

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: P1212055

Luminaire Tested: **GKO-PB1B-850-U-T1**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1212055  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB1B-850-U-T1  
Description: GEKKO WALL PACK 1500LM PACKAGE 80CRI 5000K FIXTURE w/ TYPE I DISTRIBUTION OPTIC  
Light Source: (10) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

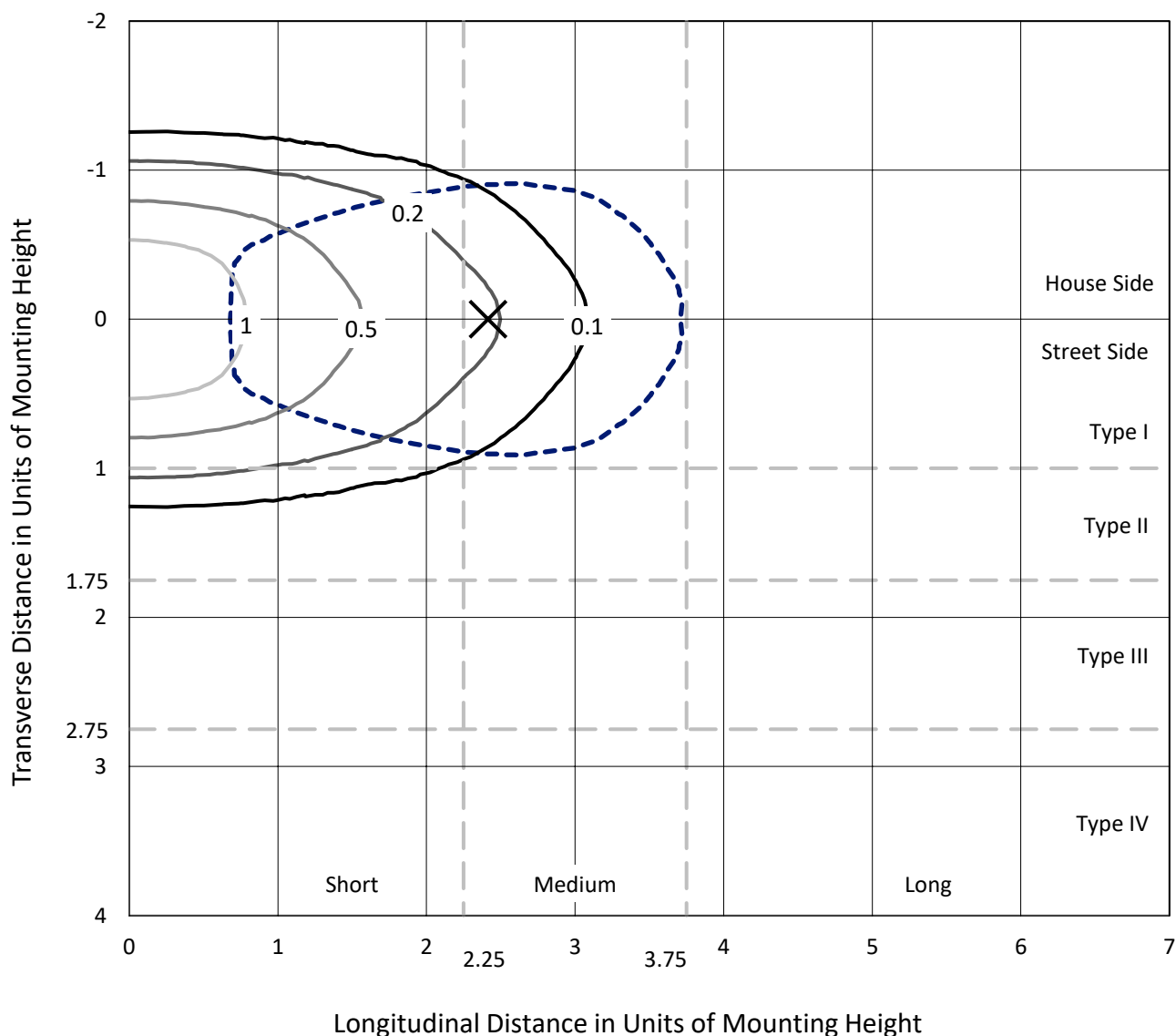
Lumens per Lamp: N/A  
Luminaire Lumens: 1455.1 lumens  
Efficiency: N/A  
Efficacy: 156.5 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type I - Short  
BUG Rating: B1 - U0 - G1

Input Watts (W): 9.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 14%  
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

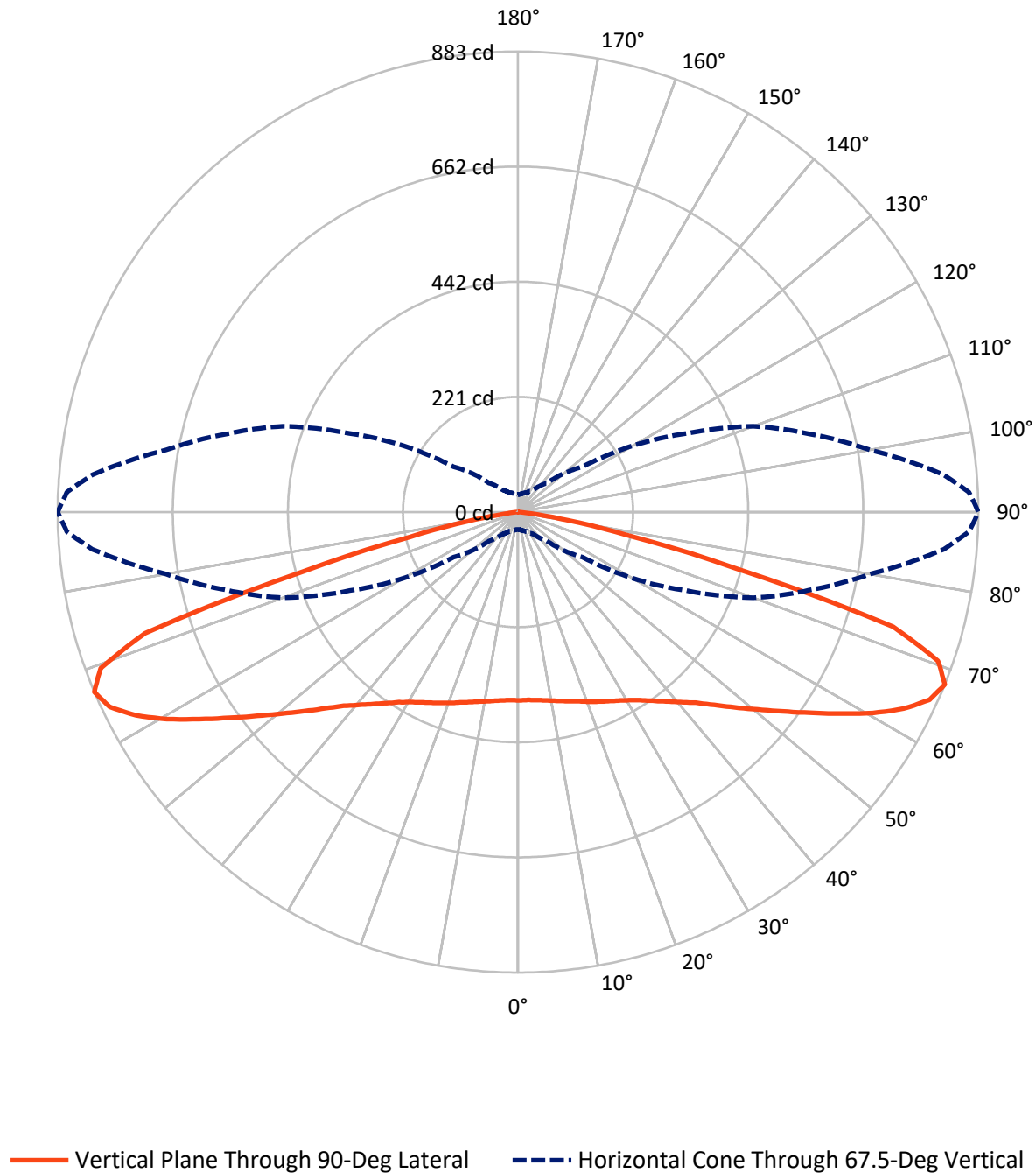
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.6 fc  
 Type I - Short - N/A

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## Luminous Intensity Polar Plot



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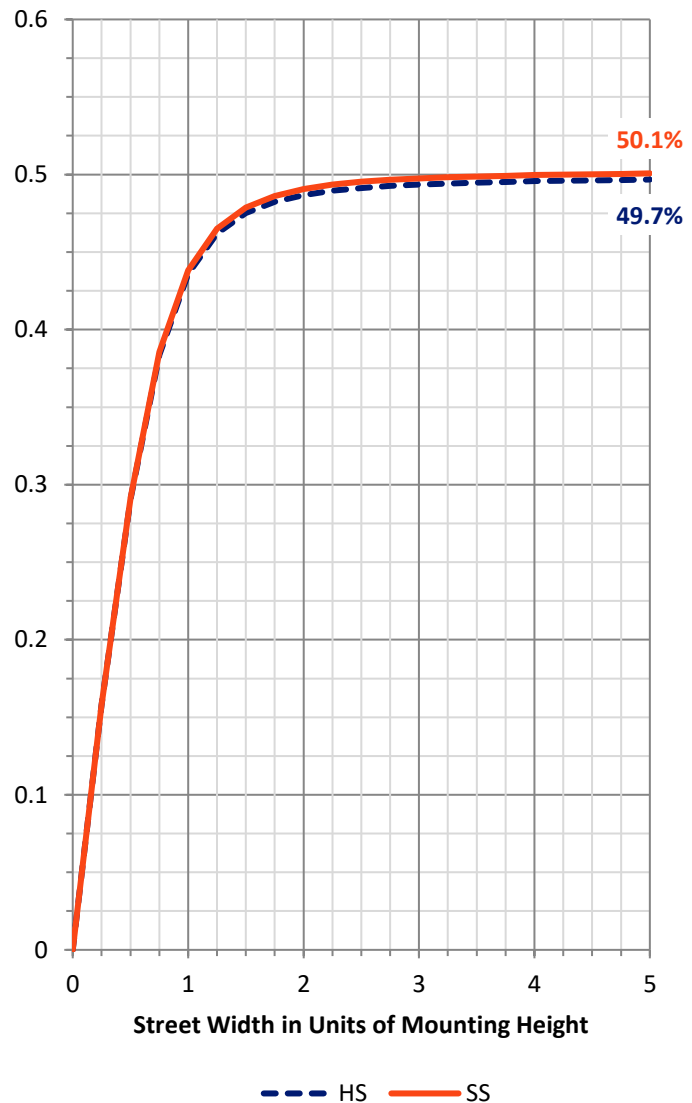
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 727.5    | 0.0    | 727.5  |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 727.5    | 0.0    | 727.5  |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 1455.1   | 0.0    | 1455.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 34.6   | 2.4       |
| 10°-20°   | 104.4  | 7.2       |
| 20°-30°   | 173.5  | 11.9      |
| 30°-40°   | 230.5  | 15.8      |
| 40°-50°   | 259.9  | 17.9      |
| 50°-60°   | 267.2  | 18.4      |
| 60°-70°   | 252.5  | 17.4      |
| 70°-80°   | 123.6  | 8.5       |
| 80°-90°   | 8.8    | 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°    | 1455.1 | 100.0     |
| 0°-180°   | 1455.1 | 100.0     |



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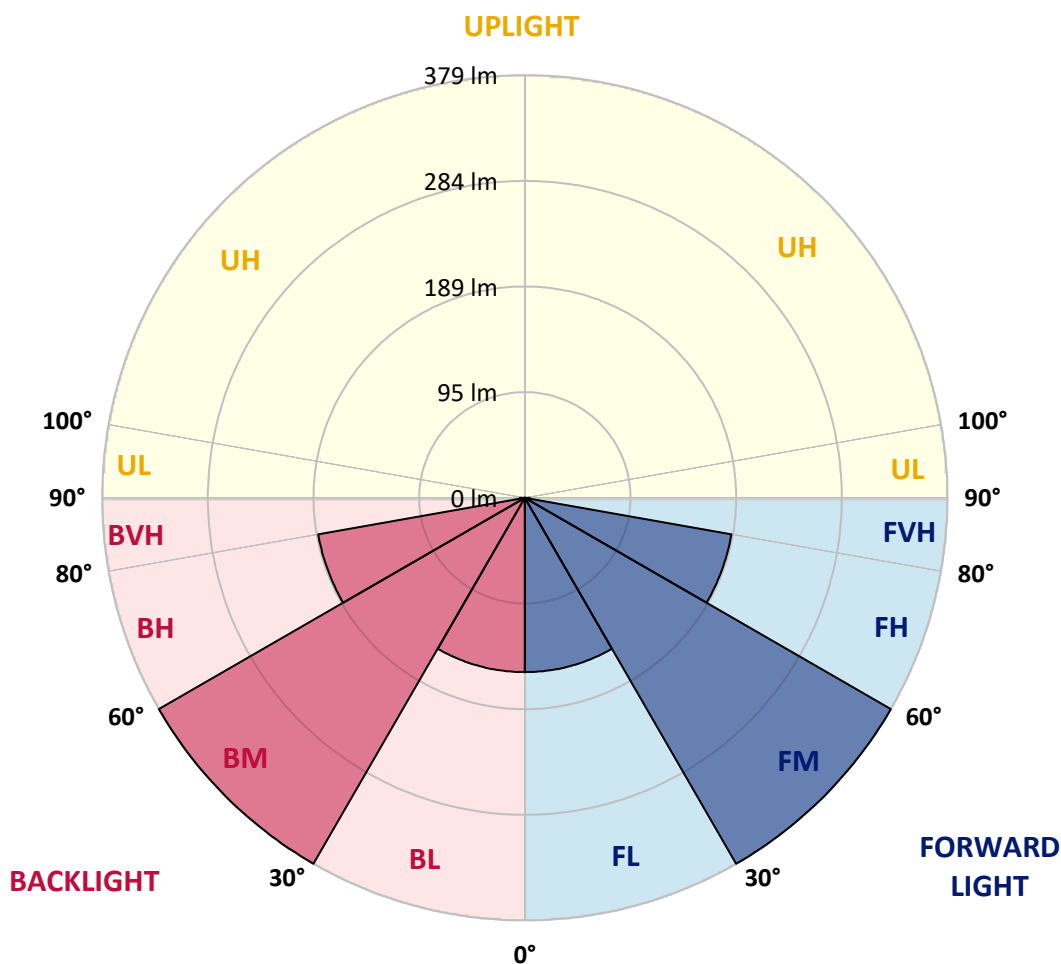
CATALOG NUMBER: GKO-PB1B-850-U-T1

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|--------|-----------|-------------------------|------|--------|
|      |             |        |           | B                       | U    | G      |
| FL   | (0°-30°)    | 156.3  | 10.7      |                         |      |        |
| FM   | (30°-60°)   | 378.8  | 26.0      |                         |      |        |
| FH   | (60°-80°)   | 188.1  | 12.9      |                         |      | G0/660 |
| FVH  | (80°-90°)   | 4.4    | 0.3       |                         |      | G0/10  |
| BL   | (0°-30°)    | 156.3  | 10.7      | B1/500                  |      |        |
| BM   | (30°-60°)   | 378.8  | 26.0      | B1/1000                 |      |        |
| BH   | (60°-80°)   | 188.1  | 12.9      | B1/500                  |      | G1/500 |
| BVH  | (80°-90°)   | 4.4    | 0.3       |                         |      | G0/10  |
| 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°    | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 | 361.1 |
| 2.5°  | 361.3 | 361.9 | 360.8 | 360.8 | 361.3 | 361.6 | 361.6 | 361.9 | 361.3 | 361.3 | 361.1 |
| 5°    | 361.3 | 361.6 | 361.1 | 361.1 | 361.6 | 362.4 | 362.1 | 362.7 | 362.7 | 362.4 | 362.4 |
| 7.5°  | 361.1 | 361.6 | 361.1 | 361.3 | 362.1 | 363.8 | 363.8 | 363.8 | 364.3 | 364.8 | 364.8 |
| 10°   | 360.8 | 361.3 | 361.6 | 361.9 | 363.0 | 365.4 | 365.9 | 366.2 | 367.0 | 367.8 | 367.8 |
| 12.5° | 359.5 | 360.0 | 360.8 | 361.9 | 363.8 | 367.0 | 368.0 | 368.9 | 370.2 | 371.0 | 371.5 |
| 15°   | 357.6 | 357.9 | 359.7 | 361.9 | 364.8 | 368.9 | 371.0 | 372.3 | 374.2 | 375.3 | 376.1 |
| 17.5° | 354.9 | 355.2 | 358.1 | 361.3 | 365.6 | 371.3 | 374.8 | 376.9 | 378.8 | 380.4 | 381.5 |
| 20°   | 351.4 | 352.2 | 355.7 | 360.8 | 367.0 | 373.7 | 378.8 | 382.5 | 384.4 | 386.0 | 387.6 |
| 22.5° | 347.1 | 347.9 | 352.2 | 359.5 | 368.3 | 376.9 | 383.6 | 388.4 | 390.8 | 393.0 | 394.9 |
| 25°   | 340.7 | 341.8 | 346.9 | 356.2 | 368.9 | 380.4 | 389.0 | 395.1 | 397.3 | 400.0 | 401.6 |
| 27.5° | 330.8 | 331.6 | 337.7 | 349.8 | 367.2 | 384.1 | 395.1 | 402.4 | 404.8 | 407.7 | 409.4 |
| 30°   | 315.2 | 316.8 | 324.3 | 339.3 | 363.2 | 387.1 | 402.4 | 409.6 | 412.6 | 415.5 | 417.7 |
| 32.5° | 295.1 | 297.5 | 305.8 | 325.1 | 355.4 | 388.2 | 410.2 | 418.5 | 422.2 | 425.5 | 428.1 |
| 35°   | 270.1 | 272.5 | 282.5 | 306.9 | 343.1 | 386.0 | 417.9 | 428.7 | 433.2 | 437.5 | 440.7 |
| 37.5° | 241.7 | 243.8 | 255.9 | 283.8 | 325.4 | 379.3 | 424.1 | 439.9 | 446.1 | 451.7 | 456.0 |
| 40°   | 213.0 | 215.4 | 228.6 | 258.3 | 303.9 | 366.4 | 426.8 | 452.3 | 460.1 | 467.3 | 472.7 |
| 42.5° | 181.9 | 184.8 | 199.6 | 231.2 | 279.0 | 348.7 | 424.6 | 464.4 | 474.0 | 483.9 | 492.0 |
| 45°   | 154.2 | 154.8 | 170.9 | 201.5 | 251.6 | 325.9 | 417.1 | 475.9 | 489.0 | 503.0 | 514.5 |
| 47.5° | 127.7 | 128.8 | 142.7 | 173.0 | 223.2 | 300.2 | 403.5 | 485.0 | 505.9 | 523.9 | 540.8 |
| 50°   | 104.1 | 105.4 | 118.0 | 145.1 | 194.8 | 272.0 | 384.9 | 490.4 | 520.4 | 544.8 | 568.4 |
| 52.5° | 84.8  | 86.4  | 96.8  | 120.7 | 166.1 | 242.5 | 362.1 | 491.2 | 533.6 | 565.8 | 597.1 |
| 55°   | 70.6  | 71.6  | 79.7  | 98.7  | 138.4 | 211.9 | 336.1 | 487.2 | 542.1 | 584.5 | 626.4 |
| 57.5° | 59.6  | 60.6  | 66.3  | 81.3  | 113.5 | 180.5 | 304.5 | 477.8 | 546.7 | 600.9 | 655.9 |
| 60°   | 51.8  | 52.6  | 56.6  | 67.3  | 93.4  | 151.0 | 270.4 | 461.1 | 545.4 | 611.1 | 680.3 |
| 62.5° | 46.1  | 46.4  | 49.9  | 57.4  | 77.0  | 123.1 | 232.0 | 436.2 | 534.4 | 612.4 | 696.9 |
| 65°   | 41.0  | 41.3  | 43.5  | 48.8  | 63.3  | 99.0  | 192.1 | 401.8 | 513.4 | 603.0 | 699.3 |
| 67.5° | 33.3  | 33.8  | 37.0  | 41.0  | 52.0  | 78.3  | 151.3 | 356.8 | 480.7 | 578.6 | 685.7 |
| 70°   | 26.6  | 26.8  | 30.0  | 34.6  | 42.4  | 61.7  | 116.2 | 296.2 | 429.5 | 538.9 | 650.3 |
| 72.5° | 19.9  | 20.4  | 23.3  | 27.9  | 34.6  | 47.7  | 84.0  | 224.0 | 343.4 | 454.4 | 566.3 |
| 75°   | 15.8  | 16.1  | 17.2  | 21.5  | 26.8  | 36.2  | 56.6  | 135.7 | 206.8 | 281.1 | 347.1 |
| 77.5° | 13.4  | 13.7  | 13.7  | 16.6  | 19.9  | 24.4  | 30.0  | 53.9  | 87.5  | 124.5 | 165.0 |
| 80°   | 11.0  | 11.5  | 10.5  | 12.3  | 14.2  | 14.2  | 13.9  | 25.8  | 41.3  | 58.5  | 76.7  |
| 82.5° | 8.0   | 8.6   | 8.0   | 8.6   | 8.6   | 7.8   | 7.2   | 9.7   | 13.1  | 18.0  | 19.6  |
| 85°   | 5.6   | 5.9   | 6.4   | 5.9   | 5.6   | 4.6   | 3.5   | 2.7   | 1.6   | 1.9   | 2.7   |
| 87.5° | 3.8   | 4.6   | 5.4   | 5.1   | 4.3   | 3.5   | 2.4   | 1.6   | 0.8   | 1.1   | 1.1   |
| 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-PB1B-850-U-T1

**CANDELA DISTRIBUTION (continued):**

|       | 85°   | 87.5° | 90°   |
|-------|-------|-------|-------|
| 0°    | 361.1 | 361.1 | 361.1 |
| 2.5°  | 361.3 | 361.1 | 360.8 |
| 5°    | 362.7 | 362.4 | 362.1 |
| 7.5°  | 364.6 | 364.6 | 364.6 |
| 10°   | 367.5 | 368.0 | 368.0 |
| 12.5° | 371.3 | 371.8 | 371.8 |
| 15°   | 375.8 | 376.1 | 376.6 |
| 17.5° | 381.5 | 381.7 | 381.7 |
| 20°   | 388.2 | 387.9 | 388.4 |
| 22.5° | 394.9 | 394.9 | 394.9 |
| 25°   | 401.8 | 401.8 | 401.8 |
| 27.5° | 409.9 | 409.9 | 409.4 |
| 30°   | 418.7 | 418.7 | 418.7 |
| 32.5° | 429.5 | 429.7 | 430.0 |
| 35°   | 443.2 | 443.7 | 444.5 |
| 37.5° | 458.7 | 460.1 | 460.9 |
| 40°   | 477.2 | 477.8 | 479.1 |
| 42.5° | 497.9 | 499.5 | 499.8 |
| 45°   | 523.6 | 526.3 | 527.4 |
| 47.5° | 553.9 | 557.7 | 559.6 |
| 50°   | 587.7 | 592.0 | 594.7 |
| 52.5° | 624.5 | 631.5 | 634.7 |
| 55°   | 663.7 | 675.7 | 679.2 |
| 57.5° | 707.9 | 724.3 | 729.1 |
| 60°   | 751.4 | 774.5 | 782.2 |
| 62.5° | 788.4 | 820.9 | 830.5 |
| 65°   | 814.4 | 853.6 | 867.8 |
| 67.5° | 819.8 | 866.2 | 883.1 |
| 70°   | 787.6 | 835.1 | 854.7 |
| 72.5° | 684.9 | 727.8 | 752.2 |
| 75°   | 404.5 | 435.4 | 427.9 |
| 77.5° | 203.1 | 211.9 | 213.3 |
| 80°   | 89.1  | 94.4  | 96.6  |
| 82.5° | 22.0  | 22.5  | 25.5  |
| 85°   | 3.0   | 3.5   | 3.2   |
| 87.5° | 1.1   | 1.1   | 1.3   |
| 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

REPORT NUMBER: SP1-2511-595-4

| 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>Λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>Λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>Λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>Λ</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>Λ</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 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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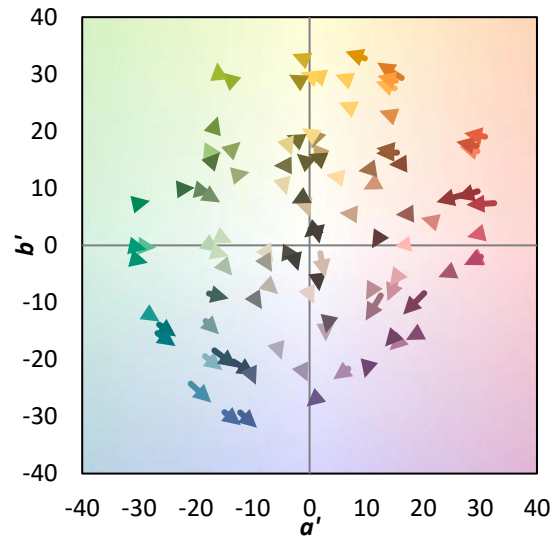
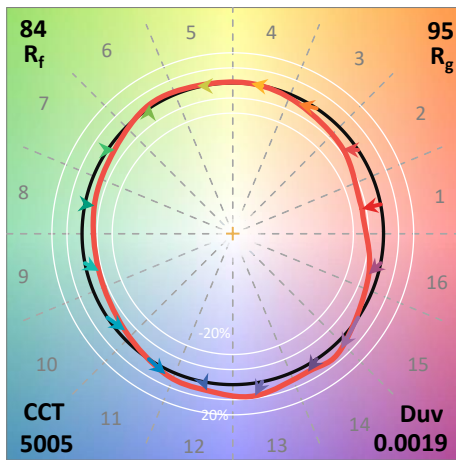
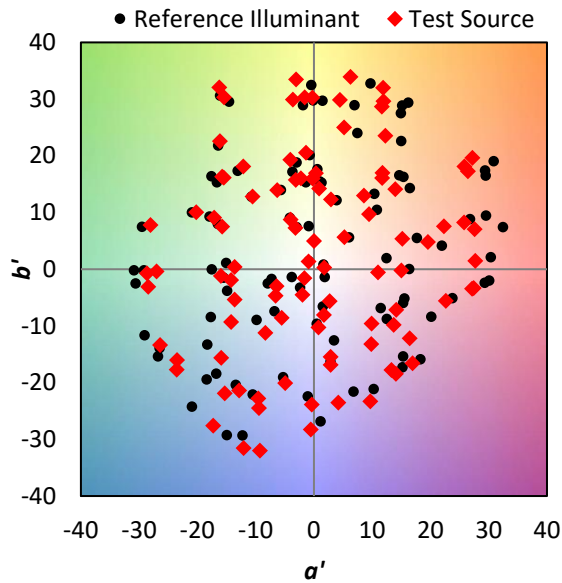
TM-30-18

### Summary

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

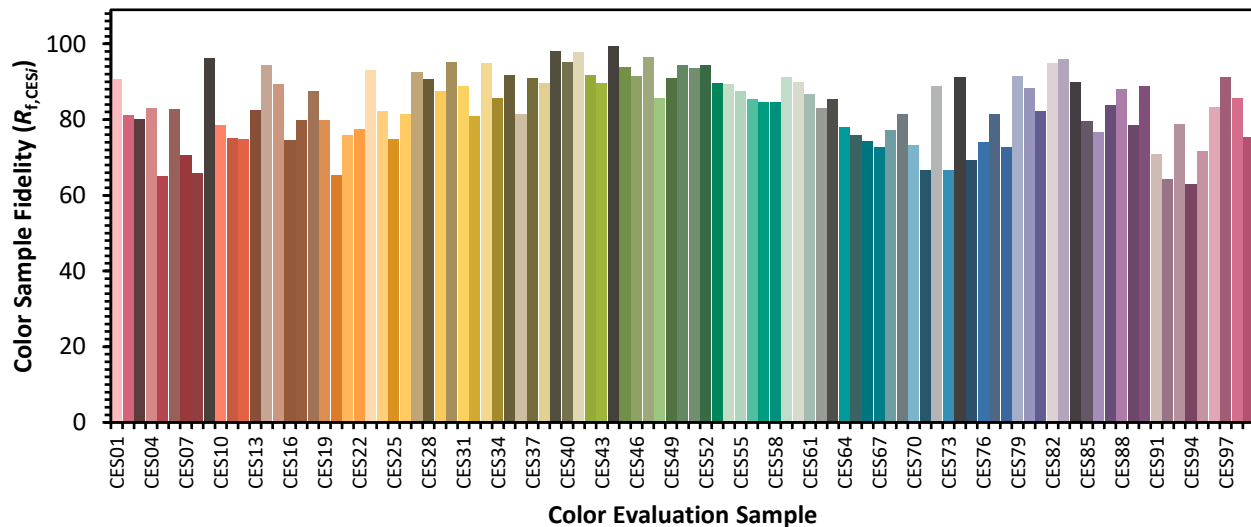


### Color Vector Graphics



**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)