

| | | | | |
|---------------|---------------|-----------------|---------------|------------------------------|
| H-ZK9A | 620603 | $n_d = 1.62041$ | $v_d = 60.34$ | $n_F - n_C = 0.010281$ |
| | | $n_e = 1.62286$ | $v_e = 60.10$ | $n_{F'} - n_{C'} = 0.010363$ |

| Refractive Indices | | |
|--------------------|----------------|-------------|
| | λ (nm) | n_λ |
| n_{2325} | 2325.42 | 1.58878 |
| n_{1970} | 1970.09 | 1.59483 |
| n_{1530} | 1529.58 | 1.60134 |
| n_{1129} | 1128.64 | 1.60692 |
| n_{1064} | 1064.00 | 1.60789 |
| n_t | 1013.98 | 1.60868 |
| n_s | 852.11 | 1.61168 |
| $n_{A'}$ | 768.19 | 1.61367 |
| n_r | 706.52 | 1.61548 |
| n_C | 656.27 | 1.61727 |
| $n_{C'}$ | 643.85 | 1.61777 |
| n_{He-Ne} | 632.80 | 1.61824 |
| n_D | 589.29 | 1.62032 |
| n_d | 587.56 | 1.62041 |
| n_e | 546.07 | 1.62286 |
| n_F | 486.13 | 1.62755 |
| $n_{F'}$ | 479.99 | 1.62813 |
| n_g | 435.84 | 1.63310 |
| n_h | 404.66 | 1.63768 |
| n_i | 365.01 | 1.64549 |

| Constants of Dispersion Formula | |
|---------------------------------|-----------------|
| A_0 | 2.58626893E+00 |
| A_1 | -1.19483745E-02 |
| A_2 | 1.37737392E-02 |
| A_3 | 5.49112685E-04 |
| A_4 | -4.52101305E-05 |
| A_5 | 2.44542790E-06 |

| Density | | Solarization | |
|-----------------------------|------|---------------------|------|
| ρ (g/cm ³) | 3.55 | $\Delta\lambda$ (%) | -2.0 |

| Relative Partial Dispersion | |
|-----------------------------|--------|
| $P_{d,C}$ | 0.3054 |
| $P_{e,d}$ | 0.2383 |
| $P_{g,F}$ | 0.5398 |
| $P'_{d,c'}$ | 0.2548 |
| $P'_{e,d}$ | 0.2364 |
| $P'_{g,F'}$ | 0.4796 |

| Deviation of Relative Partial Dispersions | |
|---|---------|
| $\Delta P_{F,e}$ | -0.0007 |
| $\Delta P_{g,F}$ | -0.0035 |
| $\Delta P_{C,t}$ | 0.0030 |
| $\Delta P_{C,s}$ | -0.0015 |

| Thermal Properties | |
|--|------|
| Tg (°C) | 663 |
| Ts (°C) | 695 |
| T ₁₀ ^{14.5} (°C) | 600 |
| T ₁₀ ¹³ (°C) | 640 |
| $\alpha_{50/80^\circ C}$ (10 ⁻⁷ /K) | 64 |
| $\alpha_{100/300^\circ C}$ (10 ⁻⁷ /K) | 75 |
| λ (W/(m·K)) | 1.02 |

| Mechanical Properties | |
|---------------------------|-------|
| HK (10 ⁷ Pa) | 550 |
| F _A | 105 |
| E (GPa) | 89.5 |
| G (GPa) | 34.5 |
| μ | 0.297 |
| σ_b (MPa) | 87.0 |
| B (10 ⁻¹² /Pa) | 1.82 |

| Chemical Properties (grade) | |
|-----------------------------|---|
| RC (S) | 1 |
| RA (S) | 2 |
| D _W | 2 |
| D _A | 4 |
| R _{OH} (S) | 3 |
| RP (S) | 2 |

| Expansion Coefficient α (×10 ⁻⁷ /K) | |
|---|----------|
| °C | α |
| -50/-40 | 56 |
| -40/-30 | 59 |
| -30/-20 | 61 |
| -20/-10 | 62 |
| -10/0 | 63 |
| 0/10 | 64 |
| 10/20 | 64 |
| 20/30 | 65 |
| 30/40 | 65 |
| 40/50 | 66 |
| 50/60 | 66 |
| 60/70 | 67 |
| 70/80 | 67 |
| 80/90 | 68 |
| 90/100 | 68 |
| 100/110 | 69 |
| 110/120 | 70 |
| 120/130 | 71 |
| 130/140 | 72 |
| 140/150 | 73 |
| 150/160 | 74 |

| Internal Transmittance | | |
|------------------------|--------------|---------------|
| λ (nm) | τ_{5mm} | τ_{10mm} |
| 2400 | 0.864 | 0.746 |
| 2200 | 0.944 | 0.891 |
| 2000 | 0.995 | 0.990 |
| 1800 | 0.999 | 0.998 |
| 1600 | 0.999 | 0.998 |
| 1400 | 0.999 | 0.998 |
| 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 |
| 750 | 0.999 | 0.998 |
| 700 | 0.999 | 0.998 |
| 650 | 0.999 | 0.998 |
| 600 | 0.999 | 0.998 |
| 550 | 0.999 | 0.998 |
| 500 | 0.999 | 0.998 |
| 480 | 0.999 | 0.998 |
| 460 | 0.999 | 0.998 |
| 440 | 0.999 | 0.998 |
| 420 | 0.998 | 0.996 |
| 400 | 0.997 | 0.994 |
| 390 | 0.996 | 0.992 |
| 380 | 0.993 | 0.987 |
| 370 | 0.988 | 0.977 |
| 360 | 0.978 | 0.957 |
| 350 | 0.959 | 0.919 |
| 340 | 0.925 | 0.855 |
| 330 | 0.866 | 0.750 |
| 320 | 0.771 | 0.594 |
| 310 | 0.620 | 0.385 |
| 300 | 0.411 | 0.169 |
| 290 | | |
| 280 | | |

| Coloration Code | |
|--|---------|
| $\lambda_{80}(\lambda_{70})/\lambda_5$ | 345/285 |
| Coloration of Internal Transmittance | |
| $\lambda\tau_{80}/\lambda\tau_5$ | 334/284 |

| Range of Temperature (°C) | Temperature Coefficients of Refractive Index | | | | | | | | | |
|---------------------------|--|-----|-----|-----|-------|-----|-----|-----|-----|-----|
| | dn/dt relative (×10 ⁻⁶ / °C) | | | | | | | | | |
| | t | s | C | C' | He-Ne | d | e | F | F' | g |
| -60 ~ -40 | 1.8 | 2.1 | 2.2 | 2.2 | 2.2 | 2.4 | 2.5 | 2.6 | 2.6 | 2.7 |
| -40 ~ -20 | 1.9 | 2.2 | 2.2 | 2.2 | 2.3 | 2.4 | 2.6 | 2.6 | 2.7 | 2.7 |
| -20 ~ 0 | 1.9 | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | 2.7 | 2.7 | 2.8 | 2.8 |
| 0 ~ 20 | 2.0 | 2.3 | 2.4 | 2.4 | 2.4 | 2.5 | 2.7 | 2.8 | 2.8 | 2.9 |
| 20 ~ 40 | 2.0 | 2.3 | 2.4 | 2.4 | 2.4 | 2.6 | 2.7 | 2.8 | 2.9 | 2.9 |
| 40 ~ 60 | 2.1 | 2.3 | 2.5 | 2.5 | 2.5 | 2.6 | 2.8 | 3.0 | 3.1 | 3.1 |
| 60 ~ 80 | 2.2 | 2.3 | 2.5 | 2.5 | 2.6 | 2.7 | 2.9 | 3.0 | 3.2 | 3.3 |
| 80 ~ 100 | 2.2 | 2.5 | 2.5 | 2.5 | 2.6 | 2.8 | 3.0 | 3.2 | 3.4 | 3.6 |
| 100 ~ 120 | 2.4 | 2.6 | 2.6 | 2.6 | 2.7 | 2.8 | 3.0 | 3.3 | 3.5 | 3.6 |
| 120 ~ 140 | 2.5 | 2.6 | 2.7 | 2.7 | 2.7 | 2.8 | 3.2 | 3.3 | 3.5 | 3.7 |
| 140 ~ 160 | 2.5 | 2.6 | 2.7 | 2.7 | 2.7 | 2.9 | 3.3 | 3.5 | 3.7 | 3.9 |

| Constants of dn/dt | | |
|--------------------|----------------|----------------|
| D ₀ | D ₁ | D ₂ |
| 7.48E-07 | 1.25E-08 | -2.50E-11 |
| E ₀ | E ₁ | λ_{TK} |
| 4.11E-07 | 7.77E-10 | 7.84E-02 |