6.2	5.5	4.8	4.7	4.2	3.9	3.7	3.6	3.6	3.4	-2.4	-2.4
	120 / 140	6.4	5.7	5.0	5.0	4.4	4.1	3.9	3.9	3.8	3.6	-2.5	-2.5
	140 / 150	6.6	5.9	5.2	5.1	4.6	4.3	4.1	4.0	4.0	3.8	-2.5	-2.5

線膨張係数 α (×10^{-7}/℃) Coefficient of Thermal Expansion

(℃)	α
-40 / -30	54
-30 / -20	54
-20 / -10	55
-10 / 0	55
0 / 10	56
10 / 20	56
20 / 30	57
30 / 40	57
40 / 50	58
50 / 60	58
60 / 70	59
70 / 80	59
80 / 90	60
90 / 100	61
100 / 110	61
110 / 120	62
120 / 130	62
130 / 140	62
140 / 150	63

着 色 度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	375/330
着 色 度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	359/332

CCI Color Contribution Index	
CCI(G)	0.77
CCI(R)	0.84

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
βC	
βd	
βF	
βg	

備 考 Remarks

硝種対照表 Glass Cross Reference Index

	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	NBFD38		(S-NBH5)			
Code	653-395		(654-397)			

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