

Signify Classified - Internal  
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: P1211909

Luminaire Tested: **GKO-PB2C-830-U-T2R**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1211909  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB2C-830-U-T2R  
Description: GEKKO WALL PACK 8000LM PACKAGE 80CRI 3000K FIXTURE w/ TYPE II  
ROADWAY DISTRIBUTION OPTIC  
Light Source: (20) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7402.9 lumens  
Efficiency: N/A  
Efficacy: 127.2 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')  
IES Classification: Type II - Medium  
BUG Rating: B2 - U0 - G2

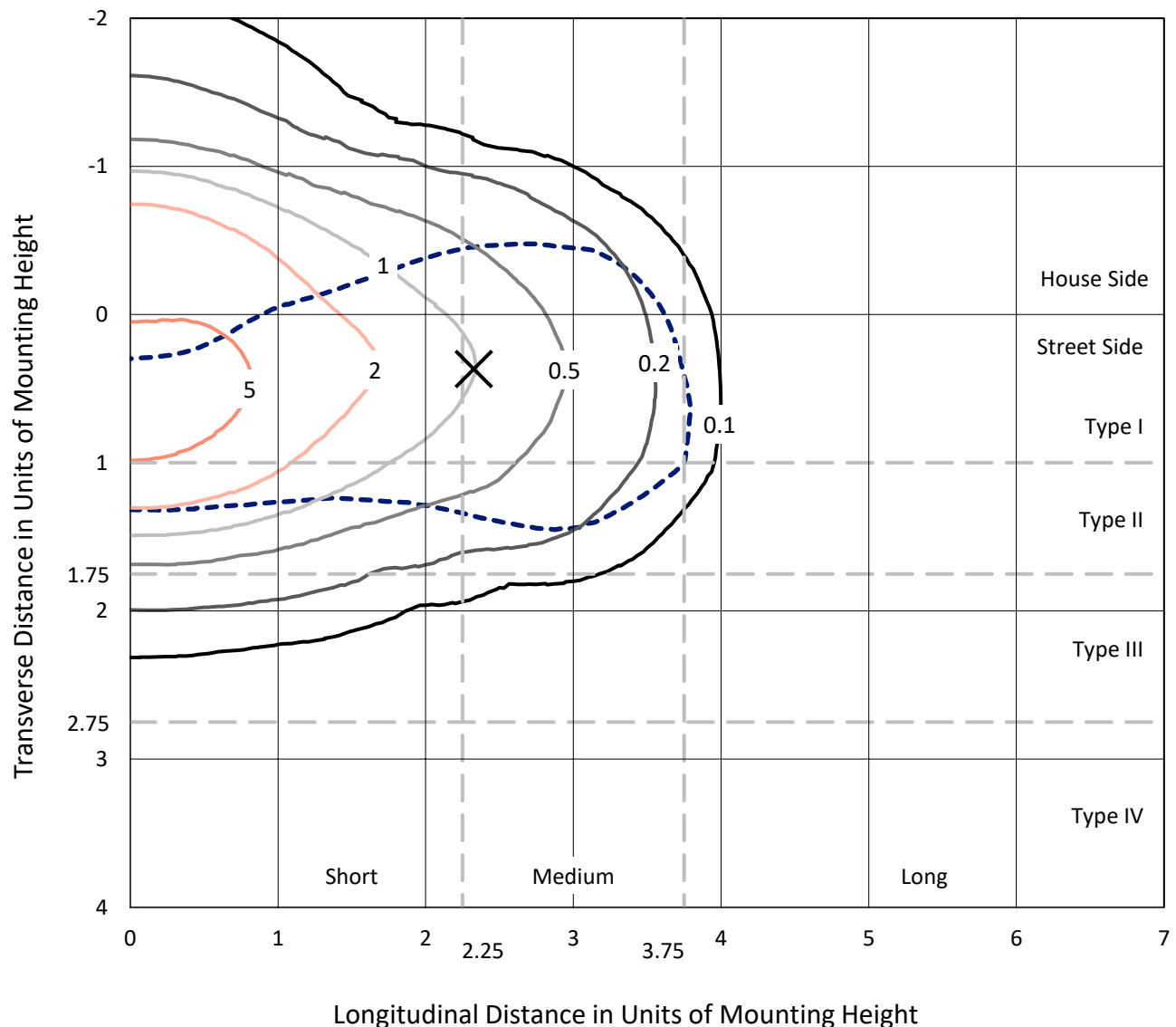
Input Watts (W): 58.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 5%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

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## Iso-Footcandle Lines of Horizontal Illumination

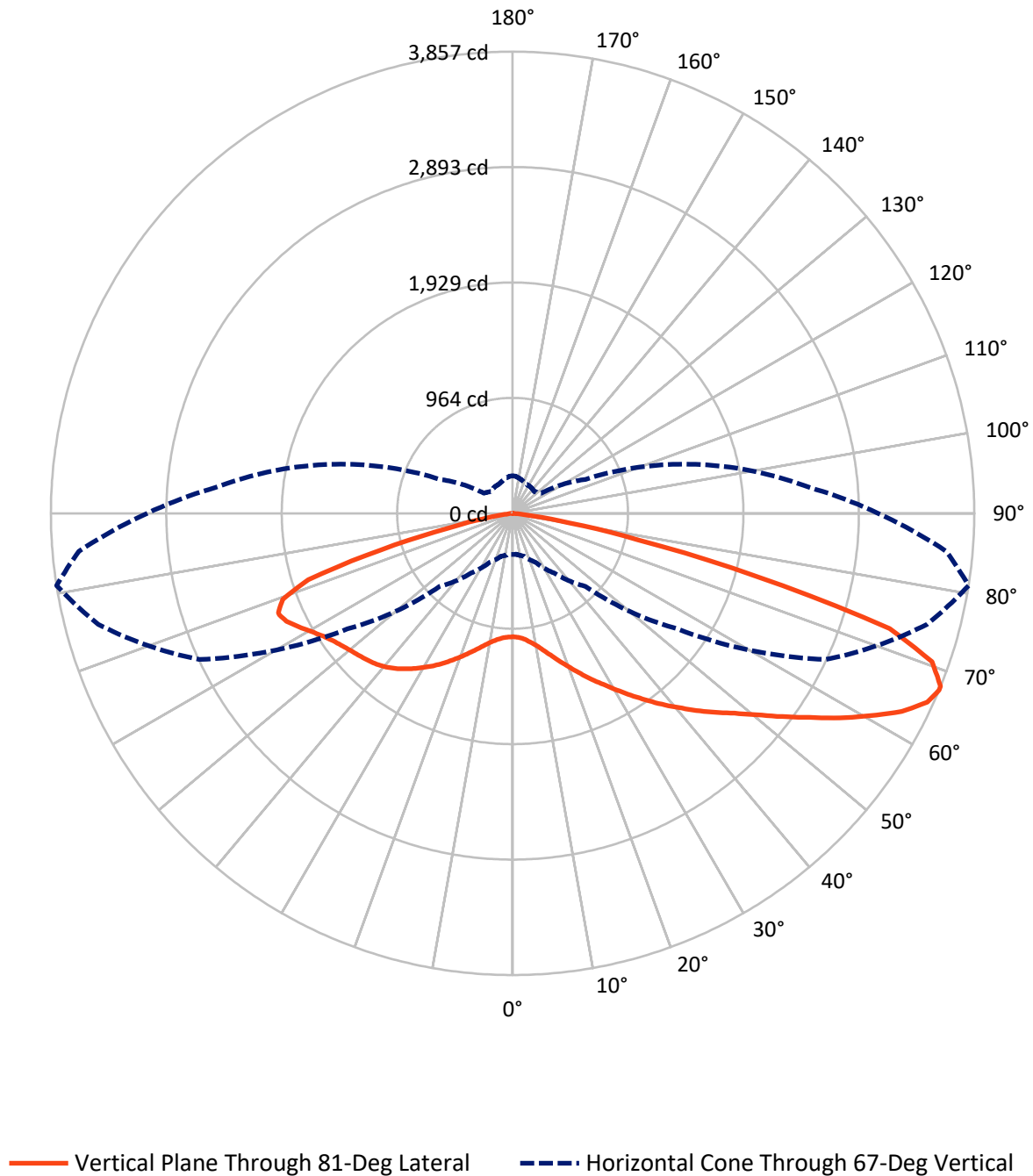
× Max cd  
 --- 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 8.8 fc  
 Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GKO-PB2C-830-U-T2R

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2286.0   | 0.0    | 2286.0 |
|                    | % Fixture | 30.9     | 0.0    | 30.9   |
| <b>Street Side</b> | Lumens    | 5116.9   | 0.0    | 5116.9 |
|                    | % Fixture | 69.1     | 0.0    | 69.1   |
| <b>Total</b>       | Lumens    | 7402.9   | 0.0    | 7402.9 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 106.8  | 1.4       |
| 10°-20°   | 386.6  | 5.2       |
| 20°-30°   | 783.3  | 10.6      |
| 30°-40°   | 1235.1 | 16.7      |
| 40°-50°   | 1516.8 | 20.5      |
| 50°-60°   | 1449.0 | 19.6      |
| 60°-70°   | 1215.1 | 16.4      |
| 70°-80°   | 643.7  | 8.7       |
| 80°-90°   | 66.5   | 0.9       |
| 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°-90°    | 7402.9 | 100.0     |
| 0°-180°   | 7402.9 | 100.0     |



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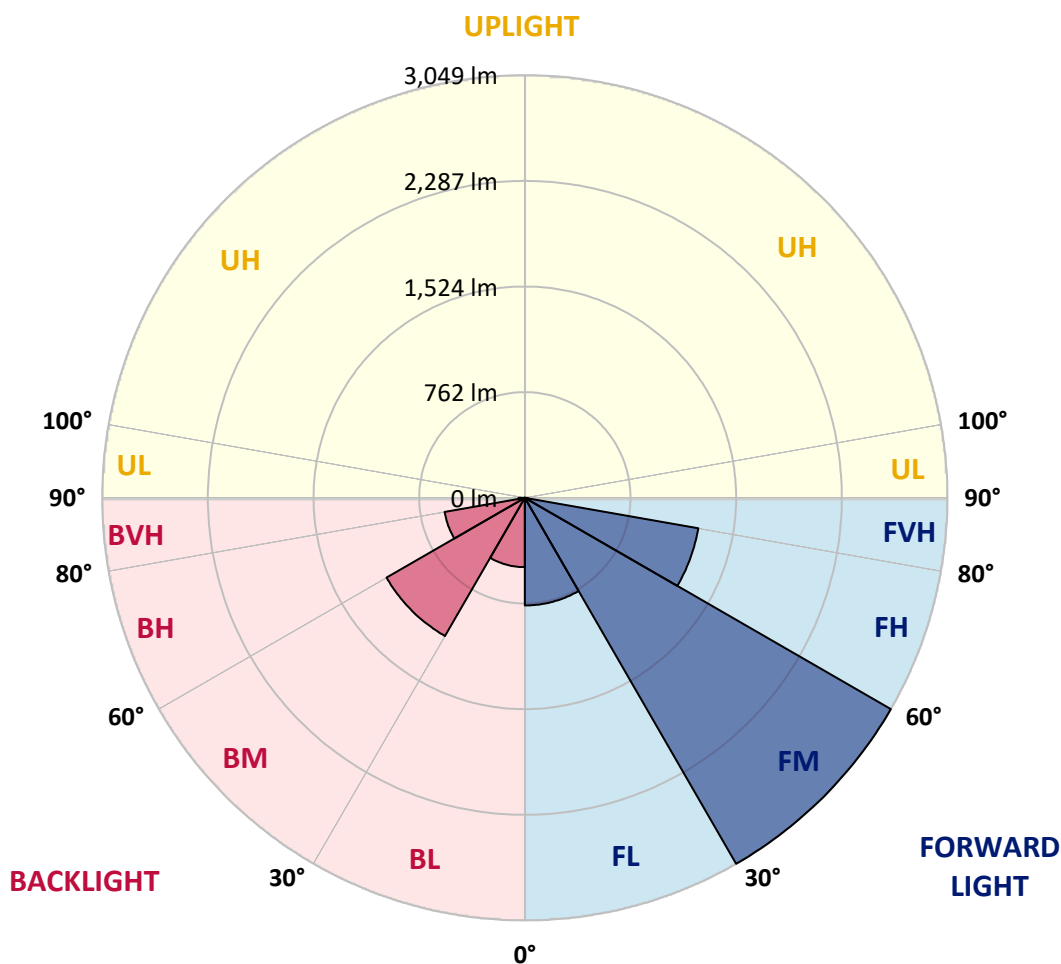
CATALOG NUMBER: GKO-PB2C-830-U-T2R

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 776.5  | 10.5      |                         |      |         |
| FM   | (30°-60°)   | 3049.0 | 41.2      |                         |      |         |
| FH   | (60°-80°)   | 1270.8 | 17.2      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 20.7   | 0.3       |                         |      | G1/100  |
| BL   | (0°-30°)    | 500.2  | 6.8       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1151.8 | 15.6      | B2/2500                 |      |         |
| BH   | (60°-80°)   | 588.0  | 7.9       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 45.8   | 0.6       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G2**

Type II Medium



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 81°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 |
| 2.5°  | 1090.7 | 1093.5 | 1087.9 | 1086.5 | 1080.8 | 1072.3 | 1062.4 | 1055.3 | 1044.0 | 1038.3 | 1035.5 |
| 5°    | 1194.1 | 1188.4 | 1184.2 | 1177.1 | 1157.3 | 1140.3 | 1112.0 | 1092.1 | 1070.9 | 1056.7 | 1052.5 |
| 7.5°  | 1320.2 | 1323.0 | 1308.8 | 1290.4 | 1262.1 | 1228.1 | 1182.8 | 1145.9 | 1106.3 | 1087.9 | 1079.4 |
| 10°   | 1457.6 | 1468.9 | 1454.7 | 1432.1 | 1378.3 | 1327.3 | 1272.0 | 1208.3 | 1154.4 | 1126.1 | 1114.8 |
| 12.5° | 1624.7 | 1631.8 | 1613.4 | 1583.6 | 1518.5 | 1442.0 | 1364.1 | 1284.8 | 1213.9 | 1178.5 | 1158.7 |
| 15°   | 1811.7 | 1806.0 | 1787.6 | 1743.7 | 1660.1 | 1575.1 | 1468.9 | 1365.5 | 1281.9 | 1238.0 | 1209.7 |
| 17.5° | 2004.3 | 1997.3 | 1973.2 | 1916.5 | 1821.6 | 1715.4 | 1589.3 | 1459.0 | 1354.2 | 1306.0 | 1267.8 |
| 20°   | 2188.5 | 2181.4 | 2164.4 | 2100.7 | 1985.9 | 1855.6 | 1708.3 | 1566.6 | 1436.3 | 1376.8 | 1334.3 |
| 22.5° | 2392.5 | 2386.8 | 2359.9 | 2282.0 | 2158.7 | 2015.7 | 1844.3 | 1675.7 | 1525.6 | 1454.7 | 1403.7 |
| 25°   | 2613.4 | 2614.9 | 2585.1 | 2476.0 | 2337.2 | 2170.1 | 1990.2 | 1799.0 | 1626.1 | 1536.9 | 1478.8 |
| 27.5° | 2871.2 | 2869.8 | 2818.8 | 2701.3 | 2527.0 | 2334.4 | 2134.7 | 1927.9 | 1725.3 | 1620.5 | 1553.9 |
| 30°   | 3105.0 | 3099.3 | 3042.6 | 2925.1 | 2723.9 | 2507.2 | 2287.6 | 2052.5 | 1837.2 | 1712.5 | 1631.8 |
| 32.5° | 3277.8 | 3279.2 | 3232.4 | 3103.5 | 2906.7 | 2675.8 | 2430.7 | 2192.7 | 1944.9 | 1811.7 | 1722.5 |
| 35°   | 3402.4 | 3403.8 | 3358.5 | 3248.0 | 3063.9 | 2833.0 | 2582.3 | 2324.5 | 2065.3 | 1913.7 | 1817.4 |
| 37.5° | 3442.1 | 3442.1 | 3412.3 | 3325.9 | 3175.8 | 2974.6 | 2731.0 | 2474.6 | 2185.7 | 2024.2 | 1913.7 |
| 40°   | 3388.3 | 3392.5 | 3391.1 | 3334.4 | 3231.0 | 3072.4 | 2868.4 | 2619.1 | 2320.2 | 2133.2 | 2011.4 |
| 42.5° | 3266.4 | 3269.3 | 3273.5 | 3252.3 | 3219.7 | 3124.8 | 2978.9 | 2766.4 | 2454.8 | 2252.2 | 2107.7 |
| 45°   | 3065.3 | 3076.6 | 3097.9 | 3106.4 | 3119.1 | 3112.0 | 3046.9 | 2903.8 | 2604.9 | 2371.2 | 2202.7 |
| 47.5° | 2810.3 | 2828.7 | 2857.1 | 2908.1 | 2978.9 | 3035.6 | 3063.9 | 3010.1 | 2750.8 | 2494.5 | 2308.9 |
| 50°   | 2456.2 | 2476.0 | 2552.5 | 2658.8 | 2799.0 | 2909.5 | 3017.1 | 3089.4 | 2913.7 | 2644.6 | 2427.9 |
| 52.5° | 1966.1 | 2008.6 | 2137.5 | 2341.5 | 2582.3 | 2746.6 | 2918.0 | 3127.6 | 3079.5 | 2821.7 | 2569.5 |
| 55°   | 1495.8 | 1511.4 | 1677.1 | 1922.2 | 2293.3 | 2570.9 | 2782.0 | 3107.8 | 3235.3 | 3007.2 | 2731.0 |
| 57.5° | 1045.4 | 1062.4 | 1206.9 | 1474.6 | 1885.4 | 2341.5 | 2646.0 | 3041.2 | 3376.9 | 3225.4 | 2916.6 |
| 60°   | 742.2  | 760.7  | 868.3  | 1066.6 | 1464.7 | 2007.2 | 2519.9 | 2956.2 | 3500.2 | 3432.2 | 3130.5 |
| 62.5° | 539.7  | 549.6  | 606.3  | 773.4  | 1058.1 | 1569.5 | 2340.1 | 2901.0 | 3586.6 | 3647.5 | 3350.0 |
| 65°   | 413.6  | 423.5  | 456.1  | 560.9  | 781.9  | 1147.4 | 2017.1 | 2899.6 | 3609.2 | 3806.1 | 3539.8 |
| 67°   | 344.2  | 342.8  | 371.1  | 450.4  | 610.5  | 862.6  | 1684.2 | 2888.2 | 3583.7 | 3857.1 | 3636.2 |
| 67.5° | 325.8  | 331.5  | 354.1  | 420.7  | 576.5  | 794.7  | 1612.0 | 2869.8 | 3575.2 | 3855.7 | 3643.2 |
| 70°   | 259.2  | 260.6  | 280.5  | 332.9  | 433.4  | 576.5  | 1160.1 | 2688.5 | 3446.3 | 3716.9 | 3563.9 |
| 72.5° | 189.8  | 188.4  | 218.1  | 252.1  | 331.5  | 419.3  | 777.7  | 2257.9 | 3167.3 | 3293.4 | 3168.7 |
| 75°   | 140.2  | 138.8  | 154.4  | 192.6  | 236.6  | 313.0  | 504.3  | 1473.2 | 2144.6 | 2095.0 | 1934.9 |
| 77.5° | 93.5   | 96.3   | 110.5  | 141.6  | 168.6  | 194.1  | 252.1  | 678.5  | 1181.4 | 1068.0 | 1028.4 |
| 80°   | 56.7   | 52.4   | 62.3   | 80.7   | 97.7   | 99.2   | 107.7  | 293.2  | 507.1  | 483.0  | 453.3  |
| 82.5° | 19.8   | 19.8   | 24.1   | 32.6   | 32.6   | 32.6   | 39.7   | 70.8   | 100.6  | 92.1   | 87.8   |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 2.8    | 4.2    | 2.8    | 5.7    | 9.9    | 11.3   | 11.3   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.4    | 1.4    | 2.8    | 4.2    | 5.7    | 5.7    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 | 1031.2 |
| 2.5°  | 1035.5 | 1035.5 | 1031.2 | 1025.5 | 1022.7 | 1021.3 | 1017.0 | 1011.4 | 1015.6 | 1019.9 | 1019.9 |
| 5°    | 1049.6 | 1046.8 | 1038.3 | 1032.6 | 1028.4 | 1028.4 | 1022.7 | 1021.3 | 1025.5 | 1029.8 | 1028.4 |
| 7.5°  | 1072.3 | 1066.6 | 1056.7 | 1048.2 | 1049.6 | 1051.0 | 1042.5 | 1042.5 | 1046.8 | 1051.0 | 1051.0 |
| 10°   | 1103.5 | 1093.5 | 1083.6 | 1076.5 | 1078.0 | 1079.4 | 1070.9 | 1068.0 | 1072.3 | 1076.5 | 1079.4 |
| 12.5° | 1143.1 | 1130.4 | 1119.0 | 1112.0 | 1110.5 | 1112.0 | 1103.5 | 1100.6 | 1100.6 | 1103.5 | 1103.5 |
| 15°   | 1189.9 | 1175.7 | 1161.5 | 1151.6 | 1148.8 | 1147.4 | 1136.0 | 1126.1 | 1126.1 | 1127.5 | 1127.5 |
| 17.5° | 1243.7 | 1223.9 | 1205.4 | 1194.1 | 1187.0 | 1177.1 | 1164.4 | 1150.2 | 1145.9 | 1147.4 | 1147.4 |
| 20°   | 1297.5 | 1276.3 | 1252.2 | 1236.6 | 1222.4 | 1205.4 | 1185.6 | 1167.2 | 1158.7 | 1158.7 | 1157.3 |
| 22.5° | 1359.8 | 1331.5 | 1298.9 | 1277.7 | 1252.2 | 1223.9 | 1195.5 | 1171.4 | 1162.9 | 1160.1 | 1160.1 |
| 25°   | 1423.6 | 1391.0 | 1344.3 | 1311.7 | 1274.8 | 1233.8 | 1196.9 | 1164.4 | 1150.2 | 1144.5 | 1144.5 |
| 27.5° | 1488.7 | 1450.5 | 1389.6 | 1342.8 | 1289.0 | 1232.4 | 1182.8 | 1141.7 | 1121.9 | 1114.8 | 1112.0 |
| 30°   | 1562.4 | 1507.2 | 1429.2 | 1365.5 | 1291.8 | 1219.6 | 1155.9 | 1107.7 | 1078.0 | 1061.0 | 1062.4 |
| 32.5° | 1638.9 | 1569.5 | 1466.1 | 1379.7 | 1287.6 | 1195.5 | 1114.8 | 1053.9 | 1015.6 | 1000.0 | 994.4  |
| 35°   | 1716.8 | 1629.0 | 1498.7 | 1386.8 | 1273.4 | 1158.7 | 1062.4 | 994.4  | 951.9  | 929.2  | 929.2  |
| 37.5° | 1796.1 | 1691.3 | 1521.3 | 1385.3 | 1247.9 | 1110.5 | 1001.5 | 929.2  | 879.6  | 851.3  | 844.2  |
| 40°   | 1874.0 | 1749.4 | 1538.3 | 1374.0 | 1209.7 | 1052.5 | 936.3  | 858.4  | 791.8  | 755.0  | 749.3  |
| 42.5° | 1950.5 | 1797.5 | 1546.8 | 1355.6 | 1164.4 | 988.7  | 862.6  | 757.8  | 694.1  | 660.1  | 658.7  |
| 45°   | 2019.9 | 1835.8 | 1548.2 | 1331.5 | 1104.9 | 916.5  | 763.5  | 662.9  | 599.2  | 563.8  | 563.8  |
| 47.5° | 2087.9 | 1878.3 | 1546.8 | 1300.3 | 1039.7 | 823.0  | 658.7  | 560.9  | 502.9  | 480.2  | 473.1  |
| 50°   | 2170.1 | 1920.8 | 1545.4 | 1262.1 | 956.1  | 711.1  | 556.7  | 473.1  | 423.5  | 400.9  | 400.9  |
| 52.5° | 2253.6 | 1970.3 | 1548.2 | 1208.3 | 857.0  | 602.0  | 466.0  | 392.4  | 359.8  | 345.6  | 344.2  |
| 55°   | 2361.3 | 2022.8 | 1555.3 | 1144.5 | 753.6  | 495.8  | 388.1  | 338.5  | 315.9  | 308.8  | 310.2  |
| 57.5° | 2491.6 | 2095.0 | 1569.5 | 1069.5 | 633.2  | 406.5  | 332.9  | 306.0  | 300.3  | 303.1  | 304.5  |
| 60°   | 2640.4 | 2184.2 | 1589.3 | 984.5  | 526.9  | 338.5  | 300.3  | 294.6  | 300.3  | 311.6  | 313.0  |
| 62.5° | 2813.2 | 2291.9 | 1614.8 | 889.6  | 422.1  | 297.5  | 286.1  | 290.4  | 294.6  | 313.0  | 314.5  |
| 65°   | 2966.1 | 2408.0 | 1620.5 | 777.7  | 342.8  | 270.6  | 277.6  | 280.5  | 291.8  | 313.0  | 314.5  |
| 67°   | 3052.6 | 2487.4 | 1582.2 | 671.4  | 293.2  | 256.4  | 266.3  | 269.1  | 289.0  | 310.2  | 313.0  |
| 67.5° | 3062.5 | 2504.4 | 1556.7 | 644.5  | 283.3  | 253.6  | 263.5  | 269.1  | 289.0  | 310.2  | 311.6  |
| 70°   | 3032.7 | 2493.0 | 1386.8 | 485.9  | 233.7  | 233.7  | 245.1  | 257.8  | 277.6  | 300.3  | 310.2  |
| 72.5° | 2767.8 | 2273.5 | 1073.7 | 330.0  | 198.3  | 211.1  | 228.1  | 246.5  | 264.9  | 291.8  | 308.8  |
| 75°   | 1749.4 | 1463.2 | 657.3  | 221.0  | 165.7  | 188.4  | 215.3  | 236.6  | 252.1  | 272.0  | 283.3  |
| 77.5° | 934.9  | 723.8  | 283.3  | 130.3  | 130.3  | 167.1  | 199.7  | 219.6  | 228.1  | 235.1  | 242.2  |
| 80°   | 441.9  | 337.1  | 137.4  | 77.9   | 90.7   | 130.3  | 177.1  | 198.3  | 201.1  | 209.6  | 212.5  |
| 82.5° | 87.8   | 76.5   | 45.3   | 41.1   | 59.5   | 93.5   | 147.3  | 171.4  | 172.8  | 187.0  | 189.8  |
| 85°   | 11.3   | 9.9    | 7.1    | 15.6   | 38.2   | 69.4   | 113.3  | 147.3  | 150.1  | 150.1  | 147.3  |
| 87.5° | 5.7    | 4.2    | 4.2    | 11.3   | 28.3   | 52.4   | 93.5   | 123.2  | 124.7  | 97.7   | 94.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP3-2511-595-4

Test Date: 11/12/2025

Luminaire Tested: GKO-PB1C-830-U-T4W

Data in this report applies to families of products including GKO-PB1C-830\*

### Test Information

Test Method: LM-79-2019  
 Report Number: SP3-2511-595-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP3 - 3M SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/27/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1C-830-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 3087  
 CIE  $u'$ : 0.2477  
 CIE  $v'$ : 0.5192  
 Duv: -0.0003  
 CIE x: 0.4305  
 CIE y: 0.4010  
 CIE z: 0.1685  
 Peak Wavelength (nm): 601  
 Dominant Wavelength (nm): 582  
 Purity: 49.5752  
 Rf: 84.7  
 Rg: 94.9

CRI (Ra): 82.7  
 R1: 81.5  
 R2: 92.1  
 R3: 95.2  
 R4: 80.4  
 R5: 81.9  
 R6: 90.5  
 R7: 82.0  
 R8: 58.3  
 R9: 5.8  
 R10: 82.0  
 R11: 80.1  
 R12: 71.1  
 R13: 84.2  
 R14: 98.1  
 R15: 73.7



### Test Conditions

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP3-2511-595-4

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | 3M SPHERE IN02505     | 7/1/2025         | 1/1/2026             |
| Power Meter                    | XITRON INXT2011006    | 10/21/2025       | 10/21/2026           |
| AC Power Source                | CHROMA 61604 IN6064A  | 10/20/2025       | 10/20/2026           |
| DC Power Source                | EYSIGHT N5770A IN0534 | 10/20/2025       | 10/20/2026           |
| Sphere Thermometer             | TANDD IN4036E         | 10/21/2025       | 10/21/2026           |
|                                |                       |                  |                      |



REPORT NUMBER: SP3-2511-595-4

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 253                                  | NR                             | 620               | 915                                  | NR                             | 750               | 27                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 293                                  | NR                             | 625               | 864                                  | NR                             | 755               | 23                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 340                                  | NR                             | 630               | 809                                  | NR                             | 760               | 19                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 384                                  | NR                             | 635               | 748                                  | NR                             | 765               | 16                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 420                                  | NR                             | 640               | 684                                  | NR                             | 770               | 14                                   | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 450                                  | NR                             | 645               | 619                                  | NR                             | 775               | 12                                   | NR                             | 905               | 0                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 474                                  | NR                             | 650               | 556                                  | NR                             | 780               | 10                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 0                                    | NR                             | 525               | 495                                  | NR                             | 655               | 495                                  | NR                             | 785               | 9                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 2                                    | NR                             | 530               | 511                                  | NR                             | 660               | 437                                  | NR                             | 790               | 7                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 3                                    | NR                             | 535               | 531                                  | NR                             | 665               | 385                                  | NR                             | 795               | 6                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 6                                    | NR                             | 540               | 551                                  | NR                             | 670               | 336                                  | NR                             | 800               | 5                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 10                                   | NR                             | 545               | 578                                  | NR                             | 675               | 293                                  | NR                             | 805               | 5                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 19                                   | NR                             | 550               | 609                                  | NR                             | 680               | 253                                  | NR                             | 810               | 4                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 33                                   | NR                             | 555               | 642                                  | NR                             | 685               | 219                                  | NR                             | 815               | 3                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 58                                   | NR                             | 560               | 683                                  | NR                             | 690               | 187                                  | NR                             | 820               | 3                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 101                                  | NR                             | 565               | 730                                  | NR                             | 695               | 161                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 176                                  | NR                             | 570               | 776                                  | NR                             | 700               | 137                                  | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 329                                  | NR                             | 575               | 827                                  | NR                             | 705               | 117                                  | NR                             | 835               | 2                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 565                                  | NR                             | 580               | 876                                  | NR                             | 710               | 100                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 599                                  | NR                             | 585               | 919                                  | NR                             | 715               | 84                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 416                                  | NR                             | 590               | 958                                  | NR                             | 720               | 72                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 350                                  | NR                             | 595               | 985                                  | NR                             | 725               | 61                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 302                                  | NR                             | 600               | 998                                  | NR                             | 730               | 52                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 229                                  | NR                             | 605               | 998                                  | NR                             | 735               | 44                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 212                                  | NR                             | 610               | 982                                  | NR                             | 740               | 37                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 228                                  | NR                             | 615               | 955                                  | NR                             | 745               | 32                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



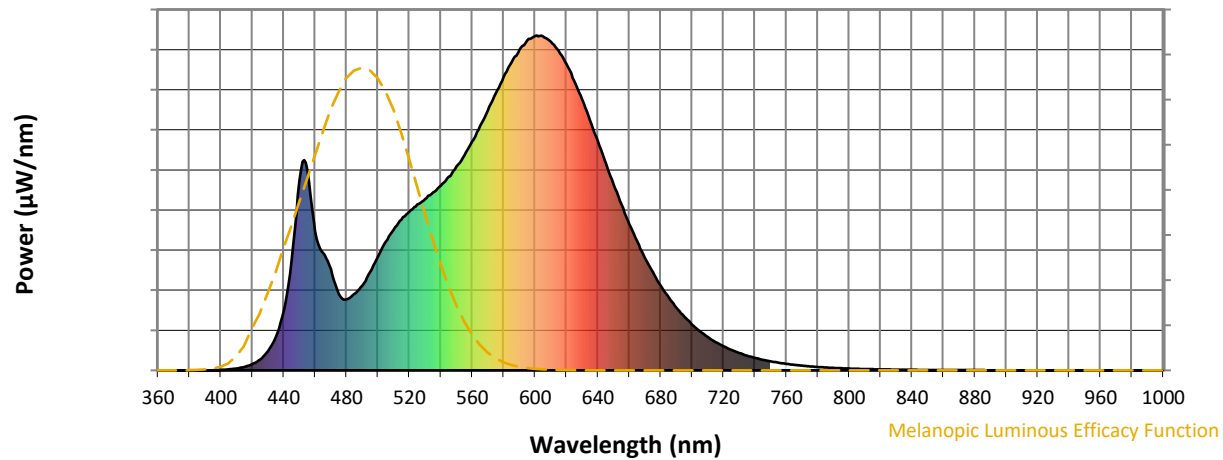
Scotopic Lumens: NR

S/P: 1.4

| 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    | 253                      | NR            | 620    | 915                      | NR            | 750    | 27                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 293                      | NR            | 625    | 864                      | NR            | 755    | 23                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 340                      | NR            | 630    | 809                      | NR            | 760    | 19                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 384                      | NR            | 635    | 748                      | NR            | 765    | 16                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 420                      | NR            | 640    | 684                      | NR            | 770    | 14                       | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 450                      | NR            | 645    | 619                      | NR            | 775    | 12                       | NR            | 905    | 0                        | NR            |
| 390    | 0                        | NR            | 520    | 474                      | NR            | 650    | 556                      | NR            | 780    | 10                       | NR            | 910    | 0                        | NR            |
| 395    | 0                        | NR            | 525    | 495                      | NR            | 655    | 495                      | NR            | 785    | 9                        | NR            | 915    | 0                        | NR            |
| 400    | 2                        | NR            | 530    | 511                      | NR            | 660    | 437                      | NR            | 790    | 7                        | NR            | 920    | 0                        | NR            |
| 405    | 3                        | NR            | 535    | 531                      | NR            | 665    | 385                      | NR            | 795    | 6                        | NR            | 925    | 0                        | NR            |
| 410    | 6                        | NR            | 540    | 551                      | NR            | 670    | 336                      | NR            | 800    | 5                        | NR            | 930    | 0                        | NR            |
| 415    | 10                       | NR            | 545    | 578                      | NR            | 675    | 293                      | NR            | 805    | 5                        | NR            | 935    | 0                        | NR            |
| 420    | 19                       | NR            | 550    | 609                      | NR            | 680    | 253                      | NR            | 810    | 4                        | NR            | 940    | 0                        | NR            |
| 425    | 33                       | NR            | 555    | 642                      | NR            | 685    | 219                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 58                       | NR            | 560    | 683                      | NR            | 690    | 187                      | NR            | 820    | 3                        | NR            | 950    | 0                        | NR            |
| 435    | 101                      | NR            | 565    | 730                      | NR            | 695    | 161                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 176                      | NR            | 570    | 776                      | NR            | 700    | 137                      | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 329                      | NR            | 575    | 827                      | NR            | 705    | 117                      | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 565                      | NR            | 580    | 876                      | NR            | 710    | 100                      | NR            | 840    | 2                        | NR            | 970    | 0                        | NR            |
| 455    | 599                      | NR            | 585    | 919                      | NR            | 715    | 84                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 416                      | NR            | 590    | 958                      | NR            | 720    | 72                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 350                      | NR            | 595    | 985                      | NR            | 725    | 61                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 302                      | NR            | 600    | 998                      | NR            | 730    | 52                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 229                      | NR            | 605    | 998                      | NR            | 735    | 44                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 212                      | NR            | 610    | 982                      | NR            | 740    | 37                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 228                      | NR            | 615    | 955                      | NR            | 745    | 32                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.74

| 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       | 253                         | NR               | 620       | 915                         | NR               | 750       | 27                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 293                         | NR               | 625       | 864                         | NR               | 755       | 23                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 340                         | NR               | 630       | 809                         | NR               | 760       | 19                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 384                         | NR               | 635       | 748                         | NR               | 765       | 16                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 420                         | NR               | 640       | 684                         | NR               | 770       | 14                          | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 450                         | NR               | 645       | 619                         | NR               | 775       | 12                          | NR               | 905       | 0                           | NR               |
| 390       | 0                           | NR               | 520       | 474                         | NR               | 650       | 556                         | NR               | 780       | 10                          | NR               | 910       | 0                           | NR               |
| 395       | 0                           | NR               | 525       | 495                         | NR               | 655       | 495                         | NR               | 785       | 9                           | NR               | 915       | 0                           | NR               |
| 400       | 2                           | NR               | 530       | 511                         | NR               | 660       | 437                         | NR               | 790       | 7                           | NR               | 920       | 0                           | NR               |
| 405       | 3                           | NR               | 535       | 531                         | NR               | 665       | 385                         | NR               | 795       | 6                           | NR               | 925       | 0                           | NR               |
| 410       | 6                           | NR               | 540       | 551                         | NR               | 670       | 336                         | NR               | 800       | 5                           | NR               | 930       | 0                           | NR               |
| 415       | 10                          | NR               | 545       | 578                         | NR               | 675       | 293                         | NR               | 805       | 5                           | NR               | 935       | 0                           | NR               |
| 420       | 19                          | NR               | 550       | 609                         | NR               | 680       | 253                         | NR               | 810       | 4                           | NR               | 940       | 0                           | NR               |
| 425       | 33                          | NR               | 555       | 642                         | NR               | 685       | 219                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 58                          | NR               | 560       | 683                         | NR               | 690       | 187                         | NR               | 820       | 3                           | NR               | 950       | 0                           | NR               |
| 435       | 101                         | NR               | 565       | 730                         | NR               | 695       | 161                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 176                         | NR               | 570       | 776                         | NR               | 700       | 137                         | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 329                         | NR               | 575       | 827                         | NR               | 705       | 117                         | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 565                         | NR               | 580       | 876                         | NR               | 710       | 100                         | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 599                         | NR               | 585       | 919                         | NR               | 715       | 84                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 416                         | NR               | 590       | 958                         | NR               | 720       | 72                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 350                         | NR               | 595       | 985                         | NR               | 725       | 61                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 302                         | NR               | 600       | 998                         | NR               | 730       | 52                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 229                         | NR               | 605       | 998                         | NR               | 735       | 44                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 212                         | NR               | 610       | 982                         | NR               | 740       | 37                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 228                         | NR               | 615       | 955                         | NR               | 745       | 32                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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TM-30-18

### Summary

$R_f = 84.7$   
 $R_g = 94.9$   
 $CIE R_a = 82.7$   
 $R_9 = 5.8$

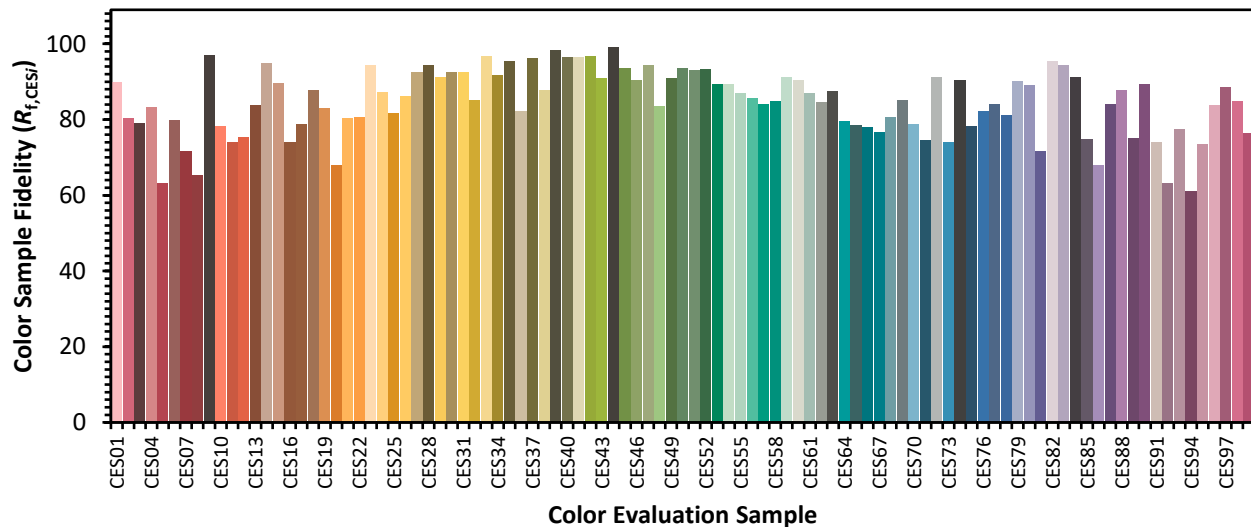


### Color Vector Graphics

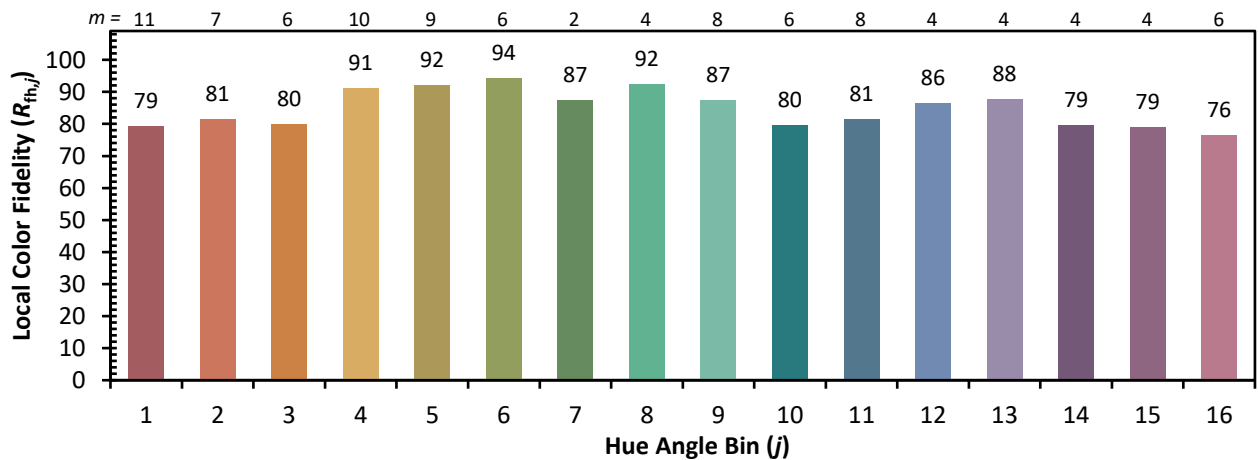
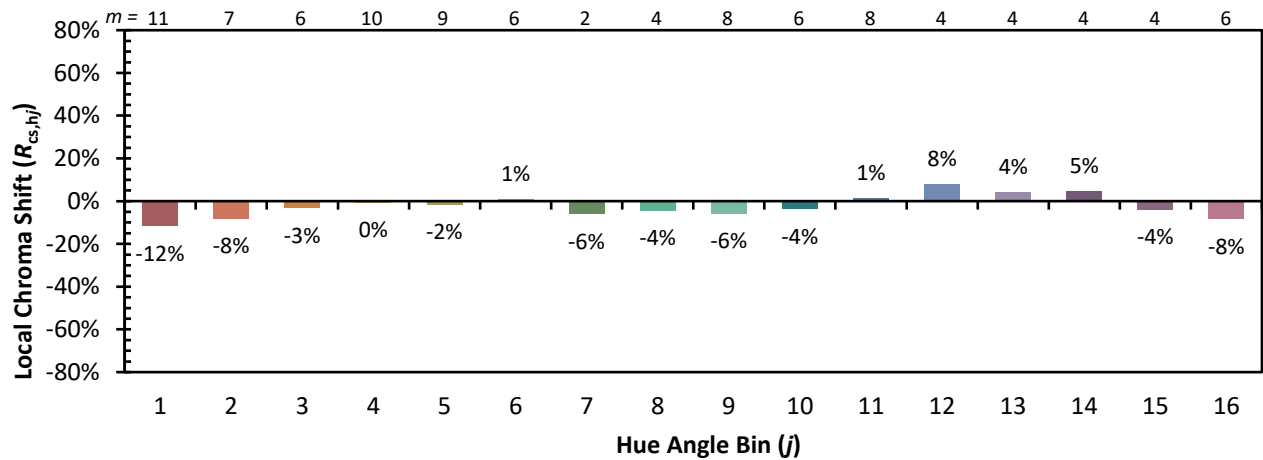


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 86 | CES51 = 93 | CES76 = 82 |
| CES02 = 63 | CES27 = 93 | CES52 = 93 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 70 | CES29 = 91 | CES54 = 89 | CES79 = 90 |
| CES05 = 49 | CES30 = 93 | CES55 = 87 | CES80 = 89 |
| CES06 = 51 | CES31 = 93 | CES56 = 86 | CES81 = 72 |
| CES07 = 42 | CES32 = 85 | CES57 = 84 | CES82 = 95 |
| CES08 = 41 | CES33 = 97 | CES58 = 85 | CES83 = 94 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 91 |
| CES10 = 76 | CES35 = 95 | CES60 = 90 | CES85 = 75 |
| CES11 = 59 | CES36 = 82 | CES61 = 87 | CES86 = 68 |
| CES12 = 65 | CES37 = 96 | CES62 = 85 | CES87 = 84 |
| CES13 = 43 | CES38 = 88 | CES63 = 87 | CES88 = 88 |
| CES14 = 74 | CES39 = 98 | CES64 = 80 | CES89 = 75 |
| CES15 = 72 | CES40 = 96 | CES65 = 79 | CES90 = 89 |
| CES16 = 47 | CES41 = 96 | CES66 = 78 | CES91 = 74 |
| CES17 = 50 | CES42 = 97 | CES67 = 77 | CES92 = 63 |
| CES18 = 56 | CES43 = 91 | CES68 = 81 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 85 | CES94 = 61 |
| CES20 = 66 | CES45 = 93 | CES70 = 79 | CES95 = 74 |
| CES21 = 87 | CES46 = 90 | CES71 = 75 | CES96 = 84 |
| CES22 = 79 | CES47 = 94 | CES72 = 91 | CES97 = 89 |
| CES23 = 92 | CES48 = 84 | CES73 = 74 | CES98 = 85 |
| CES24 = 91 | CES49 = 91 | CES74 = 90 | CES99 = 77 |
| CES25 = 72 | CES50 = 93 | CES75 = 78 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)