# Data Sheet

SCHOTT

## N-BALF4
## 580539.311

| | | |
|---|---|---|
| $n_d = 1.57956$ | $\nu_d = 53.87$ | $n_F - n_C = 0.010759$ |
| $n_e = 1.58212$ | $\nu_e = 53.59$ | $n_{F'} - n_{C'} = 0.010863$ |

### Refractive Indices

| | λ [nm] | |
|---|---|---|
| $n_{2325.4}$ | 2325.4 | 1.55068 |
| $n_{1970.1}$ | 1970.1 | 1.55577 |
| $n_{1529.6}$ | 1529.6 | 1.56124 |
| $n_{1060.0}$ | 1060.0 | 1.56707 |
| $n_t$ | 1014.0 | 1.56776 |
| $n_s$ | 852.1 | 1.57065 |
| $n_r$ | 706.5 | 1.57447 |
| $n_C$ | 656.3 | 1.57631 |
| $n_{C'}$ | 643.8 | 1.57683 |
| $n_{632.8}$ | 632.8 | 1.57731 |
| $n_D$ | 589.3 | 1.57946 |
| $n_d$ | 587.6 | 1.57956 |
| $n_e$ | 546.1 | 1.58212 |
| $n_F$ | 486.1 | 1.58707 |
| $n_{F'}$ | 480.0 | 1.58769 |
| $n_g$ | 435.8 | 1.59301 |
| $n_h$ | 404.7 | 1.59799 |
| $n_i$ | 365.0 | 1.60658 |
| $n_{334.1}$ | 334.1 | |
| $n_{312.6}$ | 312.6 | |
| $n_{296.7}$ | 296.7 | |
| $n_{280.4}$ | 280.4 | |
| $n_{248.3}$ | 248.3 | |

### Constants of Dispersion Formula

| | |
|---|---|
| $B_1$ | 1.31004128 |
| $B_2$ | 0.142038259 |
| $B_3$ | 0.964929351 |
| $C_1$ | 0.0079659645 |
| $C_2$ | 0.0330672072 |
| $C_3$ | 109.19732 |

### Constants of Dispersion dn/dT

| | |
|---|---|
| $D_0$ | $5.33 \cdot 10^{-6}$ |
| $D_1$ | $1.47 \cdot 10^{-8}$ |
| $D_2$ | $-1.58 \cdot 10^{-11}$ |
| $E_0$ | $5.75 \cdot 10^{-7}$ |
| $E_1$ | $6.58 \cdot 10^{-10}$ |
| $\lambda_{TK}$ [µm] | 0.195 |

### Internal Transmittance $\tau_i$

| λ [nm] | $\tau_i$ (10mm) | $\tau_i$ (25mm) |
|---|---|---|
| **2500** | 0.804 | 0.580 |
| **2325** | 0.887 | 0.740 |
| **1970** | 0.967 | 0.920 |
| **1530** | 0.994 | 0.984 |
| **1060** | 0.997 | 0.993 |
| **700** | 0.999 | 0.997 |
| **660** | 0.998 | 0.995 |
| **620** | 0.998 | 0.995 |
| **580** | 0.998 | 0.996 |
| **546** | 0.998 | 0.995 |
| **500** | 0.997 | 0.993 |
| **460** | 0.994 | 0.986 |
| **436** | 0.993 | 0.983 |
| **420** | 0.992 | 0.981 |
| **405** | 0.988 | 0.970 |
| **400** | 0.985 | 0.964 |
| **390** | 0.976 | 0.940 |
| **380** | 0.959 | 0.900 |
| **370** | 0.924 | 0.820 |
| **365** | 0.891 | 0.750 |
| **350** | 0.679 | 0.380 |
| **334** | 0.158 | |
| **320** | | |
| **310** | | |
| **300** | | |
| **290** | | |
| **280** | | |
| **270** | | |
| **260** | | |
| **250** | | |
| | | |
| | | |

### Color Code

| | |
|---|---|
| $\lambda_{80}/\lambda_5$ | 37/33 |
| (*= $\lambda_{70}/\lambda_5$) | |

### Remarks

### Relative Partial Dispersion

| | |
|---|---|
| $P_{s,t}$ | 0.2687 |
| $P_{C,s}$ | 0.5265 |
| $P_{d,C}$ | 0.3019 |
| $P_{e,d}$ | 0.2382 |
| $P_{g,F}$ | 0.5520 |
| $P_{i,h}$ | 0.7986 |
| | |
| $P'_{s,t}$ | 0.2661 |
| $P'_{C',s}$ | 0.5689 |
| $P'_{d,C'}$ | 0.2515 |
| $P'_{e,d}$ | 0.2359 |
| $P'_{g,F'}$ | 0.4897 |
| $P'_{i,h}$ | 0.7909 |

### Deviation of Relative Partial Dispersions ΔP from the "Normal Line"

| | |
|---|---|
| $\Delta P_{C,t}$ | -0.0053 |
| $\Delta P_{C,s}$ | -0.0019 |
| $\Delta P_{F,e}$ | -0.0001 |
| $\Delta P_{g,F}$ | -0.0012 |
| $\Delta P_{i,g}$ | -0.0114 |

### Other Properties

| | |
|---|---|
| $\alpha_{-30/+70°C}$ [$10^{-6}$/K] | 6.5 |
| $\alpha_{+20/+300°C}$ [$10^{-6}$/K] | 7.4 |
| $T_g$ [°C] | 578 |
| $T_{10^{13.0}}$ [°C] | 584 |
| $T_{10^{7.6}}$ [°C] | 661 |
| $c_p$ [J/(g·K)] | 0.690 |
| λ [W/(m·K)] | 0.850 |
| | |
| ρ [g/cm³] | 3.11 |
| **E** [$10^3$ N/mm²] | 77 |
| μ | 0.245 |
| **K** [$10^{-6}$ mm²/N] | 3.01 |
| **HK** $_{0.1/20}$ | 540 |
| **HG** | 2 |
| | |
| | |
| | |
| **CR** | 1 |
| **FR** | 0 |
| **SR** | 1 |
| **AR** | 1 |
| **PR** | 1 |
| | |
| | |
| | |

### Temperature Coefficients of Refractive Index

| | $\Delta n_{rel}/\Delta T$ [$10^{-6}$/K] | | | $\Delta n_{abs}/\Delta T$ [$10^{-6}$/K] | | |
|---|---|---|---|---|---|---|
| **[°C]** | **1060.0** | **e** | **g** | **1060.0** | **e** | **g** |
| **-40/ -20** | 4.1 | 4.9 | 5.6 | 2.0 | 2.7 | 3.4 |
| **+20/ +40** | 4.2 | 5.1 | 6.0 | 2.9 | 3.7 | 4.6 |
| **+60/ +80** | 4.4 | 5.4 | 6.4 | 3.4 | 4.3 | 5.3 |