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

FD300

624-301

$n_d = 1.62423$ $\nu_d = 30.05$ (30.050) $n_F - n_C = 0.020773$
$n_e = 1.62912$ $\nu_e = 29.76$ (29.761) $n_{F'} - n_{C'} = 0.021139$

屈 折 率 Refractive Index

	λ (nm)	
$n_{1529.6}$	1529.60	1.59491
$n_{1128.64}$	1128.64	1.60173
n_t	1013.98	1.60415
n_s	852.11	1.60864
$n_{A'}$	768.195	1.61191
n_r	706.519	1.61504
n_C	656.273	1.61827
$n_{C'}$	643.847	1.61920
n_{633}	632.8	1.62007
n_D	589.294	1.62405
n_d	587.562	1.62423
n_e	546.074	1.62912
n_F	486.133	1.63905
$n_{F'}$	479.991	1.64034
n_g	435.834	1.65198
n_h	404.656	1.66399
n_i	365.015	1.68829

分 散 式 の 定 数 Constants of dispersion formula

A_0	2.5643434
A_1	$-1.2642190 \times 10^{-2}$
A_2	1.9574131×10^{-2}
A_3	3.4696331×10^{-3}
A_4	$-4.3301058 \times 10^{-4}$
A_5	4.0458727×10^{-5}

部 分 分 散 Partial dispersions

$n_C - n_t$	0.014121
$n_d - n_C$	0.005954
$n_F - n_d$	0.014819
$n_g - n_F$	0.012938
$n_{C'} - n_t$	0.015047
$n_e - n_{C'}$	0.009918
$n_{F'} - n_e$	0.011221
$n_g - n_{F'}$	0.011646

部分分散比 Partial dispersion rates

P_{C_t}	0.6798	$P'_{C'_t}$	0.7118
P_{d_C}	0.2866	$P'_{d_C'}$	0.2379
P_{e_d}	0.2354	P'_{e_d}	0.2313
P_{F_e}	0.4780	$P'_{F'_e}$	0.5308
P_{g_F}	0.6228	$P'_{g_F'}$	0.5509
P_{h_g}	0.5780	P'_{h_g}	0.5680
P_{i_h}	1.1699	P'_{i_h}	1.1497

異常分散性 Anomalous dispersions

ΔP_{C_t}	−0.0065
$\Delta P_{C_A'}$	−0.0068
ΔP_{g_d}	0.0329
ΔP_{g_F}	0.0286
ΔP_{i_g}	0.2729

光弾性定数 Photoelastic Constant

B (10^{-12}/Pa)	2.21

比 重 Specific Gravity

d	2.75

化 学 的 性 質 Chemical Properties

D_W	2
D_A	2
T_{Blue}	3
D_{NaOH}	5
D_{STPP}	1
D_O	2
D_H	

熱 的 性 質 Thermal Properties

T_g (℃)	451
T_s (℃)	495
$T_{10^{14.5}}$ (℃)	
$T_{10^{13}}$ (℃)	
$T_{10^{7.6}}$ (℃)	523
$\alpha_{-30/+70℃}$ (10^{-7}/℃)	127
$\alpha_{100/300℃}$ (10^{-7}/℃)	168
λ [W/(m·K)]	0.749
C_p [kJ/(kg·K)]	0.767

機 械 的 性 質 Mechanical Properties

H_K	340(3)
F_A	510
E (GPa)	65
G (GPa)	25.9
μ	0.254
σ_b (MPa)	

内部透過率 Internal Transmittance

λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.891	0.749	0.561
2400	0.909	0.788	0.620
2200	0.937	0.850	0.723
2000	0.961	0.905	0.818
1800	0.982	0.954	0.911
1600	0.996	0.989	0.978
1550	0.997	0.992	0.985
1500	0.998	0.994	0.988
1400	0.999	0.998	0.996
1300	0.999	0.999	0.997
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	0.998
950	0.999	0.999	0.998
900	0.999	0.999	0.999
850	0.999	0.999	0.998
830	0.999	0.999	0.999
800	0.999	0.999	0.999
780	0.999	0.999	0.998
750	0.999	0.999	0.998
700	0.999	0.999	0.997
650	0.999	0.997	0.995
600	0.998	0.994	0.989
550	0.996	0.990	0.981
500	0.998	0.996	0.991
480	0.998	0.994	0.989
460	0.997	0.993	0.986
440	0.996	0.990	0.981
420	0.993	0.984	0.967
400	0.982	0.957	0.915
390	0.957	0.895	0.801
380	0.862	0.689	0.475
370	0.591	0.269	0.072
360	0.067		
350			
340			
330			
320			
310			
300			
290			
280			

着 色 度 Coloration Code

$\lambda_{80}(\lambda_{70})/\lambda_5$	400/370

着 色 度 (内部透過率) Coloration of Internal Transmittance

$\lambda_{\tau 80}/\lambda_{\tau 5}$	390/369

CCI Color Contribution Index

CCI(G)	1.82
CCI(R)	1.93

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	0.4	-1.2	-2.5	-2.6	-3.5	-3.9	-4.2	-4.2	-4.3	-4.5	-2.6	-2.6
	-20 / 0	0.4	-1.3	-2.6	-2.8	-3.7	-4.1	-4.4	-4.4	-4.5	-4.7	-2.7	-2.7
	0 / 20	0.4	-1.3	-2.7	-2.9	-3.8	-4.2	-4.6	-4.6	-4.7	-4.9	-2.8	-2.8
	20 / 40	0.5	-1.4	-2.8	-3.0	-4.0	-4.4	-4.7	-4.8	-4.9	-5.1	-2.9	-2.9
	40 / 60	0.5	-1.4	-2.9	-3.1	-4.1	-4.6	-4.9	-5.0	-5.0	-5.3	-3.0	-3.0
	60 / 80	0.5	-1.5	-3.0	-3.2	-4.3	-4.8	-5.1	-5.2	-5.2	-5.5	-3.2	-3.2
	80 / 100	0.6	-1.5	-3.2	-3.3	-4.5	-4.9	-5.3	-5.4	-5.5	-5.7	-3.3	-3.3
	100 / 120	0.5	-1.6	-3.3	-3.5	-4.7	-5.2	-5.6	-5.6	-5.7	-6.0	-3.4	-3.4
	120 / 140	0.5	-1.8	-3.5	-3.7	-4.9	-5.4	-5.8	-5.9	-6.0	-6.3	-3.5	-3.5
	140 / 150	0.4	-1.9	-3.7	-3.9	-5.1	-5.6	-6.0	-6.1	-6.2	-6.5	-3.6	-3.6
dn/dT & dν/dT (abs.)	-40 / -20	-1.9	-3.5	-4.8	-4.9	-5.7	-6.1	-6.4	-6.4	-6.5	-6.7	-2.6	-2.6
	-20 / 0	-1.6	-3.2	-4.6	-4.7	-5.6	-6.0	-6.2	-6.3	-6.4	-6.6	-2.7	-2.7
	0 / 20	-1.3	-3.0	-4.4	-4.5	-5.5	-5.9	-6.2	-6.2	-6.3	-6.5	-2.9	-2.8
	20 / 40	-1.0	-2.8	-4.3	-4.4	-5.4	-5.8	-6.1	-6.2	-6.3	-6.5	-3.0	-3.0
	40 / 60	-0.8	-2.7	-4.2	-4.4	-5.4	-5.8	-6.2	-6.2	-6.3	-6.5	-3.1	-3.1
	60 / 80	-0.6	-2.6	-4.2	-4.3	-5.4	-5.9	-6.2	-6.3	-6.3	-6.6	-3.2	-3.2
	80 / 100	-0.5	-2.5	-4.2	-4.3	-5.5	-5.9	-6.3	-6.4	-6.5	-6.7	-3.3	-3.3
	100 / 120	-0.4	-2.5	-4.2	-4.4	-5.6	-6.1	-6.4	-6.5	-6.6	-6.9	-3.4	-3.4
	120 / 140	-0.3	-2.6	-4.3	-4.5	-5.7	-6.2	-6.6	-6.7	-6.8	-7.1	-3.5	-3.5
	140 / 150	-0.4	-2.6	-4.5	-4.6	-5.9	-6.4	-6.8	-6.9	-7.0	-7.2	-3.6	-3.6

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

(℃)	α
-40 / -30	119
-30 / -20	121
-20 / -10	122
-10 / 0	124
0 / 10	125
10 / 20	126
20 / 30	128
30 / 40	129
40 / 50	130
50 / 60	131
60 / 70	132
70 / 80	133
80 / 90	134
90 / 100	135
100 / 110	136
110 / 120	137
120 / 130	138
130 / 140	138
140 / 150	139

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	FD300					
Code	624-301					

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