

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: P1212053

Luminaire Tested: **GKO-PB1D-850-U-T1**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1212053  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB1D-850-U-T1  
Description: GEKKO WALL PACK 3500LM PACKAGE 80CRI 5000K FIXTURE w/ TYPE I DISTRIBUTION OPTIC  
Light Source: (10) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

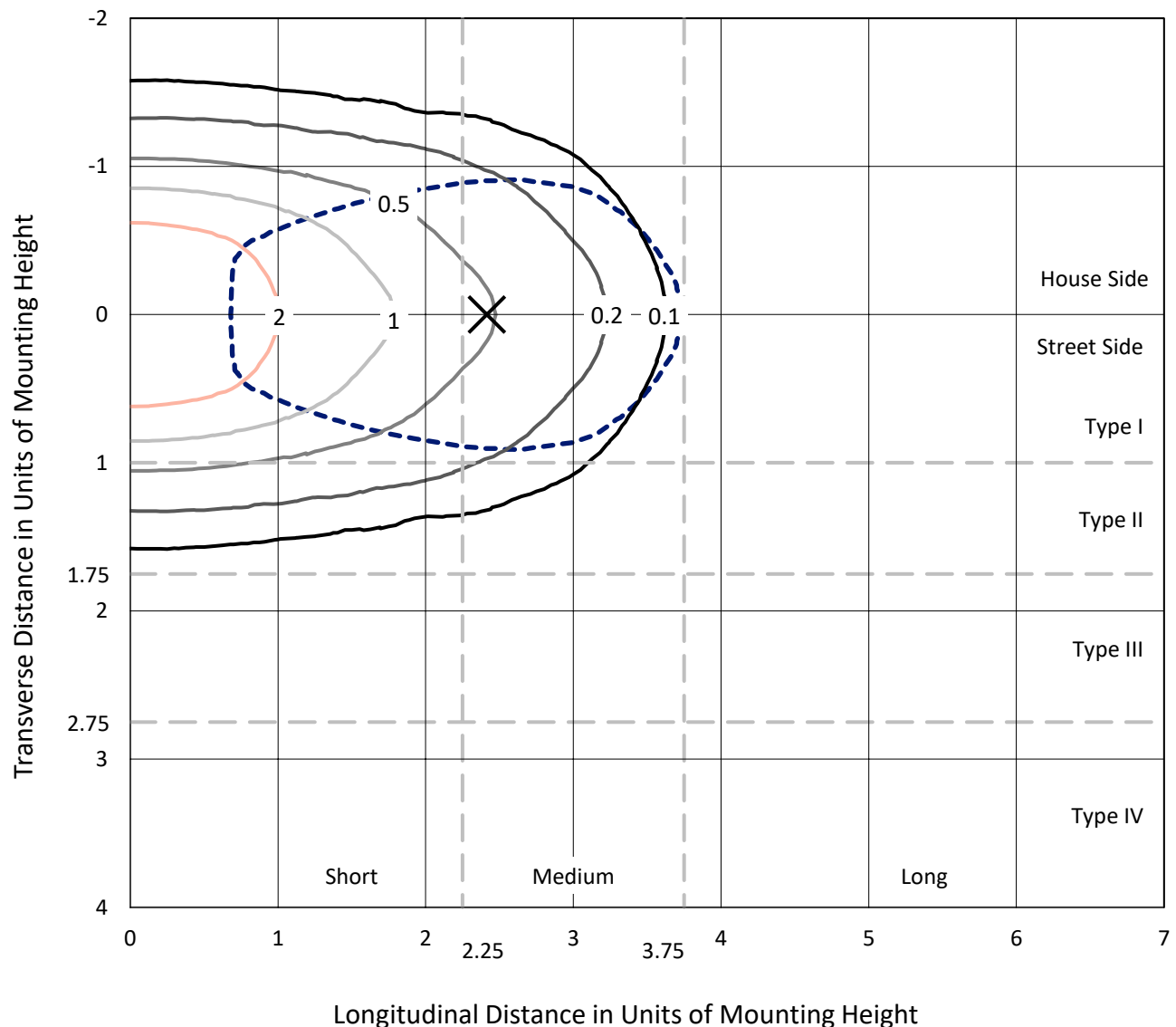
Lumens per Lamp: N/A  
Luminaire Lumens: 3544.5 lumens  
Efficiency: N/A  
Efficacy: 138.5 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type I - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi):  
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

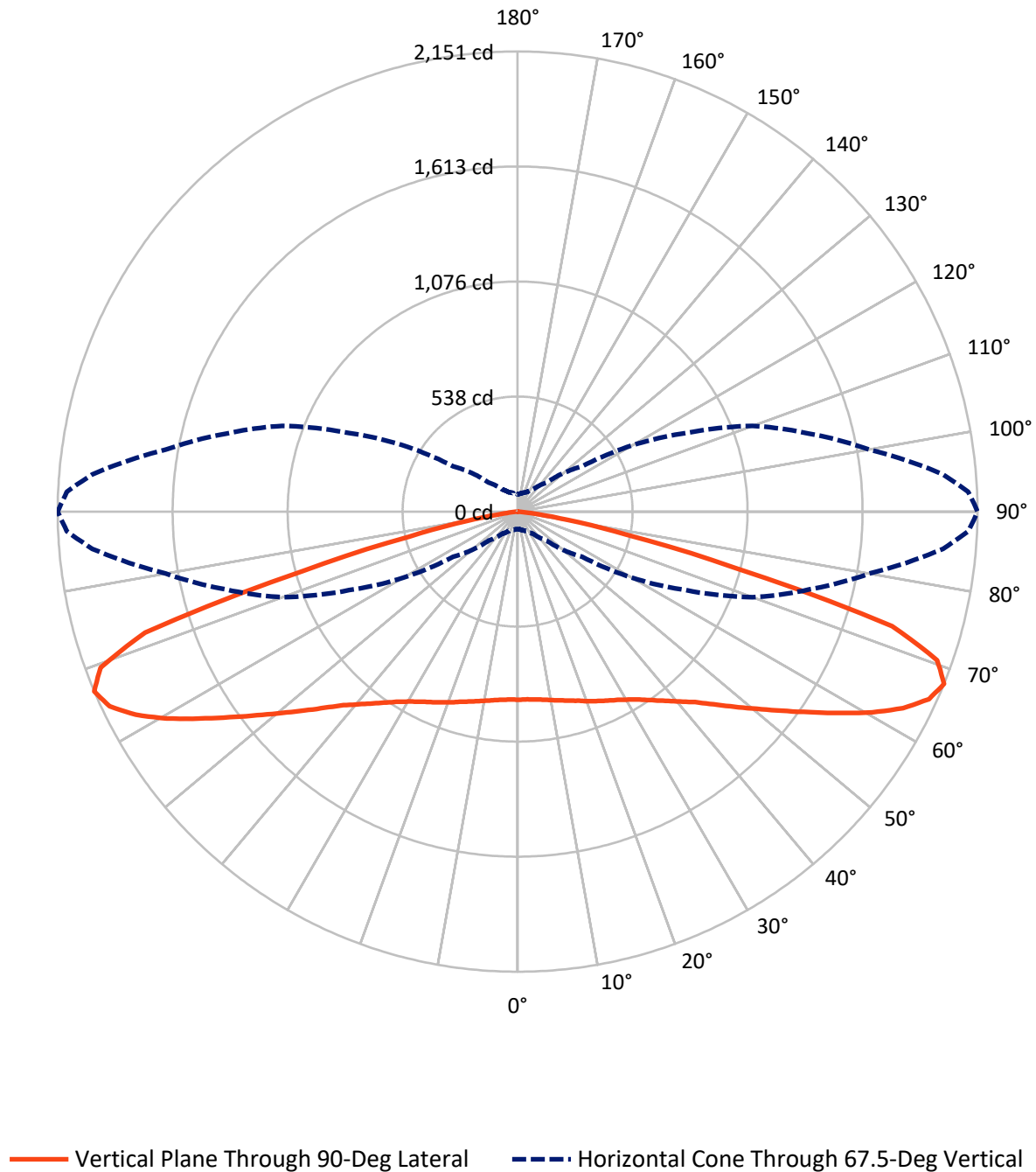
✕ Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 3.9 fc  
 Type I - Short - N/A

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## Luminous Intensity Polar Plot



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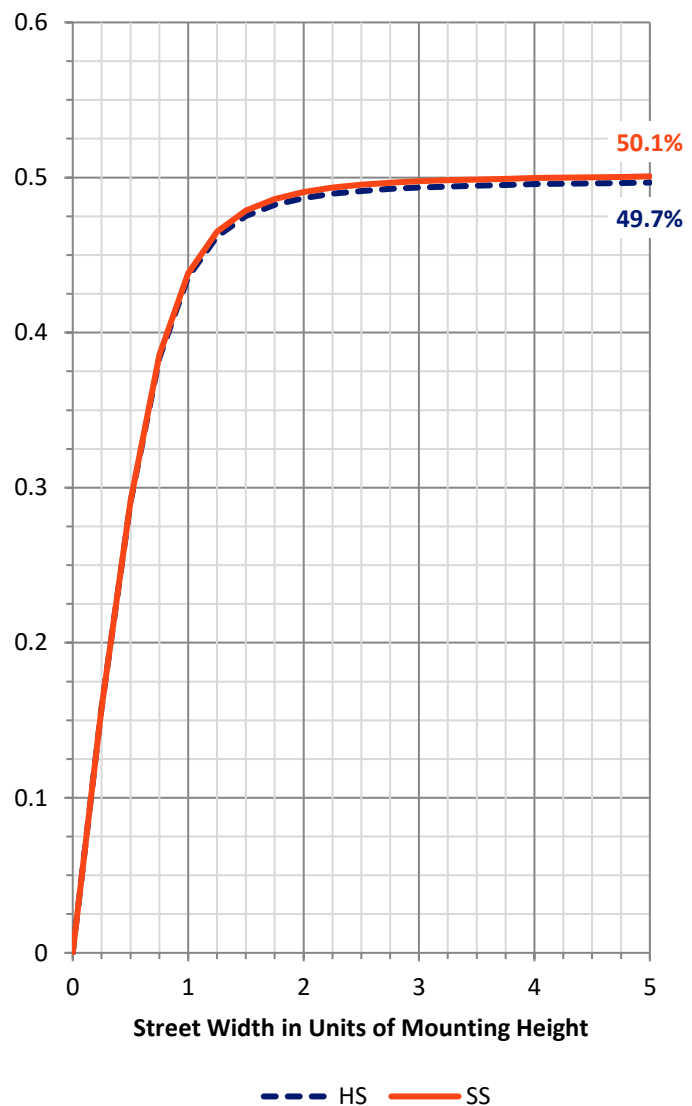
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1772.2   | 0.0    | 1772.2 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 1772.2   | 0.0    | 1772.2 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 3544.5   | 0.0    | 3544.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 84.4   | 2.4       |
| 10°-20°   | 254.2  | 7.2       |
| 20°-30°   | 422.7  | 11.9      |
| 30°-40°   | 561.5  | 15.8      |
| 40°-50°   | 633.0  | 17.9      |
| 50°-60°   | 650.9  | 18.4      |
| 60°-70°   | 615.1  | 17.4      |
| 70°-80°   | 301.1  | 8.5       |
| 80°-90°   | 21.5   | 0.6       |
| 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°    | 3544.5 | 100.0     |
| 0°-180°   | 3544.5 | 100.0     |

**Coefficient of Utilization**



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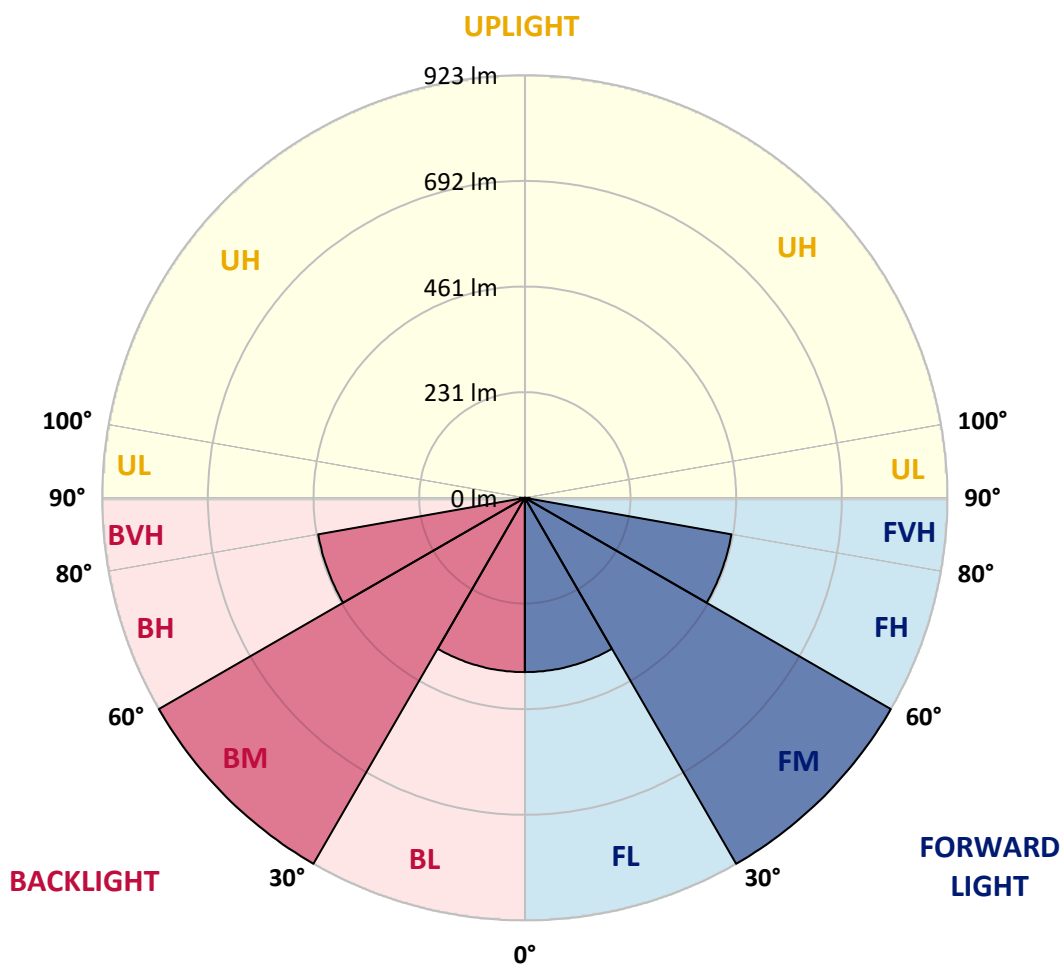
CATALOG NUMBER: GKO-PB1D-850-U-T1

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|--------|-----------|-------------------------|------|--------|
|      |             |        |           | B                       | U    | G      |
| FL   | (0°-30°)    | 380.6  | 10.7      |                         |      |        |
| FM   | (30°-60°)   | 922.7  | 26.0      |                         |      |        |
| FH   | (60°-80°)   | 458.1  | 12.9      |                         |      | G0/660 |
| FVH  | (80°-90°)   | 10.8   | 0.3       |                         |      | G1/100 |
| BL   | (0°-30°)    | 380.6  | 10.7      | B1/500                  |      |        |
| BM   | (30°-60°)   | 922.7  | 26.0      | B1/1000                 |      |        |
| BH   | (60°-80°)   | 458.1  | 12.9      | B1/500                  |      | G1/500 |
| BVH  | (80°-90°)   | 10.8   | 0.3       |                         |      | 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 I Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°    | 65°    | 70°    | 75°    | 80°    |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 0°    | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5 | 879.5  | 879.5  | 879.5  | 879.5  | 879.5  |
| 2.5°  | 880.2 | 881.5 | 878.9 | 878.9 | 880.2 | 880.8 | 880.8  | 881.5  | 880.2  | 880.2  | 879.5  |
| 5°    | 880.2 | 880.8 | 879.5 | 879.5 | 880.8 | 882.8 | 882.1  | 883.4  | 883.4  | 882.8  | 882.8  |
| 7.5°  | 879.5 | 880.8 | 879.5 | 880.2 | 882.1 | 886.1 | 886.1  | 886.1  | 887.4  | 888.7  | 888.7  |
| 10°   | 878.9 | 880.2 | 880.8 | 881.5 | 884.1 | 890.0 | 891.3  | 891.9  | 893.9  | 895.9  | 895.9  |
| 12.5° | 875.6 | 876.9 | 878.9 | 881.5 | 886.1 | 893.9 | 896.5  | 898.5  | 901.7  | 903.7  | 905.0  |
| 15°   | 871.0 | 871.7 | 876.3 | 881.5 | 888.7 | 898.5 | 903.7  | 907.0  | 911.5  | 914.2  | 916.1  |
| 17.5° | 864.5 | 865.1 | 872.3 | 880.2 | 890.6 | 904.4 | 912.8  | 918.1  | 922.7  | 926.6  | 929.2  |
| 20°   | 856.0 | 858.0 | 866.5 | 878.9 | 893.9 | 910.2 | 922.7  | 931.8  | 936.4  | 940.3  | 944.2  |
| 22.5° | 845.5 | 847.5 | 858.0 | 875.6 | 897.2 | 918.1 | 934.4  | 946.2  | 952.1  | 957.3  | 961.9  |
| 25°   | 829.9 | 832.5 | 844.9 | 867.8 | 898.5 | 926.6 | 947.5  | 962.5  | 967.7  | 974.3  | 978.2  |
| 27.5° | 805.7 | 807.6 | 822.7 | 852.1 | 894.6 | 935.7 | 962.5  | 980.2  | 986.0  | 993.2  | 997.1  |
| 30°   | 767.8 | 771.7 | 790.0 | 826.6 | 884.8 | 942.9 | 980.2  | 997.8  | 1005.0 | 1012.2 | 1017.4 |
| 32.5° | 718.8 | 724.7 | 744.9 | 792.0 | 865.8 | 945.5 | 999.1  | 1019.4 | 1028.5 | 1036.3 | 1042.9 |
| 35°   | 658.0 | 663.9 | 688.1 | 747.5 | 835.7 | 940.3 | 1018.1 | 1044.2 | 1055.3 | 1065.8 | 1073.6 |
| 37.5° | 588.7 | 594.0 | 623.4 | 691.3 | 792.6 | 924.0 | 1033.1 | 1071.6 | 1086.7 | 1100.4 | 1110.8 |
| 40°   | 518.8 | 524.7 | 556.7 | 629.3 | 740.3 | 892.6 | 1039.6 | 1101.7 | 1120.6 | 1138.3 | 1151.4 |
| 42.5° | 443.0 | 450.2 | 486.2 | 563.3 | 679.6 | 849.5 | 1034.4 | 1131.1 | 1154.6 | 1178.8 | 1198.4 |
| 45°   | 375.7 | 377.0 | 416.2 | 490.7 | 612.9 | 793.9 | 1016.1 | 1159.2 | 1191.2 | 1225.2 | 1253.3 |
| 47.5° | 311.0 | 313.6 | 347.6 | 421.5 | 543.7 | 731.2 | 982.8  | 1181.4 | 1232.4 | 1276.2 | 1317.3 |
| 50°   | 253.5 | 256.8 | 287.5 | 353.5 | 474.4 | 662.6 | 937.7  | 1194.5 | 1267.7 | 1327.1 | 1384.6 |
| 52.5° | 206.5 | 210.4 | 235.9 | 294.0 | 404.5 | 590.7 | 882.1  | 1196.4 | 1299.7 | 1378.1 | 1454.5 |
| 55°   | 171.9 | 174.5 | 194.1 | 240.5 | 337.2 | 516.2 | 818.8  | 1186.6 | 1320.6 | 1423.8 | 1525.8 |
| 57.5° | 145.1 | 147.7 | 161.4 | 198.0 | 276.4 | 439.8 | 741.6  | 1163.8 | 1331.7 | 1463.7 | 1597.7 |
| 60°   | 126.1 | 128.1 | 137.9 | 164.0 | 227.4 | 367.9 | 658.7  | 1123.3 | 1328.4 | 1488.5 | 1657.1 |
| 62.5° | 112.4 | 113.0 | 121.5 | 139.8 | 187.5 | 299.9 | 565.2  | 1062.5 | 1301.6 | 1491.8 | 1697.6 |
| 65°   | 100.0 | 100.6 | 105.9 | 118.9 | 154.2 | 241.1 | 467.9  | 978.8  | 1250.7 | 1468.9 | 1703.5 |
| 67.5° | 81.0  | 82.3  | 90.2  | 100.0 | 126.8 | 190.8 | 368.5  | 869.1  | 1171.0 | 1409.5 | 1670.2 |
| 70°   | 64.7  | 65.3  | 73.2  | 84.3  | 103.2 | 150.3 | 282.9  | 721.4  | 1046.2 | 1312.8 | 1583.9 |
| 72.5° | 48.4  | 49.7  | 56.8  | 68.0  | 84.3  | 116.3 | 204.5  | 545.6  | 836.4  | 1106.9 | 1379.4 |
| 75°   | 38.6  | 39.2  | 41.8  | 52.3  | 65.3  | 88.2  | 137.9  | 330.6  | 503.8  | 684.8  | 845.5  |
| 77.5° | 32.7  | 33.3  | 33.3  | 40.5  | 48.4  | 59.5  | 73.2   | 131.3  | 213.0  | 303.2  | 401.9  |
| 80°   | 26.8  | 28.1  | 25.5  | 30.1  | 34.6  | 34.6  | 34.0   | 62.7   | 100.6  | 142.4  | 186.9  |
| 82.5° | 19.6  | 20.9  | 19.6  | 20.9  | 20.9  | 18.9  | 17.6   | 23.5   | 32.0   | 43.8   | 47.7   |
| 85°   | 13.7  | 14.4  | 15.7  | 14.4  | 13.7  | 11.1  | 8.5    | 6.5    | 3.9    | 4.6    | 6.5    |
| 87.5° | 9.1   | 11.1  | 13.1  | 12.4  | 10.5  | 8.5   | 5.9    | 3.9    | 2.0    | 2.6    | 2.6    |
| 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):**

|       | 85°    | 87.5°  | 90°    |
|-------|--------|--------|--------|
| 0°    | 879.5  | 879.5  | 879.5  |
| 2.5°  | 880.2  | 879.5  | 878.9  |
| 5°    | 883.4  | 882.8  | 882.1  |
| 7.5°  | 888.0  | 888.0  | 888.0  |
| 10°   | 895.2  | 896.5  | 896.5  |
| 12.5° | 904.4  | 905.7  | 905.7  |
| 15°   | 915.5  | 916.1  | 917.4  |
| 17.5° | 929.2  | 929.8  | 929.8  |
| 20°   | 945.5  | 944.9  | 946.2  |
| 22.5° | 961.9  | 961.9  | 961.9  |
| 25°   | 978.8  | 978.8  | 978.8  |
| 27.5° | 998.4  | 998.4  | 997.1  |
| 30°   | 1020.0 | 1020.0 | 1020.0 |
| 32.5° | 1046.2 | 1046.8 | 1047.5 |
| 35°   | 1079.5 | 1080.8 | 1082.7 |
| 37.5° | 1117.4 | 1120.6 | 1122.6 |
| 40°   | 1162.5 | 1163.8 | 1167.0 |
| 42.5° | 1212.8 | 1216.7 | 1217.4 |
| 45°   | 1275.5 | 1282.0 | 1284.7 |
| 47.5° | 1349.3 | 1358.5 | 1363.1 |
| 50°   | 1431.7 | 1442.1 | 1448.7 |
| 52.5° | 1521.2 | 1538.2 | 1546.0 |
| 55°   | 1616.6 | 1646.0 | 1654.5 |
| 57.5° | 1724.4 | 1764.3 | 1776.0 |
| 60°   | 1830.3 | 1886.5 | 1905.4 |
| 62.5° | 1920.4 | 1999.5 | 2023.0 |
| 65°   | 1983.8 | 2079.2 | 2113.9 |
| 67.5° | 1996.9 | 2109.9 | 2151.1 |
| 70°   | 1918.5 | 2034.1 | 2081.8 |
| 72.5° | 1668.2 | 1772.8 | 1832.2 |
| 75°   | 985.4  | 1060.5 | 1042.2 |
| 77.5° | 494.7  | 516.2  | 519.5  |
| 80°   | 216.9  | 230.0  | 235.2  |
| 82.5° | 53.6   | 54.9   | 62.1   |
| 85°   | 7.2    | 8.5    | 7.8    |
| 87.5° | 2.6    | 2.6    | 3.3    |
| 90°   | 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: SP1-2511-595-4

Test Date: 01/09/2026

Luminaire Tested: GKO-PB1C-850-U-T4W

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

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2511-595-4  
 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-850-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 5005  
 CIE  $u'$ : 0.2100  
 CIE  $v'$ : 0.4867  
 Duv: 0.0019  
 CIE x: 0.3453  
 CIE y: 0.3557  
 CIE z: 0.2990  
 Peak Wavelength (nm): 451  
 Dominant Wavelength (nm): 570  
 Purity: 10.34221  
 R<sub>f</sub>: 83.7  
 R<sub>g</sub>: 95.5

CRI (Ra): 83.1  
 R1: 81.4  
 R2: 89.2  
 R3: 93.9  
 R4: 82.4  
 R5: 82.2  
 R6: 84.5  
 R7: 86.1  
 R8: 65.5  
 R9: 4.4  
 R10: 74.2  
 R11: 81.9  
 R12: 62.2  
 R13: 83.6  
 R14: 97.0  
 R15: 75.4



### Test Conditions

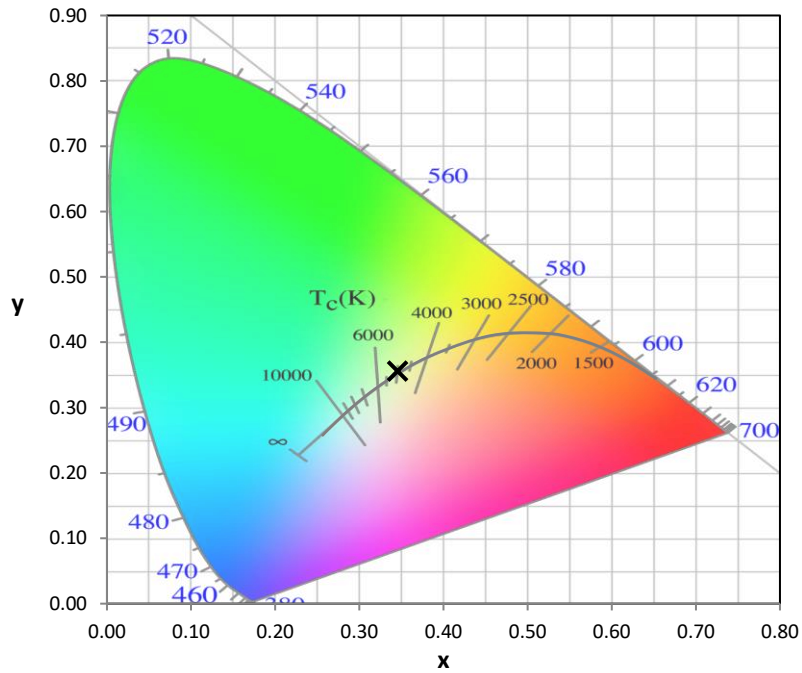
Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.1

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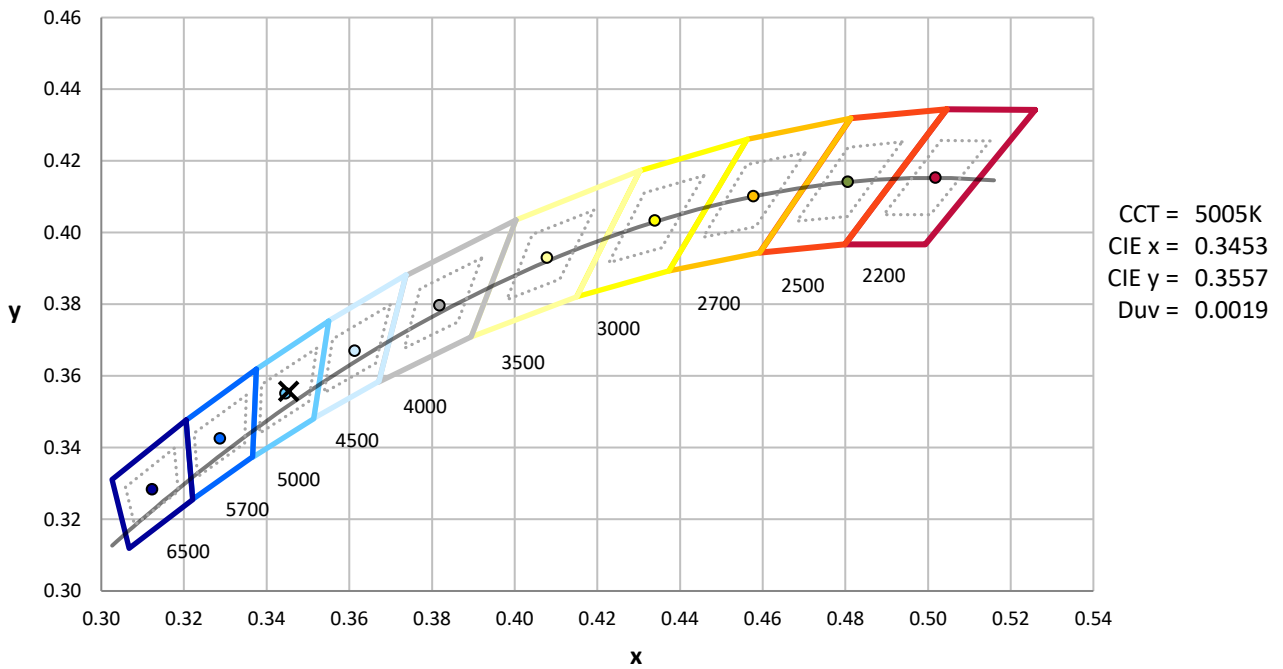
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| 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 5000K 4-step quadrangle

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### 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               | 267                                    | NR                             | 620               | 453                                    | NR                             | 750               | 11                                     | NR                             | 880               | 0                                      | NR                             |
| 365               | 0                                      | NR                             | 495               | 305                                    | NR                             | 625               | 420                                    | NR                             | 755               | 10                                     | NR                             | 885               | 0                                      | NR                             |
| 370               | 0                                      | NR                             | 500               | 350                                    | NR                             | 630               | 387                                    | NR                             | 760               | 8                                      | NR                             | 890               | 0                                      | NR                             |
| 375               | 1                                      | NR                             | 505               | 386                                    | NR                             | 635               | 351                                    | NR                             | 765               | 7                                      | NR                             | 895               | 0                                      | NR                             |
| 380               | 1                                      | NR                             | 510               | 415                                    | NR                             | 640               | 317                                    | NR                             | 770               | 6                                      | NR                             | 900               | 0                                      | NR                             |
| 385               | 2                                      | NR                             | 515               | 441                                    | NR                             | 645               | 283                                    | NR                             | 775               | 5                                      | NR                             | 905               | 0                                      | NR                             |
| 390               | 3                                      | NR                             | 520               | 454                                    | NR                             | 650               | 252                                    | NR                             | 780               | 4                                      | NR                             | 910               | 0                                      | NR                             |
| 395               | 4                                      | NR                             | 525               | 466                                    | NR                             | 655               | 222                                    | NR                             | 785               | 4                                      | NR                             | 915               | 0                                      | NR                             |
| 400               | 6                                      | NR                             | 530               | 474                                    | NR                             | 660               | 194                                    | NR                             | 790               | 3                                      | NR                             | 920               | 0                                      | NR                             |
| 405               | 8                                      | NR                             | 535               | 484                                    | NR                             | 665               | 170                                    | NR                             | 795               | 3                                      | NR                             | 925               | 0                                      | NR                             |
| 410               | 12                                     | NR                             | 540               | 492                                    | NR                             | 670               | 147                                    | NR                             | 800               | 2                                      | NR                             | 930               | 0                                      | NR                             |
| 415               | 19                                     | NR                             | 545               | 502                                    | NR                             | 675               | 127                                    | NR                             | 805               | 2                                      | NR                             | 935               | 0                                      | NR                             |
| 420               | 33                                     | NR                             | 550               | 512                                    | NR                             | 680               | 109                                    | NR                             | 810               | 2                                      | NR                             | 940               | 0                                      | NR                             |
| 425               | 57                                     | NR                             | 555               | 522                                    | NR                             | 685               | 94                                     | NR                             | 815               | 2                                      | NR                             | 945               | 0                                      | NR                             |
| 430               | 101                                    | NR                             | 560               | 535                                    | NR                             | 690               | 80                                     | NR                             | 820               | 1                                      | NR                             | 950               | 0                                      | NR                             |
| 435               | 183                                    | NR                             | 565               | 546                                    | NR                             | 695               | 69                                     | NR                             | 825               | 1                                      | NR                             | 955               | 0                                      | NR                             |
| 440               | 325                                    | NR                             | 570               | 555                                    | NR                             | 700               | 58                                     | NR                             | 830               | 1                                      | NR                             | 960               | 0                                      | NR                             |
| 445               | 630                                    | NR                             | 575               | 562                                    | NR                             | 705               | 50                                     | NR                             | 835               | 1                                      | NR                             | 965               | 0                                      | NR                             |
| 450               | 982                                    | NR                             | 580               | 567                                    | NR                             | 710               | 42                                     | NR                             | 840               | 1                                      | NR                             | 970               | 0                                      | NR                             |
| 455               | 847                                    | NR                             | 585               | 567                                    | NR                             | 715               | 36                                     | NR                             | 845               | 1                                      | NR                             | 975               | 0                                      | NR                             |
| 460               | 545                                    | NR                             | 590               | 566                                    | NR                             | 720               | 31                                     | NR                             | 850               | 1                                      | NR                             | 980               | 0                                      | NR                             |
| 465               | 456                                    | NR                             | 595               | 561                                    | NR                             | 725               | 26                                     | NR                             | 855               | 0                                      | NR                             | 985               | 0                                      | NR                             |
| 470               | 349                                    | NR                             | 600               | 547                                    | NR                             | 730               | 22                                     | NR                             | 860               | 0                                      | NR                             | 990               | 0                                      | NR                             |
| 475               | 253                                    | NR                             | 605               | 530                                    | NR                             | 735               | 19                                     | NR                             | 865               | 0                                      | NR                             | 995               | 0                                      | NR                             |
| 480               | 235                                    | NR                             | 610               | 509                                    | NR                             | 740               | 16                                     | NR                             | 870               | 0                                      | NR                             | 1000              | 0                                      | NR                             |
| 485               | 247                                    | NR                             | 615               | 482                                    | NR                             | 745               | 13                                     | NR                             | 875               | 0                                      | NR                             |                   |                                        |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.97

| 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    | 267                      | NR            | 620    | 453                      | NR            | 750    | 11                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 305                      | NR            | 625    | 420                      | NR            | 755    | 10                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 350                      | NR            | 630    | 387                      | NR            | 760    | 8                        | NR            | 890    | 0                        | NR            |
| 375    | 1                        | NR            | 505    | 386                      | NR            | 635    | 351                      | NR            | 765    | 7                        | NR            | 895    | 0                        | NR            |
| 380    | 1                        | NR            | 510    | 415                      | NR            | 640    | 317                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 2                        | NR            | 515    | 441                      | NR            | 645    | 283                      | NR            | 775    | 5                        | NR            | 905    | 0                        | NR            |
| 390    | 3                        | NR            | 520    | 454                      | NR            | 650    | 252                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 466                      | NR            | 655    | 222                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 474                      | NR            | 660    | 194                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 8                        | NR            | 535    | 484                      | NR            | 665    | 170                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 492                      | NR            | 670    | 147                      | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 19                       | NR            | 545    | 502                      | NR            | 675    | 127                      | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 33                       | NR            | 550    | 512                      | NR            | 680    | 109                      | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 57                       | NR            | 555    | 522                      | NR            | 685    | 94                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 101                      | NR            | 560    | 535                      | NR            | 690    | 80                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 183                      | NR            | 565    | 546                      | NR            | 695    | 69                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 325                      | NR            | 570    | 555                      | NR            | 700    | 58                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 630                      | NR            | 575    | 562                      | NR            | 705    | 50                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 982                      | NR            | 580    | 567                      | NR            | 710    | 42                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 847                      | NR            | 585    | 567                      | NR            | 715    | 36                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 545                      | NR            | 590    | 566                      | NR            | 720    | 31                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 456                      | NR            | 595    | 561                      | NR            | 725    | 26                       | NR            | 855    | 0                        | NR            | 985    | 0                        | NR            |
| 470    | 349                      | NR            | 600    | 547                      | NR            | 730    | 22                       | NR            | 860    | 0                        | NR            | 990    | 0                        | NR            |
| 475    | 253                      | NR            | 605    | 530                      | NR            | 735    | 19                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 235                      | NR            | 610    | 509                      | NR            | 740    | 16                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 247                      | NR            | 615    | 482                      | NR            | 745    | 13                       | NR            | 875    | 0                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 4.21**

| $\lambda$<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               | 267                                  | NR                             | 620               | 453                                  | NR                             | 750               | 11                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 305                                  | NR                             | 625               | 420                                  | NR                             | 755               | 10                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 350                                  | NR                             | 630               | 387                                  | NR                             | 760               | 8                                    | NR                             | 890               | 0                                    | NR                             |
| 375               | 1                                    | NR                             | 505               | 386                                  | NR                             | 635               | 351                                  | NR                             | 765               | 7                                    | NR                             | 895               | 0                                    | NR                             |
| 380               | 1                                    | NR                             | 510               | 415                                  | NR                             | 640               | 317                                  | NR                             | 770               | 6                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 2                                    | NR                             | 515               | 441                                  | NR                             | 645               | 283                                  | NR                             | 775               | 5                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 3                                    | NR                             | 520               | 454                                  | NR                             | 650               | 252                                  | NR                             | 780               | 4                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 4                                    | NR                             | 525               | 466                                  | NR                             | 655               | 222                                  | NR                             | 785               | 4                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 6                                    | NR                             | 530               | 474                                  | NR                             | 660               | 194                                  | NR                             | 790               | 3                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 484                                  | NR                             | 665               | 170                                  | NR                             | 795               | 3                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 12                                   | NR                             | 540               | 492                                  | NR                             | 670               | 147                                  | NR                             | 800               | 2                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 19                                   | NR                             | 545               | 502                                  | NR                             | 675               | 127                                  | NR                             | 805               | 2                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 33                                   | NR                             | 550               | 512                                  | NR                             | 680               | 109                                  | NR                             | 810               | 2                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 57                                   | NR                             | 555               | 522                                  | NR                             | 685               | 94                                   | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 101                                  | NR                             | 560               | 535                                  | NR                             | 690               | 80                                   | NR                             | 820               | 1                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 183                                  | NR                             | 565               | 546                                  | NR                             | 695               | 69                                   | NR                             | 825               | 1                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 325                                  | NR                             | 570               | 555                                  | NR                             | 700               | 58                                   | NR                             | 830               | 1                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 630                                  | NR                             | 575               | 562                                  | NR                             | 705               | 50                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 982                                  | NR                             | 580               | 567                                  | NR                             | 710               | 42                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 847                                  | NR                             | 585               | 567                                  | NR                             | 715               | 36                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 545                                  | NR                             | 590               | 566                                  | NR                             | 720               | 31                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 456                                  | NR                             | 595               | 561                                  | NR                             | 725               | 26                                   | NR                             | 855               | 0                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 349                                  | NR                             | 600               | 547                                  | NR                             | 730               | 22                                   | NR                             | 860               | 0                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 253                                  | NR                             | 605               | 530                                  | NR                             | 735               | 19                                   | NR                             | 865               | 0                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 235                                  | NR                             | 610               | 509                                  | NR                             | 740               | 16                                   | NR                             | 870               | 0                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 247                                  | NR                             | 615               | 482                                  | NR                             | 745               | 13                                   | NR                             | 875               | 0                                    | NR                             |                   |                                      |                                |

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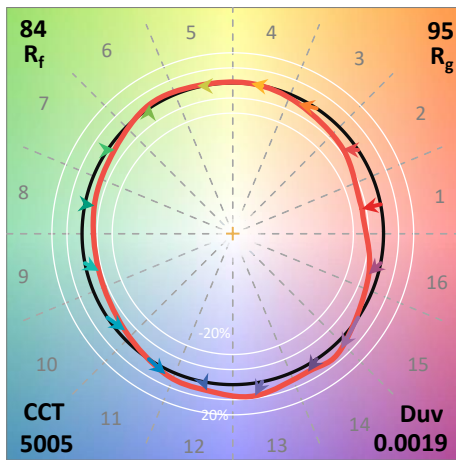
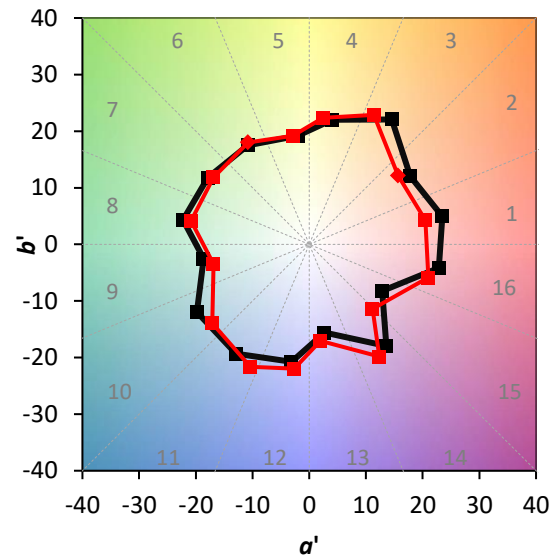
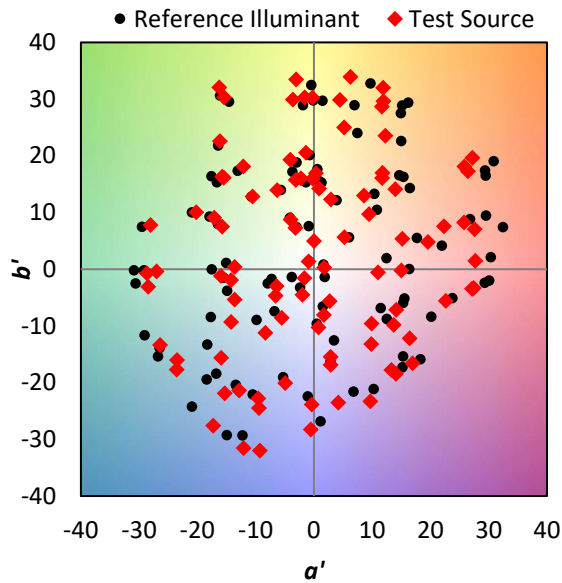
TM-30-18

### Summary

$R_f = 83.7$   
 $R_g = 95.5$   
 $CIE R_a = 83.1$   
 $R_9 = 4.4$



### Color Vector Graphics





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

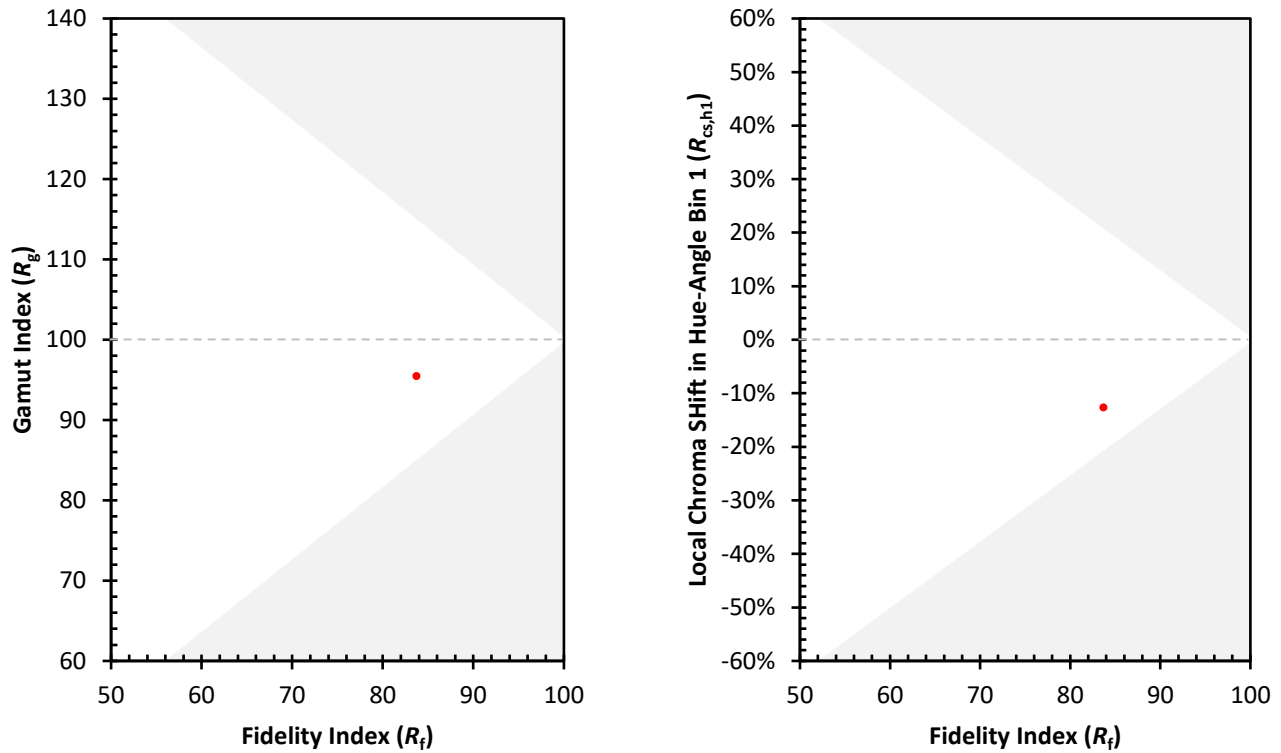
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 81 | CES51 = 94 | CES76 = 74 |
| CES02 = 60 | CES27 = 93 | CES52 = 95 | CES77 = 81 |
| CES03 = 30 | CES28 = 91 | CES53 = 90 | CES78 = 73 |
| CES04 = 69 | CES29 = 87 | CES54 = 89 | CES79 = 91 |
| CES05 = 47 | CES30 = 95 | CES55 = 87 | CES80 = 88 |
| CES06 = 50 | CES31 = 89 | CES56 = 85 | CES81 = 82 |
| CES07 = 39 | CES32 = 81 | CES57 = 85 | CES82 = 95 |
| CES08 = 39 | CES33 = 95 | CES58 = 85 | CES83 = 96 |
| CES09 = 29 | CES34 = 86 | CES59 = 91 | CES84 = 90 |
| CES10 = 73 | CES35 = 92 | CES60 = 90 | CES85 = 80 |
| CES11 = 56 | CES36 = 82 | CES61 = 87 | CES86 = 77 |
| CES12 = 62 | CES37 = 91 | CES62 = 83 | CES87 = 84 |
| CES13 = 42 | CES38 = 90 | CES63 = 85 | CES88 = 88 |
| CES14 = 74 | CES39 = 98 | CES64 = 78 | CES89 = 78 |
| CES15 = 71 | CES40 = 95 | CES65 = 76 | CES90 = 89 |
| CES16 = 46 | CES41 = 98 | CES66 = 74 | CES91 = 71 |
| CES17 = 49 | CES42 = 92 | CES67 = 73 | CES92 = 64 |
| CES18 = 55 | CES43 = 90 | CES68 = 77 | CES93 = 79 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 63 |
| CES20 = 64 | CES45 = 94 | CES70 = 73 | CES95 = 72 |
| CES21 = 85 | CES46 = 92 | CES71 = 67 | CES96 = 83 |
| CES22 = 77 | CES47 = 97 | CES72 = 89 | CES97 = 91 |
| CES23 = 91 | CES48 = 86 | CES73 = 67 | CES98 = 86 |
| CES24 = 90 | CES49 = 91 | CES74 = 91 | CES99 = 75 |
| CES25 = 71 | CES50 = 94 | CES75 = 69 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)