

E-FD4L

755-275 $n_d = 1.75520$ $\nu_d = 27.53$ (27.530) $n_F - n_C = 0.027432$
 $n_e = 1.76167$ $\nu_e = 27.31$ (27.311) $n_{F'} - n_{C'} = 0.027889$

屈折率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.71745
$n_{1128.64}$	1128.64	1.72559
n_t	1013.98	1.72866
n_s	852.11	1.73451
$n_{A'}$	768.195	1.73884
n_r	706.519	1.74299
n_C	656.273	1.74730
$n_{C'}$	643.847	1.74853
n_{633}	632.8	1.74969
n_D	589.294	1.75496
n_d	587.562	1.75520
n_e	546.074	1.76167
n_F	486.133	1.77473
$n_{F'}$	479.991	1.77642
n_g	435.834	1.79146
n_h	404.656	1.80656
n_i	365.015	1.83569

分散式の定数 Constants of dispersion formula	
A_0	2.9677007
A_1	$-1.4006378 \times 10^{-2}$
A_2	3.3049583×10^{-2}
A_3	3.2455044×10^{-3}
A_4	$-3.0156480 \times 10^{-4}$
A_5	3.1689142×10^{-5}

部分分散 Partial dispersions	
$n_C - n_t$	0.018637
$n_d - n_C$	0.007904
$n_F - n_d$	0.019528
$n_g - n_F$	0.016729
$n_{C'} - n_t$	0.019867
$n_e - n_{C'}$	0.013145
$n_{F'} - n_e$	0.014744
$n_g - n_{F'}$	0.015042

部分分散比 Partial dispersion rates	
$P_{C,t}$	0.6794
$P_{d,C}$	0.2881
$P_{e,d}$	0.2359
$P_{F,e}$	0.4760
$P_{g,F}$	0.6098
$P_{h,g}$	0.5507
$P_{i,h}$	1.0619
$P'_{C,t}$	0.7124
$P'_{d,C}$	0.2393
$P'_{e,d}$	0.2320
$P'_{F,e}$	0.5287
$P'_{g,F}$	0.5394
$P'_{h,g}$	0.5417

異常分散性 Anomalous dispersions	
$\Delta P_{C,t}$	0.0049
$\Delta P_{C,A'}$	-0.0018
$\Delta P_{g,d}$	0.0126
$\Delta P_{g,F}$	0.0111
$\Delta P_{i,g}$	

光弾性定数 Photoelastic Constant	
B (10^{-12} /Pa)	2.67

比重 Specific Gravity	
d	3.17

化学的性質 Chemical Properties	
D_W	1
D_A	1
T_{Blue}	1
D_{NaOH}	1
D_{STPP}	1
D_0	1
D_H	

熱的性質 Thermal Properties	
T_g (°C)	618
T_s (°C)	657
$T_{10^{14.5}}$ (°C)	594
$T_{10^{13}}$ (°C)	613
$T_{10^{7.6}}$ (°C)	700
α -30/+70°C ($10^{-7}/^{\circ}\text{C}$)	82
α 100/300°C ($10^{-7}/^{\circ}\text{C}$)	102
λ [W/(m·K)]	0.919
C_p [kJ/(kg·K)]	0.629

機械的性質 Mechanical Properties	
H_K	515 (5)
F_A	160
E (GPa)	93
G (GPa)	37.0
μ	0.258
σ_b (MPa)	70

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.963	0.910	0.827
2400	0.971	0.929	0.863
2200	0.982	0.956	0.914
2000	0.991	0.978	0.957
1800	0.994	0.986	0.972
1600	0.999	0.996	0.993
1550	0.999	0.997	0.994
1500	0.999	0.997	0.994
1400	0.999	0.998	0.996
1300	0.999	0.999	0.999
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	0.997
780	0.999	0.998	0.997
750	0.999	0.998	0.997
700	0.999	0.997	0.995
650	0.999	0.997	0.993
600	0.996	0.991	0.982
550	0.992	0.980	0.961
500	0.997	0.994	0.987
480	0.996	0.991	0.982
460	0.995	0.988	0.975
440	0.992	0.980	0.961
420	0.985	0.962	0.925
400	0.958	0.899	0.808
390	0.921	0.815	0.664
380	0.834	0.636	0.404
370	0.639	0.326	0.106
360	0.235		
350			
340			
330			
320			
310			
300			
290			
280			

屈折率の温度係数 dn/dT ($\times 10^{-6}/^{\circ}\text{C}$)		アッペ数の温度係数 $d\nu/dT$ ($\times 10^{-3}/^{\circ}\text{C}$)											
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
		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 & $d\nu/dT$ (rel.)	-40 / -20	6.5	5.0	3.7	3.5	2.5	2.1	1.8	1.7	1.6	1.4	-1.8	-1.8
	-20 / 0	6.9	5.3	3.9	3.8	2.7	2.3	1.9	1.9	1.8	1.5	-1.9	-1.9
	0 / 20	7.3	5.6	4.2	4.0	2.9	2.5	2.1	2.0	1.9	1.7	-2.0	-2.0
	20 / 40	7.7	6.0	4.4	4.3	3.1	2.6	2.2	2.2	2.1	1.8	-2.1	-2.1
	40 / 60	8.1	6.2	4.6	4.5	3.3	2.8	2.4	2.3	2.2	1.9	-2.2	-2.2
	60 / 80	8.4	6.5	4.8	4.6	3.4	2.9	2.4	2.4	2.3	2.0	-2.3	-2.3
	80 / 100	8.7	6.7	4.9	4.8	3.5	2.9	2.5	2.4	2.3	2.0	-2.3	-2.3
	100 / 120	9.0	6.8	5.0	4.9	3.5	3.0	2.5	2.4	2.3	2.0	-2.4	-2.4
	120 / 140	9.1	6.9	5.1	4.9	3.5	2.9	2.4	2.3	2.2	1.9	-2.5	-2.5
	140 / 150	9.2	7.0	5.1	4.9	3.5	2.8	2.4	2.3	2.2	1.8	-2.6	-2.6
dn/dT & $d\nu/dT$ (abs.)	-40 / -20	4.0	2.5	1.2	1.1	0.2	-0.3	-0.6	-0.7	-0.7	-1.0	-1.9	-1.8
	-20 / 0	4.8	3.2	1.8	1.7	0.7	0.3	-0.1	-0.2	-0.2	-0.5	-1.9	-1.9
	0 / 20	5.5	3.8	2.4	2.2	1.2	0.7	0.3	0.3	0.2	-0.1	-2.0	-2.0
	20 / 40	6.1	4.4	2.9	2.7	1.6	1.1	0.7	0.6	0.6	0.3	-2.1	-2.1
	40 / 60	6.7	4.8	3.3	3.1	1.9	1.4	1.0	0.9	0.9	0.6	-2.2	-2.2
	60 / 80	7.2	5.2	3.6	3.4	2.2	1.7	1.3	1.2	1.1	0.8	-2.3	-2.3
	80 / 100	7.6	5.6	3.9	3.7	2.4	1.9	1.4	1.3	1.2	0.9	-2.4	-2.4
	100 / 120	8.0	5.9	4.1	3.9	2.6	2.0	1.5	1.4	1.3	1.0	-2.4	-2.4
	120 / 140	8.2	6.1	4.2	4.0	2.6	2.0	1.6	1.5	1.4	1.0	-2.5	-2.5
	140 / 150	8.4	6.2	4.2	4.1	2.7	2.0	1.6	1.5	1.3	1.0	-2.6	-2.6

線膨張係数 α ($\times 10^{-7}/^{\circ}\text{C}$)	
Coefficient of Thermal Expansion	
(°C)	α
-40 / -30	76
-30 / -20	78
-20 / -10	80
-10 / 0	81
0 / 10	82
10 / 20	83
20 / 30	83
30 / 40	84
40 / 50	84
50 / 60	85
60 / 70	85
70 / 80	85
80 / 90	86
90 / 100	86
100 / 110	86
110 / 120	87
120 / 130	88
130 / 140	88
140 / 150	90

着色度 Coloration Code	
$\lambda_{80}(\lambda_{70})/\lambda_5$	425/370
着色度 (内部透過率) Coloration of Internal Transmittance	
$\lambda_{80}/\lambda_{\tau 5}$	399/367
CCI Color Contribution Index	
CCI (G)	3.29
CCI (R)	3.41

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						
	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	E-FD4L	N-SF4	S-TIH4	J-SF4	K-SFLD4	H-ZF6
Code	755-275	755-274	755-275	755-276	755-275	755-275

Excel File Name : HOYA20250701M.xlsm