

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: P1211822

Luminaire Tested: **GKO-PB1E-735-U-T3**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1211822  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB1E-735-U-T3  
Description: GEKKO WALL PACK 5000LM PACKAGE 70CRI 3500K FIXTURE w/ TYPE III DISTRIBUTION OPTIC  
Light Source: (10) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

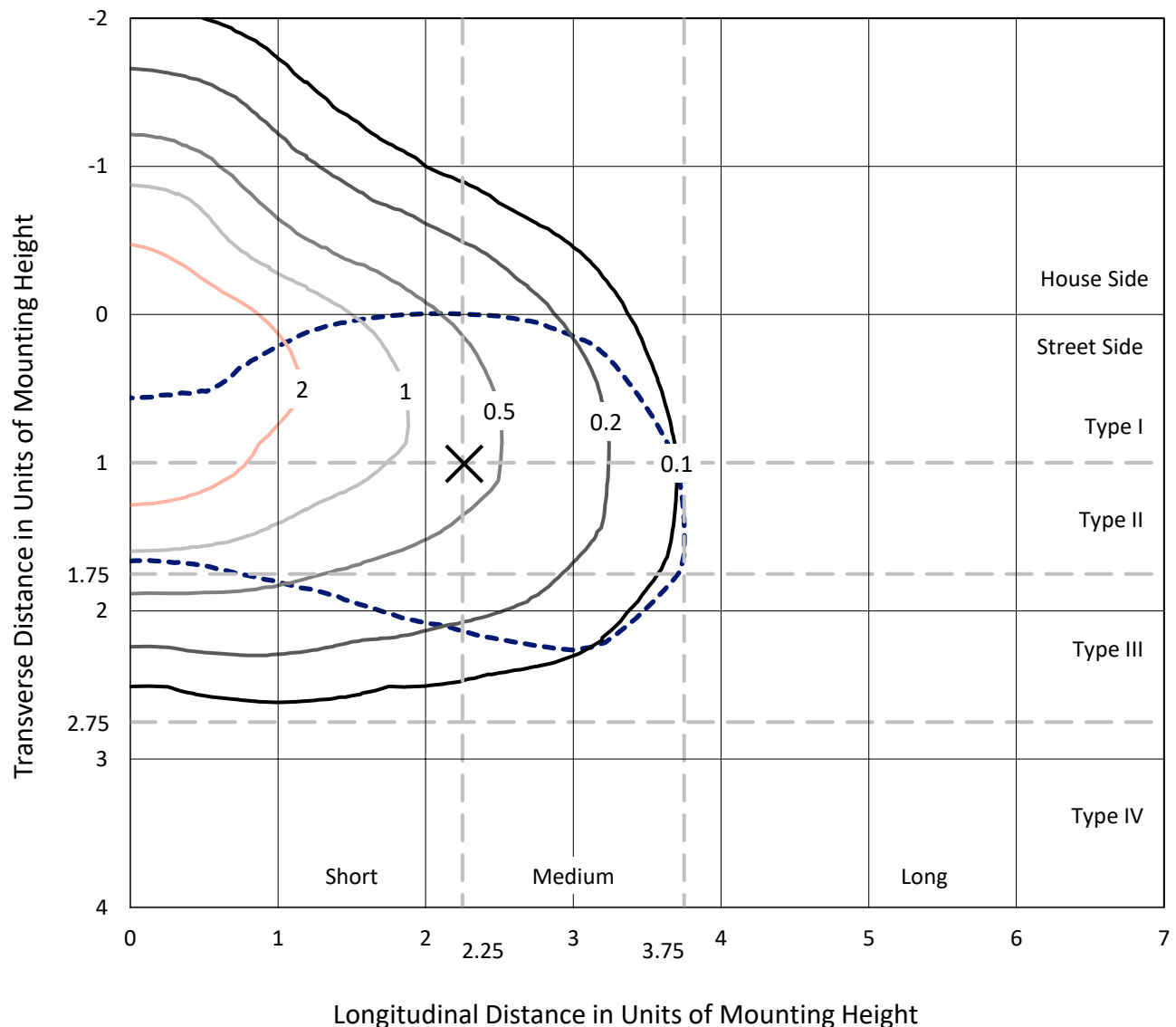
Lumens per Lamp: N/A  
Luminaire Lumens: 4930.5 lumens  
Efficiency: N/A  
Efficacy: 127.4 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G1

Input Watts (W): 38.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 9%  
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

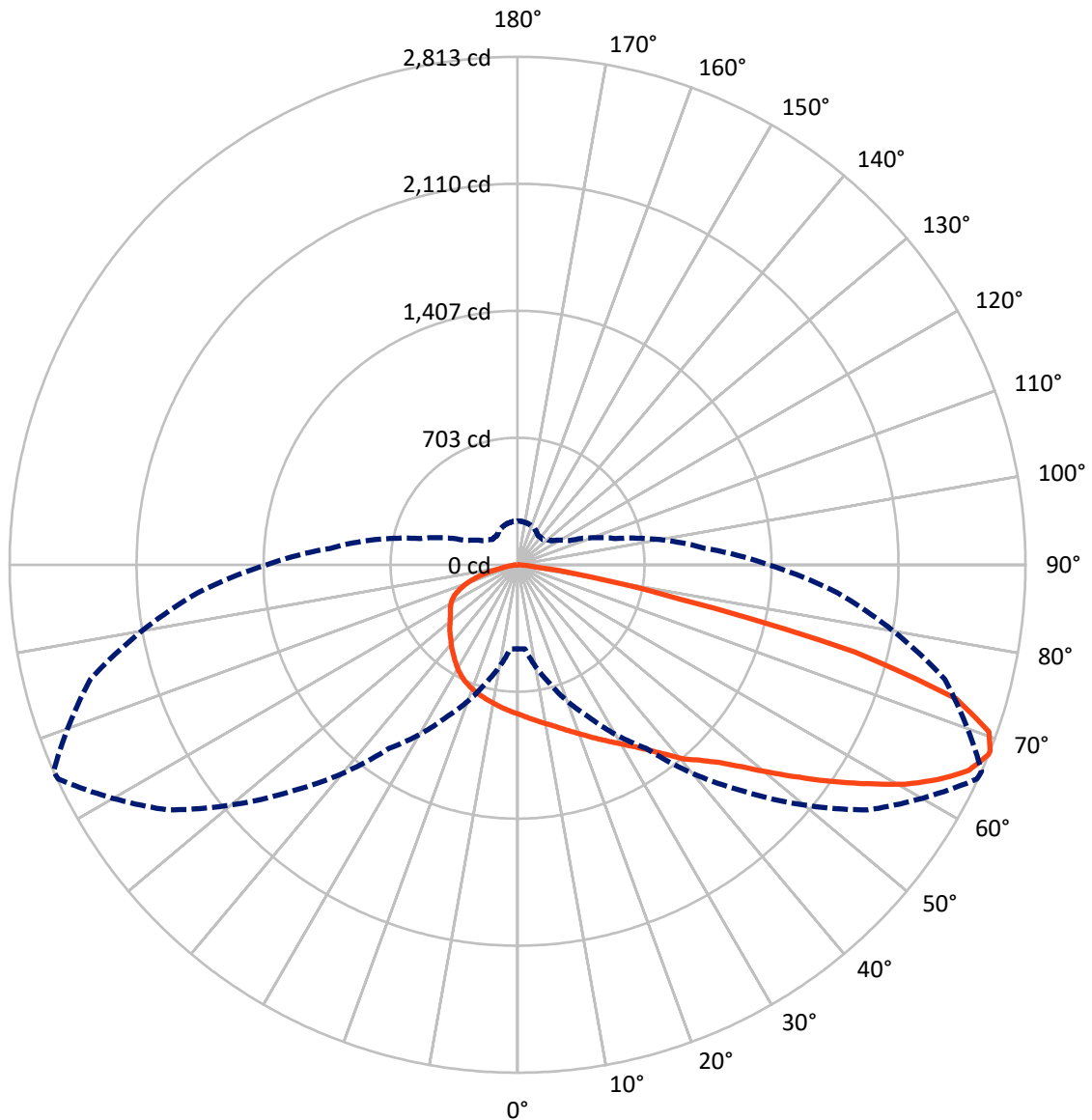
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 4.2 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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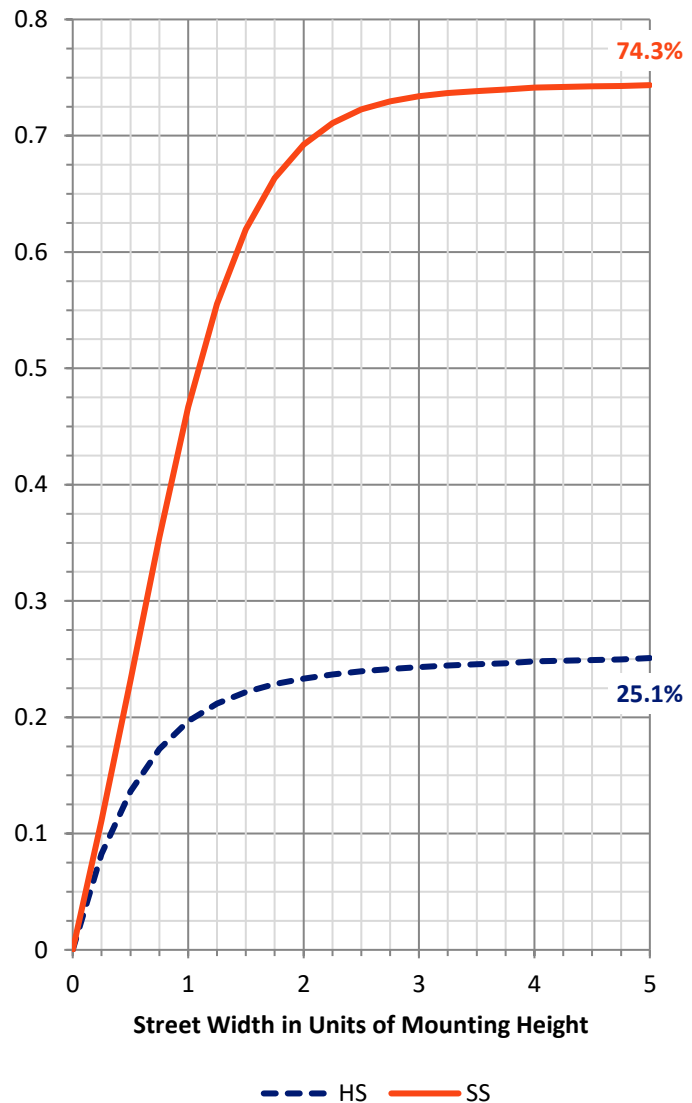
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1262.3   | 0.0    | 1262.3 |
|                    | % Fixture | 25.6     | 0.0    | 25.6   |
| <b>Street Side</b> | Lumens    | 3668.2   | 0.0    | 3668.2 |
|                    | % Fixture | 74.4     | 0.0    | 74.4   |
| <b>Total</b>       | Lumens    | 4930.5   | 0.0    | 4930.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 79.3   | 1.6       |
| 10°-20°   | 238.5  | 4.8       |
| 20°-30°   | 410.9  | 8.3       |
| 30°-40°   | 637.4  | 12.9      |
| 40°-50°   | 873.2  | 17.7      |
| 50°-60°   | 1041.7 | 21.1      |
| 60°-70°   | 1043.8 | 21.2      |
| 70°-80°   | 552.4  | 11.2      |
| 80°-90°   | 53.3   | 1.1       |
| 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°    | 4930.5 | 100.0     |
| 0°-180°   | 4930.5 | 100.0     |



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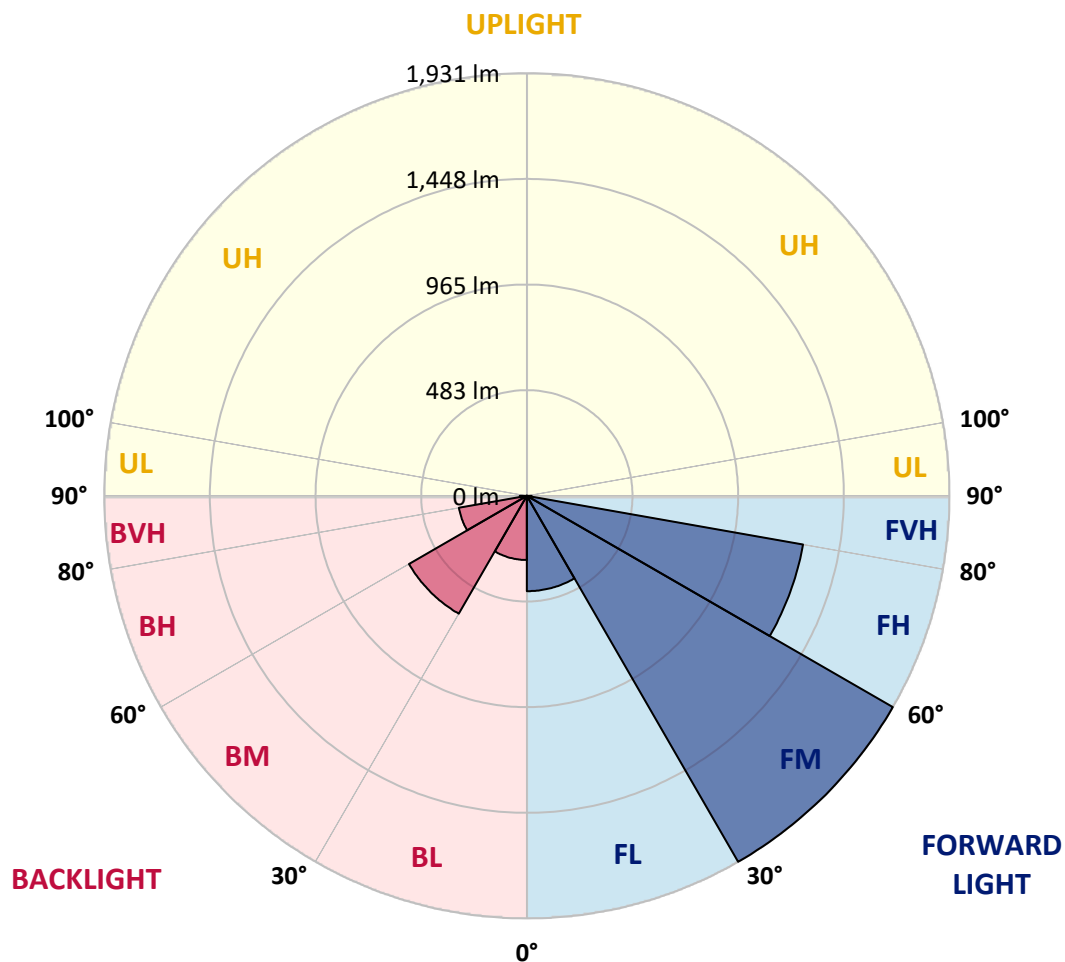
CATALOG NUMBER: GKO-PB1E-735-U-T3

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 435.5  | 8.8       |                         |      |         |
| FM   | (30°-60°)   | 1930.5 | 39.2      |                         |      |         |
| FH   | (60°-80°)   | 1281.2 | 26.0      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 21.0   | 0.4       |                         |      | G1/100  |
| BL   | (0°-30°)    | 293.2  | 5.9       | B1/500                  |      |         |
| BM   | (30°-60°)   | 621.8  | 12.6      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 314.9  | 6.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 32.4   | 0.7       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 66°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  | 826.9  |
| 2.5°  | 861.4  | 861.4  | 859.5  | 858.5  | 857.6  | 851.8  | 848.0  | 843.2  | 843.2  | 835.6  | 828.9  |
| 5°    | 891.1  | 892.0  | 888.2  | 888.2  | 884.4  | 876.7  | 869.1  | 859.5  | 859.5  | 848.0  | 834.6  |
| 7.5°  | 916.9  | 919.8  | 916.0  | 916.0  | 912.1  | 903.5  | 891.1  | 877.7  | 877.7  | 861.4  | 842.3  |
| 10°   | 941.8  | 943.7  | 941.8  | 943.7  | 938.0  | 930.3  | 916.0  | 897.8  | 896.8  | 876.7  | 849.9  |
| 12.5° | 961.9  | 963.8  | 964.8  | 967.6  | 962.9  | 957.1  | 943.7  | 920.7  | 917.9  | 893.9  | 859.5  |
| 15°   | 981.0  | 983.0  | 985.8  | 989.7  | 988.7  | 983.9  | 971.5  | 945.6  | 943.7  | 913.1  | 871.9  |
| 17.5° | 996.4  | 997.3  | 1003.1 | 1010.7 | 1012.6 | 1013.6 | 1000.2 | 973.4  | 971.5  | 935.1  | 885.3  |
| 20°   | 1018.4 | 1020.3 | 1026.0 | 1033.7 | 1039.4 | 1043.3 | 1032.7 | 1003.1 | 1001.1 | 960.9  | 902.6  |
| 22.5° | 1068.1 | 1065.3 | 1068.1 | 1068.1 | 1071.0 | 1076.8 | 1069.1 | 1039.4 | 1035.6 | 991.6  | 923.6  |
| 25°   | 1161.9 | 1159.1 | 1151.4 | 1134.2 | 1115.0 | 1114.1 | 1105.5 | 1076.8 | 1072.0 | 1023.2 | 943.7  |
| 27.5° | 1293.1 | 1286.4 | 1272.0 | 1235.6 | 1189.7 | 1160.0 | 1146.6 | 1117.0 | 1111.2 | 1054.7 | 962.9  |
| 30°   | 1431.8 | 1439.5 | 1415.6 | 1365.8 | 1281.6 | 1218.4 | 1192.6 | 1159.1 | 1154.3 | 1090.2 | 985.8  |
| 32.5° | 1593.6 | 1594.6 | 1570.6 | 1501.7 | 1392.6 | 1292.1 | 1248.1 | 1206.9 | 1203.1 | 1131.3 | 1016.5 |
| 35°   | 1687.4 | 1691.2 | 1680.7 | 1616.6 | 1492.1 | 1373.5 | 1315.1 | 1265.3 | 1262.4 | 1183.0 | 1054.7 |
| 37.5° | 1785.0 | 1793.6 | 1777.4 | 1706.5 | 1567.8 | 1449.1 | 1389.7 | 1335.2 | 1332.3 | 1242.3 | 1102.6 |
| 40°   | 1929.5 | 1925.7 | 1908.5 | 1804.2 | 1638.6 | 1512.2 | 1463.4 | 1420.4 | 1413.7 | 1315.1 | 1151.4 |
| 42.5° | 2033.9 | 2043.4 | 2006.1 | 1888.4 | 1716.1 | 1575.4 | 1537.1 | 1488.3 | 1479.7 | 1359.1 | 1180.1 |
| 45°   | 2069.3 | 2060.7 | 2019.5 | 1933.4 | 1817.6 | 1632.8 | 1607.0 | 1569.7 | 1561.1 | 1436.6 | 1236.6 |
| 47.5° | 2076.9 | 2061.6 | 2025.3 | 1960.2 | 1903.7 | 1707.5 | 1692.2 | 1683.6 | 1671.1 | 1534.3 | 1304.6 |
| 50°   | 2030.0 | 2019.5 | 2002.3 | 1969.7 | 1959.2 | 1777.4 | 1785.0 | 1816.6 | 1806.1 | 1639.5 | 1380.2 |
| 52.5° | 1923.8 | 1919.0 | 1934.3 | 1955.4 | 1927.6 | 1837.7 | 1895.1 | 1959.2 | 1955.4 | 1755.4 | 1461.5 |
| 55°   | 1723.8 | 1723.8 | 1809.9 | 1883.6 | 1899.9 | 1876.9 | 2013.8 | 2123.8 | 2119.1 | 1885.5 | 1539.0 |
| 57.5° | 1541.0 | 1543.8 | 1615.6 | 1781.2 | 1850.1 | 1919.0 | 2145.9 | 2296.1 | 2288.5 | 2032.0 | 1620.4 |
| 60°   | 1310.3 | 1310.3 | 1419.4 | 1627.1 | 1778.3 | 1951.6 | 2262.6 | 2462.7 | 2467.4 | 2173.6 | 1700.8 |
| 62.5° | 1037.5 | 1040.4 | 1191.6 | 1435.7 | 1675.0 | 1957.3 | 2355.5 | 2619.6 | 2618.7 | 2301.9 | 1763.0 |
| 65°   | 764.7  | 765.7  | 971.5  | 1223.2 | 1519.9 | 1917.1 | 2406.2 | 2740.2 | 2746.0 | 2403.3 | 1799.4 |
| 67.5° | 496.7  | 506.3  | 715.0  | 992.5  | 1300.7 | 1803.2 | 2379.4 | 2804.4 | 2811.1 | 2450.2 | 1787.9 |
| 68°   | 465.2  | 467.1  | 676.7  | 929.4  | 1241.4 | 1774.5 | 2367.0 | 2807.2 | 2813.0 | 2449.3 | 1776.4 |
| 70°   | 301.5  | 301.5  | 484.3  | 725.5  | 990.6  | 1595.5 | 2258.8 | 2762.2 | 2768.9 | 2407.1 | 1693.1 |
| 72.5° | 162.7  | 165.6  | 276.6  | 439.3  | 676.7  | 1234.7 | 2038.7 | 2527.7 | 2539.2 | 2176.5 | 1480.7 |
| 75°   | 113.9  | 115.8  | 160.8  | 246.0  | 368.5  | 804.0  | 1593.6 | 1931.5 | 1929.5 | 1503.6 | 927.4  |
| 77.5° | 82.3   | 82.3   | 91.9   | 153.1  | 193.3  | 367.5  | 788.7  | 930.3  | 919.8  | 734.1  | 468.0  |
| 80°   | 53.6   | 53.6   | 57.4   | 80.4   | 92.8   | 112.0  | 241.2  | 402.9  | 410.6  | 358.0  | 233.5  |
| 82.5° | 22.0   | 23.0   | 24.9   | 32.5   | 33.5   | 46.9   | 68.9   | 115.8  | 112.0  | 90.9   | 66.0   |
| 85°   | 2.9    | 2.9    | 3.8    | 4.8    | 5.7    | 10.5   | 9.6    | 9.6    | 9.6    | 11.5   | 10.5   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.0    | 1.9    | 2.9    | 2.9    | 3.8    | 2.9    |
| 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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CATALOG NUMBER: GKO-PB1E-735-U-T3

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 826.9  | 826.9  | 826.9 | 826.9 | 826.9 | 826.9 | 826.9 | 826.9 | 826.9 | 826.9 | 826.9 |
| 2.5°  | 826.9  | 826.9  | 821.2 | 815.5 | 809.7 | 804.9 | 798.2 | 793.4 | 794.4 | 797.3 | 796.3 |
| 5°    | 831.7  | 826.9  | 815.5 | 803.0 | 793.4 | 784.8 | 772.4 | 765.7 | 764.7 | 766.7 | 765.7 |
| 7.5°  | 834.6  | 826.9  | 809.7 | 790.6 | 775.3 | 763.8 | 746.6 | 739.9 | 737.0 | 737.9 | 737.9 |
| 10°   | 840.3  | 827.9  | 804.0 | 777.2 | 758.0 | 741.8 | 723.6 | 714.0 | 711.1 | 711.1 | 710.2 |
| 12.5° | 847.0  | 829.8  | 798.2 | 765.7 | 740.8 | 721.7 | 700.6 | 690.1 | 687.2 | 687.2 | 686.3 |
| 15°   | 853.7  | 832.7  | 792.5 | 753.3 | 724.5 | 701.6 | 681.5 | 669.0 | 665.2 | 665.2 | 667.1 |
| 17.5° | 862.4  | 835.6  | 786.8 | 741.8 | 707.3 | 681.5 | 660.4 | 648.0 | 643.2 | 646.1 | 648.0 |
| 20°   | 871.0  | 841.3  | 781.0 | 729.3 | 690.1 | 663.3 | 642.2 | 629.8 | 625.0 | 629.8 | 630.7 |
| 22.5° | 883.4  | 846.1  | 774.3 | 715.0 | 672.9 | 643.2 | 624.0 | 612.6 | 609.7 | 614.5 | 618.3 |
| 25°   | 895.9  | 851.8  | 765.7 | 699.7 | 650.8 | 622.1 | 606.8 | 598.2 | 599.2 | 605.9 | 609.7 |
| 27.5° | 909.3  | 856.6  | 757.1 | 680.5 | 626.9 | 600.1 | 588.6 | 586.7 | 590.5 | 598.2 | 603.0 |
| 30°   | 925.5  | 863.3  | 745.6 | 658.5 | 600.1 | 576.2 | 571.4 | 577.1 | 583.8 | 591.5 | 596.3 |
| 32.5° | 946.6  | 871.9  | 734.1 | 633.6 | 572.4 | 550.3 | 558.0 | 570.4 | 578.1 | 585.8 | 590.5 |
| 35°   | 976.3  | 889.2  | 727.4 | 608.7 | 542.7 | 528.3 | 545.6 | 565.7 | 571.4 | 576.2 | 581.9 |
| 37.5° | 1010.7 | 912.1  | 724.5 | 585.8 | 515.9 | 509.2 | 533.1 | 557.0 | 559.0 | 560.9 | 566.6 |
| 40°   | 1044.2 | 929.4  | 716.9 | 560.9 | 488.1 | 488.1 | 517.8 | 540.8 | 539.8 | 536.9 | 540.8 |
| 42.5° | 1057.6 | 927.4  | 694.9 | 536.9 | 466.1 | 467.1 | 493.9 | 515.9 | 510.1 | 510.1 | 515.9 |
| 45°   | 1095.9 | 942.8  | 678.6 | 517.8 | 446.0 | 442.2 | 463.2 | 480.5 | 490.0 | 502.5 | 508.2 |
| 47.5° | 1144.7 | 963.8  | 666.2 | 495.8 | 426.9 | 414.4 | 425.9 | 454.6 | 470.9 | 484.3 | 489.1 |
| 50°   | 1195.4 | 987.7  | 654.7 | 472.8 | 407.7 | 382.8 | 388.6 | 420.2 | 434.5 | 441.2 | 444.1 |
| 52.5° | 1247.1 | 1009.8 | 646.1 | 453.7 | 385.7 | 345.5 | 358.0 | 387.6 | 398.2 | 402.0 | 403.9 |
| 55°   | 1293.1 | 1027.9 | 638.4 | 437.4 | 360.8 | 315.8 | 325.4 | 356.0 | 363.7 | 367.5 | 370.4 |
| 57.5° | 1341.9 | 1048.0 | 633.6 | 422.1 | 333.1 | 290.0 | 296.7 | 324.5 | 335.0 | 338.8 | 341.7 |
| 60°   | 1384.9 | 1067.2 | 629.8 | 405.8 | 307.2 | 267.0 | 270.9 | 297.7 | 309.1 | 311.1 | 313.9 |
| 62.5° | 1413.7 | 1079.6 | 624.0 | 385.7 | 283.3 | 245.0 | 246.0 | 271.8 | 284.3 | 286.2 | 288.1 |
| 65°   | 1421.3 | 1076.8 | 606.8 | 358.9 | 259.4 | 223.0 | 223.0 | 247.9 | 261.3 | 268.0 | 270.9 |
| 67.5° | 1398.3 | 1052.8 | 570.4 | 324.5 | 236.4 | 202.9 | 202.9 | 224.9 | 239.3 | 246.9 | 249.8 |
| 68°   | 1390.7 | 1042.3 | 559.0 | 315.8 | 230.7 | 198.1 | 198.1 | 221.1 | 234.5 | 241.2 | 243.1 |
| 70°   | 1325.6 | 990.6  | 506.3 | 283.3 | 212.5 | 183.8 | 183.8 | 203.9 | 218.2 | 218.2 | 217.3 |
| 72.5° | 1151.4 | 858.5  | 416.3 | 237.4 | 185.7 | 162.7 | 165.6 | 184.7 | 189.5 | 194.3 | 193.3 |
| 75°   | 713.1  | 514.0  | 279.5 | 187.6 | 156.0 | 142.6 | 148.4 | 165.6 | 168.5 | 179.0 | 176.1 |
| 77.5° | 357.0  | 251.7  | 148.4 | 109.1 | 120.6 | 122.5 | 133.0 | 145.5 | 154.1 | 165.6 | 157.9 |
| 80°   | 176.1  | 122.5  | 87.1  | 68.0  | 70.8  | 90.0  | 115.8 | 125.4 | 140.7 | 148.4 | 141.7 |
| 82.5° | 48.8   | 37.3   | 35.4  | 37.3  | 52.6  | 69.9  | 90.9  | 111.0 | 131.1 | 137.8 | 128.3 |
| 85°   | 8.6    | 6.7    | 5.7   | 18.2  | 36.4  | 51.7  | 73.7  | 98.6  | 117.7 | 112.9 | 106.2 |
| 87.5° | 2.9    | 1.9    | 1.9   | 11.5  | 26.8  | 42.1  | 63.2  | 88.1  | 100.5 | 90.9  | 81.4  |
| 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: SP1-2511-595-2

Test Date: 01/09/2026

Luminaire Tested: GKO-PB1C-735-U-T4W

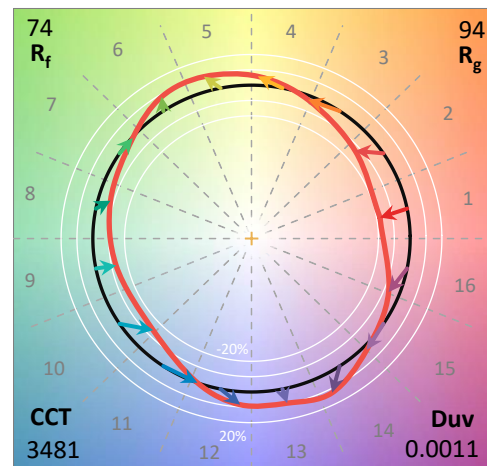
Data in this report applies to families of products including GKO-PB1C

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2511-595-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/09/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1C-735-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

|                           |         |           |      |      |       |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K):                  | 3481    | CRI (Ra): | 71.1 |      |       |
| CIE u':                   | 0.2357  | R1:       | 67.5 | R9:  | -37.9 |
| CIE v':                   | 0.5131  | R2:       | 79.5 | R10: | 52.4  |
| Duv:                      | 0.0011  | R3:       | 90.0 | R11: | 64.5  |
| CIE x:                    | 0.4076  | R4:       | 69.0 | R12: | 43.0  |
| CIE y:                    | 0.3944  | R5:       | 67.0 | R13: | 69.5  |
| CIE z:                    | 0.1981  | R6:       | 71.2 | R14: | 94.3  |
| Peak Wavelength (nm):     | 589     | R7:       | 78.9 | R15: | 59.3  |
| Dominant Wavelength (nm): | 580     | R8:       | 45.9 |      |       |
| Purity:                   | 40.6853 |           |      |      |       |
| Rf:                       | 73.8    |           |      |      |       |
| Rg:                       | 93.8    |           |      |      |       |



### Test Conditions

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.1

REPORT NUMBER: SP1-2511-595-2

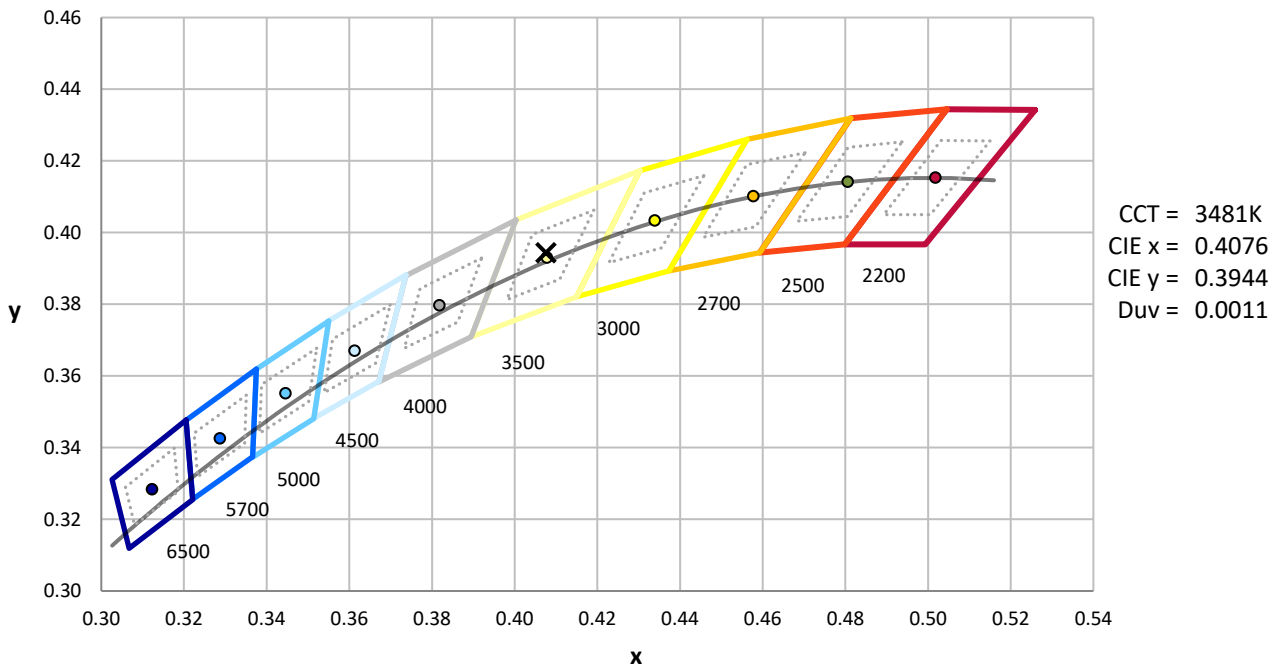
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3500K 4-step quadrangle

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### Photopic Flux vs. Wavelength

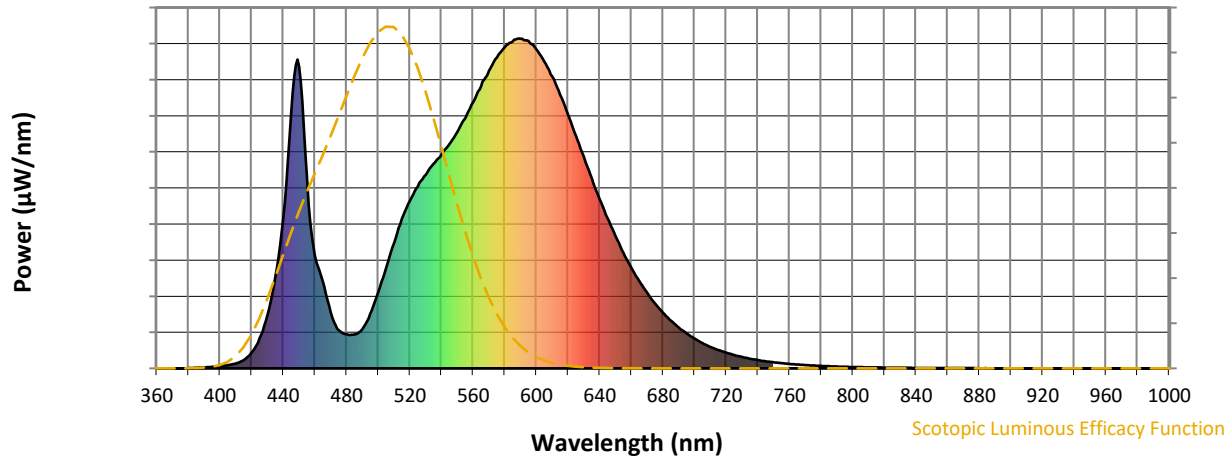


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 119                         | NR               | 620       | 771                         | NR               | 750       | 19                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 165                         | NR               | 625       | 705                         | NR               | 755       | 16                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 641                         | NR               | 760       | 14                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 305                         | NR               | 635       | 575                         | NR               | 765       | 12                          | NR               | 895       | 0                           | NR               |
| 380       | 1                           | NR               | 510       | 380                         | NR               | 640       | 513                         | NR               | 770       | 10                          | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 453                         | NR               | 645       | 455                         | NR               | 775       | 9                           | NR               | 905       | 0                           | NR               |
| 390       | 3                           | NR               | 520       | 507                         | NR               | 650       | 401                         | NR               | 780       | 7                           | NR               | 910       | 0                           | NR               |
| 395       | 5                           | NR               | 525       | 551                         | NR               | 655       | 351                         | NR               | 785       | 6                           | NR               | 915       | 0                           | NR               |
| 400       | 7                           | NR               | 530       | 587                         | NR               | 660       | 305                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 10                          | NR               | 535       | 620                         | NR               | 665       | 265                         | NR               | 795       | 5                           | NR               | 925       | 0                           | NR               |
| 410       | 15                          | NR               | 540       | 648                         | NR               | 670       | 229                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 25                          | NR               | 545       | 680                         | NR               | 675       | 197                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 48                          | NR               | 550       | 716                         | NR               | 680       | 169                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 90                          | NR               | 555       | 757                         | NR               | 685       | 145                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 161                         | NR               | 560       | 807                         | NR               | 690       | 124                         | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 279                         | NR               | 565       | 856                         | NR               | 695       | 106                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 460                         | NR               | 570       | 901                         | NR               | 700       | 90                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 771                         | NR               | 575       | 942                         | NR               | 705       | 77                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 915                         | NR               | 580       | 974                         | NR               | 710       | 65                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 572                         | NR               | 585       | 991                         | NR               | 715       | 56                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 342                         | NR               | 590       | 999                         | NR               | 720       | 48                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 264                         | NR               | 595       | 992                         | NR               | 725       | 40                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 169                         | NR               | 600       | 966                         | NR               | 730       | 35                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 115                         | NR               | 605       | 931                         | NR               | 735       | 29                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 103                         | NR               | 610       | 885                         | NR               | 740       | 25                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 103                         | NR               | 615       | 829                         | NR               | 745       | 21                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.36

| 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    | 119                      | NR            | 620    | 771                      | NR            | 750    | 19                       | NR            | 880    | 1                        | NR            |
| 365    | 0                        | NR            | 495    | 165                      | NR            | 625    | 705                      | NR            | 755    | 16                       | NR            | 885    | 1                        | NR            |
| 370    | 0                        | NR            | 500    | 230                      | NR            | 630    | 641                      | NR            | 760    | 14                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 305                      | NR            | 635    | 575                      | NR            | 765    | 12                       | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 380                      | NR            | 640    | 513                      | NR            | 770    | 10                       | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 453                      | NR            | 645    | 455                      | NR            | 775    | 9                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 507                      | NR            | 650    | 401                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 5                        | NR            | 525    | 551                      | NR            | 655    | 351                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 7                        | NR            | 530    | 587                      | NR            | 660    | 305                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 10                       | NR            | 535    | 620                      | NR            | 665    | 265                      | NR            | 795    | 5                        | NR            | 925    | 0                        | NR            |
| 410    | 15                       | NR            | 540    | 648                      | NR            | 670    | 229                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 25                       | NR            | 545    | 680                      | NR            | 675    | 197                      | NR            | 805    | 4                        | NR            | 935    | 0                        | NR            |
| 420    | 48                       | NR            | 550    | 716                      | NR            | 680    | 169                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 90                       | NR            | 555    | 757                      | NR            | 685    | 145                      | NR            | 815    | 3                        | NR            | 945    | 0                        | NR            |
| 430    | 161                      | NR            | 560    | 807                      | NR            | 690    | 124                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 279                      | NR            | 565    | 856                      | NR            | 695    | 106                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 460                      | NR            | 570    | 901                      | NR            | 700    | 90                       | NR            | 830    | 2                        | NR            | 960    | 0                        | NR            |
| 445    | 771                      | NR            | 575    | 942                      | NR            | 705    | 77                       | NR            | 835    | 2                        | NR            | 965    | 0                        | NR            |
| 450    | 915                      | NR            | 580    | 974                      | NR            | 710    | 65                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 572                      | NR            | 585    | 991                      | NR            | 715    | 56                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 342                      | NR            | 590    | 999                      | NR            | 720    | 48                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 264                      | NR            | 595    | 992                      | NR            | 725    | 40                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 169                      | NR            | 600    | 966                      | NR            | 730    | 35                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 115                      | NR            | 605    | 931                      | NR            | 735    | 29                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 103                      | NR            | 610    | 885                      | NR            | 740    | 25                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 103                      | NR            | 615    | 829                      | NR            | 745    | 21                       | NR            | 875    | 1                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.56

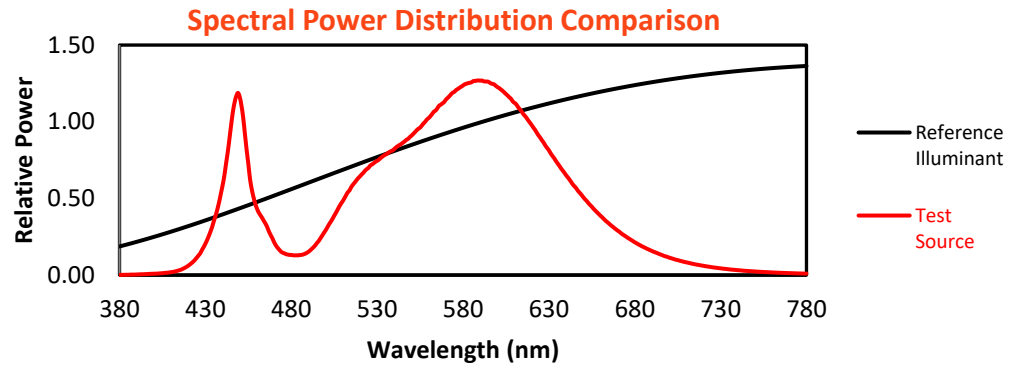
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 119                         | NR               | 620       | 771                         | NR               | 750       | 19                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 165                         | NR               | 625       | 705                         | NR               | 755       | 16                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 230                         | NR               | 630       | 641                         | NR               | 760       | 14                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 305                         | NR               | 635       | 575                         | NR               | 765       | 12                          | NR               | 895       | 0                           | NR               |
| 380       | 1                           | NR               | 510       | 380                         | NR               | 640       | 513                         | NR               | 770       | 10                          | NR               | 900       | 0                           | NR               |
| 385       | 2                           | NR               | 515       | 453                         | NR               | 645       | 455                         | NR               | 775       | 9                           | NR               | 905       | 0                           | NR               |
| 390       | 3                           | NR               | 520       | 507                         | NR               | 650       | 401                         | NR               | 780       | 7                           | NR               | 910       | 0                           | NR               |
| 395       | 5                           | NR               | 525       | 551                         | NR               | 655       | 351                         | NR               | 785       | 6                           | NR               | 915       | 0                           | NR               |
| 400       | 7                           | NR               | 530       | 587                         | NR               | 660       | 305                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 10                          | NR               | 535       | 620                         | NR               | 665       | 265                         | NR               | 795       | 5                           | NR               | 925       | 0                           | NR               |
| 410       | 15                          | NR               | 540       | 648                         | NR               | 670       | 229                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 25                          | NR               | 545       | 680                         | NR               | 675       | 197                         | NR               | 805       | 4                           | NR               | 935       | 0                           | NR               |
| 420       | 48                          | NR               | 550       | 716                         | NR               | 680       | 169                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 90                          | NR               | 555       | 757                         | NR               | 685       | 145                         | NR               | 815       | 3                           | NR               | 945       | 0                           | NR               |
| 430       | 161                         | NR               | 560       | 807                         | NR               | 690       | 124                         | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 279                         | NR               | 565       | 856                         | NR               | 695       | 106                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 460                         | NR               | 570       | 901                         | NR               | 700       | 90                          | NR               | 830       | 2                           | NR               | 960       | 0                           | NR               |
| 445       | 771                         | NR               | 575       | 942                         | NR               | 705       | 77                          | NR               | 835       | 2                           | NR               | 965       | 0                           | NR               |
| 450       | 915                         | NR               | 580       | 974                         | NR               | 710       | 65                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 572                         | NR               | 585       | 991                         | NR               | 715       | 56                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 342                         | NR               | 590       | 999                         | NR               | 720       | 48                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 264                         | NR               | 595       | 992                         | NR               | 725       | 40                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 169                         | NR               | 600       | 966                         | NR               | 730       | 35                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 115                         | NR               | 605       | 931                         | NR               | 735       | 29                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 103                         | NR               | 610       | 885                         | NR               | 740       | 25                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 103                         | NR               | 615       | 829                         | NR               | 745       | 21                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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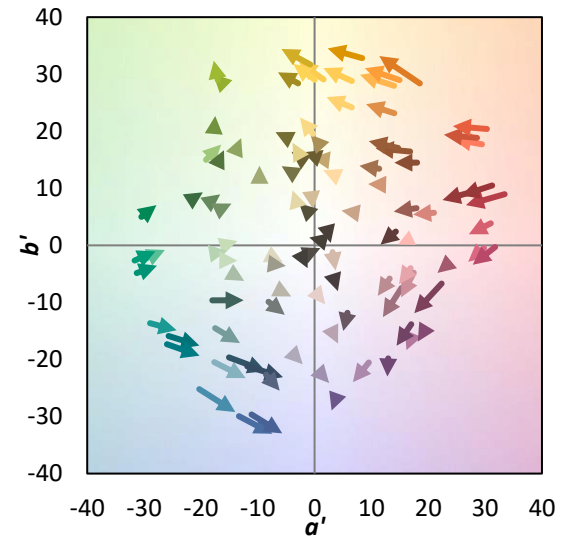
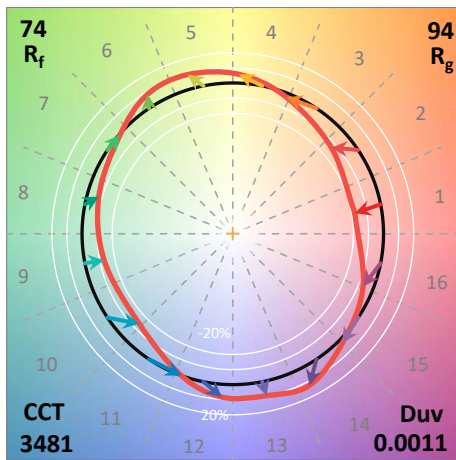
TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 93.8$   
 $CIE R_a = 71.1$   
 $R_g = -37.9$



### Color Vector Graphics



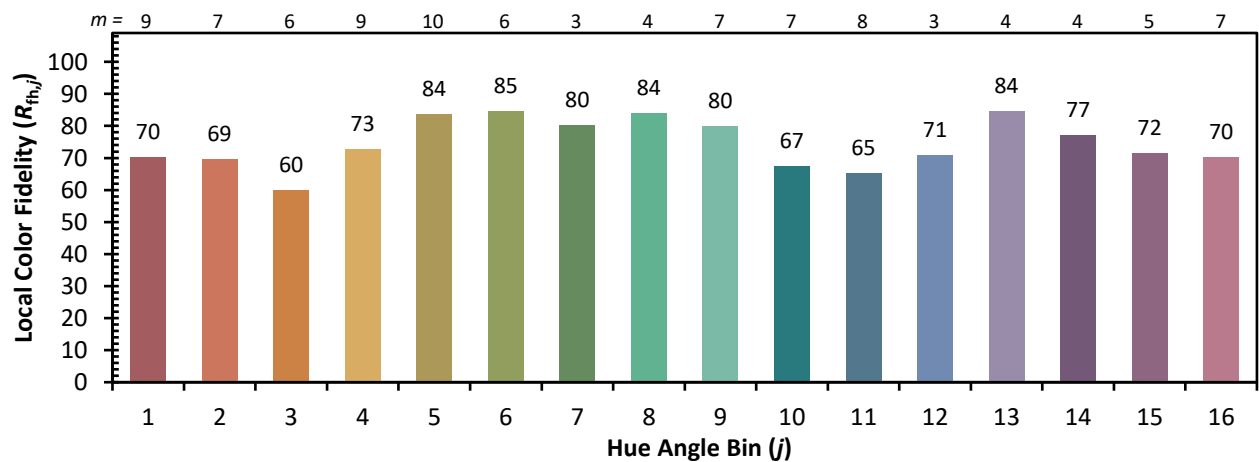
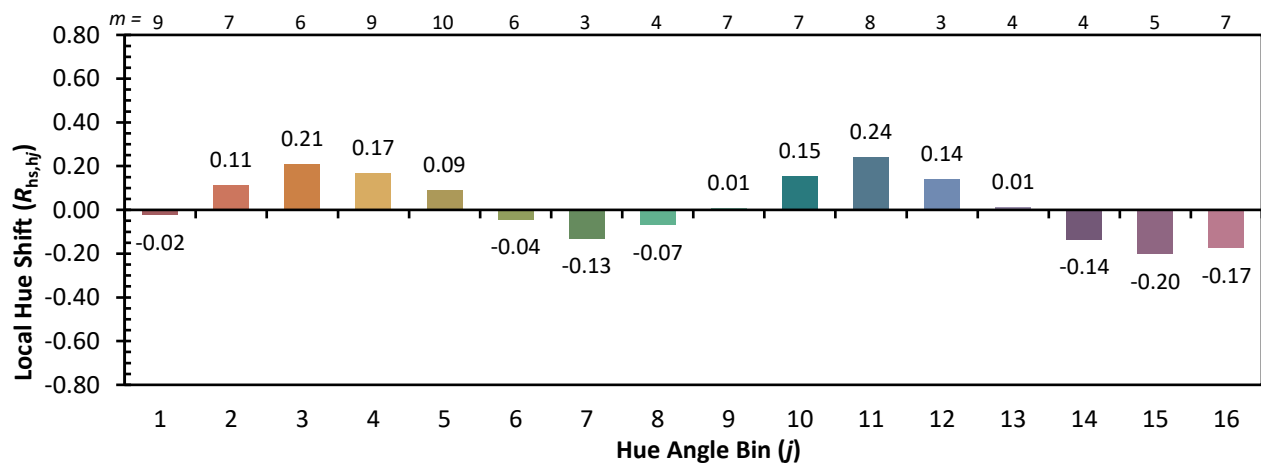
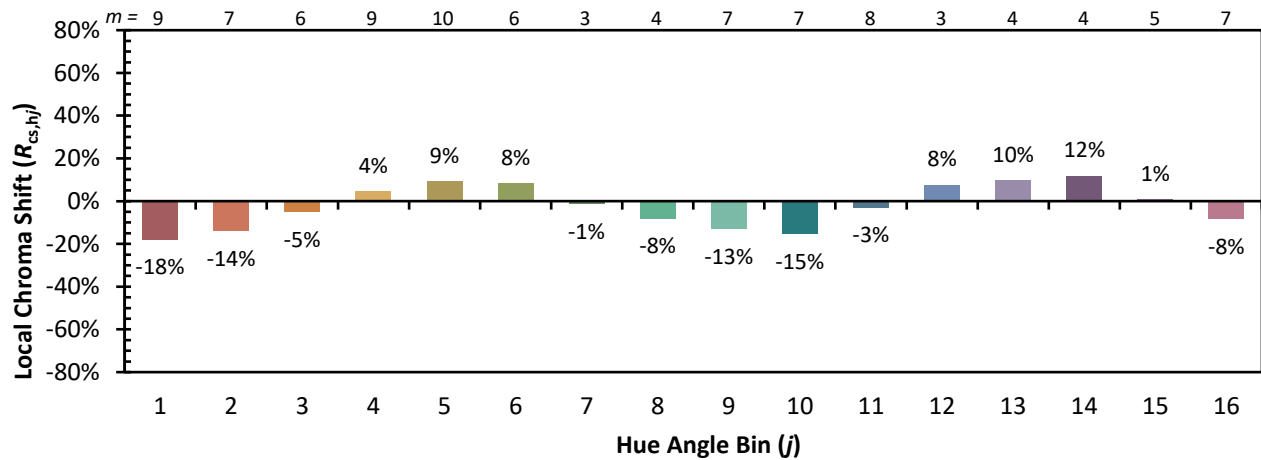


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 88 | CES76 = 53 |
| CES02 = 61 | CES27 = 88 | CES52 = 87 | CES77 = 73 |
| CES03 = 31 | CES28 = 83 | CES53 = 77 | CES78 = 56 |
| CES04 = 70 | CES29 = 65 | CES54 = 84 | CES79 = 83 |
| CES05 = 48 | CES30 = 79 | CES55 = 83 | CES80 = 81 |
| CES06 = 51 | CES31 = 69 | CES56 = 73 | CES81 = 76 |
| CES07 = 40 | CES32 = 61 | CES57 = 72 | CES82 = 92 |
| CES08 = 39 | CES33 = 75 | CES58 = 74 | CES83 = 90 |
| CES09 = 29 | CES34 = 72 | CES59 = 85 | CES84 = 87 |
| CES10 = 75 | CES35 = 85 | CES60 = 90 | CES85 = 77 |
| CES11 = 58 | CES36 = 93 | CES61 = 82 | CES86 = 68 |
| CES12 = 64 | CES37 = 81 | CES62 = 88 | CES87 = 77 |
| CES13 = 42 | CES38 = 89 | CES63 = 73 | CES88 = 79 |
| CES14 = 74 | CES39 = 96 | CES64 = 66 | CES89 = 68 |
| CES15 = 71 | CES40 = 91 | CES65 = 63 | CES90 = 79 |
| CES16 = 47 | CES41 = 92 | CES66 = 60 | CES91 = 78 |
| CES17 = 50 | CES42 = 83 | CES67 = 57 | CES92 = 57 |
| CES18 = 56 | CES43 = 77 | CES68 = 65 | CES93 = 74 |
| CES19 = 72 | CES44 = 99 | CES69 = 75 | CES94 = 50 |
| CES20 = 65 | CES45 = 85 | CES70 = 58 | CES95 = 66 |
| CES21 = 87 | CES46 = 81 | CES71 = 53 | CES96 = 76 |
| CES22 = 79 | CES47 = 84 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 74 | CES73 = 49 | CES98 = 75 |
| CES24 = 91 | CES49 = 79 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 87 | CES75 = 55 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)