

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: PrentaLux

Report Number: P878937

Luminaire Tested: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

Issue Date: 9/24/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P878937  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2405-094-1)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/24/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: PrentaLux  
Catalog Number: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X  
Description: PrentaLux 200 SERIES 3D PRINTED LUMINAIRE, 206 SHADE, CLEAR LENS.  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

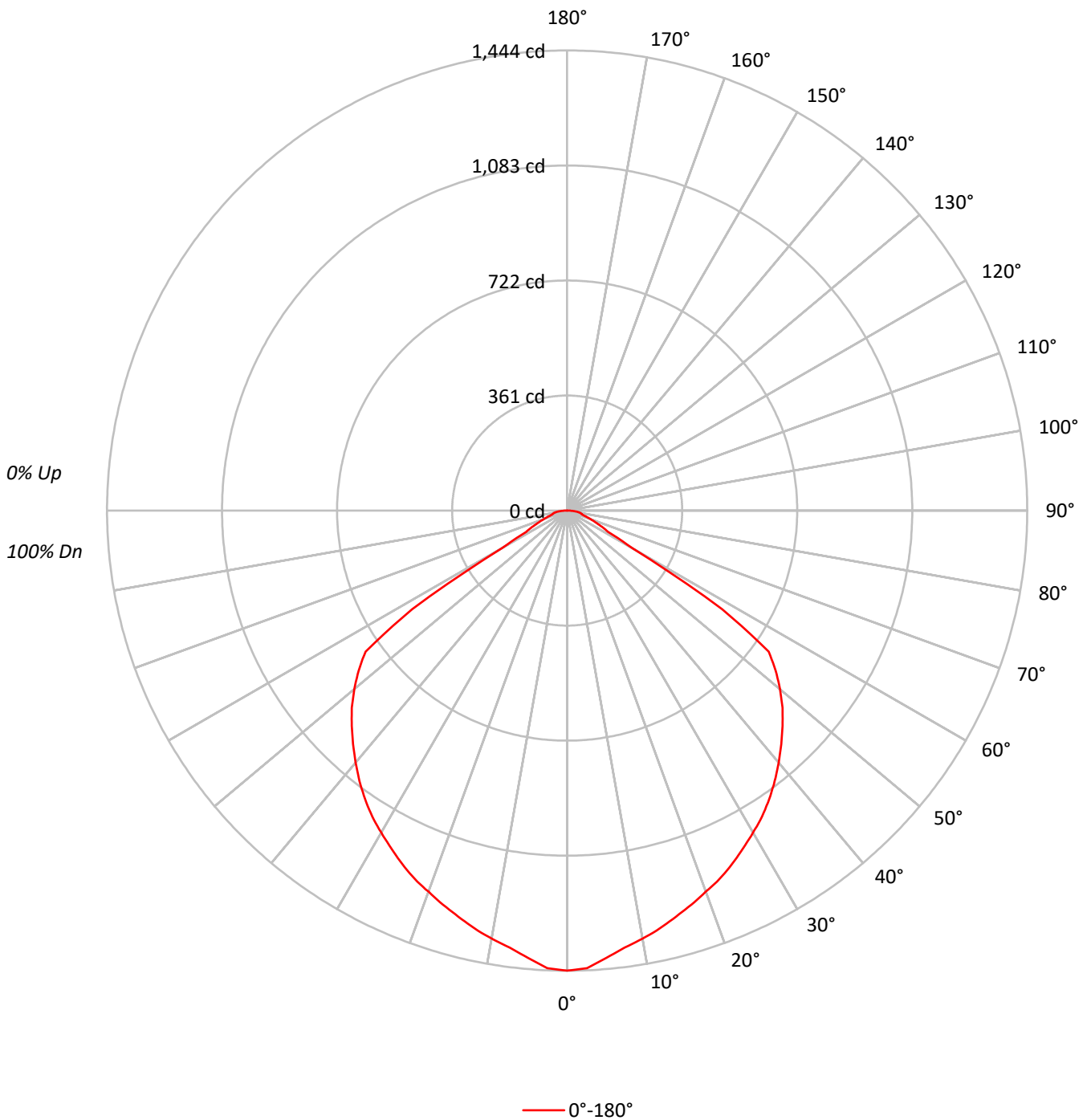
Lumens per Lamp: N/A  
Luminaire Lumens: 3316.0 lumens  
Efficiency: N/A  
Efficacy: 135.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.37  
Luminous Opening: Circular (Dia: 0.88' x H: 0')  
CIE Type: Direct

Input Watts (W): 24.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: 0.5 HR  
Operation Time: 3 HR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P878937

CATALOG NUMBER: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

### Luminous Intensity Polar Plot





TEST NUMBER: P878937

CATALOG NUMBER: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |     | 30  |     |     |     | 10  | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 111 | 107 | 103 | 100 | 108 | 105 | 101 | 99  | 100 | 98  | 95  | 97  | 95  | 93  | 93  | 91  | 90  | 88  |
| 2   | 102 | 95  | 89  | 85  | 100 | 93  | 88  | 84  | 90  | 86  | 82  | 87  | 83  | 80  | 84  | 81  | 78  | 76  |
| 3   | 94  | 85  | 78  | 72  | 92  | 83  | 77  | 72  | 81  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 67  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 59  | 57  |
| 5   | 80  | 68  | 60  | 54  | 78  | 67  | 60  | 54  | 65  | 59  | 53  | 63  | 57  | 53  | 62  | 56  | 52  | 50  |
| 6   | 74  | 62  | 54  | 48  | 72  | 61  | 53  | 47  | 59  | 52  | 47  | 58  | 51  | 47  | 56  | 51  | 46  | 44  |
| 7   | 69  | 56  | 48  | 42  | 67  | 55  | 48  | 42  | 54  | 47  | 42  | 53  | 46  | 42  | 51  | 46  | 41  | 39  |
| 8   | 64  | 51  | 43  | 38  | 63  | 51  | 43  | 38  | 49  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 37  | 35  |
| 9   | 60  | 47  | 39  | 34  | 59  | 47  | 39  | 34  | 45  | 39  | 34  | 44  | 38  | 34  | 43  | 38  | 33  | 32  |
| 10  | 56  | 43  | 36  | 31  | 55  | 43  | 36  | 31  | 42  | 35  | 31  | 41  | 35  | 31  | 40  | 34  | 30  | 29  |

**AVERAGE LUMINANCE (cd/sqm):**

|     |       |
|-----|-------|
|     | 0°    |
| 0°  | 25839 |
| 5°  | 25315 |
| 10° | 24795 |
| 15° | 24449 |
| 20° | 24246 |
| 25° | 24183 |
| 30° | 24119 |
| 35° | 24162 |
| 40° | 24129 |
| 45° | 24199 |
| 50° | 24281 |
| 55° | 24105 |
| 60° | 8435  |
| 65° | 5104  |
| 70° | 4014  |
| 75° | 3410  |
| 80° | 4237  |
| 85° | 5073  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 47.5°  
 Luminance: 24289 cd/sqm

TEST NUMBER: P878937

CATALOG NUMBER: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 133.1  | 4.0       |
| 10°-20°   | 372.7  | 11.2      |
| 20°-30°   | 564.4  | 17.0      |
| 30°-40°   | 691.6  | 20.9      |
| 40°-50°   | 737.8  | 22.2      |
| 50°-60°   | 606.9  | 18.3      |
| 60°-70°   | 127.9  | 3.9       |
| 70°-80°   | 56.5   | 1.7       |
| 80°-90°   | 25.2   | 0.8       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1070.2 | 32.3      |
| 0°-40°    | 1761.7 | 53.1      |
| 0°-60°    | 3106.4 | 93.7      |
| 0°-90°    | 3316.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3316.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | Flux |
|-----|------|------|
| 0°  | 1444 |      |
| 5°  | 1409 | 133  |
| 15° | 1319 | 373  |
| 25° | 1224 | 564  |
| 35° | 1106 | 692  |
| 45° | 956  | 738  |
| 55° | 772  | 607  |
| 65° | 120  | 128  |
| 75° | 49   | 57   |
| 85° | 25   | 25   |
| 90° | 0    |      |

TEST NUMBER: P878937

CATALOG NUMBER: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     |
|-------|--------|
| 0°    | 1443.5 |
| 2.5°  | 1437.1 |
| 5°    | 1408.8 |
| 7.5°  | 1383.2 |
| 10°   | 1364.1 |
| 12.5° | 1343.1 |
| 15°   | 1319.3 |
| 17.5° | 1296.5 |
| 20°   | 1272.8 |
| 22.5° | 1250.9 |
| 25°   | 1224.4 |
| 27.5° | 1195.2 |
| 30°   | 1166.9 |
| 32.5° | 1138.5 |
| 35°   | 1105.7 |
| 37.5° | 1070.1 |
| 40°   | 1032.6 |
| 42.5° | 994.3  |
| 45°   | 955.9  |
| 47.5° | 916.7  |
| 50°   | 871.9  |
| 52.5° | 824.5  |
| 55°   | 772.4  |
| 57.5° | 577.0  |
| 60°   | 235.6  |
| 62.5° | 145.2  |
| 65°   | 120.5  |
| 67.5° | 96.8   |
| 70°   | 76.7   |
| 72.5° | 60.3   |
| 75°   | 49.3   |
| 77.5° | 45.7   |
| 80°   | 41.1   |
| 82.5° | 34.7   |
| 85°   | 24.7   |
| 87.5° | 12.8   |
| 90°   | 0.0    |



TEST NUMBER: P878937  
 CATALOG NUMBER: PRLX-206-927-LL4-C-U-S-X-X-WHHR-BR-X

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 22.52            | 24.02 | 22.88 | 24.34 | 24.65 | 22.52          | 24.02 | 22.88 | 24.34 | 24.65 |
|                 | 3H   | 22.57            | 23.90 | 22.95 | 24.23 | 24.59 | 22.57          | 23.90 | 22.95 | 24.23 | 24.59 |
|                 | 4H   | 22.58            | 23.82 | 22.98 | 24.17 | 24.55 | 22.58          | 23.82 | 22.98 | 24.17 | 24.55 |
|                 | 6H   | 22.60            | 23.74 | 23.01 | 24.11 | 24.50 | 22.60          | 23.74 | 23.01 | 24.11 | 24.50 |
|                 | 8H   | 22.62            | 23.70 | 23.05 | 24.09 | 24.50 | 22.62          | 23.70 | 23.05 | 24.09 | 24.50 |
|                 | 12H  | 22.64            | 23.67 | 23.07 | 24.06 | 24.49 | 22.64          | 23.67 | 23.07 | 24.06 | 24.49 |
| 4H              | 2H   | 22.42            | 23.66 | 22.82 | 24.01 | 24.39 | 22.42          | 23.66 | 22.82 | 24.01 | 24.39 |
|                 | 3H   | 22.54            | 23.54 | 22.95 | 23.95 | 24.35 | 22.54          | 23.54 | 22.95 | 23.95 | 24.35 |
|                 | 4H   | 22.57            | 23.47 | 23.00 | 23.88 | 24.32 | 22.57          | 23.47 | 23.00 | 23.88 | 24.32 |
|                 | 6H   | 22.65            | 23.43 | 23.11 | 23.88 | 24.34 | 22.65          | 23.43 | 23.11 | 23.88 | 24.34 |
|                 | 8H   | 22.70            | 23.43 | 23.16 | 23.87 | 24.34 | 22.70          | 23.43 | 23.16 | 23.87 | 24.34 |
|                 | 12H  | 22.75            | 23.40 | 23.24 | 23.88 | 24.36 | 22.75          | 23.40 | 23.24 | 23.88 | 24.36 |
| 8H              | 4H   | 22.52            | 23.24 | 22.98 | 23.69 | 24.16 | 22.52          | 23.24 | 22.98 | 23.69 | 24.16 |
|                 | 6H   | 22.64            | 23.24 | 23.14 | 23.74 | 24.22 | 22.64          | 23.24 | 23.14 | 23.74 | 24.22 |
|                 | 8H   | 22.72            | 23.27 | 23.24 | 23.79 | 24.27 | 22.72          | 23.27 | 23.24 | 23.79 | 24.27 |
|                 | 12H  | 22.83            | 23.33 | 23.34 | 23.82 | 24.39 | 22.83          | 23.33 | 23.34 | 23.82 | 24.39 |
| 12H             | 4H   | 22.49            | 23.14 | 22.98 | 23.62 | 24.09 | 22.49          | 23.14 | 22.98 | 23.62 | 24.09 |
|                 | 6H   | 22.61            | 23.17 | 23.13 | 23.68 | 24.17 | 22.61          | 23.17 | 23.13 | 23.68 | 24.17 |
|                 | 8H   | 22.74            | 23.24 | 23.25 | 23.73 | 24.30 | 22.74          | 23.24 | 23.25 | 23.73 | 24.30 |

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269





**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2203-582-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 05/25/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: SHAPER  
 Catalog Number: **205-90-27K-27L-UNV-STD-X-X-WHHR-SR-X**  
 Description: Shaper 3D PRINTED 200 Series Pendants

**Spectral Parameters**

CCT (K): 2678  
 CIE u': 0.2631  
 CIE v': 0.5293  
 Duv: 0.0011  
 CIE x: 0.4634  
 CIE y: 0.4143  
 CIE z: 0.1223  
 Peak Wavelength (nm): 627  
 Dominant Wavelength (nm): 583  
 Purity: 64  
 Rf: 92.6  
 Rg: 98.1

CRI (Ra): 93.5  
 R1: 93.5  
 R2: 96.8  
 R3: 99.0  
 R4: 93.7  
 R5: 93.3  
 R6: 97.0  
 R7: 92.3  
 R8: 82.3  
 R9: 61.4  
 R10: 91.9  
 R11: 95.1  
 R12: 84.7  
 R13: 94.4  
 R14: 98.6



**Test Conditions**

Stabilization Time: 101M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 24.7/43%  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2203-582-1

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 2/7/2022         | 8/7/2022             |
| Power Meter                    | XITRON 2801 IN0071    | 11/29/2021       | 11/29/2022           |
| AC Power Source                | CHROMA 61603 IN0063   | 11/29/2021       | 11/29/2022           |
| DC Power Source                | AGILENT E3634A IN0208 | 11/29/2021       | 11/29/2022           |
| Sphere Thermometer             | ONSET IN0085          | 11/29/2021       | 11/29/2022           |
| Room Thermometer               | ONSET IN0046          | 11/29/2021       | 11/29/2022           |

REPORT NUMBER: SP1-2203-582-1

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2203-582-1

**Photopic Flux vs. Wavelength**



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 1145          | NR            | 490    | 13228         | NR            | 620    | 56980         | NR            | 750    | 5727          | NR            | 880    | 1140          | NR            |
| 365    | 1066          | NR            | 495    | 15565         | NR            | 625    | 57502         | NR            | 755    | 5083          | NR            | 885    | 1142          | NR            |
| 370    | 1064          | NR            | 500    | 17841         | NR            | 630    | 57383         | NR            | 760    | 4389          | NR            | 890    | 1233          | NR            |
| 375    | 1275          | NR            | 505    | 19900         | NR            | 635    | 56464         | NR            | 765    | 3893          | NR            | 895    | 1246          | NR            |
| 380    | 1305          | NR            | 510    | 21497         | NR            | 640    | 54698         | NR            | 770    | 3545          | NR            | 900    | 1222          | NR            |
| 385    | 1170          | NR            | 515    | 22798         | NR            | 645    | 52709         | NR            | 775    | 3080          | NR            | 905    | 1024          | NR            |
| 390    | 1068          | NR            | 520    | 24188         | NR            | 650    | 50431         | NR            | 780    | 2657          | NR            | 910    | 1001          | NR            |
| 395    | 1049          | NR            | 525    | 25262         | NR            | 655    | 47985         | NR            | 785    | 2483          | NR            | 915    | 1020          | NR            |
| 400    | 887           | NR            | 530    | 26504         | NR            | 660    | 44844         | NR            | 790    | 2269          | NR            | 920    | 1035          | NR            |
| 405    | 748           | NR            | 535    | 28006         | NR            | 665    | 41434         | NR            | 795    | 2071          | NR            | 925    | 1080          | NR            |
| 410    | 664           | NR            | 540    | 29329         | NR            | 670    | 38083         | NR            | 800    | 1908          | NR            | 930    | 589           | NR            |
| 415    | 736           | NR            | 545    | 30733         | NR            | 675    | 34738         | NR            | 805    | 1728          | NR            | 935    | 1304          | NR            |
| 420    | 1059          | NR            | 550    | 32166         | NR            | 680    | 31367         | NR            | 810    | 1556          | NR            | 940    | 1248          | NR            |
| 425    | 1573          | NR            | 555    | 33621         | NR            | 685    | 28264         | NR            | 815    | 1534          | NR            | 945    | 1376          | NR            |
| 430    | 2410          | NR            | 560    | 34870         | NR            | 690    | 25133         | NR            | 820    | 1615          | NR            | 950    | 1168          | NR            |
| 435    | 3705          | NR            | 565    | 36475         | NR            | 695    | 22417         | NR            | 825    | 1601          | NR            | 955    | 1472          | NR            |
| 440    | 5998          | NR            | 570    | 38315         | NR            | 700    | 19911         | NR            | 830    | 1464          | NR            | 960    | 1357          | NR            |
| 445    | 10483         | NR            | 575    | 39818         | NR            | 705    | 17515         | NR            | 835    | 1513          | NR            | 965    | 1256          | NR            |
| 450    | 17148         | NR            | 580    | 41512         | NR            | 710    | 15418         | NR            | 840    | 1274          | NR            | 970    | 1326          | NR            |
| 455    | 19572         | NR            | 585    | 43674         | NR            | 715    | 13677         | NR            | 845    | 1187          | NR            | 975    | 1776          | NR            |
| 460    | 15531         | NR            | 590    | 46057         | NR            | 720    | 12091         | NR            | 850    | 1450          | NR            | 980    | 1995          | NR            |
| 465    | 12608         | NR            | 595    | 48226         | NR            | 725    | 10699         | NR            | 855    | 1390          | NR            | 985    | 1613          | NR            |
| 470    | 11345         | NR            | 600    | 50613         | NR            | 730    | 9375          | NR            | 860    | 1425          | NR            | 990    | 1171          | NR            |
| 475    | 10065         | NR            | 605    | 52959         | NR            | 735    | 8139          | NR            | 865    | 1380          | NR            | 995    | 1479          | NR            |
| 480    | 9832          | NR            | 610    | 54812         | NR            | 740    | 7087          | NR            | 870    | 1138          | NR            | 1000   | 2308          | NR            |
| 485    | 11206         | NR            | 615    | 56339         | NR            | 745    | 6418          | NR            | 875    | 1228          | NR            |        |               |               |

REPORT NUMBER: SP1-2203-582-1

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 3318.5**

**S/P: 1.27**

| $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>( $\mu\text{W}/\text{nm}$ ) | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 1145                                 | NR                             | 490               | 13228                                | NR                             | 620               | 56980                                | NR                             | 750               | 5727                                 | NR                             | 880               | 1140                                 | NR                             |
| 365               | 1066                                 | NR                             | 495               | 15565                                | NR                             | 625               | 57502                                | NR                             | 755               | 5083                                 | NR                             | 885               | 1142                                 | NR                             |
| 370               | 1064                                 | NR                             | 500               | 17841                                | NR                             | 630               | 57383                                | NR                             | 760               | 4389                                 | NR                             | 890               | 1233                                 | NR                             |
| 375               | 1275                                 | NR                             | 505               | 19900                                | NR                             | 635               | 56464                                | NR                             | 765               | 3893                                 | NR                             | 895               | 1246                                 | NR                             |
| 380               | 1305                                 | NR                             | 510               | 21497                                | NR                             | 640               | 54698                                | NR                             | 770               | 3545                                 | NR                             | 900               | 1222                                 | NR                             |
| 385               | 1170                                 | NR                             | 515               | 22798                                | NR                             | 645               | 52709                                | NR                             | 775               | 3080                                 | NR                             | 905               | 1024                                 | NR                             |
| 390               | 1068                                 | NR                             | 520               | 24188                                | NR                             | 650               | 50431                                | NR                             | 780               | 2657                                 | NR                             | 910               | 1001                                 | NR                             |
| 395               | 1049                                 | NR                             | 525               | 25262                                | NR                             | 655               | 47985                                | NR                             | 785               | 2483                                 | NR                             | 915               | 1020                                 | NR                             |
| 400               | 887                                  | NR                             | 530               | 26504                                | NR                             | 660               | 44844                                | NR                             | 790               | 2269                                 | NR                             | 920               | 1035                                 | NR                             |
| 405               | 748                                  | NR                             | 535               | 28006                                | NR                             | 665               | 41434                                | NR                             | 795               | 2071                                 | NR                             | 925               | 1080                                 | NR                             |
| 410               | 664                                  | NR                             | 540               | 29329                                | NR                             | 670               | 38083                                | NR                             | 800               | 1908                                 | NR                             | 930               | 589                                  | NR                             |
| 415               | 736                                  | NR                             | 545               | 30733                                | NR                             | 675               | 34738                                | NR                             | 805               | 1728                                 | NR                             | 935               | 1304                                 | NR                             |
| 420               | 1059                                 | NR                             | 550               | 32166                                | NR                             | 680               | 31367                                | NR                             | 810               | 1556                                 | NR                             | 940               | 1248                                 | NR                             |
| 425               | 1573                                 | NR                             | 555               | 33621                                | NR                             | 685               | 28264                                | NR                             | 815               | 1534                                 | NR                             | 945               | 1376                                 | NR                             |
| 430               | 2410                                 | NR                             | 560               | 34870                                | NR                             | 690               | 25133                                | NR                             | 820               | 1615                                 | NR                             | 950               | 1168                                 | NR                             |
| 435               | 3705                                 | NR                             | 565               | 36475                                | NR                             | 695               | 22417                                | NR                             | 825               | 1601                                 | NR                             | 955               | 1472                                 | NR                             |
| 440               | 5998                                 | NR                             | 570               | 38315                                | NR                             | 700               | 19911                                | NR                             | 830               | 1464                                 | NR                             | 960               | 1357                                 | NR                             |
| 445               | 10483                                | NR                             | 575               | 39818                                | NR                             | 705               | 17515                                | NR                             | 835               | 1513                                 | NR                             | 965               | 1256                                 | NR                             |
| 450               | 17148                                | NR                             | 580               | 41512                                | NR                             | 710               | 15418                                | NR                             | 840               | 1274                                 | NR                             | 970               | 1326                                 | NR                             |
| 455               | 19572                                | NR                             | 585               | 43674                                | NR                             | 715               | 13677                                | NR                             | 845               | 1187                                 | NR                             | 975               | 1776                                 | NR                             |
| 460               | 15531                                | NR                             | 590               | 46057                                | NR                             | 720               | 12091                                | NR                             | 850               | 1450                                 | NR                             | 980               | 1995                                 | NR                             |
| 465               | 12608                                | NR                             | 595               | 48226                                | NR                             | 725               | 10699                                | NR                             | 855               | 1390                                 | NR                             | 985               | 1613                                 | NR                             |
| 470               | 11345                                | NR                             | 600               | 50613                                | NR                             | 730               | 9375                                 | NR                             | 860               | 1425                                 | NR                             | 990               | 1171                                 | NR                             |
| 475               | 10065                                | NR                             | 605               | 52959                                | NR                             | 735               | 8139                                 | NR                             | 865               | 1380                                 | NR                             | 995               | 1479                                 | NR                             |
| 480               | 9832                                 | NR                             | 610               | 54812                                | NR                             | 740               | 7087                                 | NR                             | 870               | 1138                                 | NR                             | 1000              | 2308                                 | NR                             |
| 485               | 11206                                | NR                             | 615               | 56339                                | NR                             | 745               | 6418                                 | NR                             | 875               | 1228                                 | NR                             |                   |                                      |                                |

REPORT NUMBER: SP1-2203-582-1

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 1235.2 S/P: 0.47**

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 1145          | NR            | 490    | 13228         | NR            | 620    | 56980         | NR            | 750    | 5727          | NR            | 880    | 1140          | NR            |
| 365    | 1066          | NR            | 495    | 15565         | NR            | 625    | 57502         | NR            | 755    | 5083          | NR            | 885    | 1142          | NR            |
| 370    | 1064          | NR            | 500    | 17841         | NR            | 630    | 57383         | NR            | 760    | 4389          | NR            | 890    | 1233          | NR            |
| 375    | 1275          | NR            | 505    | 19900         | NR            | 635    | 56464         | NR            | 765    | 3893          | NR            | 895    | 1246          | NR            |
| 380    | 1305          | NR            | 510    | 21497         | NR            | 640    | 54698         | NR            | 770    | 3545          | NR            | 900    | 1222          | NR            |
| 385    | 1170          | NR            | 515    | 22798         | NR            | 645    | 52709         | NR            | 775    | 3080          | NR            | 905    | 1024          | NR            |
| 390    | 1068          | NR            | 520    | 24188         | NR            | 650    | 50431         | NR            | 780    | 2657          | NR            | 910    | 1001          | NR            |
| 395    | 1049          | NR            | 525    | 25262         | NR            | 655    | 47985         | NR            | 785    | 2483          | NR            | 915    | 1020          | NR            |
| 400    | 887           | NR            | 530    | 26504         | NR            | 660    | 44844         | NR            | 790    | 2269          | NR            | 920    | 1035          | NR            |
| 405    | 748           | NR            | 535    | 28006         | NR            | 665    | 41434         | NR            | 795    | 2071          | NR            | 925    | 1080          | NR            |
| 410    | 664           | NR            | 540    | 29329         | NR            | 670    | 38083         | NR            | 800    | 1908          | NR            | 930    | 589           | NR            |
| 415    | 736           | NR            | 545    | 30733         | NR            | 675    | 34738         | NR            | 805    | 1728          | NR            | 935    | 1304          | NR            |
| 420    | 1059          | NR            | 550    | 32166         | NR            | 680    | 31367         | NR            | 810    | 1556          | NR            | 940    | 1248          | NR            |
| 425    | 1573          | NR            | 555    | 33621         | NR            | 685    | 28264         | NR            | 815    | 1534          | NR            | 945    | 1376          | NR            |
| 430    | 2410          | NR            | 560    | 34870         | NR            | 690    | 25133         | NR            | 820    | 1615          | NR            | 950    | 1168          | NR            |
| 435    | 3705          | NR            | 565    | 36475         | NR            | 695    | 22417         | NR            | 825    | 1601          | NR            | 955    | 1472          | NR            |
| 440    | 5998          | NR            | 570    | 38315         | NR            | 700    | 19911         | NR            | 830    | 1464          | NR            | 960    | 1357          | NR            |
| 445    | 10483         | NR            | 575    | 39818         | NR            | 705    | 17515         | NR            | 835    | 1513          | NR            | 965    | 1256          | NR            |
| 450    | 17148         | NR            | 580    | 41512         | NR            | 710    | 15418         | NR            | 840    | 1274          | NR            | 970    | 1326          | NR            |
| 455    | 19572         | NR            | 585    | 43674         | NR            | 715    | 13677         | NR            | 845    | 1187          | NR            | 975    | 1776          | NR            |
| 460    | 15531         | NR            | 590    | 46057         | NR            | 720    | 12091         | NR            | 850    | 1450          | NR            | 980    | 1995          | NR            |
| 465    | 12608         | NR            | 595    | 48226         | NR            | 725    | 10699         | NR            | 855    | 1390          | NR            | 985    | 1613          | NR            |
| 470    | 11345         | NR            | 600    | 50613         | NR            | 730    | 9375          | NR            | 860    | 1425          | NR            | 990    | 1171          | NR            |
| 475    | 10065         | NR            | 605    | 52959         | NR            | 735    | 8139          | NR            | 865    | 1380          | NR            | 995    | 1479          | NR            |
| 480    | 9832          | NR            | 610    | 54812         | NR            | 740    | 7087          | NR            | 870    | 1138          | NR            | 1000   | 2308          | NR            |
| 485    | 11206         | NR            | 615    | 56339         | NR            | 745    | 6418          | NR            | 875    | 1228          | NR            |        |               |               |

REPORT NUMBER: SP1-2203-582-1

TM-30-18

**Summary**

$R_f = 92.6$   
 $R_g = 98.1$   
 CIE  $R_a = 93.5$   
 $R_9 = 61.4$



**Color Vector Graphics**

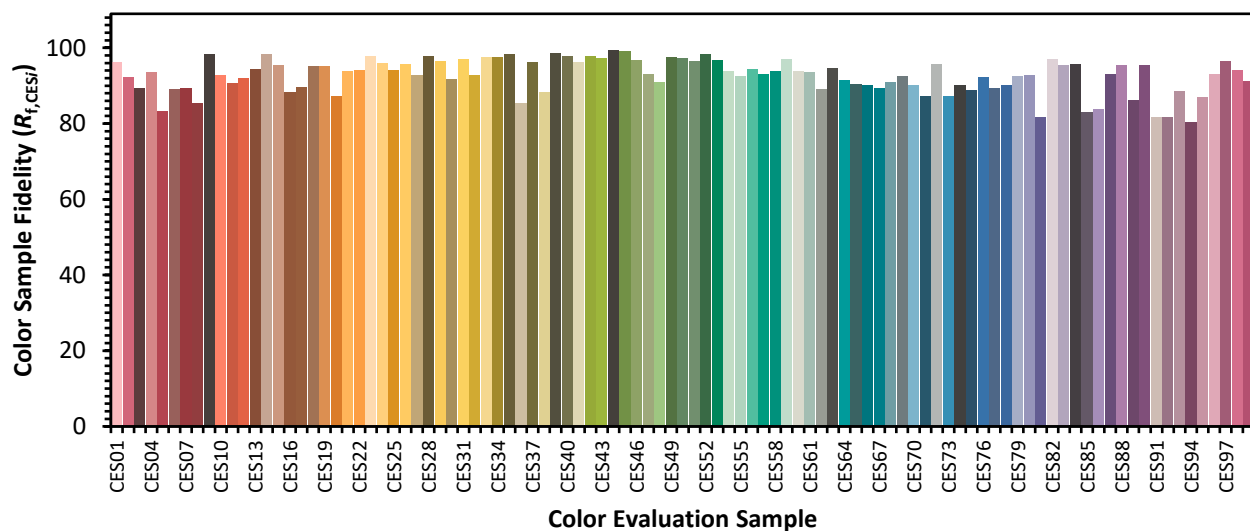


REPORT NUMBER: SP1-2203-582-1

TM-30-18

**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 96 | CES51 = 97 | CES76 = 92 |
| CES02 = 64 | CES27 = 93 | CES52 = 98 | CES77 = 89 |
| CES03 = 32 | CES28 = 98 | CES53 = 97 | CES78 = 90 |
| CES04 = 71 | CES29 = 97 | CES54 = 94 | CES79 = 93 |
| CES05 = 51 | CES30 = 92 | CES55 = 93 | CES80 = 93 |
| CES06 = 52 | CES31 = 97 | CES56 = 94 | CES81 = 82 |
| CES07 = 44 | CES32 = 93 | CES57 = 93 | CES82 = 97 |
| CES08 = 43 | CES33 = 97 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 97 | CES59 = 97 | CES84 = 96 |
| CES10 = 77 | CES35 = 98 | CES60 = 94 | CES85 = 83 |
| CES11 = 59 | CES36 = 85 | CES61 = 94 | CES86 = 84 |
| CES12 = 66 | CES37 = 96 | CES62 = 89 | CES87 = 93 |
| CES13 = 44 | CES38 = 88 | CES63 = 95 | CES88 = 95 |
| CES14 = 74 | CES39 = 99 | CES64 = 92 | CES89 = 86 |
| CES15 = 72 | CES40 = 98 | CES65 = 90 | CES90 = 95 |
| CES16 = 48 | CES41 = 96 | CES66 = 90 | CES91 = 82 |
| CES17 = 50 | CES42 = 98 | CES67 = 89 | CES92 = 82 |
| CES18 = 57 | CES43 = 97 | CES68 = 91 | CES93 = 89 |
| CES19 = 72 | CES44 = 99 | CES69 = 92 | CES94 = 80 |
| CES20 = 68 | CES45 = 99 | CES70 = 90 | CES95 = 87 |
| CES21 = 87 | CES46 = 97 | CES71 = 87 | CES96 = 93 |
| CES22 = 79 | CES47 = 93 | CES72 = 96 | CES97 = 96 |
| CES23 = 92 | CES48 = 91 | CES73 = 87 | CES98 = 94 |
| CES24 = 91 | CES49 = 97 | CES74 = 90 | CES99 = 91 |
| CES25 = 72 | CES50 = 97 | CES75 = 89 |            |





REPORT NUMBER: SP1-2203-582-1

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-2203-582-1

TM-30-18

Measure Comparisons



(END OF REPORT)