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

Scaled data based on original data using

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P821138

Luminaire Tested: **TT-D2-830-24VDC-RW-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P821138 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-5) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 12/2/2020 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | TT-D2-830-24VDC-RW-HSS |
| Description: | TOPTIER LED PARKING GARAGE LUMINAIRE |
| | 3000K, 80 CRI LEDS AND RECTANGULAR DISTRIBUTION WITH HOUSE SIDE SHIELD |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 2962.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 78.0 lumens/watt |
| Luminous Opening: | Circular (Dia: 1.12' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B1 - U1 - G2 |

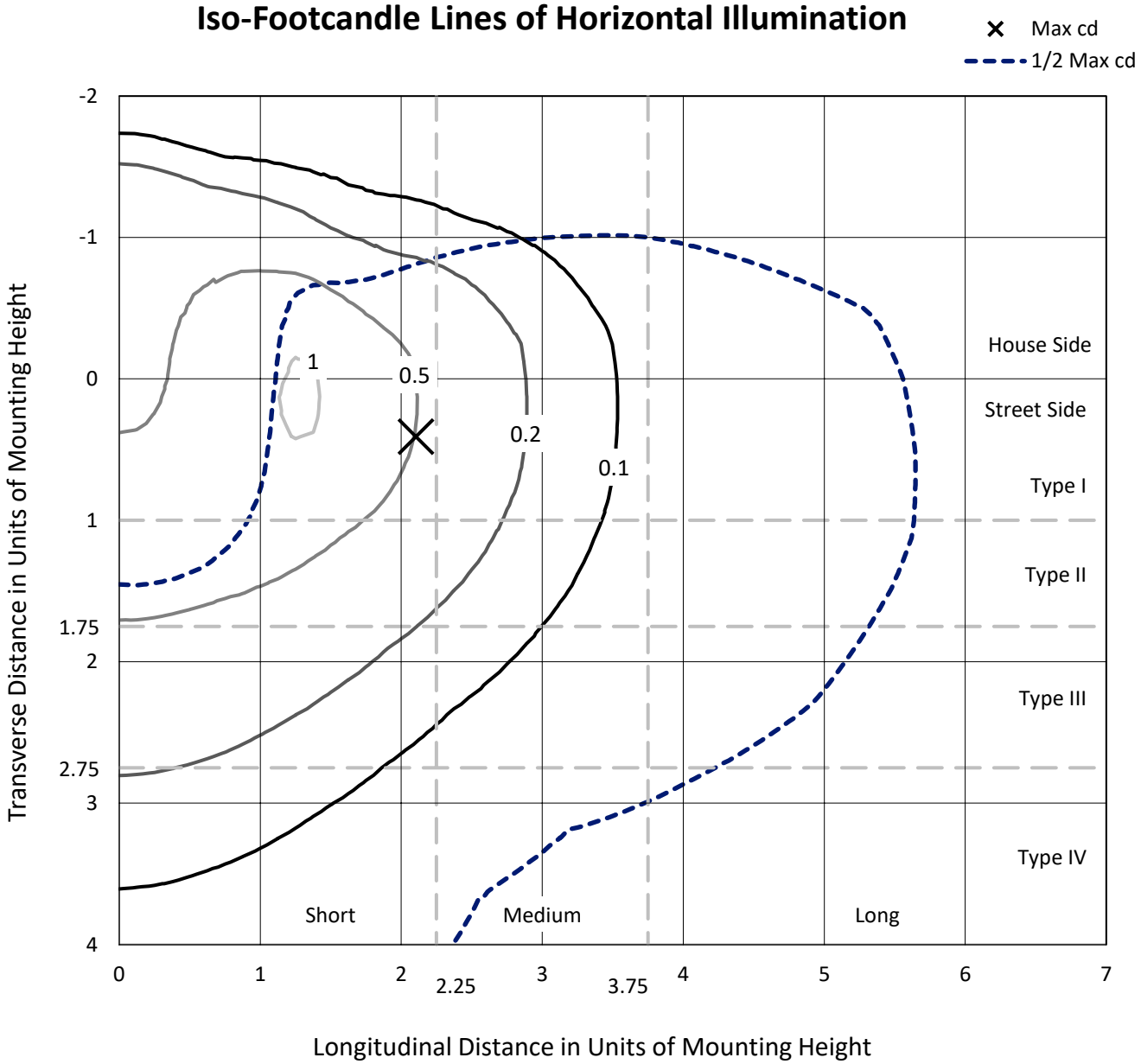
| | |
|---|---|
| Input Watts (W): | 38 |
| Input Voltage (V): | NR |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 25 FT |

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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

## Iso-Footcandle Lines of Horizontal Illumination



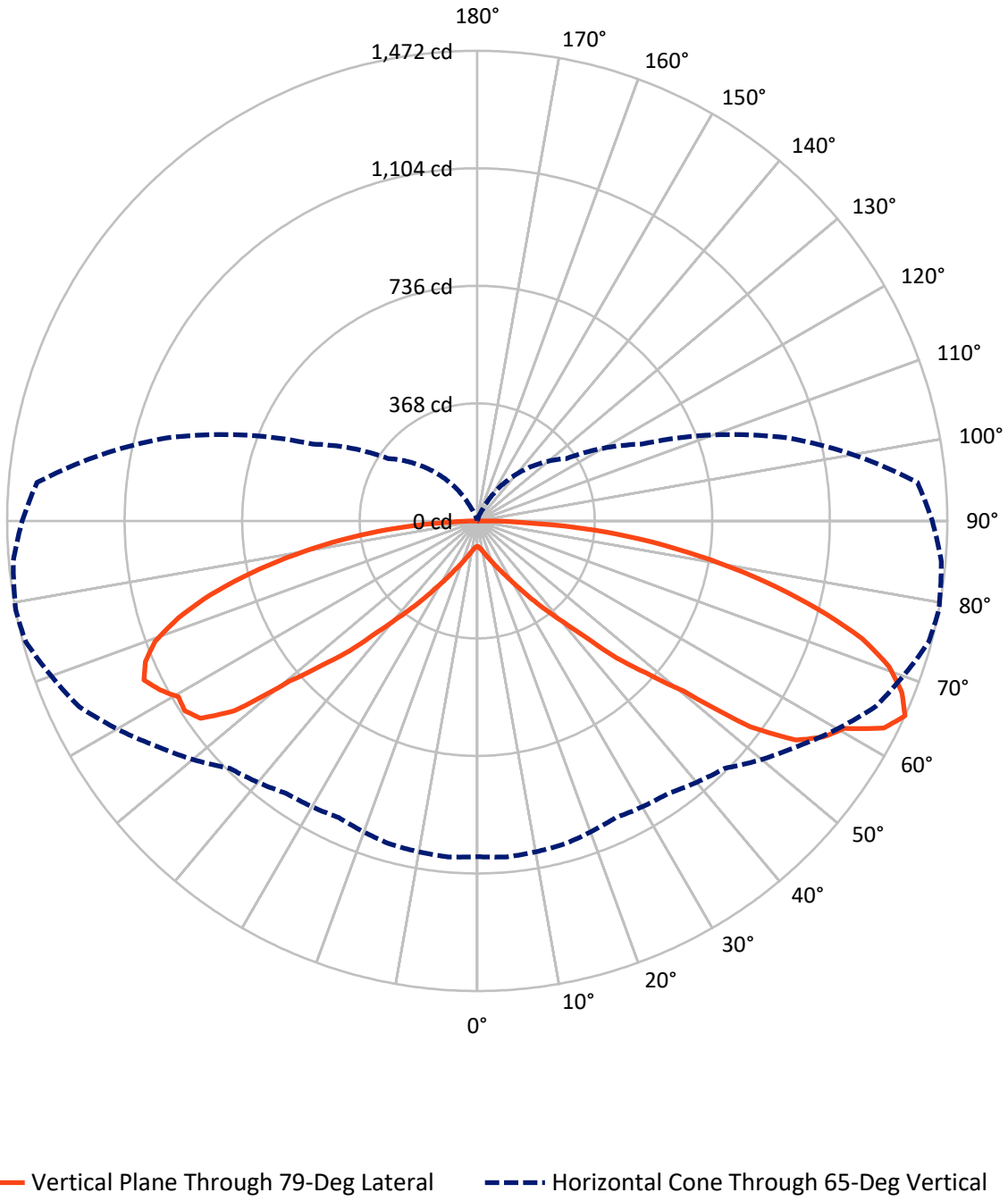

Based on 15 foot mounting height. Maximum calculated value = 1.1 fc
Type IV - Short - N/A

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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

## Luminous Intensity Polar Plot



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

Scaled Data Report

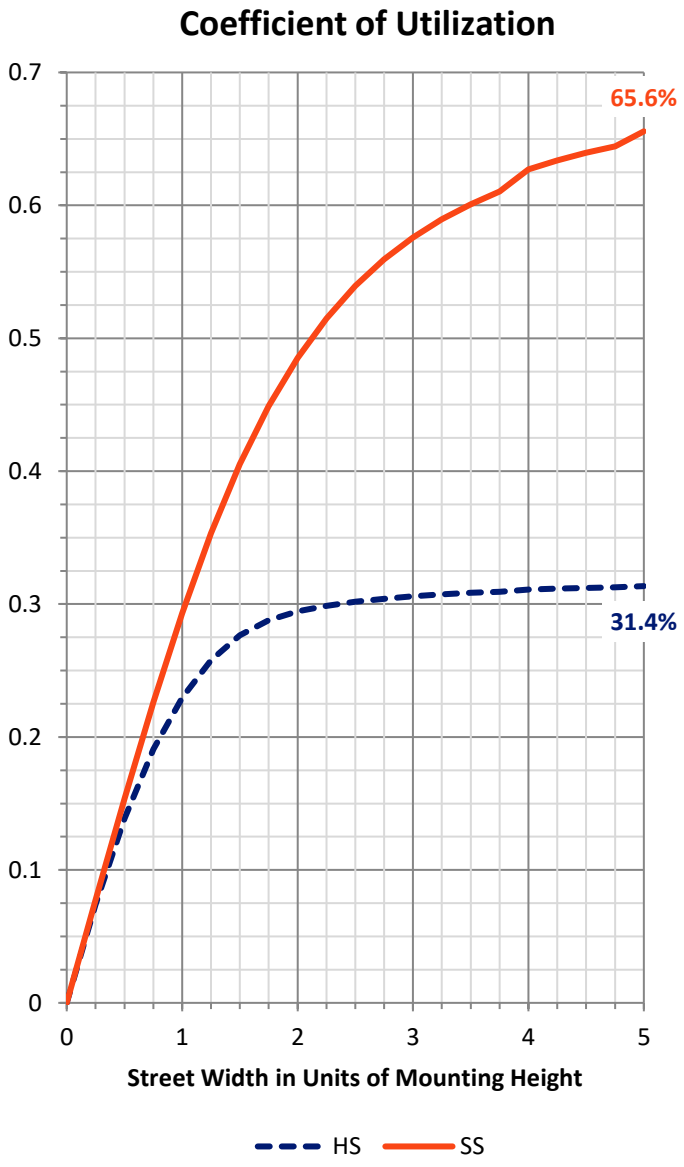
REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 935.7 | 1.1 | 936.8 |
| | % Fixture | 31.6 | 0.0 | 31.6 |
| **Street Side** | Lumens | 2013.1 | 13.0 | 2026.1 |
| | % Fixture | 67.9 | 0.4 | 68.4 |
| **Total** | Lumens | 2948.7 | 14.2 | 2962.9 |
| | % Fixture | 99.5 | 0.5 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 8.4 | 0.3 |
| 10°-20° | 31.9 | 1.1 |
| 20°-30° | 73.6 | 2.5 |
| 30°-40° | 157.7 | 5.3 |
| 40°-50° | 337.8 | 11.4 |
| 50°-60° | 638.0 | 21.5 |
| 60°-70° | 792.9 | 26.8 |
| 70°-80° | 678.8 | 22.9 |
| 80°-90° | 229.6 | 7.7 |
| 90°-100° | 9.9 | 0.3 |
| 100°-110° | 2.8 | 0.1 |
| 110°-120° | 0.6 | 0.0 |
| 120°-130° | 0.3 | 0.0 |
| 130°-140° | 0.2 | 0.0 |
| 140°-150° | 0.2 | 0.0 |
| 150°-160° | 0.1 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 2948.7 | 99.5 |
| 0°-180° | 2962.9 | 100.0 |



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

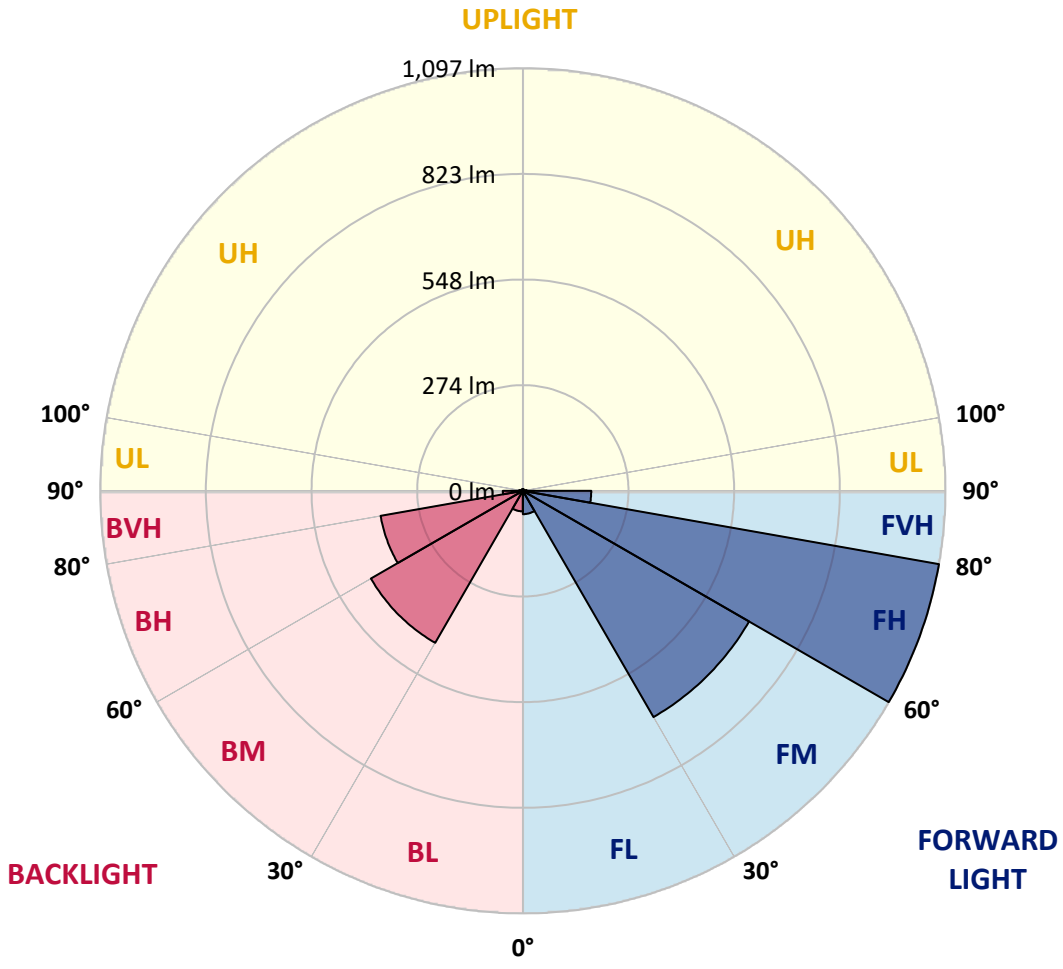
Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 60.6 | 2.0 | | | |
| FM | (30°-60°) | 678.1 | 22.9 | | | |
| FH | (60°-80°) | 1096.8 | 37.0 | | | G1/1800 |
| FVH | (80°-90°) | 177.6 | 6.0 | | | G2/225 |
| BL | (0°-30°) | 53.4 | 1.8 | B0/110 | | |
| BM | (30°-60°) | 455.4 | 15.4 | B1/1000 | | |
| BH | (60°-80°) | 374.9 | 12.7 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 52.0 | 1.8 | | | G1/100 |
| UL | (90°-100°) | 9.9 | 0.3 | | U1/10 | |
| UH | (100°-180°) | 4.3 | 0.1 | | U1/10 | |

**BUG Rating: B1-U1-G2**
Type IV Short



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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 |
| 2.5° | 84.9 | 84.9 | 84.9 | 84.2 | 84.2 | 84.2 | 83.4 | 82.7 | 82.0 | 82.0 | 82.0 |
| 5° | 89.3 | 89.3 | 89.3 | 89.3 | 88.6 | 87.9 | 87.1 | 86.4 | 85.6 | 85.6 | 84.9 |
| 7.5° | 95.2 | 94.5 | 95.2 | 94.5 | 94.5 | 93.8 | 93.0 | 92.3 | 90.8 | 90.8 | 90.1 |
| 10° | 101.2 | 101.2 | 101.2 | 101.2 | 101.2 | 100.4 | 99.7 | 98.9 | 98.2 | 97.5 | 96.7 |
| 12.5° | 108.5 | 108.5 | 108.5 | 107.8 | 108.5 | 107.8 | 107.1 | 107.1 | 106.3 | 104.8 | 104.8 |
| 15° | 115.9 | 115.9 | 115.9 | 115.9 | 116.7 | 116.7 | 116.7 | 115.9 | 115.9 | 115.2 | 114.4 |
| 17.5° | 124.8 | 124.0 | 124.8 | 124.8 | 125.5 | 126.3 | 127.0 | 127.7 | 127.7 | 127.0 | 127.0 |
| 20° | 134.4 | 133.6 | 134.4 | 134.4 | 135.9 | 137.3 | 139.5 | 141.0 | 141.8 | 140.3 | 140.3 |
| 22.5° | 144.7 | 144.0 | 145.4 | 145.4 | 147.7 | 149.9 | 153.6 | 155.0 | 157.3 | 156.5 | 156.5 |
| 25° | 157.3 | 156.5 | 157.3 | 158.0 | 161.0 | 164.6 | 169.1 | 172.8 | 175.0 | 175.0 | 175.7 |
| 27.5° | 171.3 | 171.3 | 172.0 | 172.8 | 175.7 | 181.6 | 188.3 | 194.9 | 200.1 | 199.3 | 200.1 |
| 30° | 190.5 | 190.5 | 192.0 | 192.7 | 196.4 | 203.0 | 211.9 | 220.8 | 228.1 | 228.1 | 229.6 |
| 32.5° | 211.9 | 211.2 | 213.4 | 214.1 | 217.8 | 226.7 | 239.2 | 253.2 | 262.8 | 262.8 | 264.3 |
| 35° | 237.7 | 237.0 | 239.2 | 239.2 | 243.6 | 256.2 | 272.4 | 291.6 | 307.9 | 308.6 | 310.8 |
| 37.5° | 270.2 | 268.8 | 268.8 | 271.0 | 276.1 | 292.4 | 314.5 | 341.1 | 358.1 | 359.6 | 363.3 |
| 40° | 308.6 | 307.9 | 309.4 | 308.6 | 315.3 | 335.2 | 363.3 | 394.3 | 414.2 | 417.9 | 422.3 |
| 42.5° | 355.9 | 357.3 | 355.1 | 355.1 | 363.3 | 386.1 | 419.4 | 455.5 | 491.7 | 496.2 | 498.4 |
| 45° | 413.5 | 416.4 | 413.5 | 412.7 | 420.1 | 446.7 | 492.5 | 556.0 | 598.0 | 612.8 | 617.2 |
| 47.5° | 482.9 | 484.3 | 480.6 | 479.2 | 487.3 | 521.3 | 580.3 | 651.2 | 700.7 | 711.7 | 723.6 |
| 50° | 560.4 | 558.2 | 555.2 | 553.0 | 568.5 | 610.6 | 679.3 | 752.4 | 837.3 | 838.7 | 843.2 |
| 52.5° | 640.1 | 633.5 | 634.2 | 633.5 | 654.9 | 700.7 | 792.2 | 916.3 | 1045.5 | 1072.0 | 1075.0 |
| 55° | 719.9 | 711.7 | 711.0 | 718.4 | 748.7 | 814.4 | 929.6 | 1090.5 | 1195.3 | 1211.6 | 1209.4 |
| 57.5° | 799.6 | 795.9 | 794.4 | 801.1 | 845.4 | 923.6 | 1053.6 | 1189.4 | 1278.8 | 1277.3 | 1261.8 |
| 60° | 882.3 | 885.3 | 880.1 | 892.6 | 938.4 | 1016.7 | 1111.2 | 1243.3 | 1326.0 | 1319.4 | 1303.9 |
| 62.5° | 967.2 | 974.6 | 969.4 | 970.9 | 1000.4 | 1058.0 | 1151.0 | 1304.6 | 1419.1 | 1428.7 | 1410.9 |
| 65° | 1051.4 | 1056.5 | 1048.4 | 1025.5 | 1041.8 | 1095.7 | 1228.6 | 1376.2 | 1463.4 | 1472.2 | 1458.9 |
| 67.5° | 1122.3 | 1127.4 | 1099.4 | 1063.2 | 1065.4 | 1104.5 | 1221.2 | 1362.2 | 1439.7 | 1433.8 | 1412.4 |
| 70° | 1182.8 | 1173.2 | 1127.4 | 1065.4 | 1039.6 | 1058.0 | 1168.0 | 1292.8 | 1371.8 | 1368.9 | 1343.8 |
| 72.5° | 1202.7 | 1190.2 | 1112.7 | 1016.7 | 965.7 | 972.4 | 1079.4 | 1190.9 | 1255.2 | 1260.3 | 1230.0 |
| 75° | 1171.0 | 1149.6 | 1043.3 | 922.9 | 857.2 | 861.6 | 953.2 | 1055.8 | 1107.5 | 1101.6 | 1078.0 |
| 77.5° | 1056.5 | 1035.1 | 920.0 | 791.5 | 727.2 | 733.9 | 806.3 | 886.7 | 929.6 | 927.3 | 911.1 |
| 80° | 877.1 | 857.9 | 756.8 | 637.2 | 578.8 | 582.5 | 637.9 | 701.4 | 734.6 | 742.0 | 733.2 |
| 82.5° | 648.2 | 635.0 | 563.3 | 466.6 | 419.4 | 418.6 | 460.7 | 509.4 | 541.9 | 557.4 | 551.5 |
| 85° | 400.9 | 394.3 | 354.4 | 291.6 | 258.4 | 257.7 | 282.8 | 319.0 | 348.5 | 369.2 | 355.9 |
| 87.5° | 159.5 | 157.3 | 145.4 | 117.4 | 102.6 | 97.5 | 91.6 | 114.4 | 116.7 | 138.1 | 137.3 |
| 90° | 39.1 | 38.4 | 37.7 | 35.4 | 31.7 | 27.3 | 22.1 | 16.2 | 10.3 | 8.1 | 4.4 |
| 92.5° | 34.7 | 34.7 | 34.0 | 31.7 | 28.8 | 24.4 | 19.9 | 14.8 | 9.6 | 7.4 | 3.7 |
| 95° | 28.1 | 28.1 | 27.3 | 25.8 | 22.9 | 19.9 | 15.5 | 11.8 | 7.4 | 5.9 | 3.0 |
| 97.5° | 21.4 | 20.7 | 20.7 | 19.2 | 17.7 | 14.8 | 11.8 | 8.9 | 5.9 | 4.4 | 2.2 |
| 100° | 15.5 | 15.5 | 14.8 | 14.0 | 12.6 | 11.1 | 8.9 | 6.6 | 3.7 | 3.0 | 1.5 |
| 102.5° | 11.1 | 10.3 | 10.3 | 10.3 | 8.9 | 7.4 | 5.9 | 4.4 | 3.0 | 2.2 | 0.7 |
| 105° | 7.4 | 6.6 | 6.6 | 6.6 | 5.9 | 5.2 | 3.7 | 3.0 | 1.5 | 1.5 | 0.7 |
| 107.5° | 4.4 | 4.4 | 4.4 | 4.4 | 3.7 | 3.0 | 2.2 | 1.5 | 0.7 | 0.7 | 0.7 |
| 110° | 2.2 | 2.2 | 2.2 | 3.0 | 2.2 | 2.2 | 1.5 | 0.7 | 0.7 | 0.7 | 0.7 |

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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 0.7 | 0.7 | 0.7 | *0.7* | 0.7 |
| 115° | 0.7 | 0.7 | 0.7 | 1.5 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 | *0.7* | 0.7 |
| 117.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 120° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 122.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 125° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 130° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.7 |
| 135° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | *0.0* | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 | 80.5 |
| 2.5° | 81.2 | 81.2 | 81.2 | 80.5 | 80.5 | 80.5 | 79.7 | 79.7 | 79.0 | 79.0 | 79.0 |
| 5° | 84.2 | 84.2 | 83.4 | 83.4 | 82.7 | 82.0 | 82.0 | 81.2 | 81.2 | 80.5 | 80.5 |
| 7.5° | 89.3 | 89.3 | 88.6 | 87.9 | 86.4 | 85.6 | 84.9 | 84.2 | 84.2 | 83.4 | 83.4 |
| 10° | 96.0 | 96.0 | 94.5 | 93.0 | 91.6 | 90.1 | 89.3 | 87.9 | 87.1 | 87.1 | 87.1 |
| 12.5° | 104.1 | 103.4 | 101.9 | 99.7 | 98.2 | 96.0 | 94.5 | 93.0 | 91.6 | 91.6 | 91.6 |
| 15° | 113.7 | 113.7 | 110.7 | 108.5 | 105.6 | 102.6 | 100.4 | 98.2 | 96.7 | 96.0 | 96.0 |
| 17.5° | 125.5 | 125.5 | 121.8 | 118.1 | 114.4 | 110.7 | 107.8 | 104.8 | 103.4 | 102.6 | 102.6 |
| 20° | 138.8 | 138.8 | 135.1 | 130.7 | 125.5 | 120.3 | 115.9 | 112.2 | 110.0 | 109.3 | 109.3 |
| 22.5° | 155.0 | 155.0 | 149.9 | 144.0 | 137.3 | 129.9 | 124.0 | 119.6 | 117.4 | 115.9 | 115.9 |
| 25° | 173.5 | 172.0 | 166.9 | 159.5 | 149.9 | 141.0 | 132.9 | 128.5 | 125.5 | 123.3 | 124.0 |
| 27.5° | 198.6 | 196.4 | 189.7 | 177.2 | 165.4 | 153.6 | 144.0 | 138.1 | 134.4 | 132.9 | 133.6 |
| 30° | 227.4 | 225.2 | 215.6 | 201.6 | 183.8 | 168.3 | 156.5 | 149.9 | 146.2 | 144.0 | 144.7 |
| 32.5° | 262.1 | 259.2 | 247.3 | 228.1 | 207.5 | 185.3 | 170.6 | 162.4 | 158.7 | 156.5 | 155.8 |
| 35° | 307.9 | 304.2 | 289.4 | 262.8 | 234.0 | 207.5 | 186.8 | 176.5 | 172.8 | 170.6 | 171.3 |
| 37.5° | 359.6 | 354.4 | 334.5 | 302.0 | 265.8 | 231.8 | 208.2 | 194.9 | 190.5 | 186.8 | 186.8 |
| 40° | 418.6 | 412.7 | 386.9 | 344.1 | 300.5 | 258.4 | 228.1 | 213.4 | 208.2 | 208.2 | 208.2 |
| 42.5° | 492.5 | 486.6 | 457.0 | 394.3 | 336.7 | 287.2 | 251.0 | 234.0 | 228.9 | 230.4 | 230.4 |
| 45° | 606.9 | 598.8 | 551.5 | 468.8 | 383.9 | 316.7 | 274.7 | 255.5 | 251.8 | 255.5 | 255.5 |
| 47.5° | 711.7 | 701.4 | 632.0 | 538.2 | 430.4 | 346.3 | 298.3 | 276.1 | 274.7 | 282.8 | 282.8 |
| 50° | 829.1 | 815.8 | 742.8 | 594.4 | 468.1 | 378.8 | 319.7 | 293.1 | 293.9 | 305.7 | 309.4 |
| 52.5° | 1056.5 | 1042.5 | 916.3 | 696.2 | 508.7 | 390.6 | 328.6 | 296.8 | 296.8 | 310.1 | 315.3 |
| 55° | 1191.7 | 1162.9 | 998.2 | 762.7 | 525.7 | 404.6 | 324.9 | 282.0 | 280.6 | 295.3 | 299.8 |
| 57.5° | 1236.0 | 1206.4 | 1015.2 | 743.5 | 514.6 | 386.9 | 303.5 | 242.2 | 239.2 | 258.4 | 256.9 |
| 60° | 1272.1 | 1233.0 | 987.9 | 679.3 | 451.9 | 349.2 | 262.1 | 180.2 | 167.6 | 184.6 | 183.8 |
| 62.5° | 1374.0 | 1331.9 | 989.4 | 603.9 | 378.0 | 291.6 | 197.1 | 101.2 | 75.3 | 88.6 | 82.7 |
| 65° | *1425.0* | *1383.6* | *1004.9* | *568.5* | *340.4* | *241.4* | *141.0* | *41.3* | *3.0* | *3.0* | *1.5* |
| 67.5° | 1381.4 | 1344.5 | 984.9 | 559.7 | 335.2 | 240.0 | 143.2 | 40.6 | 0.0 | 0.0 | 0.0 |
| 70° | 1317.9 | 1282.5 | 939.1 | 528.6 | 318.2 | 231.1 | 140.3 | 40.6 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1206.4 | 1170.2 | 860.1 | 484.3 | 292.4 | 211.9 | 129.9 | 38.4 | 0.0 | 0.0 | 0.0 |
| 75° | 1059.5 | 1032.2 | 759.7 | 426.8 | 257.7 | 186.8 | 115.2 | 34.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 897.1 | 864.6 | 637.2 | 355.1 | 215.6 | 155.0 | 97.5 | 28.1 | 0.0 | 0.0 | 0.0 |
| 80° | 719.9 | 696.2 | 502.1 | 278.3 | 166.9 | 121.1 | 76.0 | 21.4 | 0.0 | 0.0 | 0.0 |
| 82.5° | 535.3 | 515.4 | 371.4 | 199.3 | 118.9 | 84.2 | 52.4 | 14.0 | 0.0 | 0.0 | 0.0 |
| 85° | 351.4 | 346.3 | 238.5 | 121.1 | 70.9 | 46.5 | 28.1 | 6.6 | 0.0 | 0.0 | 0.0 |
| 87.5° | 127.0 | 131.4 | 87.1 | 34.7 | 19.2 | 8.1 | 3.7 | 0.7 | 0.0 | 0.0 | 0.0 |
| 90° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Scaled Data Report

REPORT NUMBER: P821138
CATALOG NUMBER: TT-D2-830-24VDC-RW-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-176-7

Test Date: 09/27/2024

Luminaire Tested: MEM2-HTN-VA-30-830-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-830-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

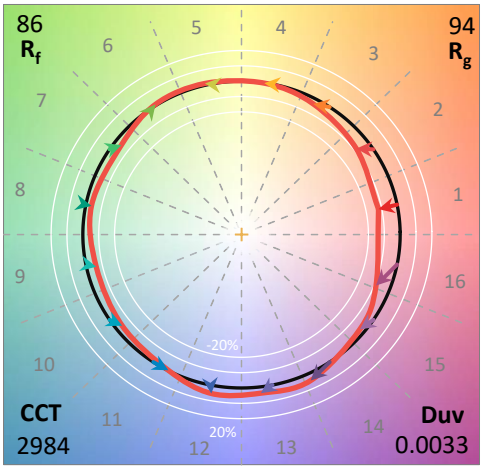
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-176-7 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 09/27/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Streetworks |
| Catalog Number: | **MEM2-HTN-VA-30-830-U-WQ** |
| Description: | EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 2984 | CRI (Ra): | 81.8 | | |
| CIE u': | 0.2500 | R1: | 79.4 | R9: | -1.1 |
| CIE v': | 0.5264 | R2: | 89.9 | R10: | 78.4 |
| Duv: | 0.0033 | R3: | 96.6 | R11: | 80.8 |
| CIE x: | 0.4431 | R4: | 80.6 | R12: | 72.8 |
| CIE y: | 0.4147 | R5: | 80.1 | R13: | 81.7 |
| CIE z: | 0.1422 | R6: | 88.9 | R14: | 98.5 |
| Peak Wavelength (nm): | 601 | R7: | 82.6 | R15: | 70.2 |
| Dominant Wavelength (nm): | 581 | R8: | 56.0 | | |
| Purity: | 57.4798 | | | | |

| | |
|---|---|
| Rf: | 85.8 |
| Rg: | 94.1 |




## Test Conditions

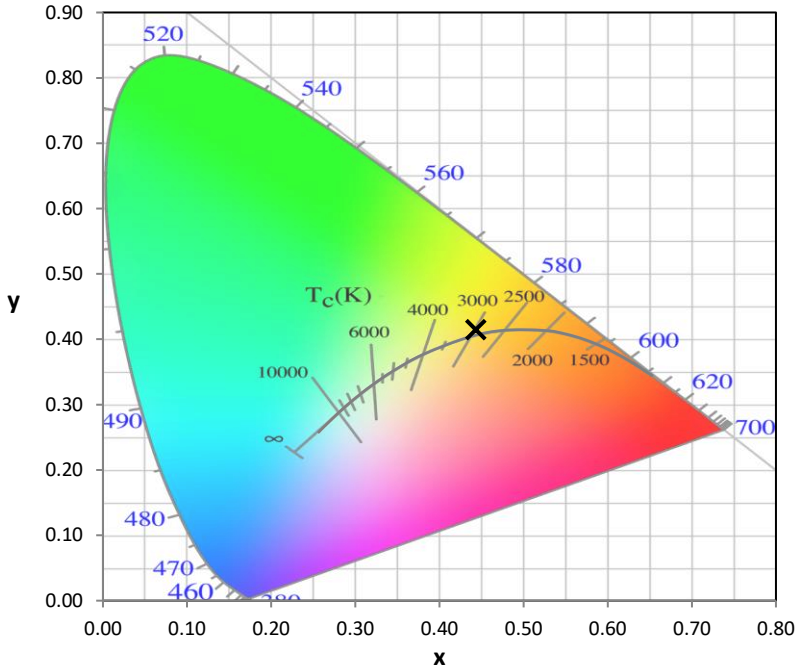
| | |
|---|---|
| Stabilization Time: | 29M |
| Operation Time: | 1H 29M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-176-7

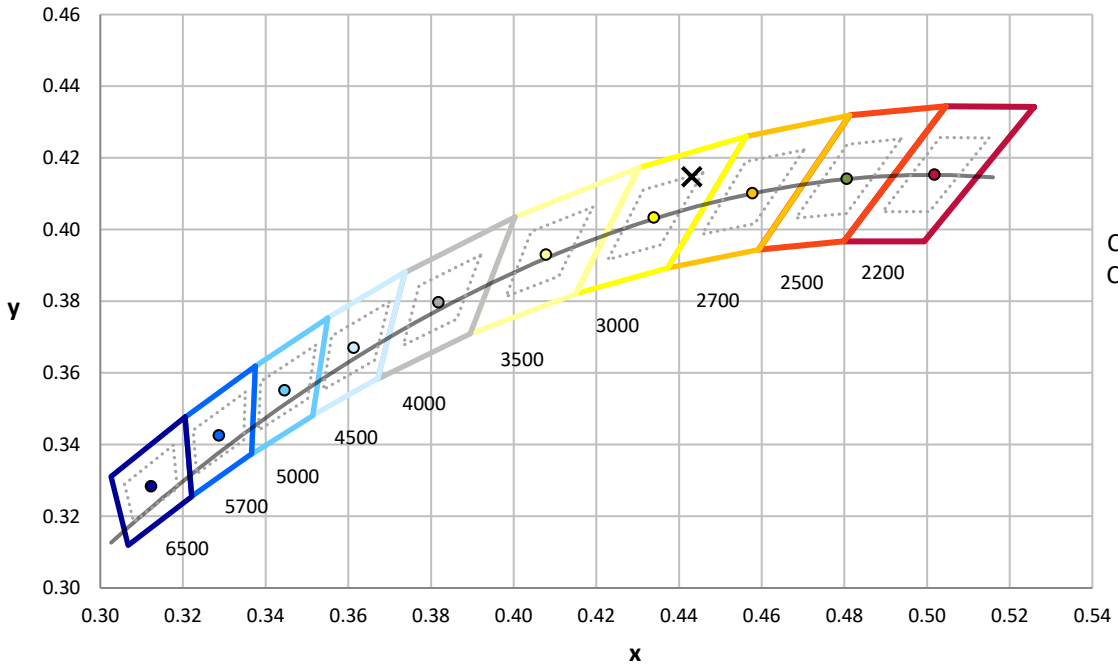
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2407-176-7

## CIE 1931 Chromaticity Diagram




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

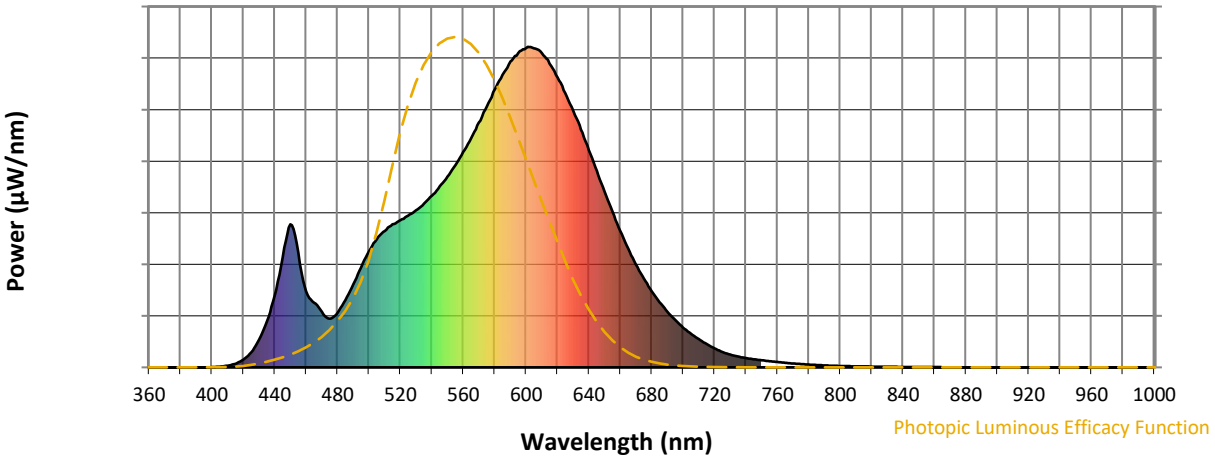



CCT = 2984K
CIE x = 0.4431
CIE y = 0.4147
Duv = 0.0033

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-7

## Photopic Flux vs. Wavelength

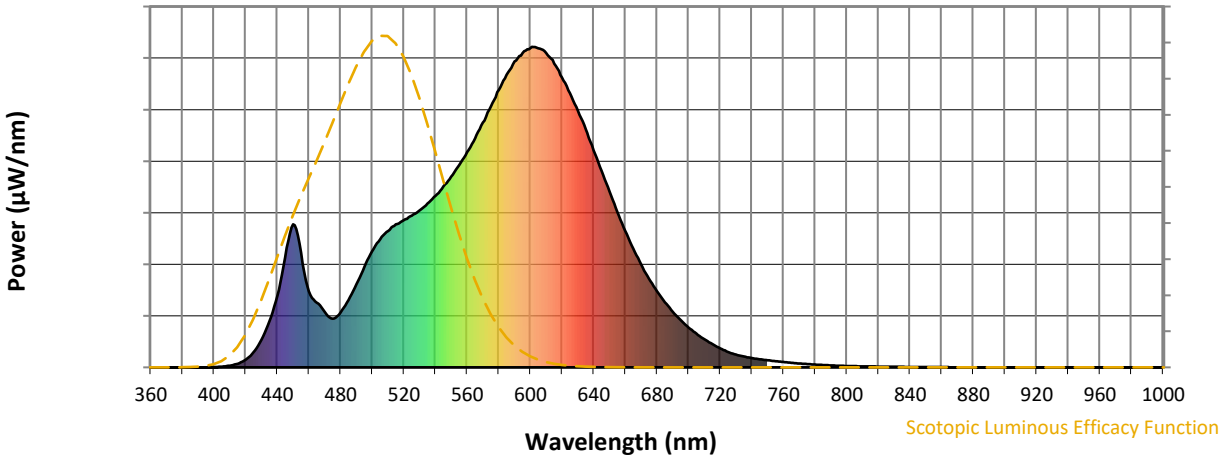



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 260 | NR | 620 | 905 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 312 | NR | 625 | 856 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 362 | NR | 630 | 801 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 399 | NR | 635 | 742 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 425 | NR | 640 | 677 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 446 | NR | 645 | 613 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 459 | NR | 650 | 549 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 473 | NR | 655 | 485 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 490 | NR | 660 | 425 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 511 | NR | 665 | 371 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 535 | NR | 670 | 321 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 565 | NR | 675 | 276 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 24 | NR | 550 | 595 | NR | 680 | 238 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 631 | NR | 685 | 203 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 86 | NR | 560 | 672 | NR | 690 | 174 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 144 | NR | 565 | 715 | NR | 695 | 148 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 763 | NR | 700 | 124 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 342 | NR | 575 | 814 | NR | 705 | 105 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 446 | NR | 580 | 866 | NR | 710 | 88 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 357 | NR | 585 | 912 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 237 | NR | 590 | 954 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 202 | NR | 595 | 981 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 172 | NR | 600 | 996 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 152 | NR | 605 | 996 | NR | 735 | 34 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 980 | NR | 740 | 29 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 947 | NR | 745 | 25 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-176-7

## Scotopic Flux vs. Wavelength

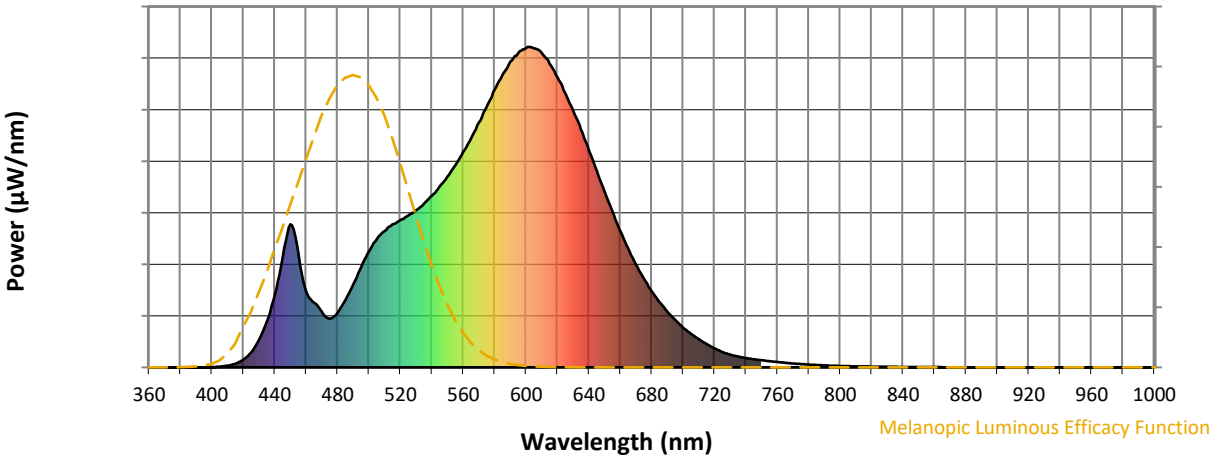



**Scotopic Lumens: NR** **S/P: 1.32**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 260 | NR | 620 | 905 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 312 | NR | 625 | 856 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 362 | NR | 630 | 801 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 399 | NR | 635 | 742 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 425 | NR | 640 | 677 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 446 | NR | 645 | 613 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 459 | NR | 650 | 549 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 473 | NR | 655 | 485 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 490 | NR | 660 | 425 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 511 | NR | 665 | 371 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 535 | NR | 670 | 321 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 565 | NR | 675 | 276 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 24 | NR | 550 | 595 | NR | 680 | 238 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 631 | NR | 685 | 203 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 86 | NR | 560 | 672 | NR | 690 | 174 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 144 | NR | 565 | 715 | NR | 695 | 148 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 763 | NR | 700 | 124 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 342 | NR | 575 | 814 | NR | 705 | 105 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 446 | NR | 580 | 866 | NR | 710 | 88 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 357 | NR | 585 | 912 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 237 | NR | 590 | 954 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 202 | NR | 595 | 981 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 172 | NR | 600 | 996 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 152 | NR | 605 | 996 | NR | 735 | 34 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 980 | NR | 740 | 29 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 947 | NR | 745 | 25 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-176-7

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.51**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 260 | NR | 620 | 905 | NR | 750 | 22 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 312 | NR | 625 | 856 | NR | 755 | 19 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 362 | NR | 630 | 801 | NR | 760 | 17 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 399 | NR | 635 | 742 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 425 | NR | 640 | 677 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 446 | NR | 645 | 613 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 459 | NR | 650 | 549 | NR | 780 | 9 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 473 | NR | 655 | 485 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 490 | NR | 660 | 425 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 2 | NR | 535 | 511 | NR | 665 | 371 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 5 | NR | 540 | 535 | NR | 670 | 321 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 11 | NR | 545 | 565 | NR | 675 | 276 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 24 | NR | 550 | 595 | NR | 680 | 238 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 47 | NR | 555 | 631 | NR | 685 | 203 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 86 | NR | 560 | 672 | NR | 690 | 174 | NR | 820 | 2 | NR | 950 | 0 | NR |
| 435 | 144 | NR | 565 | 715 | NR | 695 | 148 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 224 | NR | 570 | 763 | NR | 700 | 124 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 342 | NR | 575 | 814 | NR | 705 | 105 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 446 | NR | 580 | 866 | NR | 710 | 88 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 357 | NR | 585 | 912 | NR | 715 | 73 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 237 | NR | 590 | 954 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 202 | NR | 595 | 981 | NR | 725 | 48 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 172 | NR | 600 | 996 | NR | 730 | 40 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 152 | NR | 605 | 996 | NR | 735 | 34 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 171 | NR | 610 | 980 | NR | 740 | 29 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 210 | NR | 615 | 947 | NR | 745 | 25 | NR | 875 | 0 | NR | | | |

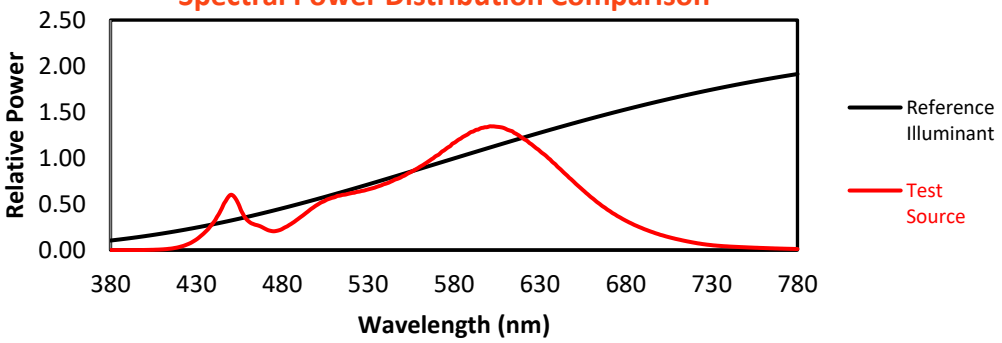
REPORT NUMBER: SP1-2407-176-7

# TM-30-18

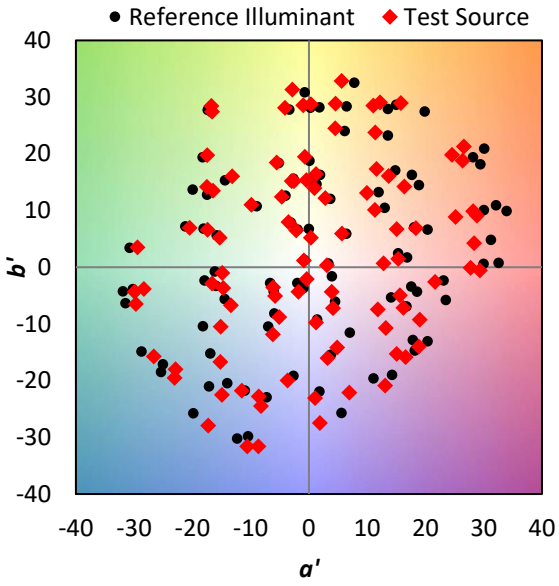
## Summary

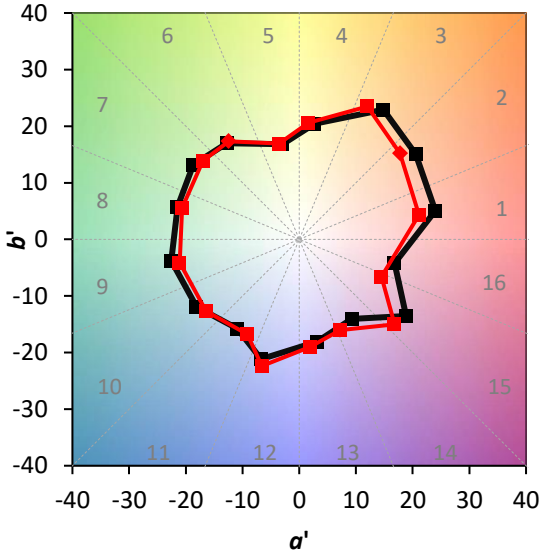
$R_f$ = 85.8
$R_g$ = 94.1
CIE $R_a$ = 81.8
$R_9$ = -1.1

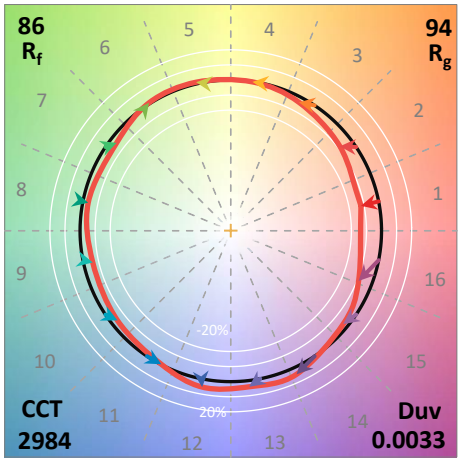
## Spectral Power Distribution Comparison

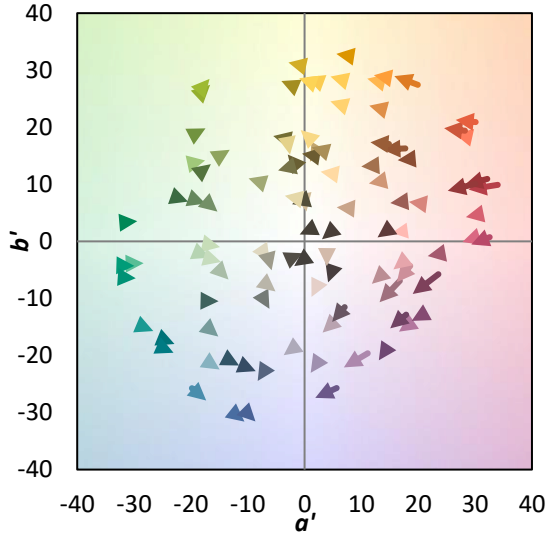



## Color Vector Graphics



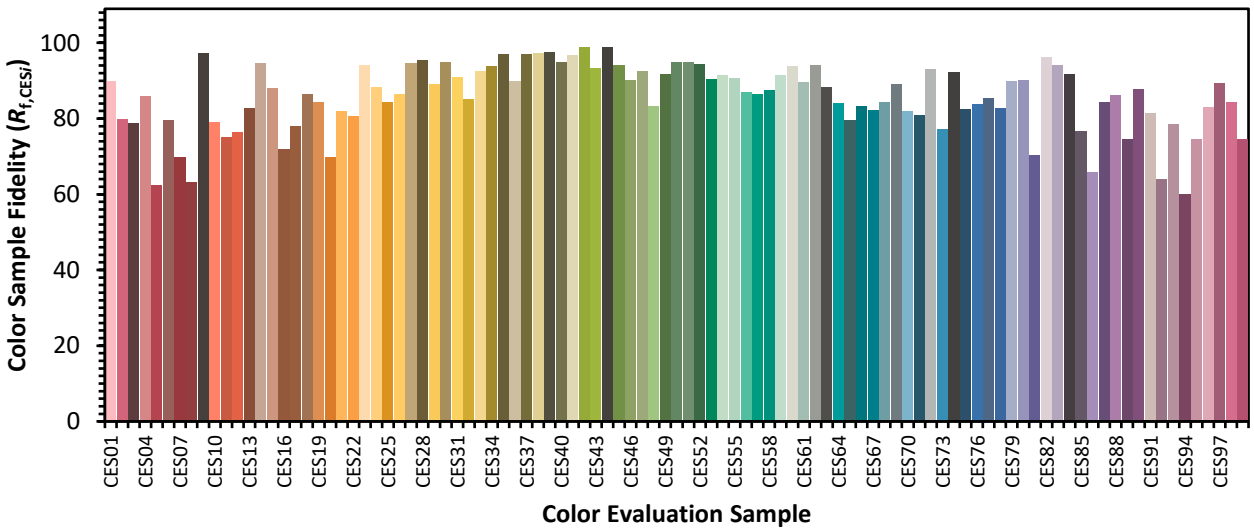



REPORT NUMBER: SP1-2407-176-7

# TM-30-18

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

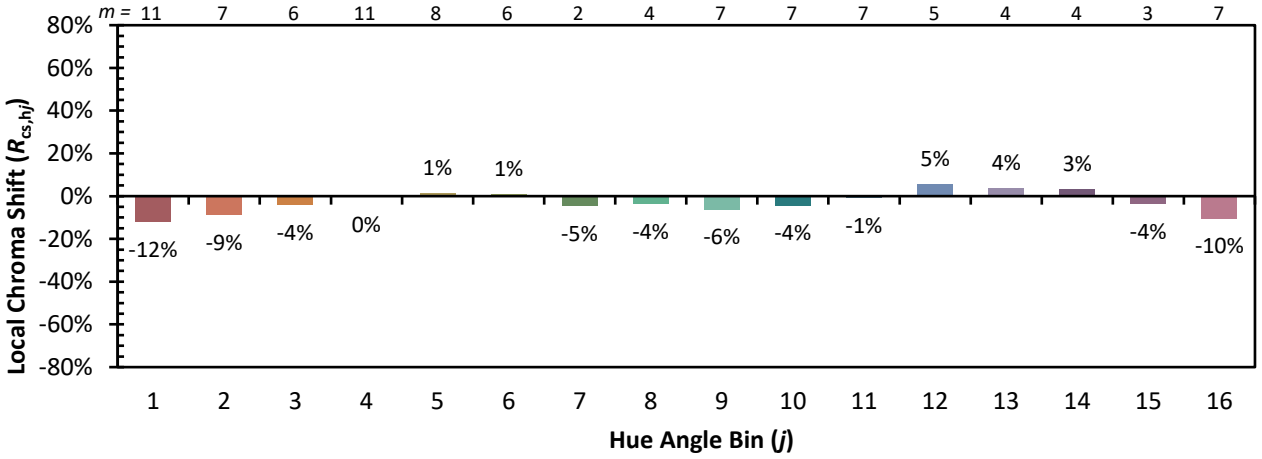
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 86 | CES51 = 95 | CES76 = 84 |
| CES02 = 63 | CES27 = 95 | CES52 = 94 | CES77 = 86 |
| CES03 = 31 | CES28 = 95 | CES53 = 90 | CES78 = 83 |
| CES04 = 70 | CES29 = 89 | CES54 = 91 | CES79 = 90 |
| CES05 = 50 | CES30 = 95 | CES55 = 91 | CES80 = 90 |
| CES06 = 51 | CES31 = 91 | CES56 = 87 | CES81 = 70 |
| CES07 = 42 | CES32 = 85 | CES57 = 86 | CES82 = 96 |
| CES08 = 41 | CES33 = 93 | CES58 = 87 | CES83 = 94 |
| CES09 = 29 | CES34 = 94 | CES59 = 92 | CES84 = 92 |
| CES10 = 76 | CES35 = 97 | CES60 = 94 | CES85 = 77 |
| CES11 = 59 | CES36 = 90 | CES61 = 90 | CES86 = 66 |
| CES12 = 65 | CES37 = 97 | CES62 = 94 | CES87 = 84 |
| CES13 = 43 | CES38 = 97 | CES63 = 88 | CES88 = 86 |
| CES14 = 74 | CES39 = 98 | CES64 = 84 | CES89 = 75 |
| CES15 = 72 | CES40 = 95 | CES65 = 80 | CES90 = 88 |
| CES16 = 47 | CES41 = 97 | CES66 = 83 | CES91 = 81 |
| CES17 = 50 | CES42 = 99 | CES67 = 82 | CES92 = 64 |
| CES18 = 56 | CES43 = 93 | CES68 = 84 | CES93 = 79 |
| CES19 = 72 | CES44 = 99 | CES69 = 89 | CES94 = 60 |
| CES20 = 67 | CES45 = 94 | CES70 = 82 | CES95 = 74 |
| CES21 = 87 | CES46 = 90 | CES71 = 81 | CES96 = 83 |
| CES22 = 79 | CES47 = 93 | CES72 = 93 | CES97 = 89 |
| CES23 = 92 | CES48 = 83 | CES73 = 77 | CES98 = 84 |
| CES24 = 91 | CES49 = 92 | CES74 = 92 | CES99 = 75 |
| CES25 = 72 | CES50 = 95 | CES75 = 83 | |

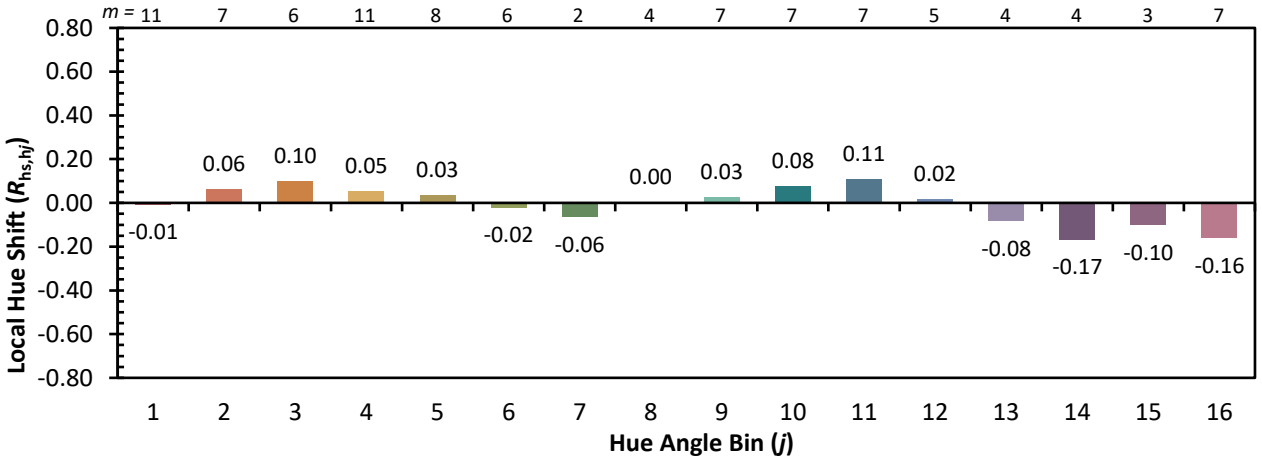


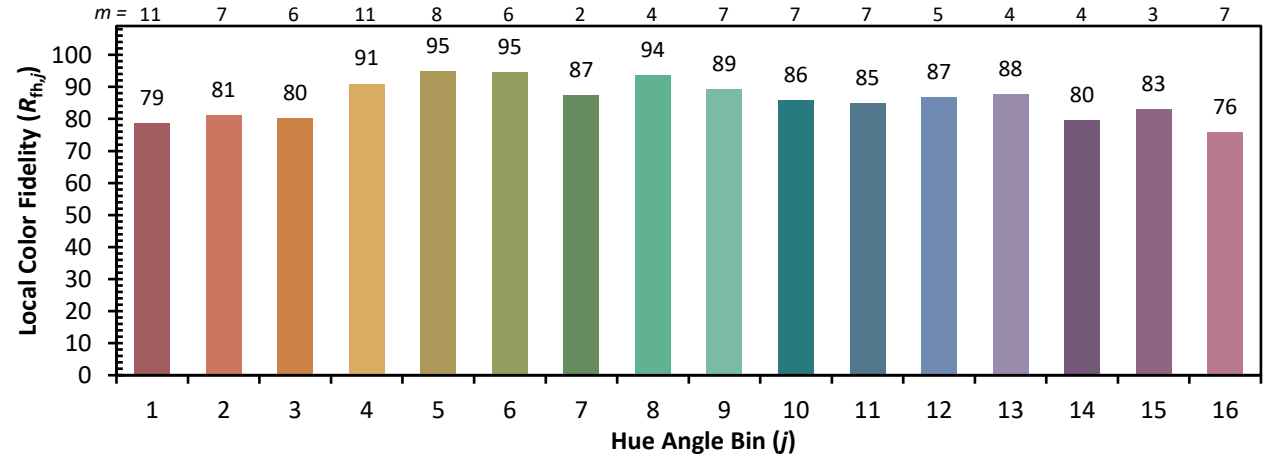
REPORT NUMBER: SP1-2407-176-7

**TM-30-18**

## Color Rendition by Hue-Angle Bin



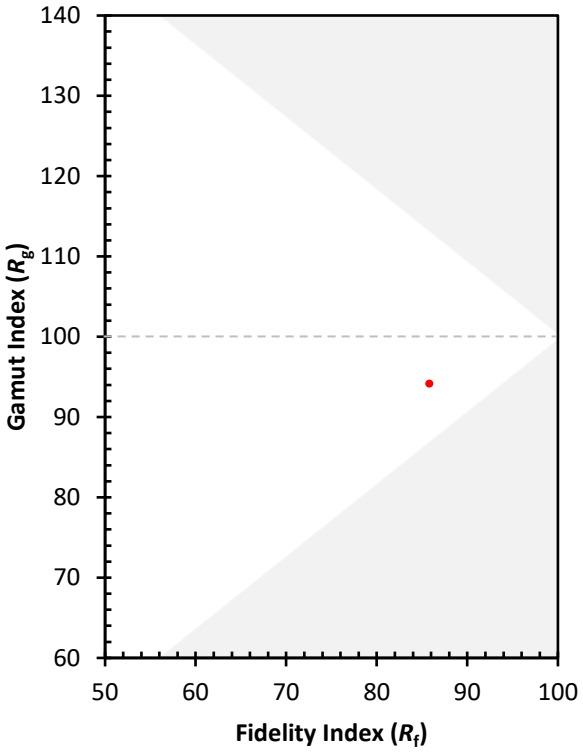



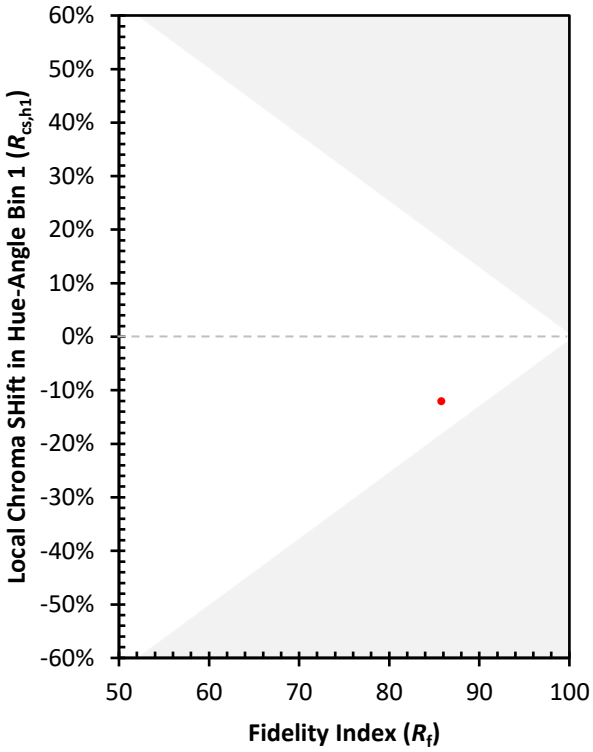



REPORT NUMBER: SP1-2407-176-7

# TM-30-18

## Measure Comparisons




(END OF REPORT)