

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: P1057192

Luminaire Tested: PRLX-CYL2-X-935-10L-SP-U-S-X-X-BLAK

Issue Date: 8/6/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1057192  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2504-407-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 8/6/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: PrentaLux  
Catalog Number: PRLX-CYL2-X-935-10L-SP-U-S-X-X-BLAK  
Description: PrentaLux 2-INCH CYLINDER  
DOWNLIGHT 1000 LUMENS, SPOT OPTIC (19-DEGREES)  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

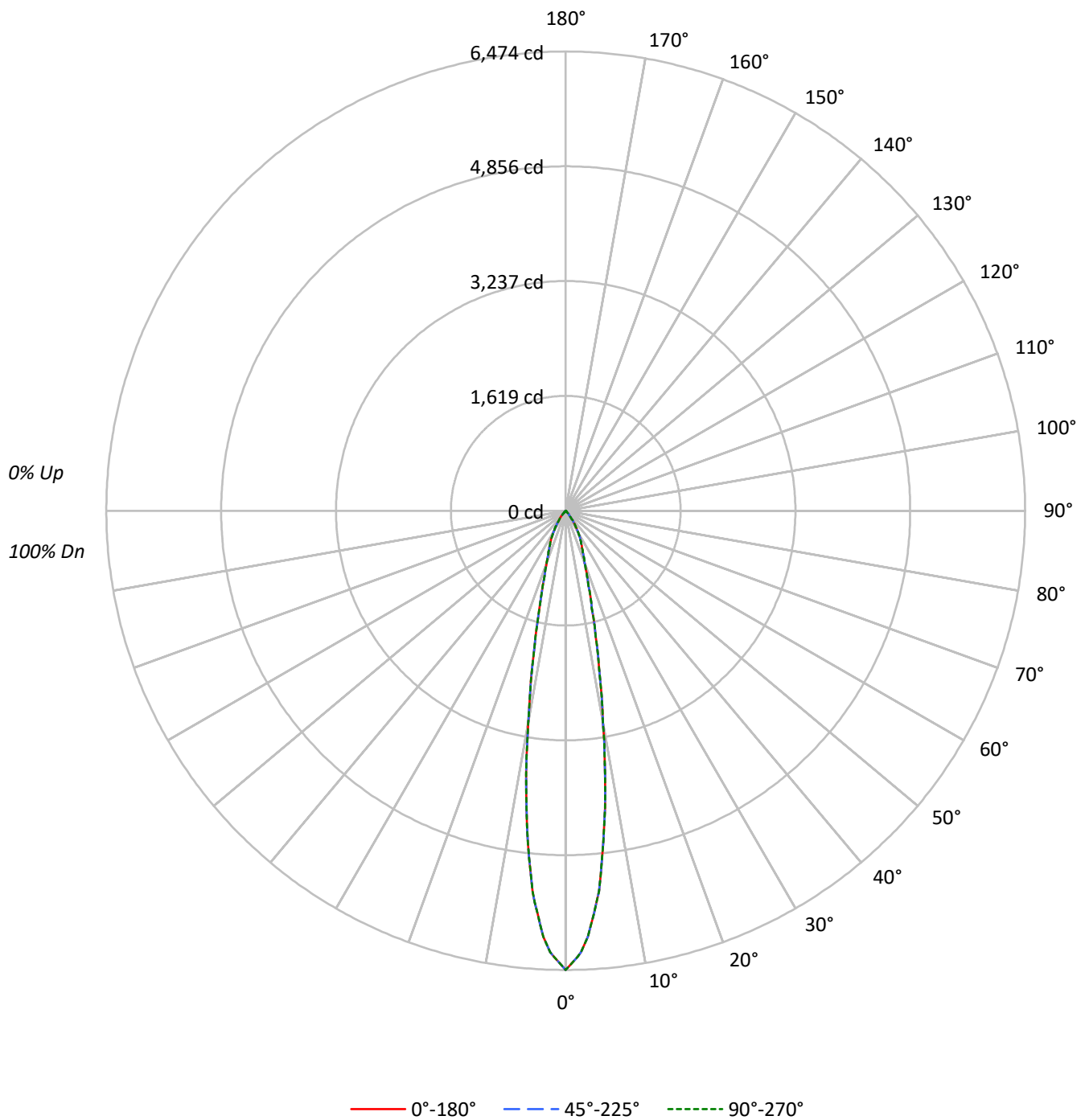
Lumens per Lamp: N/A  
Luminaire Lumens: 1234.3 lumens  
Efficiency: N/A  
Efficacy: 138.7 lumens/watt  
Spacing Criteria (0/90/45): 0.33 / 0.33 / 0.34  
Luminous Opening: Circular (Dia: 0.15' x H: 0')  
CIE Type: Direct

Input Watts (W): 8.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-X-BLAK

### Luminous Intensity Polar Plot



TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-BLAK

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

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 115 | 113 | 111 | 109 | 112 | 110 | 109 | 107 | 106 | 105 | 104 |  | 103 | 102 | 101 |  | 99  |
| 2   | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 100 | 102 | 100 | 98  |  | 99  | 97  | 96  |  | 97  |
| 3   | 107 | 102 | 98  | 95  | 105 | 101 | 97  | 94  | 98  | 95  | 93  |  | 96  | 93  | 91  |  | 94  |
| 4   | 103 | 97  | 93  | 90  | 102 | 96  | 93  | 90  | 94  | 91  | 89  |  | 93  | 90  | 88  |  | 91  |
| 5   | 100 | 94  | 89  | 86  | 98  | 93  | 89  | 86  | 91  | 88  | 85  |  | 90  | 86  | 84  |  | 88  |
| 6   | 97  | 90  | 85  | 82  | 95  | 89  | 85  | 82  | 88  | 84  | 82  |  | 87  | 83  | 81  |  | 85  |
| 7   | 94  | 87  | 82  | 79  | 92  | 86  | 82  | 79  | 85  | 81  | 79  |  | 84  | 81  | 78  |  | 83  |
| 8   | 91  | 84  | 79  | 76  | 90  | 83  | 79  | 76  | 82  | 79  | 76  |  | 81  | 78  | 76  |  | 81  |
| 9   | 88  | 81  | 77  | 74  | 87  | 81  | 76  | 74  | 80  | 76  | 73  |  | 79  | 76  | 73  |  | 78  |
| 10  | 86  | 79  | 74  | 71  | 85  | 78  | 74  | 71  | 77  | 74  | 71  |  | 77  | 73  | 71  |  | 76  |

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

|     | 0°      | 45°     | 90°     |
|-----|---------|---------|---------|
| 0°  | 4172295 | 4172295 | 4172295 |
| 5°  | 3482808 | 3482808 | 3482808 |
| 10° | 1986051 | 1986051 | 1986051 |
| 15° | 950625  | 950625  | 950625  |
| 20° | 532163  | 532163  | 532163  |
| 25° | 372797  | 372797  | 372797  |
| 30° | 258356  | 258356  | 258356  |
| 35° | 135626  | 135626  | 135626  |
| 40° | 49969   | 49969   | 49969   |
| 45° | 14855   | 14855   | 14855   |
| 50° | 7018    | 7018    | 7018    |
| 55° | 5281    | 5281    | 5281    |
| 60° | 4511    | 4511    | 4511    |
| 65° | 3507    | 3507    | 3507    |
| 70° | 2261    | 2261    | 2261    |
| 75° | 0       | 0       | 0       |
| 80° | 0       | 0       | 0       |
| 85° | 0       | 0       | 0       |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14855 cd/sqm

TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-X-BLAK

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 433.6  | 35.1      |
| 10°-20°   | 422.1  | 34.2      |
| 20°-30°   | 242.9  | 19.7      |
| 30°-40°   | 112.1  | 9.1       |
| 40°-50°   | 17.0   | 1.4       |
| 50°-60°   | 4.0    | 0.3       |
| 60°-70°   | 2.0    | 0.2       |
| 70°-80°   | 0.5    | 0.0       |
| 80°-90°   | 0.0    | 0.0       |
| 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°    | 1098.7 | 89.0      |
| 0°-40°    | 1210.7 | 98.1      |
| 0°-60°    | 1231.8 | 99.8      |
| 0°-90°    | 1234.3 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1234.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 6474 | 6474  | 6474 | 6474  | 6474 |      |
| 5°  | 5384 | 5384  | 5384 | 5384  | 5384 | 434  |
| 15° | 1425 | 1425  | 1425 | 1425  | 1425 | 422  |
| 25° | 524  | 524   | 524  | 524   | 524  | 243  |
| 35° | 172  | 172   | 172  | 172   | 172  | 112  |
| 45° | 16   | 16    | 16   | 16    | 16   | 17   |
| 55° | 5    | 5     | 5    | 5     | 5    | 4    |
| 65° | 2    | 2     | 2    | 2     | 2    | 2    |
| 75° | 0    | 0     | 0    | 0     | 0    | 0    |
| 85° | 0    | 0     | 0    | 0     | 0    | 0    |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-BLAK

**CANDELA DISTRIBUTION (FULL):**

|     | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-----|--------|--------|--------|--------|--------|
| 0°  | 6474.5 | 6474.5 | 6474.5 | 6474.5 | 6474.5 |
| 1°  | 6352.0 | 6352.0 | 6352.0 | 6352.0 | 6352.0 |
| 2°  | 6229.4 | 6229.4 | 6229.4 | 6229.4 | 6229.4 |
| 3°  | 6011.3 | 6011.3 | 6011.3 | 6011.3 | 6011.3 |
| 4°  | 5697.6 | 5697.6 | 5697.6 | 5697.6 | 5697.6 |
| 5°  | 5384.0 | 5384.0 | 5384.0 | 5384.0 | 5384.0 |
| 6°  | 4925.9 | 4925.9 | 4925.9 | 4925.9 | 4925.9 |
| 7°  | 4467.7 | 4467.7 | 4467.7 | 4467.7 | 4467.7 |
| 8°  | 3998.0 | 3998.0 | 3998.0 | 3998.0 | 3998.0 |
| 9°  | 3516.5 | 3516.5 | 3516.5 | 3516.5 | 3516.5 |
| 10° | 3035.1 | 3035.1 | 3035.1 | 3035.1 | 3035.1 |
| 11° | 2651.1 | 2651.1 | 2651.1 | 2651.1 | 2651.1 |
| 12° | 2267.1 | 2267.1 | 2267.1 | 2267.1 | 2267.1 |
| 13° | 1945.0 | 1945.0 | 1945.0 | 1945.0 | 1945.0 |
| 14° | 1685.0 | 1685.0 | 1685.0 | 1685.0 | 1685.0 |
| 15° | 1424.9 | 1424.9 | 1424.9 | 1424.9 | 1424.9 |
| 16° | 1261.8 | 1261.8 | 1261.8 | 1261.8 | 1261.8 |
| 17° | 1098.7 | 1098.7 | 1098.7 | 1098.7 | 1098.7 |
| 18° | 968.9  | 968.9  | 968.9  | 968.9  | 968.9  |
| 19° | 872.4  | 872.4  | 872.4  | 872.4  | 872.4  |
| 20° | 776.0  | 776.0  | 776.0  | 776.0  | 776.0  |
| 21° | 716.8  | 716.8  | 716.8  | 716.8  | 716.8  |
| 22° | 657.6  | 657.6  | 657.6  | 657.6  | 657.6  |
| 23° | 607.3  | 607.3  | 607.3  | 607.3  | 607.3  |
| 24° | 565.8  | 565.8  | 565.8  | 565.8  | 565.8  |
| 25° | 524.3  | 524.3  | 524.3  | 524.3  | 524.3  |
| 26° | 488.9  | 488.9  | 488.9  | 488.9  | 488.9  |
| 27° | 453.5  | 453.5  | 453.5  | 453.5  | 453.5  |
| 28° | 418.0  | 418.0  | 418.0  | 418.0  | 418.0  |
| 29° | 382.6  | 382.6  | 382.6  | 382.6  | 382.6  |
| 30° | 347.2  | 347.2  | 347.2  | 347.2  | 347.2  |
| 31° | 310.4  | 310.4  | 310.4  | 310.4  | 310.4  |
| 32° | 273.6  | 273.6  | 273.6  | 273.6  | 273.6  |
| 33° | 238.6  | 238.6  | 238.6  | 238.6  | 238.6  |
| 34° | 205.5  | 205.5  | 205.5  | 205.5  | 205.5  |
| 35° | 172.4  | 172.4  | 172.4  | 172.4  | 172.4  |
| 36° | 145.9  | 145.9  | 145.9  | 145.9  | 145.9  |
| 37° | 119.3  | 119.3  | 119.3  | 119.3  | 119.3  |
| 38° | 96.7   | 96.7   | 96.7   | 96.7   | 96.7   |
| 39° | 78.1   | 78.1   | 78.1   | 78.1   | 78.1   |
| 40° | 59.4   | 59.4   | 59.4   | 59.4   | 59.4   |
| 41° | 48.2   | 48.2   | 48.2   | 48.2   | 48.2   |
| 42° | 37.1   | 37.1   | 37.1   | 37.1   | 37.1   |
| 43° | 28.4   | 28.4   | 28.4   | 28.4   | 28.4   |
| 44° | 22.4   | 22.4   | 22.4   | 22.4   | 22.4   |

TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-BLAK

**CANDELA DISTRIBUTION (continued):**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  |
|-----|------|-------|------|-------|------|
| 45° | 16.3 | 16.3  | 16.3 | 16.3  | 16.3 |
| 46° | 13.5 | 13.5  | 13.5 | 13.5  | 13.5 |
| 47° | 10.7 | 10.7  | 10.7 | 10.7  | 10.7 |
| 48° | 8.9  | 8.9   | 8.9  | 8.9   | 8.9  |
| 49° | 7.9  | 7.9   | 7.9  | 7.9   | 7.9  |
| 50° | 7.0  | 7.0   | 7.0  | 7.0   | 7.0  |
| 51° | 6.1  | 6.1   | 6.1  | 6.1   | 6.1  |
| 52° | 5.1  | 5.1   | 5.1  | 5.1   | 5.1  |
| 53° | 4.7  | 4.7   | 4.7  | 4.7   | 4.7  |
| 54° | 4.7  | 4.7   | 4.7  | 4.7   | 4.7  |
| 55° | 4.7  | 4.7   | 4.7  | 4.7   | 4.7  |
| 56° | 4.2  | 4.2   | 4.2  | 4.2   | 4.2  |
| 57° | 3.7  | 3.7   | 3.7  | 3.7   | 3.7  |
| 58° | 3.5  | 3.5   | 3.5  | 3.5   | 3.5  |
| 59° | 3.5  | 3.5   | 3.5  | 3.5   | 3.5  |
| 60° | 3.5  | 3.5   | 3.5  | 3.5   | 3.5  |
| 61° | 3.0  | 3.0   | 3.0  | 3.0   | 3.0  |
| 62° | 2.6  | 2.6   | 2.6  | 2.6   | 2.6  |
| 63° | 2.3  | 2.3   | 2.3  | 2.3   | 2.3  |
| 64° | 2.3  | 2.3   | 2.3  | 2.3   | 2.3  |
| 65° | 2.3  | 2.3   | 2.3  | 2.3   | 2.3  |
| 66° | 1.9  | 1.9   | 1.9  | 1.9   | 1.9  |
| 67° | 1.4  | 1.4   | 1.4  | 1.4   | 1.4  |
| 68° | 1.2  | 1.2   | 1.2  | 1.2   | 1.2  |
| 69° | 1.2  | 1.2   | 1.2  | 1.2   | 1.2  |
| 70° | 1.2  | 1.2   | 1.2  | 1.2   | 1.2  |
| 71° | 1.2  | 1.2   | 1.2  | 1.2   | 1.2  |
| 72° | 1.2  | 1.2   | 1.2  | 1.2   | 1.2  |
| 73° | 0.9  | 0.9   | 0.9  | 0.9   | 0.9  |
| 74° | 0.5  | 0.5   | 0.5  | 0.5   | 0.5  |
| 75° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 76° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 77° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 78° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 79° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 80° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 81° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 82° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 83° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 84° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 85° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 86° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 87° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 88° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |
| 89° | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  |



TEST NUMBER: P1057192  
CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-X-BLAK

**CANDELA DISTRIBUTION (continued):**

|     | 0°  | 22.5° | 45° | 67.5° | 90° |
|-----|-----|-------|-----|-------|-----|
| 90° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |



TEST NUMBER: P1057192

CATALOG NUMBER: PRLX-CYL2-X-935-10L-SP-U-S-X-BLAK

**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 | 4.13             | 5.03 | 4.49 | 5.34 | 5.65 | 4.13           | 5.03 | 4.49 | 5.34 | 5.65 |
|                 | 3H   | 4.60             | 5.39 | 4.98 | 5.72 | 6.09 | 4.60           | 5.39 | 4.98 | 5.72 | 6.09 |
|                 | 4H   | 4.57             | 5.30 | 4.97 | 5.65 | 6.04 | 4.57           | 5.30 | 4.97 | 5.65 | 6.04 |
|                 | 6H   | 4.45             | 5.11 | 4.87 | 5.49 | 5.89 | 4.45           | 5.11 | 4.87 | 5.49 | 5.89 |
|                 | 8H   | 4.39             | 5.01 | 4.82 | 5.40 | 5.82 | 4.39           | 5.01 | 4.82 | 5.40 | 5.82 |
|                 | 12H  | 4.32             | 4.92 | 4.76 | 5.30 | 5.74 | 4.32           | 4.92 | 4.76 | 5.30 | 5.74 |
| 4H              | 2H   | 4.43             | 5.16 | 4.83 | 5.51 | 5.90 | 4.43           | 5.16 | 4.83 | 5.51 | 5.90 |
|                 | 3H   | 5.09             | 5.69 | 5.51 | 6.10 | 6.51 | 5.09           | 5.69 | 5.51 | 6.10 | 6.51 |
|                 | 4H   | 5.02             | 5.55 | 5.46 | 5.98 | 6.43 | 5.02           | 5.55 | 5.46 | 5.98 | 6.43 |
|                 | 6H   | 4.90             | 5.36 | 5.38 | 5.81 | 6.28 | 4.90           | 5.36 | 5.38 | 5.81 | 6.28 |
|                 | 8H   | 4.83             | 5.25 | 5.31 | 5.70 | 6.18 | 4.83           | 5.25 | 5.31 | 5.70 | 6.18 |
|                 | 12H  | 4.76             | 5.12 | 5.25 | 5.61 | 6.09 | 4.76           | 5.12 | 5.25 | 5.61 | 6.09 |
| 8H              | 4H   | 4.90             | 5.32 | 5.37 | 5.77 | 6.24 | 4.90           | 5.32 | 5.37 | 5.77 | 6.24 |
|                 | 6H   | 4.77             | 5.09 | 5.28 | 5.60 | 6.09 | 4.77           | 5.09 | 5.28 | 5.60 | 6.09 |
|                 | 8H   | 4.69             | 4.98 | 5.23 | 5.50 | 6.00 | 4.69           | 4.98 | 5.23 | 5.50 | 6.00 |
|                 | 12H  | 4.63             | 4.88 | 5.16 | 5.38 | 5.96 | 4.63           | 4.88 | 5.16 | 5.38 | 5.96 |
| 12H             | 4H   | 4.83             | 5.19 | 5.32 | 5.68 | 6.15 | 4.83           | 5.19 | 5.32 | 5.68 | 6.15 |
|                 | 6H   | 4.69             | 4.98 | 5.23 | 5.50 | 6.00 | 4.69           | 4.98 | 5.23 | 5.50 | 6.00 |
|                 | 8H   | 4.63             | 4.88 | 5.16 | 5.38 | 5.96 | 4.63           | 4.88 | 5.16 | 5.38 | 5.96 |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

PrentaLux 3D Printing

Report Number: SP1-2504-407-2

Test Date: 07/17/2025

Luminaire Tested: PRLX-CYL2-X-935-10L-FL-U-S-X-X-BLAK

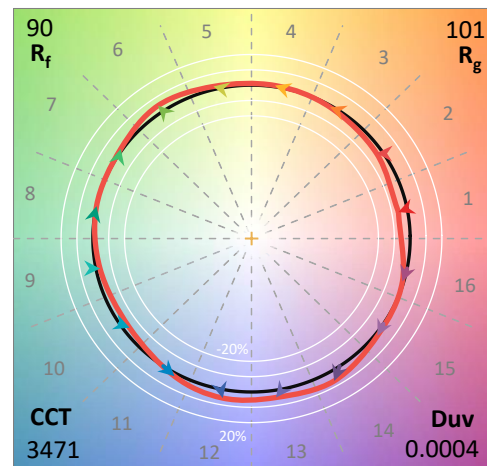
Data in this report applies to families of products including PRLX-CYL2-X-935-10L-FL-U-S-X-X-BLAK

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2504-407-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 07/17/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: PrentaLux 3D Printing  
 Catalog Number: **PRLX-CYL2-X-935-10L-FL-U-S-X-X-BLAK**  
 Description: PrentaLux 2-INCH CYLINDER, BLACK TRIM, FLOOD OPTIC, 1000 LUMENS, 3500K

### Spectral Parameters

|                           |          |           |      |      |      |
|---------------------------|----------|-----------|------|------|------|
| CCT (K):                  | 3471     | CRI (Ra): | 92.0 |      |      |
| CIE u':                   | 0.2363   | R1:       | 93.5 | R9:  | 60.0 |
| CIE v':                   | 0.5123   | R2:       | 93.8 | R10: | 83.3 |
| Duv:                      | 0.0004   | R3:       | 92.5 | R11: | 93.8 |
| CIE x:                    | 0.4073   | R4:       | 93.5 | R12: | 74.7 |
| CIE y:                    | 0.3925   | R5:       | 92.3 | R13: | 93.1 |
| CIE z:                    | 0.2001   | R6:       | 92.2 | R14: | 94.7 |
| Peak Wavelength (nm):     | 630      | R7:       | 93.3 | R15: | 90.1 |
| Dominant Wavelength (nm): | 580      | R8:       | 85.0 |      |      |
| Purity:                   | 40.06645 |           |      |      |      |
| Rf:                       | 90       |           |      |      |      |
| Rg:                       | 100.7    |           |      |      |      |



### Test Conditions

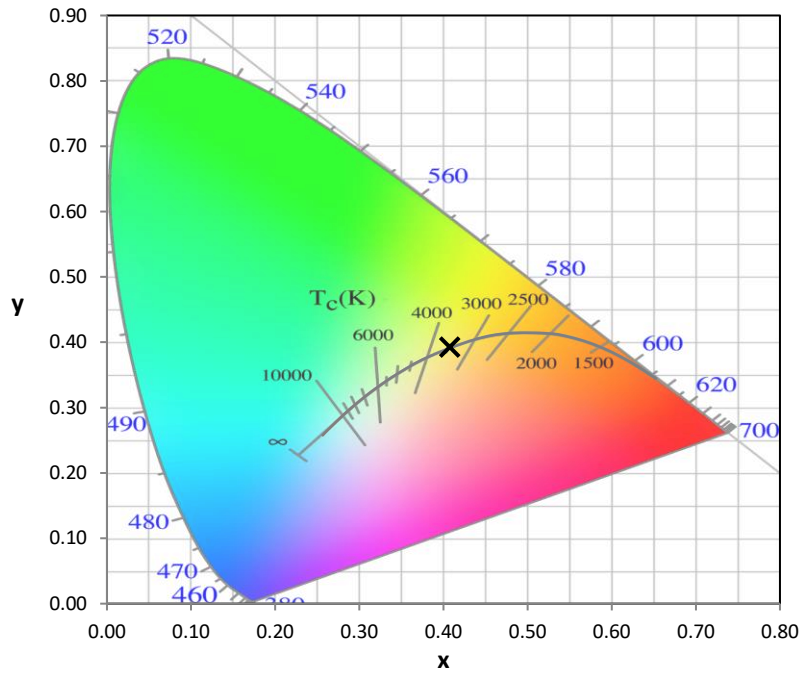
Stabilization Time: 64M  
 Operation Time: 2H 4M  
 Sphere Temperature (°C): 24.0

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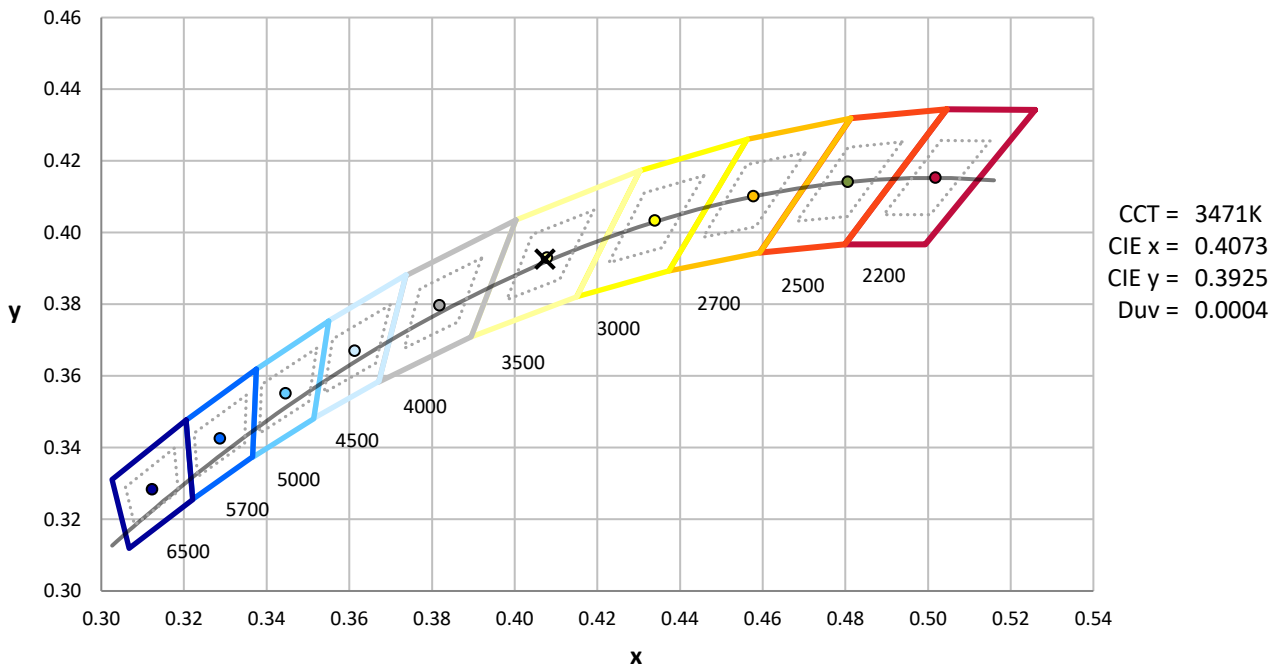
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 76INCH SPHERE IN0058  | 6/16/2025        | 12/16/2025           |
| Power Meter                    | XITRON INXT2011004    | 1/21/2025        | 1/21/2026            |
| AC Power Source                | CHROMA 61603 IN0063   | 10/22/2024       | 10/22/2025           |
| DC Power Source                | AGILENT E3634A IN0208 | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | ONSET IN0085          | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | ONSET IN0046          | 10/22/2024       | 10/22/2025           |

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**CIE 1931 Chromaticity Diagram**



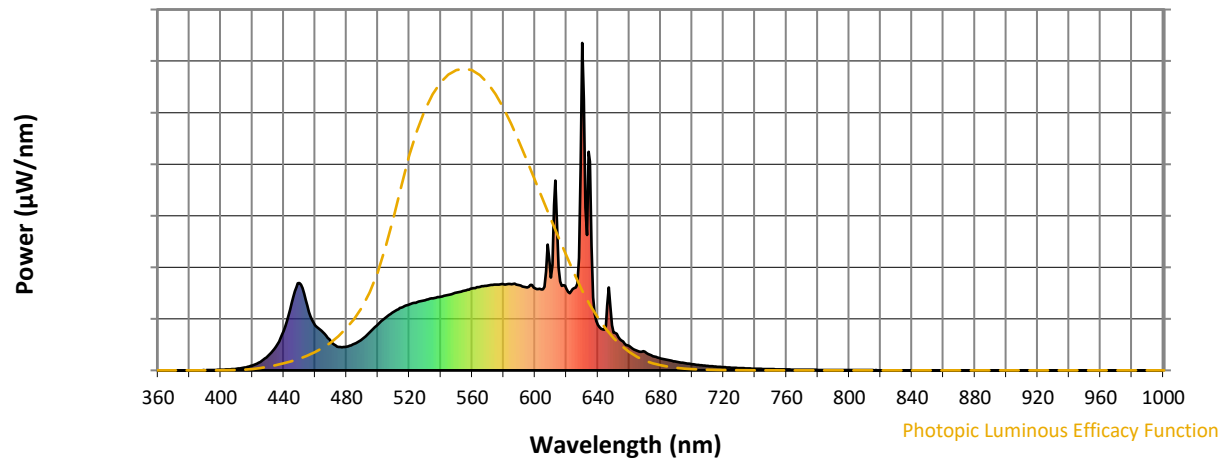
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3500K 4-step quadrangle

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### Photopic Flux vs. Wavelength

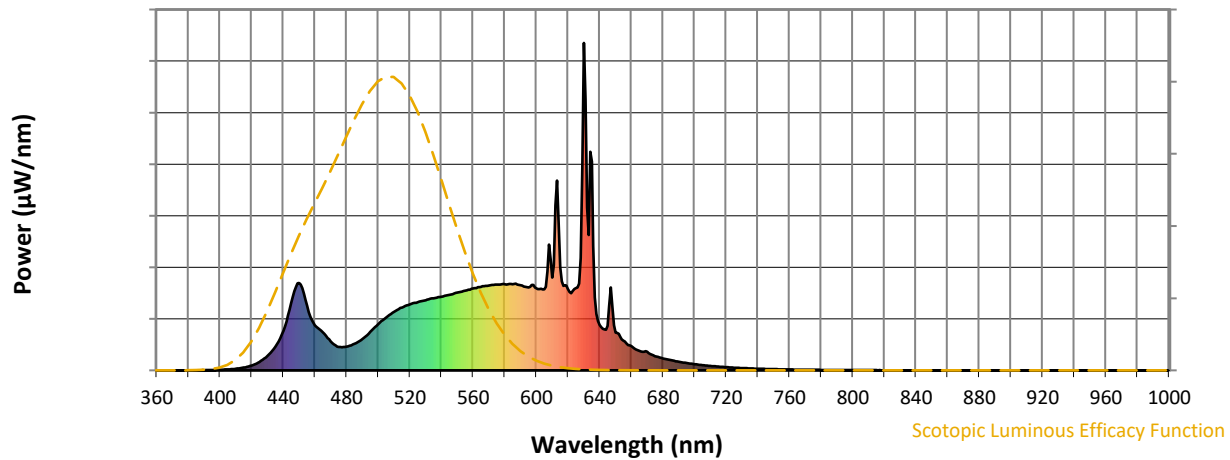


### Photopic Lumens: NR

| λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>λ</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 96                       | NR            | 620    | 248                      | NR            | 750    | 4                        | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 117                      | NR            | 625    | 252                      | NR            | 755    | 3                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 140                      | NR            | 630    | 1000                     | NR            | 760    | 3                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 161                      | NR            | 635    | 638                      | NR            | 765    | 2                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 179                      | NR            | 640    | 139                      | NR            | 770    | 2                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 192                      | NR            | 645    | 136                      | NR            | 775    | 2                        | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 201                      | NR            | 650    | 116                      | NR            | 780    | 1                        | NR            | 910    | 0                        | NR            |
| 395    | 1                        | NR            | 525    | 208                      | NR            | 655    | 91                       | NR            | 785    | 1                        | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 214                      | NR            | 660    | 74                       | NR            | 790    | 1                        | NR            | 920    | 0                        | NR            |
| 405    | 3                        | NR            | 535    | 220                      | NR            | 665    | 59                       | NR            | 795    | 1                        | NR            | 925    | 0                        | NR            |
| 410    | 5                        | NR            | 540    | 225                      | NR            | 670    | 57                       | NR            | 800    | 1                        | NR            | 930    | 0                        | NR            |
| 415    | 8                        | NR            | 545    | 231                      | NR            | 675    | 43                       | NR            | 805    | 1                        | NR            | 935    | 0                        | NR            |
| 420    | 15                       | NR            | 550    | 237                      | NR            | 680    | 37                       | NR            | 810    | 1                        | NR            | 940    | 0                        | NR            |
| 425    | 26                       | NR            | 555    | 243                      | NR            | 685    | 31                       | NR            | 815    | 1                        | NR            | 945    | 0                        | NR            |
| 430    | 44                       | NR            | 560    | 250                      | NR            | 690    | 26                       | NR            | 820    | 0                        | NR            | 950    | 0                        | NR            |
| 435    | 72                       | NR            | 565    | 255                      | NR            | 695    | 22                       | NR            | 825    | 0                        | NR            | 955    | 0                        | NR            |
| 440    | 120                      | NR            | 570    | 259                      | NR            | 700    | 19                       | NR            | 830    | 0                        | NR            | 960    | 0                        | NR            |
| 445    | 206                      | NR            | 575    | 262                      | NR            | 705    | 16                       | NR            | 835    | 0                        | NR            | 965    | 0                        | NR            |
| 450    | 267                      | NR            | 580    | 263                      | NR            | 710    | 14                       | NR            | 840    | 0                        | NR            | 970    | 0                        | NR            |
| 455    | 197                      | NR            | 585    | 263                      | NR            | 715    | 12                       | NR            | 845    | 0                        | NR            | 975    | 0                        | NR            |
| 460    | 138                      | NR            | 590    | 260                      | NR            | 720    | 10                       | NR            | 850    | 0                        | NR            | 980    | 0                        | NR            |
| 465    | 117                      | NR            | 595    | 253                      | NR            | 725    | 8                        | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 88                       | NR            | 600    | 250                      | NR            | 730    | 7                        | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 71                       | NR            | 605    | 247                      | NR            | 735    | 6                        | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 73                       | NR            | 610    | 284                      | NR            | 740    | 5                        | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 81                       | NR            | 615    | 315                      | NR            | 745    | 4                        | NR            | 875    | 0                        | NR            |        |                          |               |

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### Scotopic Flux vs. Wavelength



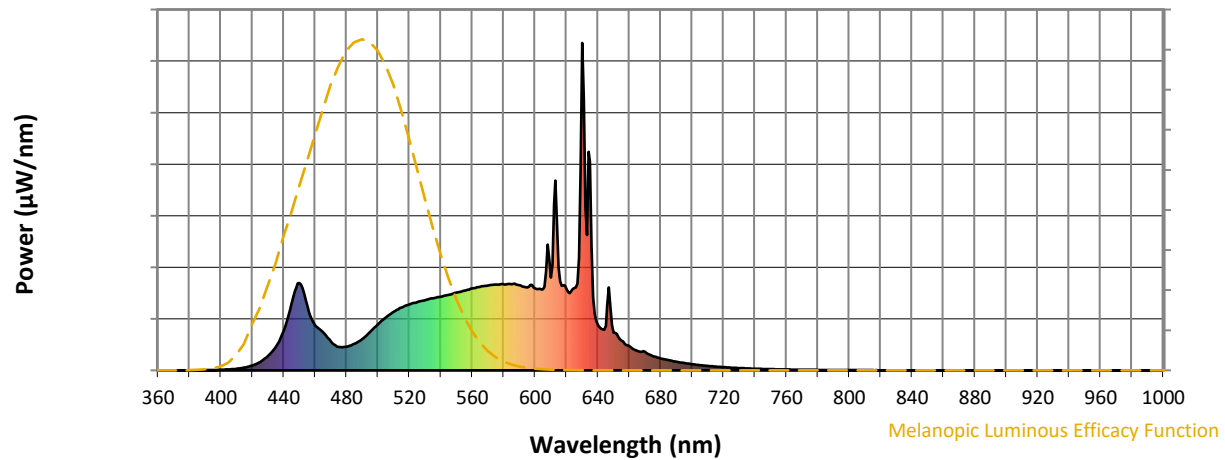
Scotopic Lumens: NR

S/P: 1.57

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 96                          | NR               | 620       | 248                         | NR               | 750       | 4                           | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 117                         | NR               | 625       | 252                         | NR               | 755       | 3                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 140                         | NR               | 630       | 1000                        | NR               | 760       | 3                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 161                         | NR               | 635       | 638                         | NR               | 765       | 2                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 179                         | NR               | 640       | 139                         | NR               | 770       | 2                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 192                         | NR               | 645       | 136                         | NR               | 775       | 2                           | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 201                         | NR               | 650       | 116                         | NR               | 780       | 1                           | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 208                         | NR               | 655       | 91                          | NR               | 785       | 1                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 214                         | NR               | 660       | 74                          | NR               | 790       | 1                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 220                         | NR               | 665       | 59                          | NR               | 795       | 1                           | NR               | 925       | 0                           | NR               |
| 410       | 5                           | NR               | 540       | 225                         | NR               | 670       | 57                          | NR               | 800       | 1                           | NR               | 930       | 0                           | NR               |
| 415       | 8                           | NR               | 545       | 231                         | NR               | 675       | 43                          | NR               | 805       | 1                           | NR               | 935       | 0                           | NR               |
| 420       | 15                          | NR               | 550       | 237                         | NR               | 680       | 37                          | NR               | 810       | 1                           | NR               | 940       | 0                           | NR               |
| 425       | 26                          | NR               | 555       | 243                         | NR               | 685       | 31                          | NR               | 815       | 1                           | NR               | 945       | 0                           | NR               |
| 430       | 44                          | NR               | 560       | 250                         | NR               | 690       | 26                          | NR               | 820       | 0                           | NR               | 950       | 0                           | NR               |
| 435       | 72                          | NR               | 565       | 255                         | NR               | 695       | 22                          | NR               | 825       | 0                           | NR               | 955       | 0                           | NR               |
| 440       | 120                         | NR               | 570       | 259                         | NR               | 700       | 19                          | NR               | 830       | 0                           | NR               | 960       | 0                           | NR               |
| 445       | 206                         | NR               | 575       | 262                         | NR               | 705       | 16                          | NR               | 835       | 0                           | NR               | 965       | 0                           | NR               |
| 450       | 267                         | NR               | 580       | 263                         | NR               | 710       | 14                          | NR               | 840       | 0                           | NR               | 970       | 0                           | NR               |
| 455       | 197                         | NR               | 585       | 263                         | NR               | 715       | 12                          | NR               | 845       | 0                           | NR               | 975       | 0                           | NR               |
| 460       | 138                         | NR               | 590       | 260                         | NR               | 720       | 10                          | NR               | 850       | 0                           | NR               | 980       | 0                           | NR               |
| 465       | 117                         | NR               | 595       | 253                         | NR               | 725       | 8                           | NR               | 855       | 0                           | NR               | 985       | 0                           | NR               |
| 470       | 88                          | NR               | 600       | 250                         | NR               | 730       | 7                           | NR               | 860       | 0                           | NR               | 990       | 0                           | NR               |
| 475       | 71                          | NR               | 605       | 247                         | NR               | 735       | 6                           | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 73                          | NR               | 610       | 284                         | NR               | 740       | 5                           | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 81                          | NR               | 615       | 315                         | NR               | 745       | 4                           | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 3.11**

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 96                          | NR               | 620       | 248                         | NR               | 750       | 4                           | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 117                         | NR               | 625       | 252                         | NR               | 755       | 3                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 140                         | NR               | 630       | 1000                        | NR               | 760       | 3                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 161                         | NR               | 635       | 638                         | NR               | 765       | 2                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 179                         | NR               | 640       | 139                         | NR               | 770       | 2                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 192                         | NR               | 645       | 136                         | NR               | 775       | 2                           | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 201                         | NR               | 650       | 116                         | NR               | 780       | 1                           | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 208                         | NR               | 655       | 91                          | NR               | 785       | 1                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 214                         | NR               | 660       | 74                          | NR               | 790       | 1                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 220                         | NR               | 665       | 59                          | NR               | 795       | 1                           | NR               | 925       | 0                           | NR               |
| 410       | 5                           | NR               | 540       | 225                         | NR               | 670       | 57                          | NR               | 800       | 1                           | NR               | 930       | 0                           | NR               |
| 415       | 8                           | NR               | 545       | 231                         | NR               | 675       | 43                          | NR               | 805       | 1                           | NR               | 935       | 0                           | NR               |
| 420       | 15                          | NR               | 550       | 237                         | NR               | 680       | 37                          | NR               | 810       | 1                           | NR               | 940       | 0                           | NR               |
| 425       | 26                          | NR               | 555       | 243                         | NR               | 685       | 31                          | NR               | 815       | 1                           | NR               | 945       | 0                           | NR               |
| 430       | 44                          | NR               | 560       | 250                         | NR               | 690       | 26                          | NR               | 820       | 0                           | NR               | 950       | 0                           | NR               |
| 435       | 72                          | NR               | 565       | 255                         | NR               | 695       | 22                          | NR               | 825       | 0                           | NR               | 955       | 0                           | NR               |
| 440       | 120                         | NR               | 570       | 259                         | NR               | 700       | 19                          | NR               | 830       | 0                           | NR               | 960       | 0                           | NR               |
| 445       | 206                         | NR               | 575       | 262                         | NR               | 705       | 16                          | NR               | 835       | 0                           | NR               | 965       | 0                           | NR               |
| 450       | 267                         | NR               | 580       | 263                         | NR               | 710       | 14                          | NR               | 840       | 0                           | NR               | 970       | 0                           | NR               |
| 455       | 197                         | NR               | 585       | 263                         | NR               | 715       | 12                          | NR               | 845       | 0                           | NR               | 975       | 0                           | NR               |
| 460       | 138                         | NR               | 590       | 260                         | NR               | 720       | 10                          | NR               | 850       | 0                           | NR               | 980       | 0                           | NR               |
| 465       | 117                         | NR               | 595       | 253                         | NR               | 725       | 8                           | NR               | 855       | 0                           | NR               | 985       | 0                           | NR               |
| 470       | 88                          | NR               | 600       | 250                         | NR               | 730       | 7                           | NR               | 860       | 0                           | NR               | 990       | 0                           | NR               |
| 475       | 71                          | NR               | 605       | 247                         | NR               | 735       | 6                           | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 73                          | NR               | 610       | 284                         | NR               | 740       | 5                           | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 81                          | NR               | 615       | 315                         | NR               | 745       | 4                           | NR               | 875       | 0                           | NR               |           |                             |                  |

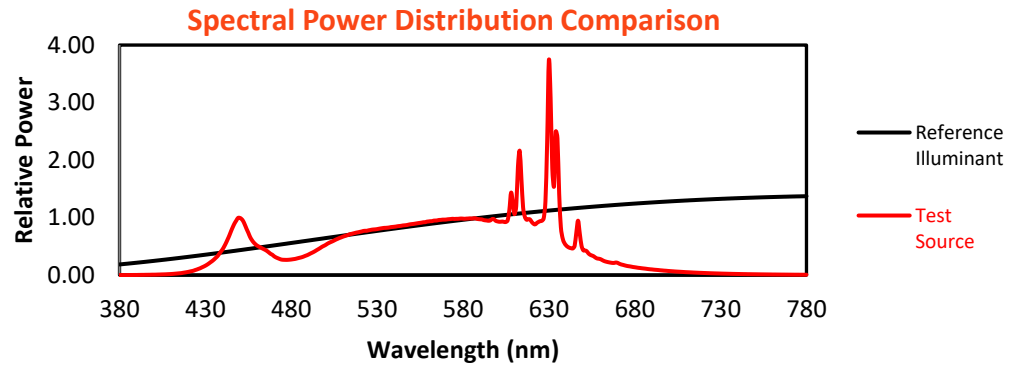


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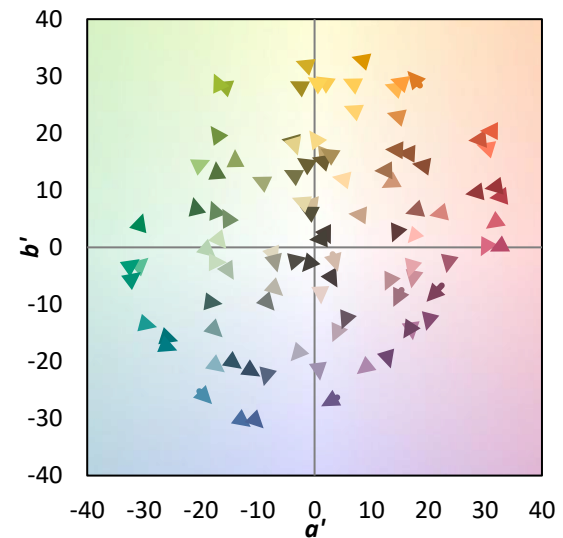
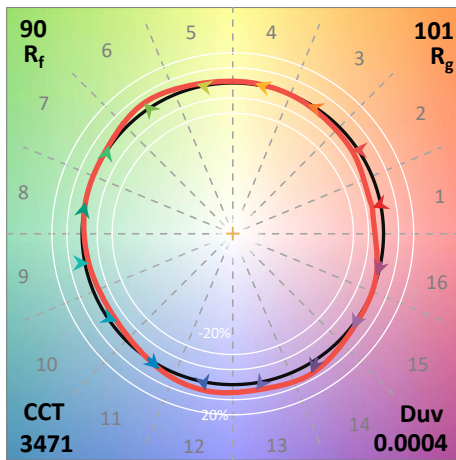
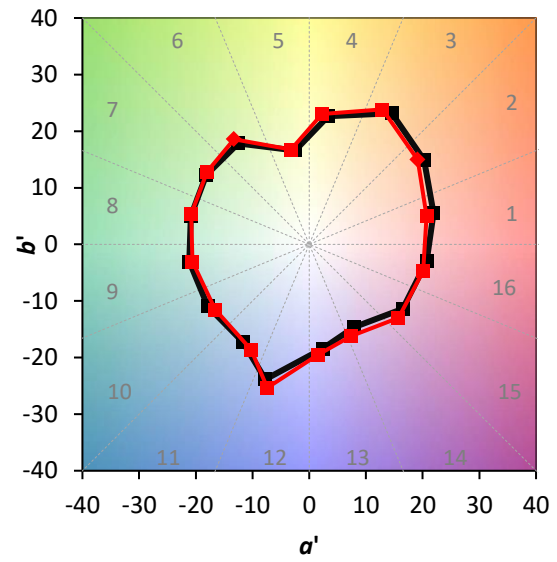
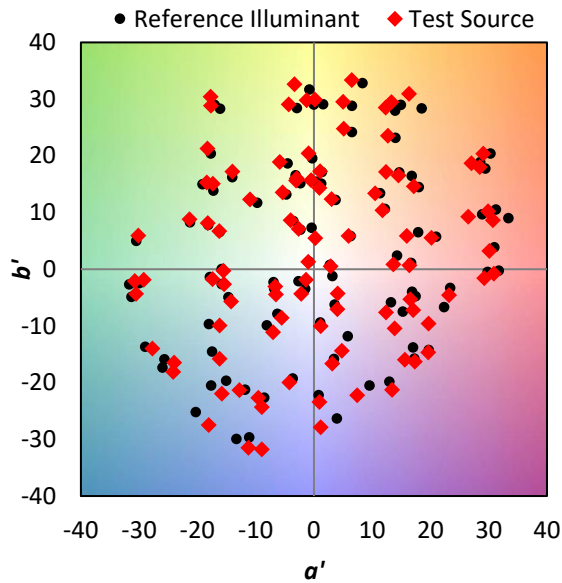
TM-30-18

### Summary

$R_f = 90$   
 $R_g = 100.7$   
 $CIE R_a = 92.0$   
 $R_9 = 60.0$

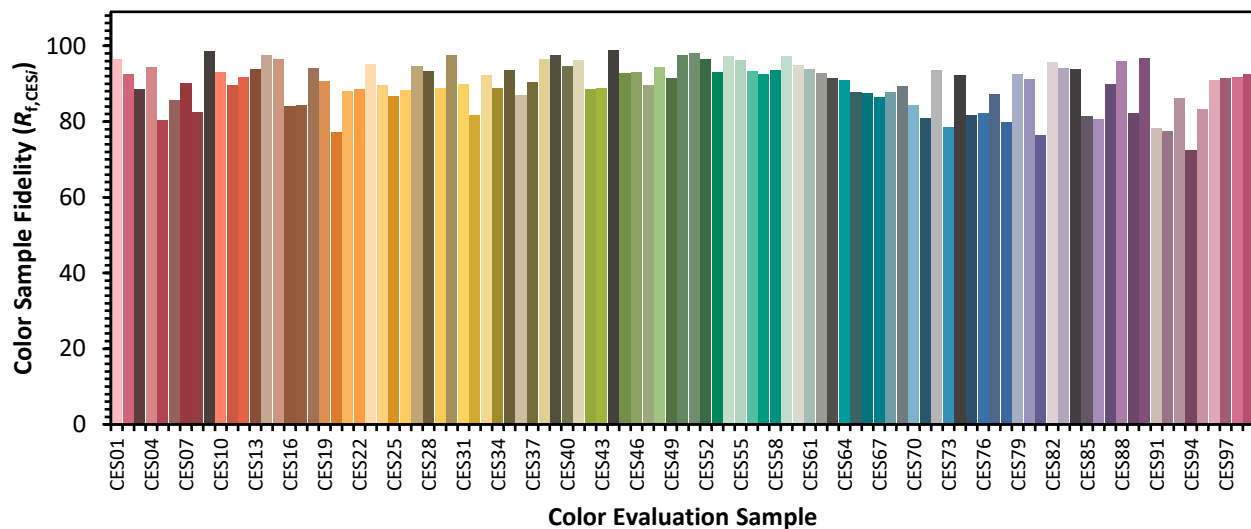


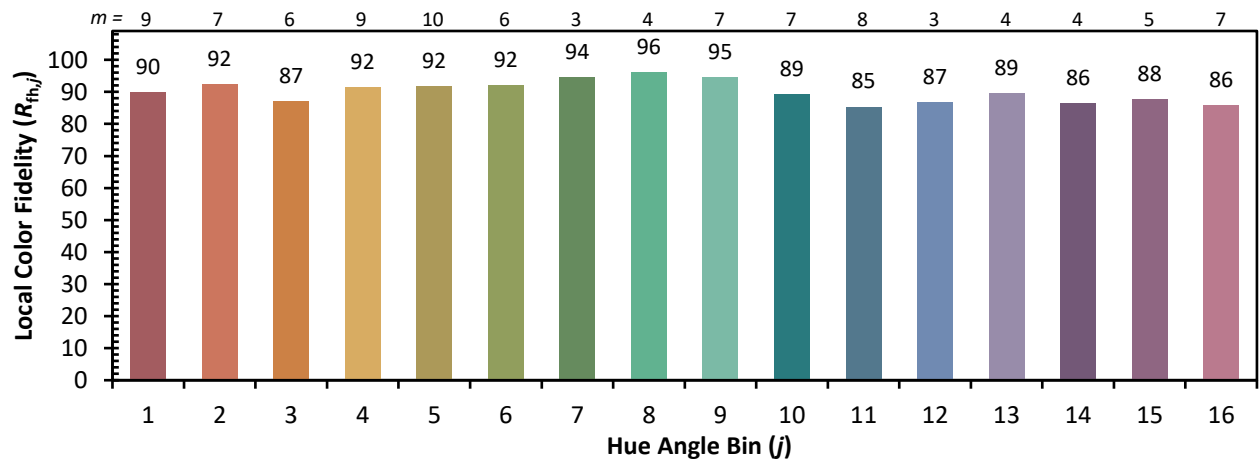
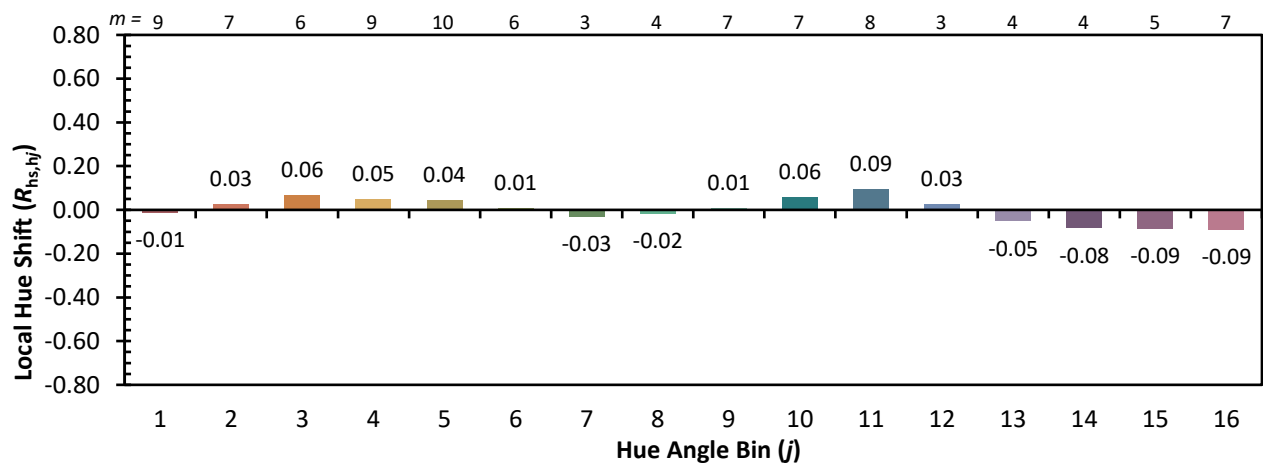
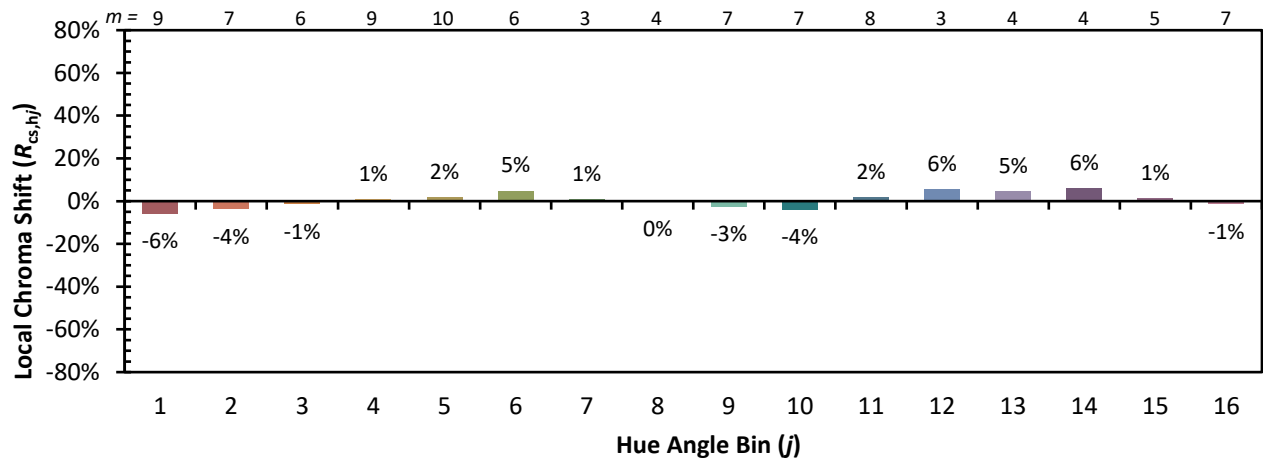
### Color Vector Graphics



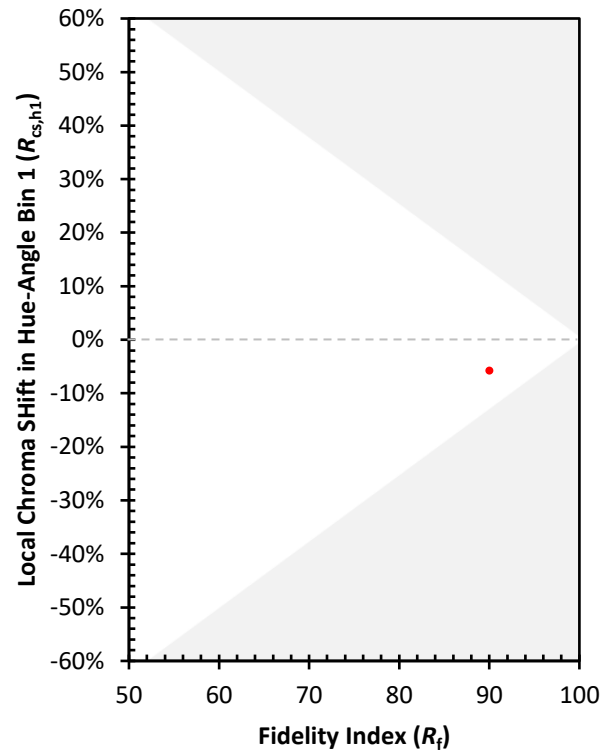
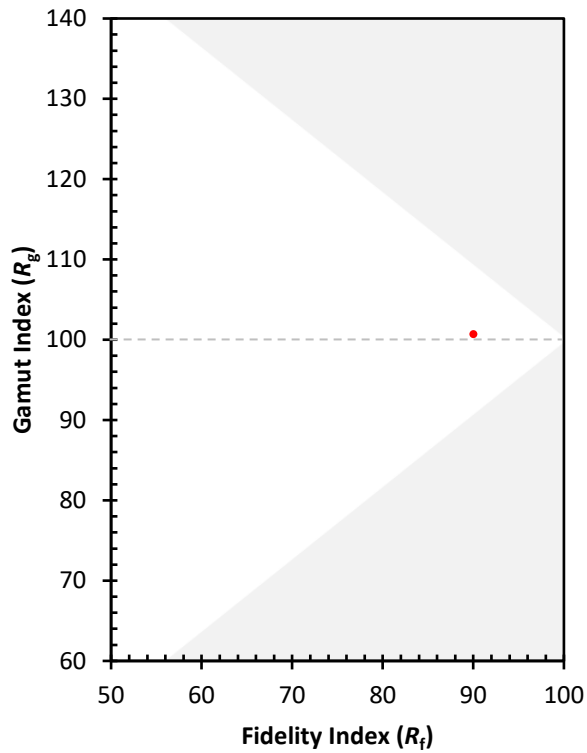
Individual Sample Fidelity Index ( $R_{f,i}$ )

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 88 | CES51 = 98 | CES76 = 82 |
| CES02 = 62 | CES27 = 95 | CES52 = 96 | CES77 = 87 |
| CES03 = 31 | CES28 = 93 | CES53 = 93 | CES78 = 80 |
| CES04 = 70 | CES29 = 89 | CES54 = 97 | CES79 = 93 |
| CES05 = 49 | CES30 = 97 | CES55 = 96 | CES80 = 91 |
| CES06 = 51 | CES31 = 90 | CES56 = 93 | CES81 = 77 |
| CES07 = 43 | CES32 = 82 | CES57 = 93 | CES82 = 96 |
| CES08 = 41 | CES33 = 92 | CES58 = 94 | CES83 = 94 |
| CES09 = 29 | CES34 = 89 | CES59 = 97 | CES84 = 94 |
| CES10 = 75 | CES35 = 93 | CES60 = 95 | CES85 = 81 |
| CES11 = 58 | CES36 = 87 | CES61 = 94 | CES86 = 81 |
| CES12 = 64 | CES37 = 90 | CES62 = 93 | CES87 = 90 |
| CES13 = 43 | CES38 = 97 | CES63 = 91 | CES88 = 96 |
| CES14 = 74 | CES39 = 98 | CES64 = 91 | CES89 = 82 |
| CES15 = 71 | CES40 = 95 | CES65 = 88 | CES90 = 97 |
| CES16 = 47 | CES41 = 96 | CES66 = 88 | CES91 = 78 |
| CES17 = 49 | CES42 = 88 | CES67 = 86 | CES92 = 77 |
| CES18 = 56 | CES43 = 89 | CES68 = 88 | CES93 = 86 |
| CES19 = 71 | CES44 = 99 | CES69 = 89 | CES94 = 72 |
| CES20 = 66 | CES45 = 93 | CES70 = 84 | CES95 = 83 |
| CES21 = 86 | CES46 = 93 | CES71 = 81 | CES96 = 91 |
| CES22 = 78 | CES47 = 90 | CES72 = 94 | CES97 = 92 |
| CES23 = 91 | CES48 = 95 | CES73 = 78 | CES98 = 92 |
| CES24 = 90 | CES49 = 91 | CES74 = 92 | CES99 = 93 |
| CES25 = 71 | CES50 = 98 | CES75 = 82 |            |



**Color Rendition by Hue-Angle Bin**


**Measure Comparisons**



(END OF REPORT)