

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

NBFD30

859-300

$n_d = 1.85883$ $\nu_d = 30.00$
 $n_e = 1.86560$ $\nu_e = 29.77$

$n_F - n_C = 0.028631$
 $n_F' - n_C' = 0.029073$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.81916
$n_{1128.64}$	1128.64	1.82752
n_t	1013.98	1.83075
n_s	852.11	1.83696
$n_{A'}$	768.19	1.84156
n_r	706.52	1.84597
n_C	656.27	1.85052
$n_{C'}$	643.85	1.85182
n_{633}	632.80	1.85304
n_D	589.29	1.85858
n_d	587.56	1.85883
n_e	546.07	1.86560
n_F	486.13	1.87915
$n_{F'}$	479.99	1.88089
n_g	435.84	1.89627
n_h	404.66	1.91144
n_i	365.01	1.93975

部分分散 Partial dispersions	
$n_C - n_t$	0.019771
$n_d - n_C$	0.008314
$n_F - n_d$	0.020317
$n_g - n_F$	0.017118
$n_{C'} - n_t$	0.021069
$n_e - n_{C'}$	0.013784
$n_{F'} - n_e$	0.015289
$n_g - n_{F'}$	0.015378

比重 Specific Gravity	
d	3.75

化学的性質 Chemical Properties	
D_W	1
D_A	1
T_{Blue}	1
D_{NaOH}	1
D_{STPP}	1
D_O	1
D_H	1

内部透過率 Internal Transmittance			
λ (nm)	τ_{2mm}	τ_{5mm}	τ_{10mm}
2500	0.970	0.928	0.860
2400	0.976	0.941	0.885
2200	0.990	0.976	0.952
2000	0.995	0.989	0.977
1800	0.998	0.994	0.989
1600	0.999	0.997	0.994
1550	0.999	0.997	0.995
1500	0.999	0.997	0.994
1400	0.999	0.998	0.996
1300	0.999	0.999	0.998
1200	0.999	0.999	0.998
1100	0.999	0.999	0.998
1060	0.999	0.999	0.998
1050	0.999	0.999	0.998
1000	0.999	0.999	0.997
950	0.999	0.999	0.997
900	0.999	0.999	0.997
850	0.999	0.999	0.997
830	0.999	0.999	0.997
800	0.999	0.999	0.999
780	0.999	0.999	0.999
750	0.999	0.999	0.999
700	0.999	0.999	0.998
650	0.999	0.998	0.996
600	0.999	0.998	0.995
550	0.999	0.997	0.993
500	0.997	0.992	0.985
480	0.996	0.989	0.979
460	0.994	0.986	0.971
440	0.992	0.980	0.961
420	0.988	0.970	0.942
400	0.977	0.943	0.889
390	0.962	0.908	0.824
380	0.928	0.829	0.687
370	0.843	0.652	0.425
360	0.597	0.275	0.076
350			
340			
330			
320			
310			
300			
290			
280			

部分分散比 Partial dispersion rates			
$P_{C,t}$	0.6905	$P'_{C,t}$	0.7247
$P_{d,C}$	0.2904	$P'_{d,C}$	0.2413
$P_{e,d}$	0.2364	$P'_{e,d}$	0.2328
$P_{F,e}$	0.4732	$P'_{F,e}$	0.5259
$P_{g,F}$	0.5979	$P'_{g,F}$	0.5289
$P_{h,g}$	0.5297	$P'_{h,g}$	0.5217
$P_{i,h}$	0.9891	$P'_{i,h}$	0.9740

熱的性質 Thermal Properties	
T_g (°C)	679
T_s (°C)	734
$T_{10^{14.5}}$ (°C)	660
$T_{10^{13}}$ (°C)	691
$T_{10^{7.6}}$ (°C)	779
$\alpha_{-30/+70^\circ C}$ ($10^{-7}/^\circ C$)	70
$\alpha_{100/300^\circ C}$ ($10^{-7}/^\circ C$)	87
λ [W/(m·K)]	1.120
C_p [kJ/(kg·K)]	0.609

分散式の定数 Constants of dispersion formula	
A_0	3.3241277
A_1	$-1.3971809 \times 10^{-2}$
A_2	4.0932303×10^{-2}
A_3	2.2915572×10^{-3}
A_4	$-1.2906531 \times 10^{-4}$
A_5	1.8478848×10^{-5}

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	0.0044
$\Delta P_{C,A'}$	-0.0005
$\Delta P_{g,d}$	0.0041
$\Delta P_{g,F}$	0.0037
$\Delta P_{i,g}$	0.0430

機械的性質 Mechanical Properties	
H_K	500(5)
F_A	100
E (GPa)	117
G (GPa)	45.7
μ	0.284
σ_b (MPa)	83

光弾性定数 Photoelastic Constant	
B ($10^{-12}/Pa$)	2.08

屈折率の温度係数 dn/dT ($\times 10^{-6}/^\circ C$)		アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/^\circ C$)													
Temperature Coefficient of Refractive Index		Temperature Coefficient of Abbe-number													
	(°C)	dn/dT												$d\nu/dT$	
		n_h	n_g	$n_{F'}$	n_F	n_e	n_d	n_{633}	$n_{C'}$	n_C	n_r	ν_e	ν_d		
dn/dT & $d\nu/dT$ (rel.)	-40 / -20	8.6	7.2	5.9	5.8	4.8	4.4	4.0	4.0	3.9	3.6	-1.8	-1.8		
	-20 / 0	8.9	7.4	6.0	5.9	4.9	4.4	4.1	4.0	3.9	3.7	-1.9	-1.9		
	0 / 20	9.2	7.6	6.2	6.0	5.0	4.5	4.2	4.1	4.0	3.7	-2.0	-2.0		
	20 / 40	9.5	7.8	6.4	6.2	5.1	4.6	4.2	4.2	4.1	3.8	-2.1	-2.1		
	40 / 60	9.8	8.1	6.5	6.4	5.3	4.7	4.3	4.3	4.2	3.9	-2.1	-2.1		
	60 / 80	10.1	8.3	6.7	6.6	5.4	4.8	4.4	4.3	4.2	3.9	-2.2	-2.2		
	80 / 100	10.4	8.5	6.9	6.7	5.5	4.9	4.5	4.4	4.3	4.0	-2.3	-2.3		
	100 / 120	10.7	8.7	7.0	6.8	5.6	5.0	4.5	4.4	4.4	4.0	-2.4	-2.4		
	120 / 140	10.9	8.9	7.1	7.0	5.6	5.0	4.6	4.5	4.4	4.0	-2.5	-2.5		
	140 / 150	11.1	9.0	7.2	7.0	5.7	5.1	4.6	4.5	4.4	4.0	-2.5	-2.5		
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	6.0	4.6	3.3	3.2	2.3	1.9	1.5	1.5	1.4	1.2	-1.8	-1.8		
	-20 / 0	6.6	5.1	3.8	3.7	2.7	2.3	1.9	1.9	1.8	1.5	-1.9	-1.9		
	0 / 20	7.2	5.7	4.3	4.1	3.1	2.7	2.3	2.2	2.1	1.9	-2.0	-2.0		
	20 / 40	7.8	6.1	4.7	4.6	3.5	3.0	2.6	2.5	2.5	2.2	-2.1	-2.1		
	40 / 60	8.3	6.6	5.1	4.9	3.8	3.3	2.9	2.8	2.7	2.5	-2.2	-2.2		
	60 / 80	8.8	7.0	5.4	5.3	4.1	3.6	3.2	3.1	3.0	2.7	-2.3	-2.2		
	80 / 100	9.2	7.3	5.7	5.6	4.3	3.8	3.4	3.3	3.2	2.9	-2.3	-2.3		
	100 / 120	9.6	7.7	6.0	5.8	4.6	4.0	3.5	3.4	3.4	3.0	-2.4	-2.4		
	120 / 140	9.9	7.9	6.2	6.0	4.7	4.1	3.7	3.6	3.5	3.1	-2.5	-2.5		
	140 / 150	10.2	8.1	6.3	6.2	4.8	4.2	3.7	3.6	3.5	3.2	-2.5	-2.5		

線膨張係数 α ($\times 10^{-7}/^\circ C$)	
Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	62
-30 / -20	64
-20 / -10	67
-10 / 0	68
0 / 10	70
10 / 20	71
20 / 30	71
30 / 40	72
40 / 50	72
50 / 60	72
60 / 70	72
70 / 80	72
80 / 90	72
90 / 100	72
100 / 110	73
110 / 120	73
120 / 130	74
130 / 140	75
140 / 150	76

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	(395)/360
着色度 Coloration of Internal Transmittance (内部透過率)	
$\lambda_{\tau 80}/\lambda_{\tau 5}$	388/359

CCI Color Contribution Index	
CCI (G)	2.29
CCI (R)	2.45

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
β_C	
β_d	
β_F	
β_g	

備考 Remarks						
硝種対照表 Glass Cross Reference Index						
Glass_Type	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Code	NBFD30					
	859-300					

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