

# J-FKH1

 $n_d = 1.497820$ 
 $n_e = 1.499259$ 
 $v_d = 82.57$ 
 $v_e = 82.14$ 

|                |
|----------------|
| Glass code (d) |
| 498826         |
| Glass code (e) |
| 499821         |

| Spectral l. | Refractive idx |
|-------------|----------------|
| 2.058       | 1.48334        |
| 1.970       | 1.48404        |
| 1.530       | 1.48723        |
| 1.129       | 1.49009        |
| 1.064       | 1.49062        |
| t           | 1.49105        |
| s           | 1.49273        |
| A'          | 1.493880       |
| r           | 1.494932       |
| C           | 1.495980       |
| C'          | 1.496273       |
| He-Ne       | 1.496547       |
| D           | 1.497766       |
| d           | 1.497820       |
| e           | 1.499259       |
| F           | 1.502009       |
| F'          | 1.502351       |
| g           | 1.505256       |
| h           | 1.507932       |
| 0.389       | 1.509554       |
| i           | 1.512445       |

| Coef. disp. form. (pwr ser.) |                 |
|------------------------------|-----------------|
| A0                           | 2.22016073E+00  |
| A1                           | -5.00725473E-03 |
| A2                           | -3.55507111E-05 |
| A3                           | 8.42088796E-03  |
| A4                           | 7.02327459E-05  |
| A5                           | 2.47007900E-06  |
| A6                           | -6.50002003E-08 |
| A7                           | 0.00000000E+00  |
| A8                           | 0.00000000E+00  |

| Partial dispersion |          |
|--------------------|----------|
| F-C                | 0.006029 |
| F'-C'              | 0.006078 |
| C-t                | 0.004929 |
| C-A'               | 0.002100 |
| d-C                | 0.001840 |
| e-C                | 0.003279 |
| g-d                | 0.007436 |
| g-F                | 0.003247 |
| h-g                | 0.002676 |
| i-g                | 0.007189 |
| C'-t               | 0.005222 |
| e-C'               | 0.002986 |
| F'-e               | 0.003092 |
| i-F'               | 0.010094 |

| Relative partial dispersion |        |
|-----------------------------|--------|
| C-t/F-C                     | 0.8175 |
| C-A'/F-C                    | 0.3483 |
| d-C/F-C                     | 0.3052 |
| e-C/F-C                     | 0.5439 |
| g-d/F-C                     | 1.2334 |
| g-F/F-C                     | 0.5386 |
| h-g/F-C                     | 0.4439 |
| i-g/F-C                     | 1.1924 |
| C'-t/F'-C'                  | 0.8592 |
| e-C'/F'-C'                  | 0.4913 |
| F'-e/F'-C'                  | 0.5087 |
| i-F'/F'-C'                  | 1.6607 |

| Deviation of relative partial disp. |         |
|-------------------------------------|---------|
| $\Delta PdC$                        | -0.0093 |
| $\Delta PgF$                        | 0.0327  |

| Internal CC (80%/5%) |      |
|----------------------|------|
| 328/270              |      |
| Color Code (80%/5%)  |      |
| 335/270              |      |
| CCI                  |      |
| B                    | 0.00 |
| G                    | 0.11 |
| R                    | 0.08 |

| Thermal properties       |       |
|--------------------------|-------|
| CTE(-30,70) [1E-7/°C]    | 129   |
| CTE(100,300) [1E-7/°C]   | 152   |
| Tg [°C]                  | 479   |
| At [°C]                  | 510   |
| StP [°C]                 | 434   |
| AP [°C]                  | 464   |
| SP [°C]                  | 561   |
| Ht condct. [W/m·K]       | 0.832 |
| Sp. heat [kJ/kg·K]       | 0.596 |
| Ht diffus. [1E-6 m2/sec] | 0.361 |

| Chemical properties [class] |   |
|-----------------------------|---|
| Acid res. (surface)         | 6 |
| Alkaline detergent res.     | 4 |
| Climate resistance          | 1 |
| Water res. (powder)         | 2 |
| Acid res. (powder)          | 3 |

| Mechanical properties                |         |
|--------------------------------------|---------|
| Knoop hardness                       | 391 (4) |
| Abrasion hardness                    | 449     |
| Young's mod. [GPa]                   | 77.4    |
| Shear mod. [GPa]                     | 29.7    |
| Poisson's ratio                      | 0.302   |
| Stress optical coef. [1E-5 nm/cm/Pa] | 0.69    |

| Internal trans. (10mm) |        |
|------------------------|--------|
| $\lambda$ [nm]         | $\tau$ |
| 280                    | 0.10   |
| 290                    | 0.18   |
| 300                    | 0.33   |
| 310                    | 0.51   |
| 320                    | 0.69   |
| 330                    | 0.82   |
| 340                    | 0.912  |
| 350                    | 0.962  |
| 360                    | 0.977  |
| 370                    | 0.988  |
| 380                    | 0.994  |
| 390                    | 0.995  |
| 400                    | 0.996  |
| 420                    | 0.995  |
| 440                    | 0.995  |
| 460                    | 0.996  |
| 480                    | 0.997  |
| 500                    | 0.998  |
| 550                    | 0.998  |
| 600                    | 0.998  |
| 650                    | 0.998  |
| 700                    | 0.997  |
| 800                    | 0.995  |
| 900                    | 0.993  |
| 1000                   | 0.995  |
| 1200                   | 0.998  |
| 1400                   | 0.999  |
| 1600                   | 0.995  |
| 1800                   | 0.991  |
| 2000                   | 0.994  |
| 2200                   | 0.988  |
| 2400                   | 0.984  |

| Specific gravity |  |
|------------------|--|
| 3.86             |  |

| Relative $\Delta n / \Delta T$ [1E-6/°C] |       |      |      |      |      |      |      |       |      |      |      |      |      |      |       |  |
|--|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|-------|--|
| Temp. [°C]                               | 1.083 | t    | s    | A'   | r    | C    | C'   | He-Ne | d    | e    | F    | F'   | g    | h    | 0.389 |  |
| 80 to 90 (ref.)                          | -7.1  | -7.1 | -7.1 | -7.0 | -6.9 | -6.8 | -6.8 | -6.8  | -6.7 | -6.6 | -6.4 | -6.4 | -6.2 | -6.1 | -6.0  |  |
| 60 to 80 (ref.)                          | -7.0  | -6.9 | -6.8 | -6.8 | -6.8 | -6.7 | -6.7 | -6.7  | -6.6 | -6.5 | -6.3 | -6.3 | -6.1 | -6.0 | -5.8  |  |
| 40 to 60                                 | -6.7  | -6.7 | -6.6 | -6.6 | -6.5 | -6.5 | -6.5 | -6.5  | -6.4 | -6.3 | -6.1 | -6.1 | -5.9 | -5.8 | -5.7  |  |
| 20 to 40                                 | -6.5  | -6.5 | -6.4 | -6.4 | -6.3 | -6.3 | -6.2 | -6.2  | -6.2 | -6.1 | -5.9 | -5.9 | -5.7 | -5.6 | -5.5  |  |
| 0 to 20                                  | -6.2  | -6.2 | -6.1 | -6.1 | -6.0 | -6.0 | -6.0 | -6.0  | -5.9 | -5.8 | -5.7 | -5.6 | -5.5 | -5.3 | -5.2  |  |
| -20 to 0                                 | -5.8  | -5.8 | -5.8 | -5.8 | -5.7 | -5.7 | -5.7 | -5.7  | -5.6 | -5.5 | -5.4 | -5.3 | -5.2 | -5.1 | -5.0  |  |
| -40 to -20                               | -5.4  | -5.4 | -5.4 | -5.4 | -5.3 | -5.3 | -5.3 | -5.3  | -5.2 | -5.1 | -5.0 | -5.0 | -4.8 | -4.7 | -4.6  |  |
| -60 to -40 (ref.)                        | -4.9  | -4.9 | -4.9 | -4.9 | -4.9 | -4.8 | -4.8 | -4.8  | -4.8 | -4.7 | -4.6 | -4.5 | -4.4 | -4.3 | -4.2  |  |
| -70 to -60 (ref.)                        | -4.5  | -4.5 | -4.5 | -4.5 | -4.5 | -4.4 | -4.4 | -4.4  | -4.4 | -4.3 | -4.2 | -4.1 | -4.0 | -3.9 | -3.8  |  |

| Absolute $\Delta n / \Delta T$ [1E-6/°C] |       |      |      |      |      |      |      |       |      |      |      |      |      |      |       |      |
|--|-------|------|------|------|------|------|------|-------|------|------|------|------|------|------|-------|------|
| Temp. [°C]                               | 1.083 | t    | s    | A'   | r    | C    | C'   | He-Ne | d    | e    | F    | F'   | g    | h    | 0.389 |      |
| 80 to 90                                 | -8.1  | -8.0 | -7.9 | -7.9 | -7.8 | -7.8 | -7.7 | -7.7  | -7.7 | -7.6 | -7.5 | -7.4 | -7.3 | -7.2 | -7.0  | -6.9 |
| 60 to 80                                 | -8.0  | -8.0 | -7.9 | -7.8 | -7.8 | -7.7 | -7.7 | -7.7  | -7.6 | -7.5 | -7.3 | -7.3 | -7.2 | -7.0 | -6.9  |      |
| 40 to 60                                 | -7.9  | -7.8 | -7.8 | -7.7 | -7.7 | -7.6 | -7.6 | -7.6  | -7.5 | -7.4 | -7.3 | -7.3 | -7.1 | -7.0 | -6.9  |      |
| 20 to 40                                 | -7.8  | -7.7 | -7.7 | -7.6 | -7.6 | -7.6 | -7.5 | -7.5  | -7.5 | -7.4 | -7.2 | -7.2 | -7.1 | -6.9 | -6.8  |      |
| 0 to 20                                  | -7.7  | -7.6 | -7.6 | -7.6 | -7.5 | -7.5 | -7.5 | -7.5  | -7.4 | -7.3 | -7.2 | -7.2 | -7.0 | -6.9 | -6.8  |      |
| -20 to 0                                 | -7.5  | -7.5 | -7.5 | -7.5 | -7.4 | -7.4 | -7.4 | -7.4  | -7.3 | -7.3 | -7.1 | -7.1 | -7.0 | -6.8 | -6.7  |      |
| -40 to -20                               | -7.4  | -7.4 | -7.4 | -7.4 | -7.4 | -7.3 | -7.3 | -7.3  | -7.3 | -7.2 | -7.1 | -7.0 | -6.9 | -6.8 | -6.7  |      |
| -60 to -40                               | -7.3  | -7.3 | -7.3 | -7.3 | -7.3 | -7.3 | -7.2 | -7.2  | -7.2 | -7.1 | -7.0 | -7.0 | -6.9 | -6.8 | -6.7  |      |
| -70 to -60                               | -7.2  | -7.2 | -7.2 | -7.2 | -7.2 | -7.2 | -7.2 | -7.2  | -7.1 | -7.1 | -7.0 | -7.0 | -6.8 | -6.7 | -6.6  |      |

| Coef. disp. form. (frac. eq.) (ref.) |                |
|--------------------------------------|----------------|
| P1                                   | 1.22682060E-01 |
| Q1                                   | 1.44413557E+02 |
| P2                                   | 9.76901834E-02 |
| Q2                                   | 1.01538863E-02 |
| P3                                   | 1.91449766E-01 |
| Q3                                   | 2.19355503E-03 |

| Fitting error of disp. form. $\sigma$ [1E-6] |         |          |
|--|---------|----------|
|  | Visible | Infrared |
| Power ser. eq.                               | 0.4     | 9.1      |
| Frac. eq. (ref.)                             | 0.9     | 8.7      |

|                      |   |
|----------------------|---|
| Prod. Freq. (A to D) | A |
|----------------------|---|

| Similar glass type |   |        |   |
|--------------------|---|--------|---|
| OHARA              | - | HOYA   | - |
| CDGM               | - | SCHOTT | - |

|          |                   |
|----------|-------------------|
| 2022-7-1 | StP, AP, SP       |
| 2019-4-1 | Transmittance     |
| 2018-4-1 | Abrasion hardness |