

HOYA CANDEO OPTRONICS CORPORATION

Transmittance (T) units: %

| | | | | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| λnm | 200 | 210 | 220 | 230 | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 330 | 340 | 350 | 360 | 370 | 380 | 390 |
| T | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| λnm | 400 | 410 | 420 | 430 | 440 | 450 | 460 | 470 | 480 | 490 | 500 | 510 | 520 | 530 | 540 | 550 | 560 | 570 | 580 | 590 |
| T | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| λnm | 600 | 610 | 620 | 630 | 640 | 650 | 660 | 670 | 680 | 690 | 700 | 710 | 720 | 730 | 740 | 750 | 760 | 770 | 780 | 790 |
| T | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| λnm | 800 | 810 | 820 | 830 | 840 | 850 | 860 | 870 | 880 | 890 | 900 | 910 | 920 | 930 | 940 | 950 | 960 | 970 | 980 | 990 |
| T | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.13 | 0.14 | 0.16 |
| λnm | 1000 | 1010 | 1020 | 1030 | 1040 | 1050 | 1060 | 1070 | 1080 | 1090 | 1100 | 1120 | 1140 | 1160 | 1180 | 1200 | | | | |
| T | 0.17 | 0.19 | 0.20 | 0.22 | 0.24 | 0.25 | 0.27 | 0.29 | 0.30 | 0.32 | 0.34 | 0.37 | 0.41 | 0.45 | 0.50 | 0.56 | | | | |

Refractive Index/Absorption coefficient/Reflection coefficient

| | | | | | | | |
|-----|---------|---------|---------|---------|---------|---------|---------|
| λnm | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| n | 1.592 | 1.568 | 1.555 | 1.548 | 1.544 | 1.541 | 1.539 |
| K | 1.5E-02 | 5.8E-03 | 2.9E-03 | 1.7E-03 | 1.2E-03 | 8.4E-04 | 6.4E-04 |
| P | 0.901 | 0.907 | 0.910 | 0.912 | 0.913 | 0.913 | 0.914 |

Classes of Bubbles and Inclusions

| |
|--------------|
| Bubble Class |
| 3 |

Color Specification

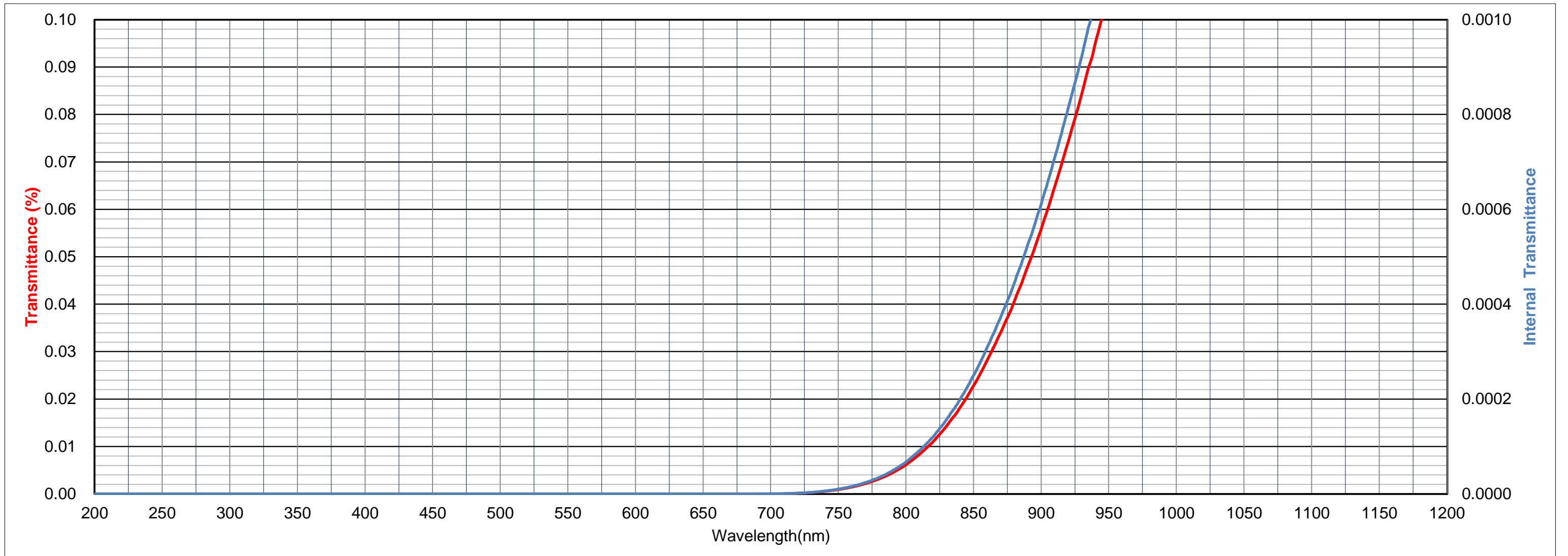
| | | | | | |
|-----|---|---|---|----------------|----------------|
| | x | y | Y | λ _d | P _e |
| A | - | - | - | - | - |
| C | - | - | - | - | - |
| D65 | - | - | - | - | - |

Properties

| Chemical | | Thermal | | | | Mechanical | | Others |
|----------------|----------------|----------------|----------------|---------------------|----------------------|----------------|----------------|--------|
| D _w | D _A | T _g | T _s | α _{-30/70} | α _{100/300} | H _K | F _A | d |
| 2 | 1 | 542 | 622 | - | 76 | - | - | 2.47 |

Tolerance of Transmittance (T)

| | |
|--------------------------------------|----|
| Average Transmittance at 400nm-700nm | |
| Tav(%) | OD |
| <0.01 | >4 |





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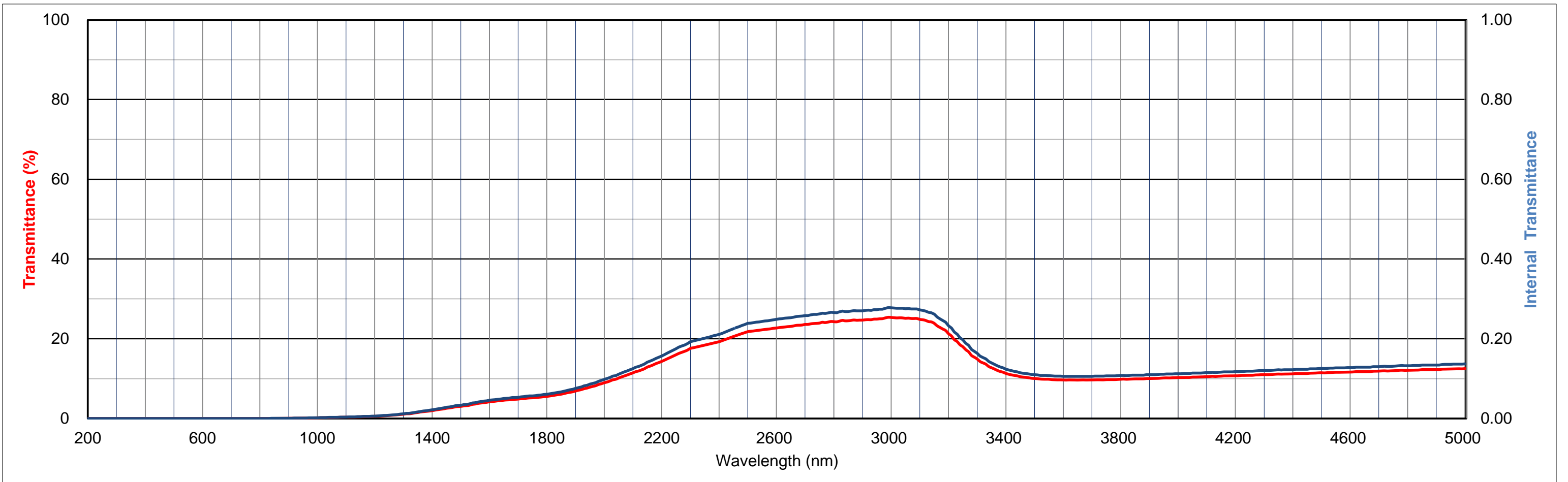
GALVOPTICS LTD - Harvey Rd - Basildon - Essex - SS13 1ES - UK

Thickness (2.5) mm

NDO

Transmittance (T) units: %

| | | | | | | | | | | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| λnm | 200 | 210 | 220 | 230 | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 330 | 340 | 350 | 360 | 370 | 380 | 390 |
| T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| λnm | 400 | 410 | 420 | 430 | 440 | 450 | 460 | 470 | 480 | 490 | 500 | 510 | 520 | 530 | 540 | 550 | 560 | 570 | 580 | 590 |
| T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| λnm | 600 | 610 | 620 | 630 | 640 | 650 | 660 | 670 | 680 | 690 | 700 | 710 | 720 | 730 | 740 | 750 | 760 | 770 | 780 | 790 |
| T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| λnm | 800 | 810 | 820 | 830 | 840 | 850 | 860 | 870 | 880 | 890 | 900 | 910 | 920 | 930 | 940 | 950 | 960 | 970 | 980 | 990 |
| T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| λnm | 1000 | 1010 | 1020 | 1030 | 1040 | 1050 | 1060 | 1070 | 1080 | 1090 | 1100 | 1110 | 1120 | 1130 | 1140 | 1150 | 1160 | 1170 | 1180 | 1190 |
| T | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |
| λnm | 1200 | 1210 | 1220 | 1230 | 1240 | 1250 | 1260 | 1270 | 1280 | 1290 | 1300 | 1310 | 1320 | 1330 | 1340 | 1350 | 1360 | 1370 | 1380 | 1390 |
| T | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 |
| λnm | 1400 | 1410 | 1420 | 1430 | 1440 | 1450 | 1460 | 1470 | 1480 | 1490 | 1500 | 1510 | 1520 | 1530 | 1540 | 1550 | 1560 | 1570 | 1580 | 1590 |
| T | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.6 | 2.6 | 2.8 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.3 | 3.5 | 3.6 | 3.8 | 3.9 | 4.0 | 4.1 |
| λnm | 1600 | 1610 | 1620 | 1630 | 1640 | 1650 | 1660 | 1670 | 1680 | 1690 | 1700 | 1710 | 1720 | 1730 | 1740 | 1750 | 1760 | 1770 | 1780 | 1790 |
| T | 4.2 | 4.3 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.7 | 4.8 | 4.8 | 4.9 | 5.0 | 5.0 | 5.1 | 5.2 | 5.2 | 5.2 | 5.3 | 5.4 | 5.5 |
| λnm | 1800 | 1810 | 1820 | 1830 | 1840 | 1850 | 1860 | 1870 | 1880 | 1890 | 1900 | 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 |
| T | 5.5 | 5.6 | 5.8 | 5.9 | 6.0 | 6.1 | 6.3 | 6.4 | 6.6 | 6.7 | 6.9 | 7.1 | 7.2 | 7.5 | 7.6 | 7.9 | 8.0 | 8.2 | 8.5 | 8.7 |
| λnm | 2000 | 2050 | 2100 | 2150 | 2200 | 2250 | 2300 | 2350 | 2400 | 2450 | 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2900 | 2950 |
| T | 9.0 | 10.1 | 11.4 | 12.9 | 14.3 | 16.0 | 17.6 | 18.4 | 19.2 | 20.5 | 21.8 | 22.2 | 22.7 | 23.1 | 23.6 | 23.9 | 24.3 | 24.5 | 24.7 | 24.9 |
| λnm | 3000 | 3050 | 3100 | 3150 | 3200 | 3250 | 3300 | 3350 | 3400 | 3450 | 3500 | 3550 | 3600 | 3650 | 3700 | 3750 | 3800 | 3850 | 3900 | 3950 |
| T | 25.3 | 25.1 | 24.8 | 23.9 | 21.3 | 18.0 | 14.9 | 12.7 | 11.3 | 10.5 | 10.0 | 9.8 | 9.7 | 9.6 | 9.7 | 9.7 | 9.8 | 9.9 | 10.0 | 10.2 |
| λnm | 4000 | 4050 | 4100 | 4150 | 4200 | 4250 | 4300 | 4350 | 4400 | 4450 | 4500 | 4550 | 4600 | 4650 | 4700 | 4750 | 4800 | 4850 | 4900 | 4950 |
| T | 10.3 | 10.4 | 10.5 | 10.6 | 10.7 | 10.8 | 11.0 | 11.1 | 11.2 | 11.3 | 11.5 | 11.6 | 11.6 | 11.7 | 11.9 | 12.0 | 12.1 | 12.2 | 12.3 | 12.4 |
| λnm | 5000 | | | | | | | | | | | | | | | | | | | |
| T | 12.5 | | | | | | | | | | | | | | | | | | | |



All data is mean values of various melts.

The content of this catalog is accurate as of April ,2014

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