

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: CORELITE

Report Number: P1217197

Luminaire Tested: 14-ID2-35-CNV-L930-U

Issue Date: 12/5/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1217197  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2508-507-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: CORELITE  
Catalog Number: 14-ID2-35-CNV-L930-U  
Description: 1X4 IN DEPTH TROFFER WITH 2INCH CURVE DROP LENS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

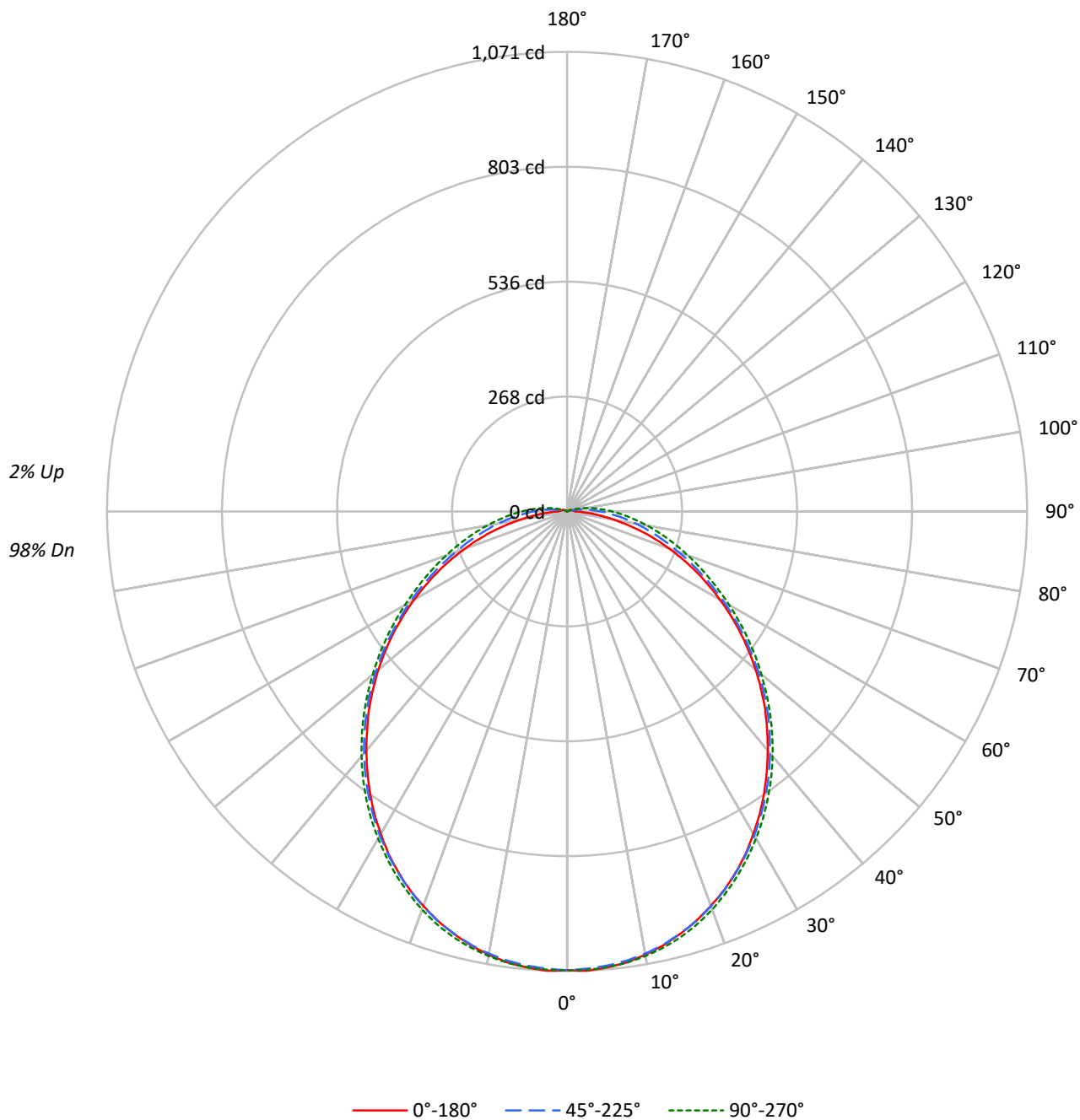
Lumens per Lamp: N/A  
Luminaire Lumens: 3043.3 lumens  
Efficiency: N/A  
Efficacy: 99.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.22 / 1.33  
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 4' x H: 0.16')  
CIE Type: Direct

Input Watts (W): 30.6  
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



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CATALOG NUMBER: 14-ID2-35-CNV-L930-U

### Luminous Intensity Polar Plot



TEST NUMBER: P1217197

CATALOG NUMBER: 14-ID2-35-CNV-L930-U

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

|     |     |     |     |     |     |     |     |     |  |     |     |     |  |  |     |     |     |  |  |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|--|-----|-----|-----|--|--|----|
| RF  | 20  |     |     |     | 20  |     |     |     |  | 20  |     |     |  |  | 20  |     |     |  |  | 20 |
| RC  | 80  |     |     |     | 70  |     |     |     |  | 50  |     |     |  |  | 30  |     |     |  |  | 0  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  |  | 50  | 30  | 10  |  |  | 50  | 30  | 10  |  |  | 0  |
| RCR |     |     |     |     |     |     |     |     |  |     |     |     |  |  |     |     |     |  |  |    |
| 0   | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 |  | 110 | 110 | 110 |  |  | 105 | 105 | 105 |  |  | 98 |
| 1   | 107 | 102 | 98  | 94  | 104 | 100 | 96  | 92  |  | 95  | 92  | 88  |  |  | 91  | 88  | 85  |  |  | 80 |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 80  | 75  |  | 83  | 77  | 73  |  |  | 79  | 75  | 71  |  |  | 66 |
| 3   | 89  | 78  | 70  | 63  | 86  | 76  | 69  | 62  |  | 73  | 66  | 61  |  |  | 70  | 64  | 60  |  |  | 56 |
| 4   | 81  | 69  | 60  | 54  | 79  | 68  | 59  | 53  |  | 65  | 58  | 52  |  |  | 62  | 56  | 51  |  |  | 48 |
| 5   | 75  | 62  | 53  | 46  | 73  | 61  | 52  | 46  |  | 58  | 51  | 45  |  |  | 56  | 49  | 44  |  |  | 41 |
| 6   | 69  | 56  | 47  | 40  | 67  | 55  | 46  | 40  |  | 53  | 45  | 39  |  |  | 51  | 44  | 39  |  |  | 36 |
| 7   | 64  | 51  | 42  | 36  | 62  | 50  | 41  | 35  |  | 48  | 40  | 35  |  |  | 46  | 40  | 35  |  |  | 32 |
| 8   | 60  | 46  | 38  | 32  | 58  | 45  | 37  | 32  |  | 44  | 37  | 31  |  |  | 42  | 36  | 31  |  |  | 29 |
| 9   | 56  | 42  | 34  | 29  | 54  | 42  | 34  | 29  |  | 40  | 33  | 28  |  |  | 39  | 33  | 28  |  |  | 26 |
| 10  | 52  | 39  | 31  | 26  | 51  | 39  | 31  | 26  |  | 37  | 30  | 26  |  |  | 36  | 30  | 25  |  |  | 23 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2877 | 2877 | 2877 |
| 5°  | 2871 | 2835 | 2840 |
| 10° | 2846 | 2789 | 2795 |
| 15° | 2809 | 2733 | 2742 |
| 20° | 2761 | 2667 | 2672 |
| 25° | 2707 | 2589 | 2591 |
| 30° | 2634 | 2504 | 2503 |
| 35° | 2557 | 2410 | 2409 |
| 40° | 2471 | 2309 | 2305 |
| 45° | 2387 | 2201 | 2194 |
| 50° | 2290 | 2082 | 2076 |
| 55° | 2187 | 1953 | 1958 |
| 60° | 2068 | 1825 | 1837 |
| 65° | 1941 | 1690 | 1727 |
| 70° | 1795 | 1563 | 1636 |
| 75° | 1625 | 1466 | 1566 |
| 80° | 1402 | 1395 | 1534 |
| 85° | 1225 | 1370 | 1570 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2387 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 101.1  | 3.3       |
| 10°-20°   | 287.7  | 9.5       |
| 20°-30°   | 428.7  | 14.1      |
| 30°-40°   | 504.5  | 16.6      |
| 40°-50°   | 509.0  | 16.7      |
| 50°-60°   | 448.8  | 14.7      |
| 60°-70°   | 343.8  | 11.3      |
| 70°-80°   | 225.2  | 7.4       |
| 80°-90°   | 120.4  | 4.0       |
| 90°-100°  | 51.1   | 1.7       |
| 100°-110° | 16.3   | 0.5       |
| 110°-120° | 3.8    | 0.1       |
| 120°-130° | 1.7    | 0.1       |
| 130°-140° | 0.9    | 0.0       |
| 140°-150° | 0.3    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 817.5  | 26.9      |
| 0°-40°    | 1322.0 | 43.4      |
| 0°-60°    | 2279.7 | 74.9      |
| 0°-90°    | 2969.0 | 97.6      |
| 90°-120°  | 71.3   | 2.3       |
| 90°-150°  | 74.2   | 2.4       |
| 90°-180°  | 74.0   | 2.4       |
| 0°-180°   | 3043.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1069 | 1069  | 1069 | 1069  | 1069 |      |
| 5°   | 1067 | 1065  | 1063 | 1063  | 1066 | 101  |
| 15°  | 1019 | 1018  | 1018 | 1022  | 1026 | 287  |
| 25°  | 929  | 927   | 930  | 934   | 938  | 427  |
| 35°  | 800  | 800   | 806  | 813   | 816  | 500  |
| 45°  | 652  | 653   | 660  | 668   | 669  | 503  |
| 55°  | 493  | 493   | 500  | 511   | 513  | 440  |
| 65°  | 331  | 333   | 346  | 359   | 364  | 328  |
| 75°  | 180  | 187   | 215  | 235   | 240  | 190  |
| 85°  | 58   | 79    | 116  | 138   | 144  | 58   |
| 90°  | 20   | 45    | 78   | 99    | 105  | 13   |
| 95°  | 17   | 23    | 48   | 66    | 73   | 13   |
| 105° | 12   | 9     | 10   | 20    | 25   | 13   |
| 115° | 8    | 6     | 3    | 0     | 0    | 8    |
| 125° | 5    | 4     | 2    | 0     | 0    | 4    |
| 135° | 3    | 2     | 1    | 0     | 0    | 2    |
| 145° | 2    | 1     | 0    | 0     | 0    | 1    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |

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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1069.3 | 1069.3 | 1069.3 | 1069.3 | 1069.3 |
| 2.5°   | 1071.3 | 1069.8 | 1066.2 | 1067.2 | 1068.8 |
| 5°     | 1066.7 | 1065.2 | 1062.6 | 1063.1 | 1066.2 |
| 7.5°   | 1060.1 | 1058.0 | 1056.0 | 1057.5 | 1061.1 |
| 10°    | 1048.8 | 1047.8 | 1046.3 | 1048.3 | 1051.9 |
| 12.5°  | 1035.5 | 1034.5 | 1034.0 | 1036.5 | 1040.6 |
| 15°    | 1019.1 | 1018.1 | 1018.1 | 1022.2 | 1026.3 |
| 17.5°  | 1000.2 | 999.7  | 1000.7 | 1005.3 | 1008.4 |
| 20°    | 978.2  | 977.7  | 979.2  | 983.8  | 987.4  |
| 22.5°  | 955.2  | 954.2  | 955.7  | 959.8  | 963.4  |
| 25°    | 928.6  | 927.0  | 929.6  | 934.2  | 937.8  |
| 27.5°  | 899.9  | 897.4  | 901.5  | 906.6  | 909.7  |
| 30°    | 867.2  | 867.7  | 871.8  | 876.9  | 880.0  |
| 32.5°  | 835.0  | 834.4  | 839.6  | 845.7  | 848.8  |
| 35°    | 800.2  | 800.2  | 806.3  | 813.0  | 815.5  |
| 37.5°  | 763.8  | 765.4  | 771.5  | 777.7  | 780.7  |
| 40°    | 727.0  | 729.1  | 735.2  | 741.8  | 744.4  |
| 42.5°  | 689.1  | 691.2  | 697.8  | 705.0  | 707.1  |
| 45°    | 652.3  | 652.8  | 660.0  | 667.7  | 668.7  |
| 47.5°  | 612.4  | 612.9  | 620.6  | 628.3  | 629.8  |
| 50°    | 573.0  | 573.5  | 581.2  | 589.4  | 590.4  |
| 52.5°  | 533.1  | 533.6  | 540.3  | 550.0  | 552.0  |
| 55°    | 492.7  | 492.7  | 500.4  | 510.6  | 512.6  |
| 57.5°  | 452.3  | 452.3  | 460.5  | 471.2  | 473.8  |
| 60°    | 410.8  | 411.9  | 422.1  | 432.3  | 435.9  |
| 62.5°  | 370.9  | 371.9  | 383.2  | 393.9  | 398.5  |
| 65°    | 331.0  | 332.6  | 345.9  | 358.6  | 364.3  |
| 67.5°  | 292.1  | 294.2  | 309.5  | 325.9  | 331.0  |
| 70°    | 253.2  | 257.3  | 275.8  | 293.7  | 299.3  |
| 72.5°  | 215.9  | 220.5  | 245.1  | 264.0  | 269.1  |
| 75°    | 179.6  | 186.7  | 215.4  | 234.8  | 240.5  |
| 77.5°  | 144.3  | 155.0  | 187.8  | 208.7  | 213.9  |
| 80°    | 111.0  | 126.9  | 162.2  | 183.2  | 188.8  |
| 82.5°  | 82.9   | 100.8  | 138.6  | 160.1  | 165.3  |
| 85°    | 57.8   | 79.3   | 116.1  | 138.1  | 143.8  |
| 87.5°  | 37.3   | 60.9   | 96.2   | 117.7  | 123.8  |
| 90°    | 20.5   | 45.0   | 78.3   | 98.7   | 104.9  |
| 92.5°  | 18.4   | 32.7   | 62.4   | 81.9   | 88.0   |
| 95°    | 16.9   | 23.0   | 48.1   | 66.5   | 72.6   |
| 97.5°  | 15.3   | 15.3   | 35.8   | 52.7   | 58.3   |
| 100°   | 14.3   | 11.3   | 25.6   | 40.4   | 46.0   |
| 102.5° | 12.8   | 10.2   | 16.9   | 29.7   | 34.8   |
| 105°   | 11.8   | 9.2    | 10.2   | 20.5   | 24.6   |
| 107.5° | 10.7   | 8.2    | 5.1    | 12.8   | 16.4   |
| 110°   | 9.7    | 7.7    | 4.1    | 6.1    | 9.7    |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 8.7 | 6.7   | 3.6 | 1.5   | 3.6 |
| 115°   | 7.7 | 6.1   | 3.1 | 0.0   | 0.0 |
| 117.5° | 6.7 | 5.6   | 2.6 | 0.0   | 0.0 |
| 120°   | 6.1 | 4.6   | 2.6 | 0.0   | 0.0 |
| 122.5° | 5.6 | 4.1   | 2.0 | 0.0   | 0.0 |
| 125°   | 4.6 | 3.6   | 1.5 | 0.0   | 0.0 |
| 127.5° | 4.1 | 3.1   | 1.5 | 0.0   | 0.0 |
| 130°   | 3.6 | 3.1   | 1.0 | 0.0   | 0.0 |
| 132.5° | 3.1 | 2.6   | 1.0 | 0.0   | 0.0 |
| 135°   | 2.6 | 2.0   | 1.0 | 0.0   | 0.0 |
| 137.5° | 2.6 | 2.0   | 0.5 | 0.0   | 0.0 |
| 140°   | 2.0 | 1.5   | 0.5 | 0.0   | 0.0 |
| 142.5° | 1.5 | 1.0   | 0.5 | 0.0   | 0.0 |
| 145°   | 1.5 | 1.0   | 0.0 | 0.0   | 0.0 |
| 147.5° | 1.0 | 1.0   | 0.0 | 0.0   | 0.0 |
| 150°   | 1.0 | 0.5   | 0.0 | 0.0   | 0.0 |
| 152.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 155°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 157.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 160°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 162.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 165°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 167.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 170°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 172.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 175°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 177.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |
| 180°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 |

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**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 | 13.74            | 15.33 | 14.14 | 15.69 | 16.07 | 14.38          | 15.97 | 14.78 | 16.34 | 16.71 |
|                 | 3H   | 15.33            | 16.78 | 15.75 | 17.16 | 17.58 | 16.36          | 17.80 | 16.77 | 18.18 | 18.60 |
|                 | 4H   | 15.90            | 17.27 | 16.34 | 17.67 | 18.10 | 17.25          | 18.61 | 17.69 | 19.01 | 19.45 |
|                 | 6H   | 16.30            | 17.57 | 16.75 | 17.98 | 18.43 | 18.12          | 19.39 | 18.57 | 19.81 | 20.26 |
|                 | 8H   | 16.42            | 17.64 | 16.88 | 18.07 | 18.53 | 18.55          | 19.76 | 19.01 | 20.20 | 20.66 |
|                 | 12H  | 16.50            | 17.67 | 16.97 | 18.10 | 18.59 | 18.99          | 20.15 | 19.46 | 20.58 | 21.07 |
| 4H              | 2H   | 14.38            | 15.74 | 14.82 | 16.14 | 16.58 | 14.89          | 16.26 | 15.33 | 16.66 | 17.09 |
|                 | 3H   | 16.20            | 17.35 | 16.65 | 17.80 | 18.26 | 17.10          | 18.25 | 17.55 | 18.70 | 19.16 |
|                 | 4H   | 16.89            | 17.94 | 17.36 | 18.40 | 18.89 | 18.15          | 19.20 | 18.62 | 19.66 | 20.15 |
|                 | 6H   | 17.41            | 18.34 | 17.90 | 18.82 | 19.33 | 19.21          | 20.13 | 19.70 | 20.62 | 21.13 |
|                 | 8H   | 17.58            | 18.45 | 18.08 | 18.94 | 19.46 | 19.72          | 20.59 | 20.22 | 21.07 | 21.60 |
|                 | 12H  | 17.71            | 18.49 | 18.23 | 19.01 | 19.54 | 20.27          | 21.05 | 20.78 | 21.57 | 22.09 |
| 8H              | 4H   | 17.32            | 18.18 | 17.81 | 18.67 | 19.19 | 18.43          | 19.29 | 18.92 | 19.78 | 20.30 |
|                 | 6H   | 17.99            | 18.72 | 18.52 | 19.25 | 19.78 | 19.65          | 20.38 | 20.18 | 20.91 | 21.44 |
|                 | 8H   | 18.24            | 18.90 | 18.79 | 19.45 | 19.99 | 20.29          | 20.95 | 20.84 | 21.50 | 22.04 |
|                 | 12H  | 18.45            | 19.04 | 18.99 | 19.57 | 20.18 | 21.00          | 21.59 | 21.55 | 22.12 | 22.74 |
| 12H             | 4H   | 17.41            | 18.19 | 17.93 | 18.71 | 19.24 | 18.45          | 19.23 | 18.97 | 19.75 | 20.28 |
|                 | 6H   | 18.14            | 18.80 | 18.69 | 19.35 | 19.89 | 19.70          | 20.36 | 20.25 | 20.91 | 21.45 |
|                 | 8H   | 18.48            | 19.06 | 19.02 | 19.60 | 20.21 | 20.43          | 21.01 | 20.97 | 21.54 | 22.16 |

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

Report Prepared for

Cooper Lighting Solutions

Corelite

Report Number: SP1-2506-458-9

Test Date: 08/26/2025

Luminaire Tested: 22ID2-55-CFR1-L930-U

Data in this report applies to families of products including 22ID2-55-CFR1-L930-U

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2506-458-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 08/27/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Corelite  
 Catalog Number: **22ID2-55-CFR1-L930-U**  
 Description: 2X2 CGTX WITH INDEPTH FRAME AND CFR1 LENS - 5500 LUMEN 3000K 90CRI

### Spectral Parameters

CCT (K): 3003  
 CIE  $u'$ : 0.2507  
 CIE  $v'$ : 0.5202  
 Duv: -0.0008  
 CIE x: 0.4356  
 CIE y: 0.4017  
 CIE z: 0.1627  
 Peak Wavelength (nm): 618  
 Dominant Wavelength (nm): 583  
 Purity: 51.31044  
 R<sub>f</sub>: 91.9  
 R<sub>g</sub>: 99.2

CRI (Ra): 93.2  
 R1: 93.7  
 R2: 97.2  
 R3: 98.7  
 R4: 93.5  
 R5: 93.6  
 R6: 96.3  
 R7: 91.5  
 R8: 81.5  
 R9: 59.0  
 R10: 92.7  
 R11: 94.9  
 R12: 82.6  
 R13: 94.8  
 R14: 99.1  
 R15: 89.5



### Test Conditions

Stabilization Time: 32M  
 Operation Time: 1H 32M  
 Sphere Temperature (°C): 25.2

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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 3000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

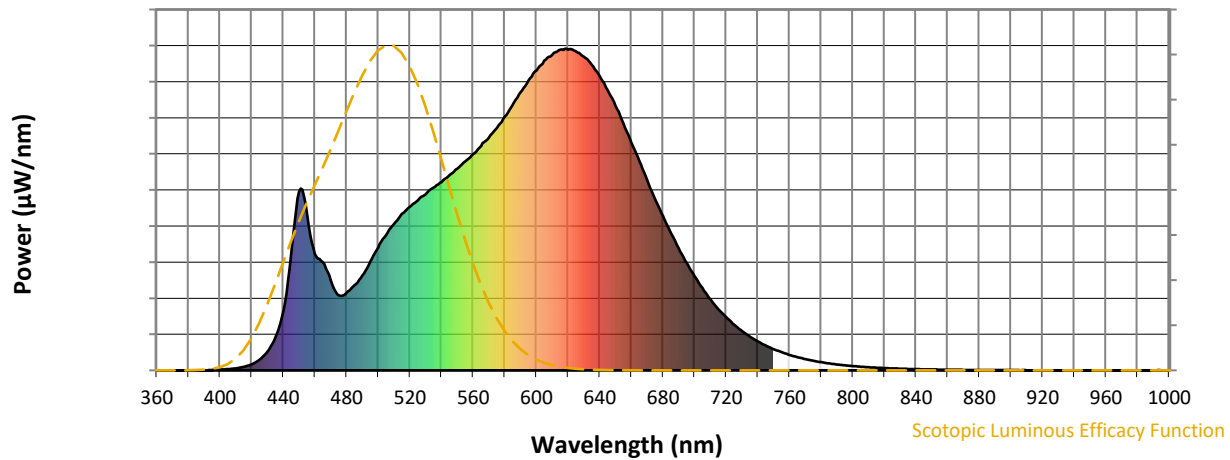


### Photopic Lumens: NR

| 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    | 296                      | NR            | 620    | 997                      | NR            | 750    | 66                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 338                      | NR            | 625    | 992                      | NR            | 755    | 56                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 381                      | NR            | 630    | 975                      | NR            | 760    | 48                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 421                      | NR            | 635    | 949                      | NR            | 765    | 41                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 456                      | NR            | 640    | 916                      | NR            | 770    | 35                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 487                      | NR            | 645    | 871                      | NR            | 775    | 30                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 508                      | NR            | 650    | 821                      | NR            | 780    | 26                       | NR            | 910    | 1                        | NR            |
| 395    | 1                        | NR            | 525    | 529                      | NR            | 655    | 769                      | NR            | 785    | 22                       | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 548                      | NR            | 660    | 709                      | NR            | 790    | 18                       | NR            | 920    | 0                        | NR            |
| 405    | 4                        | NR            | 535    | 568                      | NR            | 665    | 652                      | NR            | 795    | 16                       | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 585                      | NR            | 670    | 591                      | NR            | 800    | 13                       | NR            | 930    | 0                        | NR            |
| 415    | 11                       | NR            | 545    | 607                      | NR            | 675    | 534                      | NR            | 805    | 11                       | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 627                      | NR            | 680    | 480                      | NR            | 810    | 10                       | NR            | 940    | 0                        | NR            |
| 425    | 33                       | NR            | 555    | 649                      | NR            | 685    | 427                      | NR            | 815    | 8                        | NR            | 945    | 0                        | NR            |
| 430    | 58                       | NR            | 560    | 673                      | NR            | 690    | 380                      | NR            | 820    | 7                        | NR            | 950    | 0                        | NR            |
| 435    | 103                      | NR            | 565    | 697                      | NR            | 695    | 334                      | NR            | 825    | 6                        | NR            | 955    | 0                        | NR            |
| 440    | 184                      | NR            | 570    | 723                      | NR            | 700    | 292                      | NR            | 830    | 5                        | NR            | 960    | 0                        | NR            |
| 445    | 360                      | NR            | 575    | 753                      | NR            | 705    | 255                      | NR            | 835    | 4                        | NR            | 965    | 0                        | NR            |
| 450    | 557                      | NR            | 580    | 789                      | NR            | 710    | 221                      | NR            | 840    | 4                        | NR            | 970    | 0                        | NR            |
| 455    | 486                      | NR            | 585    | 825                      | NR            | 715    | 190                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 362                      | NR            | 590    | 864                      | NR            | 720    | 166                      | NR            | 850    | 3                        | NR            | 980    | 0                        | NR            |
| 465    | 337                      | NR            | 595    | 902                      | NR            | 725    | 143                      | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 279                      | NR            | 600    | 932                      | NR            | 730    | 122                      | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 233                      | NR            | 605    | 963                      | NR            | 735    | 105                      | NR            | 865    | 2                        | NR            | 995    | 0                        | NR            |
| 480    | 241                      | NR            | 610    | 981                      | NR            | 740    | 90                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 264                      | NR            | 615    | 997                      | NR            | 745    | 77                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP1-2506-458-9

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.43

| 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       | 296                         | NR               | 620       | 997                         | NR               | 750       | 66                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 338                         | NR               | 625       | 992                         | NR               | 755       | 56                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 381                         | NR               | 630       | 975                         | NR               | 760       | 48                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 421                         | NR               | 635       | 949                         | NR               | 765       | 41                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 456                         | NR               | 640       | 916                         | NR               | 770       | 35                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 487                         | NR               | 645       | 871                         | NR               | 775       | 30                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 508                         | NR               | 650       | 821                         | NR               | 780       | 26                          | NR               | 910       | 1                           | NR               |
| 395       | 1                           | NR               | 525       | 529                         | NR               | 655       | 769                         | NR               | 785       | 22                          | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 548                         | NR               | 660       | 709                         | NR               | 790       | 18                          | NR               | 920       | 0                           | NR               |
| 405       | 4                           | NR               | 535       | 568                         | NR               | 665       | 652                         | NR               | 795       | 16                          | NR               | 925       | 0                           | NR               |
| 410       | 6                           | NR               | 540       | 585                         | NR               | 670       | 591                         | NR               | 800       | 13                          | NR               | 930       | 0                           | NR               |
| 415       | 11                          | NR               | 545       | 607                         | NR               | 675       | 534                         | NR               | 805       | 11                          | NR               | 935       | 0                           | NR               |
| 420       | 19                          | NR               | 550       | 627                         | NR               | 680       | 480                         | NR               | 810       | 10                          | NR               | 940       | 0                           | NR               |
| 425       | 33                          | NR               | 555       | 649                         | NR               | 685       | 427                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 58                          | NR               | 560       | 673                         | NR               | 690       | 380                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 103                         | NR               | 565       | 697                         | NR               | 695       | 334                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 184                         | NR               | 570       | 723                         | NR               | 700       | 292                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 360                         | NR               | 575       | 753                         | NR               | 705       | 255                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 557                         | NR               | 580       | 789                         | NR               | 710       | 221                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 486                         | NR               | 585       | 825                         | NR               | 715       | 190                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 362                         | NR               | 590       | 864                         | NR               | 720       | 166                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 337                         | NR               | 595       | 902                         | NR               | 725       | 143                         | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 279                         | NR               | 600       | 932                         | NR               | 730       | 122                         | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 233                         | NR               | 605       | 963                         | NR               | 735       | 105                         | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 241                         | NR               | 610       | 981                         | NR               | 740       | 90                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 264                         | NR               | 615       | 997                         | NR               | 745       | 77                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.82

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 296                      | NR            | 620    | 997                      | NR            | 750    | 66                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 338                      | NR            | 625    | 992                      | NR            | 755    | 56                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 381                      | NR            | 630    | 975                      | NR            | 760    | 48                       | NR            | 890    | 1                        | NR            |
| 375    | 0                        | NR            | 505    | 421                      | NR            | 635    | 949                      | NR            | 765    | 41                       | NR            | 895    | 1                        | NR            |
| 380    | 0                        | NR            | 510    | 456                      | NR            | 640    | 916                      | NR            | 770    | 35                       | NR            | 900    | 1                        | NR            |
| 385    | 0                        | NR            | 515    | 487                      | NR            | 645    | 871                      | NR            | 775    | 30                       | NR            | 905    | 1                        | NR            |
| 390    | 0                        | NR            | 520    | 508                      | NR            | 650    | 821                      | NR            | 780    | 26                       | NR            | 910    | 1                        | NR            |
| 395    | 1                        | NR            | 525    | 529                      | NR            | 655    | 769                      | NR            | 785    | 22                       | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 548                      | NR            | 660    | 709                      | NR            | 790    | 18                       | NR            | 920    | 0                        | NR            |
| 405    | 4                        | NR            | 535    | 568                      | NR            | 665    | 652                      | NR            | 795    | 16                       | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 585                      | NR            | 670    | 591                      | NR            | 800    | 13                       | NR            | 930    | 0                        | NR            |
| 415    | 11                       | NR            | 545    | 607                      | NR            | 675    | 534                      | NR            | 805    | 11                       | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 627                      | NR            | 680    | 480                      | NR            | 810    | 10                       | NR            | 940    | 0                        | NR            |
| 425    | 33                       | NR            | 555    | 649                      | NR            | 685    | 427                      | NR            | 815    | 8                        | NR            | 945    | 0                        | NR            |
| 430    | 58                       | NR            | 560    | 673                      | NR            | 690    | 380                      | NR            | 820    | 7                        | NR            | 950    | 0                        | NR            |
| 435    | 103                      | NR            | 565    | 697                      | NR            | 695    | 334                      | NR            | 825    | 6                        | NR            | 955    | 0                        | NR            |
| 440    | 184                      | NR            | 570    | 723                      | NR            | 700    | 292                      | NR            | 830    | 5                        | NR            | 960    | 0                        | NR            |
| 445    | 360                      | NR            | 575    | 753                      | NR            | 705    | 255                      | NR            | 835    | 4                        | NR            | 965    | 0                        | NR            |
| 450    | 557                      | NR            | 580    | 789                      | NR            | 710    | 221                      | NR            | 840    | 4                        | NR            | 970    | 0                        | NR            |
| 455    | 486                      | NR            | 585    | 825                      | NR            | 715    | 190                      | NR            | 845    | 3                        | NR            | 975    | 0                        | NR            |
| 460    | 362                      | NR            | 590    | 864                      | NR            | 720    | 166                      | NR            | 850    | 3                        | NR            | 980    | 0                        | NR            |
| 465    | 337                      | NR            | 595    | 902                      | NR            | 725    | 143                      | NR            | 855    | 2                        | NR            | 985    | 0                        | NR            |
| 470    | 279                      | NR            | 600    | 932                      | NR            | 730    | 122                      | NR            | 860    | 2                        | NR            | 990    | 0                        | NR            |
| 475    | 233                      | NR            | 605    | 963                      | NR            | 735    | 105                      | NR            | 865    | 2                        | NR            | 995    | 0                        | NR            |
| 480    | 241                      | NR            | 610    | 981                      | NR            | 740    | 90                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 264                      | NR            | 615    | 997                      | NR            | 745    | 77                       | NR            | 875    | 1                        | NR            |        |                          |               |

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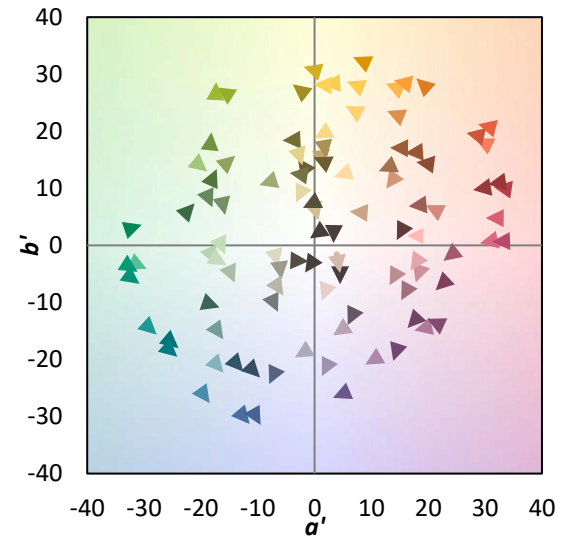
TM-30-18

### Summary

$R_f = 91.9$   
 $R_g = 99.2$   
 $CIE\ R_a = 93.2$   
 $R_9 = 59.0$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 94 | CES51 = 97 | CES76 = 90 |
| CES02 = 63 | CES27 = 92 | CES52 = 99 | CES77 = 89 |
| CES03 = 32 | CES28 = 97 | CES53 = 97 | CES78 = 87 |
| CES04 = 70 | CES29 = 97 | CES54 = 94 | CES79 = 93 |
| CES05 = 51 | CES30 = 93 | CES55 = 92 | CES80 = 93 |
| CES06 = 51 | CES31 = 97 | CES56 = 95 | CES81 = 82 |
| CES07 = 43 | CES32 = 91 | CES57 = 94 | CES82 = 97 |
| CES08 = 42 | CES33 = 99 | CES58 = 94 | CES83 = 96 |
| CES09 = 29 | CES34 = 95 | CES59 = 97 | CES84 = 95 |
| CES10 = 76 | CES35 = 97 | CES60 = 93 | CES85 = 82 |
| CES11 = 59 | CES36 = 83 | CES61 = 93 | CES86 = 83 |
| CES12 = 65 | CES37 = 97 | CES62 = 88 | CES87 = 91 |
| CES13 = 44 | CES38 = 89 | CES63 = 94 | CES88 = 96 |
| CES14 = 74 | CES39 = 99 | CES64 = 91 | CES89 = 85 |
| CES15 = 72 | CES40 = 98 | CES65 = 90 | CES90 = 96 |
| CES16 = 48 | CES41 = 97 | CES66 = 90 | CES91 = 78 |
| CES17 = 50 | CES42 = 96 | CES67 = 89 | CES92 = 79 |
| CES18 = 57 | CES43 = 94 | CES68 = 90 | CES93 = 87 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 79 |
| CES20 = 67 | CES45 = 98 | CES70 = 88 | CES95 = 84 |
| CES21 = 86 | CES46 = 96 | CES71 = 85 | CES96 = 92 |
| CES22 = 79 | CES47 = 94 | CES72 = 95 | CES97 = 96 |
| CES23 = 92 | CES48 = 91 | CES73 = 84 | CES98 = 94 |
| CES24 = 91 | CES49 = 96 | CES74 = 91 | CES99 = 91 |
| CES25 = 72 | CES50 = 98 | CES75 = 87 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)