# H-ZF11 699301

| $n_d$ = 1.698940 | $\upsilon_d$ = 30.05 | $n_F - n_C$ = 0.023259 |
|---|---|---|
| $n_e$ = 1.704431 | $\upsilon_e$ = 29.81 | $n_{F'} - n_{C'}$ = 0.023628 |

## 折射率 Refractive Index

| | λ（nm） | |
|---|---|---|
| $n_{2325.42}$ | 2325.42 | 1.653752 |
| $n_{1970.09}$ | 1970.09 | 1.659667 |
| $n_{1529.58}$ | 1529.58 | 1.666431 |
| $n_{1060.0}$ | 1060.0 | 1.674944 |
| $n_t$ | 1013.98 | 1.676081 |
| $n_s$ | 852.11 | 1.681178 |
| $n_r$ | 706.52 | 1.688512 |
| $n_C$ | 656.27 | 1.692201 |
| $n_{C'}$ | 643.85 | 1.693253 |
| $n_{He-Ne}$ | 632.8 | 1.694243 |
| $n_D$ | 589.29 | 1.698738 |
| $n_d$ | 587.56 | 1.698940 |
| $n_e$ | 546.07 | 1.704431 |
| $n_F$ | 486.13 | 1.715460 |
| $n_{F'}$ | 479.99 | 1.716881 |
| $n_g$ | 435.83 | 1.729483 |
| $n_h$ | 404.66 | 1.742000 |
| $n_i$ | 365.01 | 1.765684 |
| $n_{313.18}$ | 313.18 | |
| $n_{302.15}$ | 302.15 | |

## 色散公式常数 Constants of Dispersion Formula

| | |
|---|---|
| $K_1$ | 1.59868051E+00 |
| $L_1$ | 1.26057844E-02 |
| $K_2$ | 1.89448887E-01 |
| $L_2$ | 6.17894718E-02 |
| $K_3$ | 1.26870155E+00 |
| $L_3$ | 1.21376823E+02 |

## 折射率温度系数常数 Constants of dn/dt

| | |
|---|---|
| $D_0$ | -5.39E-06 |
| $D_1$ | 1.28E-08 |
| $D_2$ | -5.25E-11 |
| $E_0$ | 9.07E-07 |
| $E_1$ | 9.29E-10 |
| $\lambda_{TK}$(μm) | 0.278 |

## 相对部分色散 Relative Partial Dispersions

| | | | |
|---|---|---|---|
| $P_{s,t}$ | 0.2191 | $P'_{s,t}$ | 0.2157 |
| $P_{C,s}$ | 0.4739 | $P'_{C',s}$ | 0.5110 |
| $P_{d,C}$ | 0.2897 | $P'_{d,C'}$ | 0.2407 |
| $P_{e,d}$ | 0.2361 | $P'_{e,d}$ | 0.2324 |
| $P_{g,F}$ | 0.6029 | $P'_{g,F'}$ | 0.5334 |
| $P_{i,h}$ | 1.0183 | $P'_{i,h}$ | 1.0024 |

## 异常色散 Abnormal Dispersions

| | | | |
|---|---|---|---|
| $\Delta P_{C,t}$ | 0.0052 | $\Delta P_{C,s}$ | 0.0012 |
| $\Delta P_{F,e}$ | 0.0010 | $\Delta P_{g,F}$ | 0.0084 |

## 着色度 Color Code

| | |
|---|---|
| $\lambda_{80}/\lambda_5$ | 395/360 |
| $\lambda_{70}/\lambda_5$ | |

## 热性质 Thermal Properties

| | |
|---|---|
| $T_g$ (℃) | 576 |
| $T_s$ (℃) | 613 |
| $T_{10}^{14.5}$ (℃) | 517 |
| $T_{10}^{13}$ (℃) | 551 |
| $T_{10}^{7.6}$(℃) | 672 |
| $\alpha_{-30/70℃}$($10^{-7}$/K) | 90 |
| $\alpha_{100/300℃}$($10^{-7}$/K) | 113 |
| λ[W/(m·K)] | 0.836 |
| $c_p$[J/(g·K)] | 0.691 |

## 化学性质 Chemical Properties

| | Grade |
|---|---|
| $D_W$ | 1 |
| $D_A$ | 1 |
| CR | 1 |
| RC(S) | 2 |
| RA(S) | 1 |

## 内部透过率 Internal Transmittance τ

| λ（nm） | τ (5mm) | τ (10mm) |
|---|---|---|
| 2400 | 0.915 | 0.838 |
| 2200 | 0.943 | 0.889 |
| 2000 | 0.972 | 0.945 |
| 1800 | 0.984 | 0.968 |
| 1600 | 0.995 | 0.990 |
| 1400 | 0.996 | 0.993 |
| 1200 | 0.999 | 0.998 |
| 1060 | 0.999 | 0.998 |
| 1000 | 0.999 | 0.998 |
| 950 | 0.999 | 0.998 |
| 900 | 0.999 | 0.998 |
| 850 | 0.999 | 0.998 |
| 800 | 0.999 | 0.998 |
| 700 | 0.998 | 0.996 |
| 650 | 0.998 | 0.996 |
| 600 | 0.998 | 0.996 |
| 550 | 0.997 | 0.994 |
| 500 | 0.995 | 0.990 |
| 480 | 0.994 | 0.988 |
| 460 | 0.992 | 0.984 |
| 440 | 0.989 | 0.978 |
| 420 | 0.984 | 0.969 |
| 400 | 0.965 | 0.932 |
| 390 | 0.935 | 0.875 |
| 380 | 0.851 | 0.725 |
| 370 | 0.615 | 0.378 |
| 360 | 0.184 | 0.034 |
| 350 | | |
| 340 | | |
| 330 | | |
| 320 | | |
| 310 | | |
| 300 | | |
| 290 | | |
| 280 | | |

## 折射率温度系数 Temperature Coefficients of Refractive Index

| 温度范围（℃） Range of Temperature | dn/dt relative($10^{-6}$/℃) | | | | | |
|---|---|---|---|---|---|---|
| | t | C′ | d | e | F′ | g |
| -60～-40 | -1.2 | -0.4 | 0.0 | 0.2 | 1.1 | 2.1 |
| -40～-20 | -1.2 | -0.1 | 0.1 | 0.5 | 1.4 | 2.4 |
| -20～0 | -1.1 | 0.0 | 0.2 | 0.7 | 1.6 | 2.8 |
| 0～20 | -1.0 | 0.0 | 0.4 | 0.8 | 1.9 | 2.9 |
| 20～40 | -0.9 | 0.1 | 0.5 | 1.0 | 2.1 | 3.3 |
| 40～60 | -0.8 | 0.1 | 0.6 | 1.1 | 2.2 | 3.5 |
| 60～80 | -0.7 | 0.4 | 0.7 | 1.3 | 2.3 | 3.8 |
| 80～100 | -0.6 | 0.4 | 0.8 | 1.3 | 2.4 | 3.9 |
| 100～120 | -0.8 | 0.1 | 0.6 | 1.1 | 2.1 | 3.7 |
| 120～140 | -0.9 | 0.3 | 0.7 | 1.2 | 2.5 | 4.1 |

## 机械性质 Mechanical Properties

| | |
|---|---|
| $H_K$ ($10^7$Pa) | 521 |
| $F_A$ | 175 |
| E ($10^7$Pa) | 8410 |
| G ($10^7$Pa) | 3371 |
| μ | 0.248 |
| B ($10^{-12}$/Pa) | 2.73 |

## 其他性质 Other Properties

| | |
|---|---|
| ρ (g/cm$^3$) | 2.95 |

## 备注 Remarks

CDGM