

# J-PSKH4

$n_d = 1.593490$

$n_e = 1.595604$

$v_d = 67.00$

$v_e = 66.76$

|                |        |
|----------------|--------|
| Glass code (d) | 593670 |
| Glass code (e) | 596668 |

| Spectral l. | Refractive idx |
|-------------|----------------|
| 2.058       | 1.56926        |
| 1.970       | 1.57059        |
| 1.530       | 1.57659        |
| 1.129       | 1.58162        |
| 1.064       | 1.58249        |
| t           | 1.58320        |
| s           | 1.58586        |
| A'          | 1.587621       |
| r           | 1.589208       |
| C           | 1.590771       |
| C'          | 1.591206       |
| He-Ne       | 1.591611       |
| D           | 1.593411       |
| d           | 1.593490       |
| e           | 1.595604       |
| F           | 1.599629       |
| F'          | 1.600128       |
| g           | 1.604375       |
| h           | 1.608288       |
| 0.389       | 1.610663       |
| i           | 1.614907       |

| Coef. disp. form. (pwr ser.) |                 |
|------------------------------|-----------------|
| A0                           | 2.50453078E+00  |
| A1                           | -1.01597822E-02 |
| A2                           | -1.08653142E-04 |
| A3                           | 1.27723327E-02  |
| A4                           | 1.33860625E-04  |
| A5                           | 3.37285381E-06  |
| A6                           | -2.56491019E-08 |
| A7                           | 0.00000000E+00  |
| A8                           | 0.00000000E+00  |

| Partial dispersion |          |
|--------------------|----------|
| F-C                | 0.008858 |
| F'-C'              | 0.008922 |
| C-t                | 0.007571 |
| C-A'               | 0.003150 |
| d-C                | 0.002719 |
| e-C                | 0.004833 |
| g-d                | 0.010885 |
| g-F                | 0.004746 |
| h-g                | 0.003913 |
| i-g                | 0.010532 |
| C'-t               | 0.008006 |
| e-C'               | 0.004398 |
| F'-e               | 0.004524 |
| i-F'               | 0.014779 |

| Relative partial dispersion |        |
|-----------------------------|--------|
| C-t/F-C                     | 0.8547 |
| C-A'/F-C                    | 0.3556 |
| d-C/F-C                     | 0.3070 |
| e-C/F-C                     | 0.5456 |
| g-d/F-C                     | 1.2288 |
| g-F/F-C                     | 0.5358 |
| h-g/F-C                     | 0.4417 |
| i-g/F-C                     | 1.1890 |
| C'-t/F'-C'                  | 0.8973 |
| e-C'/F'-C'                  | 0.4929 |
| F'-e/F'-C'                  | 0.5071 |
| i-F'/F'-C'                  | 1.6565 |

| Deviation of relative partial disp. |         |
|-------------------------------------|---------|
| $\Delta PdC$                        | -0.0005 |
| $\Delta PgF$                        | 0.0038  |

| Internal CC (80%/5%) |  |
|----------------------|--|
| 335/287              |  |

| Color Code (80%/5%) |  |
|---------------------|--|
| 345/290             |  |

| CCI |      |
|-----|------|
| B   | 0.00 |
| G   | 0.20 |
| R   | 0.19 |

| Thermal properties       |       |
|--------------------------|-------|
| CTE(-30,70) [1E-7/°C]    | 90    |
| CTE(100,300) [1E-7/°C]   | 114   |
| Tg [°C]                  | 497   |
| At [°C]                  | 531   |
| Ht condct. [W/m·K]       | 0.761 |
| Sp. heat [kJ/kg·K]       | 0.619 |
| Ht diffus. [1E-6 m2/sec] | 0.375 |

| Chemical properties [class] |   |
|-----------------------------|---|
| Acid res. (surface)         | 4 |
| Alkaline detergent res.     | 4 |
| Climate resistance          | 2 |
| Water res. (powder)         | 2 |
| Acid res. (powder)          | 5 |

| Mechanical properties                |         |
|--------------------------------------|---------|
| Knoop hardness                       | 416 (4) |
| Abrasion hardness                    | 267     |
| Young's mod. [GPa]                   | 81.6    |
| Shear mod. [GPa]                     | 32.0    |
| Poisson's ratio                      | 0.274   |
| Stress optical coef. [1E-5 nm/cm/Pa] | 1.56    |

| Internal trans. (10mm) |        |
|------------------------|--------|
| $\lambda$ [nm]         | $\tau$ |
| 280                    | 0.02   |
| 290                    | 0.07   |
| 300                    | 0.20   |
| 310                    | 0.39   |
| 320                    | 0.58   |
| 330                    | 0.74   |
| 340                    | 0.85   |
| 350                    | 0.917  |
| 360                    | 0.955  |
| 370                    | 0.975  |
| 380                    | 0.985  |
| 390                    | 0.990  |
| 400                    | 0.992  |
| 420                    | 0.994  |
| 440                    | 0.994  |
| 460                    | 0.995  |
| 480                    | 0.996  |
| 500                    | 0.997  |
| 550                    | 0.998  |
| 600                    | 0.999  |
| 650                    | 0.998  |
| 700                    | 0.998  |
| 800                    | 0.997  |
| 900                    | 0.997  |
| 1000                   | 0.997  |
| 1200                   | 0.998  |
| 1400                   | 0.995  |
| 1600                   | 0.986  |
| 1800                   | 0.968  |
| 2000                   | 0.945  |
| 2200                   | 0.87   |
| 2400                   | 0.81   |

| Specific gravity |  |
|------------------|--|
| 3.28             |  |

| 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.)                          | -1.9  | -1.9 | -1.9 | -1.8 | -1.7 | -1.6 | -1.6 | -1.5  | -1.4 | -1.3 | -1.1 | -1.1 | -0.7 | -0.4 | -0.3  |  |
| 60 to 80 (ref.)                          | -1.9  | -1.9 | -1.8 | -1.8 | -1.7 | -1.6 | -1.6 | -1.6  | -1.5 | -1.4 | -1.1 | -1.1 | -0.8 | -0.5 | -0.4  |  |
| 40 to 60                                 | -1.9  | -1.9 | -1.9 | -1.8 | -1.7 | -1.6 | -1.6 | -1.6  | -1.5 | -1.4 | -1.2 | -1.1 | -0.8 | -0.6 | -0.4  |  |
| 20 to 40                                 | -1.9  | -1.9 | -1.8 | -1.7 | -1.7 | -1.6 | -1.6 | -1.6  | -1.5 | -1.4 | -1.1 | -1.1 | -0.8 | -0.6 | -0.5  |  |
| 0 to 20                                  | -1.8  | -1.8 | -1.8 | -1.7 | -1.6 | -1.5 | -1.5 | -1.5  | -1.4 | -1.3 | -1.1 | -1.1 | -0.8 | -0.6 | -0.4  |  |
| -20 to 0                                 | -1.7  | -1.7 | -1.6 | -1.6 | -1.5 | -1.4 | -1.4 | -1.4  | -1.3 | -1.2 | -1.0 | -1.0 | -0.7 | -0.5 | -0.4  |  |
| -40 to -20                               | -1.5  | -1.5 | -1.5 | -1.4 | -1.3 | -1.3 | -1.2 | -1.2  | -1.1 | -1.1 | -0.9 | -0.8 | -0.6 | -0.4 | -0.3  |  |
| -60 to -40 (ref.)                        | -1.3  | -1.3 | -1.2 | -1.1 | -1.1 | -1.0 | -1.0 | -1.0  | -0.9 | -0.8 | -0.6 | -0.6 | -0.4 | -0.1 | -0.1  |  |
| -70 to -60 (ref.)                        | -1.0  | -1.0 | -0.9 | -0.9 | -0.8 | -0.7 | -0.7 | -0.7  | -0.6 | -0.5 | -0.4 | -0.3 | -0.1 | 0.1  | 0.2   |  |

| 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                                 | -2.9  | -2.9 | -2.8 | -2.7 | -2.7 | -2.6 | -2.6 | -2.5  | -2.4 | -2.3 | -2.1 | -2.1 | -1.8 | -1.5 | -1.3  |  |
| 60 to 80                                 | -3.0  | -3.0 | -2.9 | -2.8 | -2.8 | -2.7 | -2.7 | -2.6  | -2.6 | -2.5 | -2.2 | -2.2 | -1.9 | -1.6 | -1.5  |  |
| 40 to 60                                 | -3.1  | -3.1 | -3.1 | -3.0 | -2.9 | -2.8 | -2.8 | -2.8  | -2.7 | -2.6 | -2.4 | -2.4 | -2.1 | -1.8 | -1.7  |  |
| 20 to 40                                 | -3.3  | -3.3 | -3.2 | -3.1 | -3.0 | -3.0 | -3.0 | -2.9  | -2.9 | -2.8 | -2.6 | -2.5 | -2.3 | -2.0 | -1.9  |  |
| 0 to 20                                  | -3.4  | -3.4 | -3.3 | -3.3 | -3.2 | -3.1 | -3.1 | -3.1  | -3.0 | -2.9 | -2.7 | -2.7 | -2.4 | -2.2 | -2.1  |  |
| -20 to 0                                 | -3.5  | -3.5 | -3.5 | -3.4 | -3.3 | -3.3 | -3.3 | -3.2  | -3.2 | -3.1 | -2.9 | -2.9 | -2.6 | -2.4 | -2.3  |  |
| -40 to -20                               | -3.7  | -3.7 | -3.6 | -3.5 | -3.5 | -3.4 | -3.4 | -3.4  | -3.3 | -3.2 | -3.1 | -3.0 | -2.8 | -2.6 | -2.5  |  |
| -60 to -40                               | -3.8  | -3.8 | -3.7 | -3.7 | -3.6 | -3.6 | -3.5 | -3.5  | -3.5 | -3.4 | -3.2 | -3.2 | -3.0 | -2.8 | -2.7  |  |
| -70 to -60                               | -3.9  | -3.9 | -3.8 | -3.8 | -3.7 | -3.7 | -3.7 | -3.6  | -3.6 | -3.5 | -3.4 | -3.3 | -3.1 | -2.9 | -2.9  |  |

| Coef. disp. form. (frac. eq.) (ref.) |                |
|--------------------------------------|----------------|
| P1                                   | 1.27151677E-01 |
| Q1                                   | 8.43272005E+01 |
| P2                                   | 4.55367919E-02 |
| Q2                                   | 1.57347586E-02 |
| P3                                   | 2.88484152E-01 |
| Q3                                   | 4.04391028E-03 |

| Fitting error of disp. form. $\sigma$ [1E-6] |         |          |
|--|---------|----------|
|  | Visible | Infrared |
| Power ser. eq.                               | 0.4     | 2.2      |
| Frac. eq. (ref.)                             | 0.4     | 2.2      |
| Prod. Freq. (A to D)                         | A       |          |

| Similar glass type |        |        |       |
|--------------------|--------|--------|-------|
| OHARA              | -      | HOYA   | PCD51 |
| CDGM               | H-ZPK3 | SCHOTT | -     |

|          |               |
|----------|---------------|
| -        | -             |
| 2019-4-1 | Transmittance |
| 2015-4-1 | 1st edition   |