# H-ZF10 689312

| | | |
|---|---|---|
| $n_d$ = 1.68893 | $\upsilon_d$ = 31.16 | $n_F - n_C$ = 0.022109 |
| $n_e$ = 1.69416 | $\upsilon_e$ = 30.92 | $n_{F'} - n_{C'}$ = 0.022450 |

| Refractive Indices | | |
|---|---|---|
| | λ(nm) | |
| $n_r$ | 706.5 | 1.67899 |
| $n_C$ | 656.3 | 1.68251 |
| $n_{C'}$ | 643.8 | 1.68315 |
| $n_{He-Ne}$ | 632.8 | 1.68445 |
| $n_D$ | 589.3 | 1.68874 |
| $n_d$ | 587.6 | 1.68893 |
| $n_e$ | 546.1 | 1.69416 |
| $n_F$ | 486.1 | 1.70462 |
| $n_{F'}$ | 480.0 | 1.70596 |
| $n_g$ | 435.8 | 1.71786 |
| $n_h$ | 404.7 | 1.72964 |
| $n_i$ | 365.0 | 1.75182 |

| Chemical Properties (grade) | |
|---|---|
| RC(S) | 1 |
| RA(S) | 1 |
| $D_W$ | 1 |
| $D_A$ | 1 |

| Thermal Properties | |
|---|---|
| Tg(℃) | 580 |
| Ts(℃) | 625 |
| $T_{10}^{14.5}$(℃) | 528 |
| $T_{10}^{13}$(℃) | 566 |
| $\alpha_{20/120℃}$ ($10^{-7}$/K) | 88 |
| $\alpha_{20/300℃}$ ($10^{-7}$/K) | 100 |
| λ(W/m·K) | |

| Internal Transmittance | | |
|---|---|---|
| λ(nm) | τ5mm | τ10mm |
| 2400 | | |
| 2200 | | |
| 2000 | | |
| 1800 | | |
| 1600 | | |
| 1400 | | |
| 1200 | | |
| 1060 | | |
| 1000 | | |
| 950 | | |
| 900 | | |
| 850 | 0.998 | 0.994 |
| 800 | 0.996 | 0.993 |
| 700 | 0.996 | 0.992 |
| 650 | 0.996 | 0.991 |
| 600 | 0.996 | 0.991 |
| 550 | 0.994 | 0.988 |
| 500 | 0.987 | 0.972 |
| 480 | 0.983 | 0.964 |
| 460 | 0.976 | 0.953 |
| 440 | 0.964 | 0.930 |
| 420 | 0.939 | 0.883 |
| 400 | 0.866 | 0.750 |
| 390 | 0.785 | 0.620 |
| 380 | 0.644 | 0.416 |
| 370 | 0.397 | 0.158 |
| 360 | 0.133 | 0.054 |
| 350 | | |
| 340 | | |
| 330 | | |
| 320 | | |
| 310 | | |
| 300 | | |
| 290 | | |
| 280 | | |

| Constants of Dispersion Formula | |
|---|---|
| $A_0$ | 2.7617586 |
| $A_1$ | -1.1254039×10-2 |
| $A_2$ | 2.8221737×10-2 |
| $A_3$ | 1.7540315×10-3 |
| $A_4$ | -1.2127053×10-4 |
| $A_5$ | 1.5522384×10-5 |

| Mechanical Properties | |
|---|---|
| $H_K$($10^7$Pa) | 531 |
| $F_A$ | 143 |
| E($10^7$Pa) | 9050 |
| G($10^7$Pa) | 3637 |
| μ | 0.244 |
| B($10^{-12}$/Pa) | |

| Relative Partial Dispersion | | | |
|---|---|---|---|
| $P_{d,c}$ | 0.2904 | $P'_{d,c'}$ | 0.2575 |
| $P_{e,d}$ | 0.2366 | $P'_{e,d}$ | 0.2330 |
| $P_{g,F}$ | 0.5989 | $P'_{g,F'}$ | 0.5301 |

| Anomalous dispersions | |
|---|---|
| $\Delta P_{F,e}$ | 0.0001 |
| $\Delta P_{g,F}$ | 0.0070 |
| | |

| Range of Temperature (℃) | Temperature Coefficients of Refractive Index dn/dt relative ($10^{-6}$ / ℃) | | | | | | |
|---|---|---|---|---|---|---|---|
| | t | C' | He-Ne | D | e | F' | g |
| -40～-20 | | | | | | | |
| -20～0 | | | | | | | |
| 0～20 | | | | | | | |
| 20～40 | | | | | | | |
| 40～60 | | | | | | | |
| 60～80 | | | | | | | |

| Density | |
|---|---|
| ρ(g/cm$^3$) | 2.93 |

| Coloration Code | | | |
|---|---|---|---|
| $\lambda_{80}/\lambda_5$ | 40/36 | $\lambda_{70}/\lambda_5$ | |