

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: P1211985

Luminaire Tested: **GKO-PB1B-840-U-T2U**

Issue Date: 11/5/2025



**Test Information**

Test Method: LM-79-08  
Report Number: P1211985  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 11/5/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GKO-PB1B-840-U-T2U  
Description: GEKKO WALL PACK 1500LM PACKAGE 80CRI 4000K FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC  
Light Source: (10) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1386.7 lumens  
Efficiency: N/A  
Efficacy: 149.1 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type II - Medium  
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

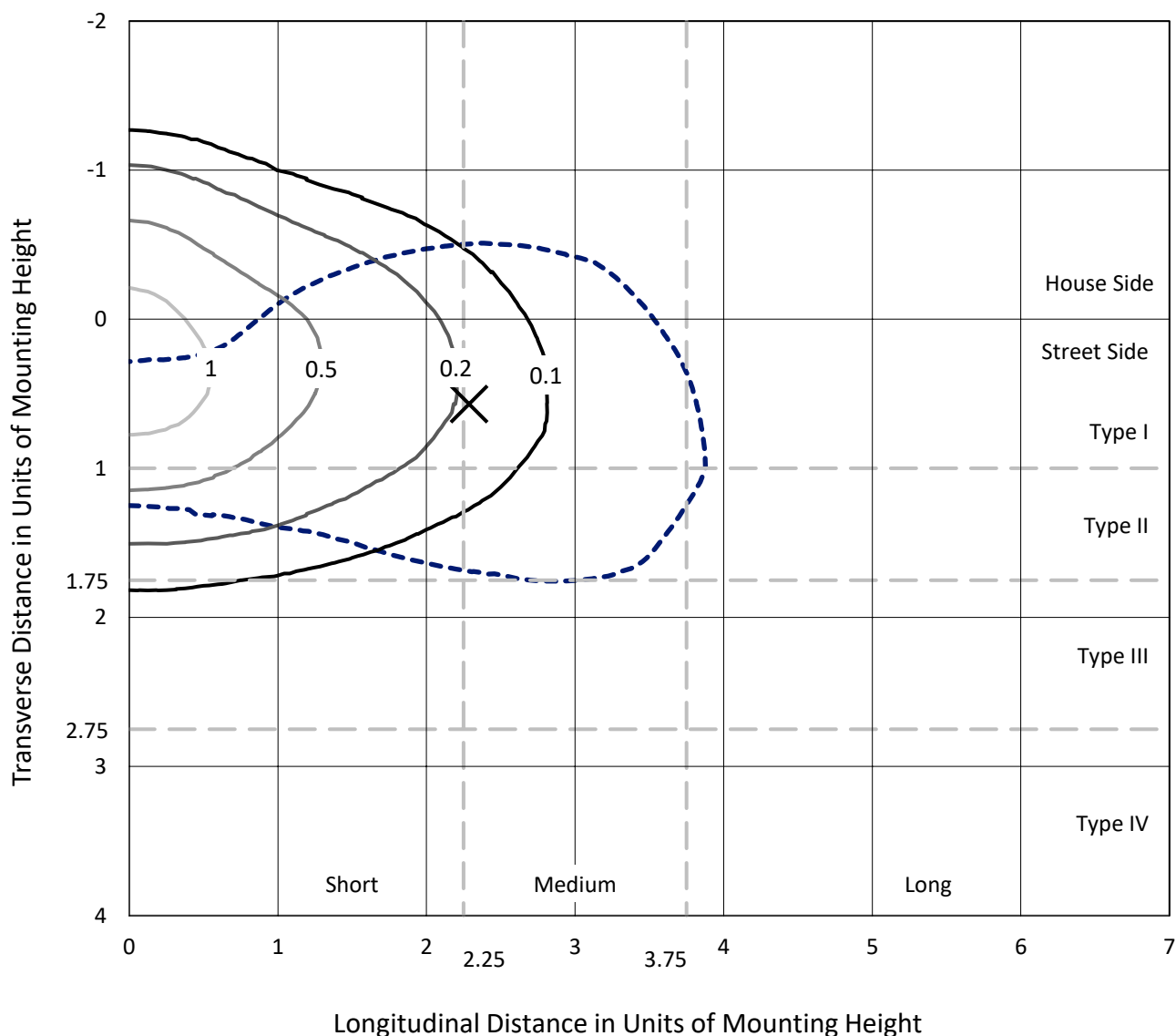
REPORT NUMBER: P1211985

CATALOG NUMBER: GKO-PB1B-840-U-T2U

## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

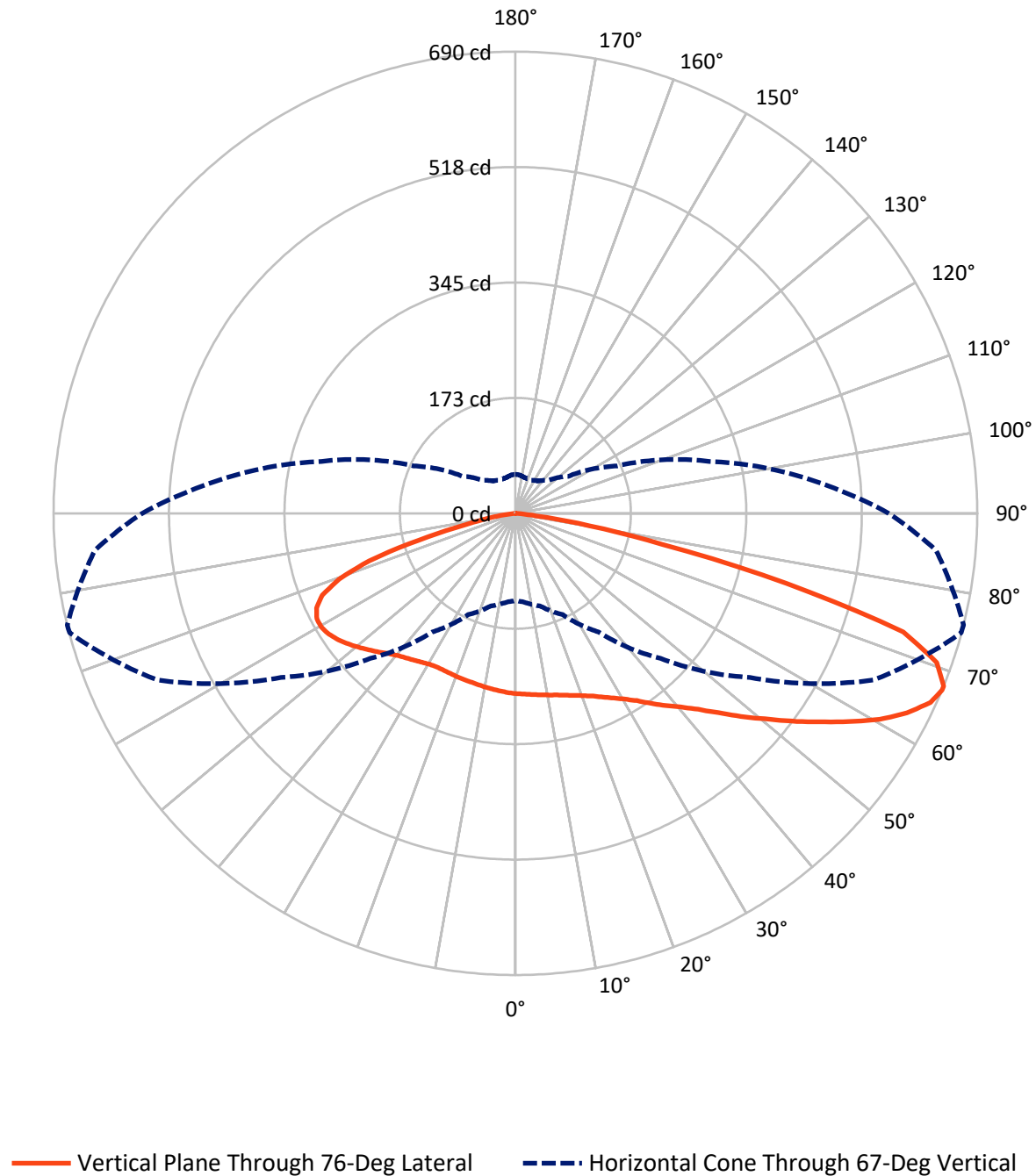
--- 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1.4 fc  
 Type II - Medium - N/A

REPORT NUMBER: P1211985  
CATALOG NUMBER: GKO-PB1B-840-U-T2U

## Luminous Intensity Polar Plot



REPORT NUMBER: P1211985

CATALOG NUMBER: GKO-PB1B-840-U-T2U

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 457.5    | 0.0    | 457.5  |
|                    | % Fixture | 33.0     | 0.0    | 33.0   |
| <b>Street Side</b> | Lumens    | 929.2    | 0.0    | 929.2  |
|                    | % Fixture | 67.0     | 0.0    | 67.0   |
| <b>Total</b>       | Lumens    | 1386.7   | 0.0    | 1386.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 25.9   | 1.9       |
| 10°-20°   | 79.3   | 5.7       |
| 20°-30°   | 136.4  | 9.8       |
| 30°-40°   | 196.0  | 14.1      |
| 40°-50°   | 248.5  | 17.9      |
| 50°-60°   | 272.9  | 19.7      |
| 60°-70°   | 264.7  | 19.1      |
| 70°-80°   | 146.1  | 10.5      |
| 80°-90°   | 16.9   | 1.2       |
| 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°    | 1386.7 | 100.0     |
| 0°-180°   | 1386.7 | 100.0     |



REPORT NUMBER: P1211985

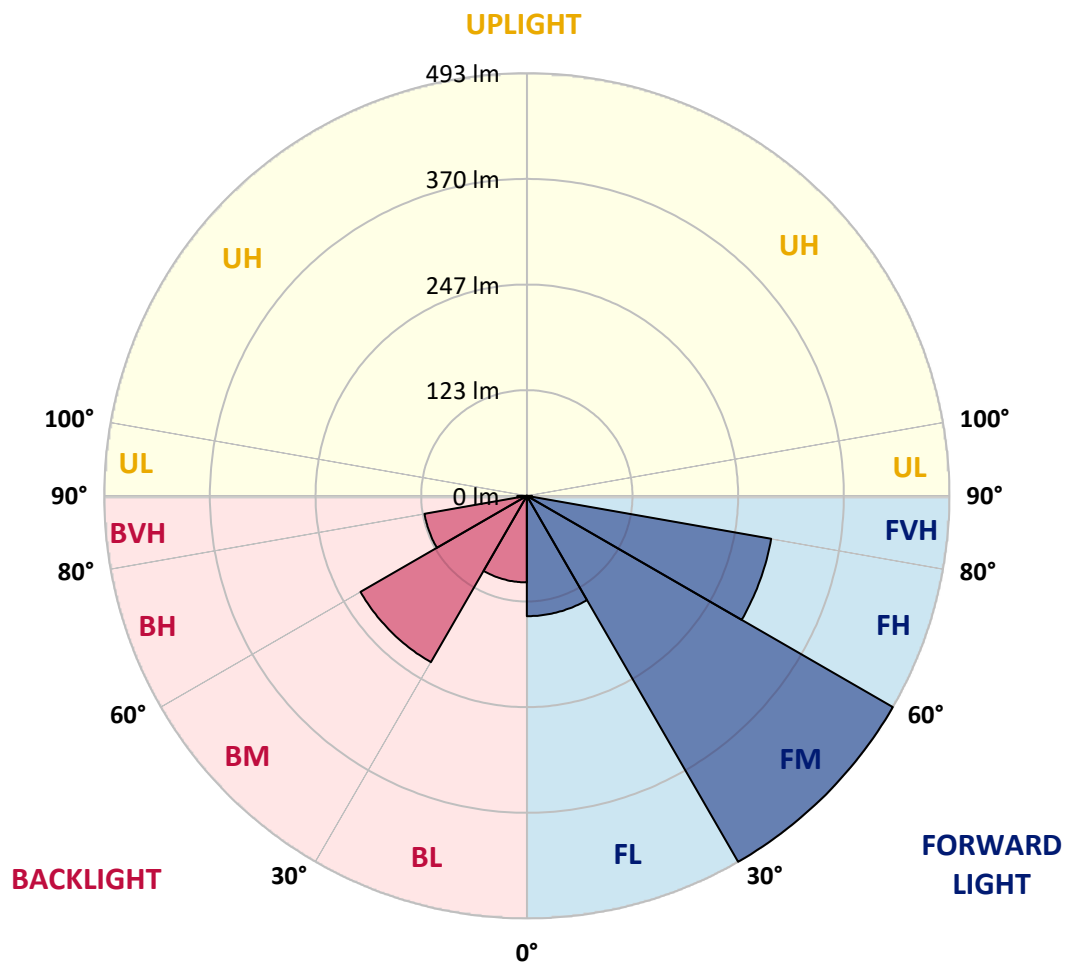
CATALOG NUMBER: GKO-PB1B-840-U-T2U

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|--------|-----------|-------------------------|------|--------|
|      |             |        |           | B                       | U    | G      |
| FL   | (0°-30°)    | 140.5  | 10.1      |                         |      |        |
| FM   | (30°-60°)   | 493.2  | 35.6      |                         |      |        |
| FH   | (60°-80°)   | 289.5  | 20.9      |                         |      | G0/660 |
| FVH  | (80°-90°)   | 6.0    | 0.4       |                         |      | G0/10  |
| BL   | (0°-30°)    | 101.1  | 7.3       | B0/110                  |      |        |
| BM   | (30°-60°)   | 224.2  | 16.2      | B1/1000                 |      |        |
| BH   | (60°-80°)   | 121.3  | 8.7       | B1/500                  |      | G1/500 |
| BVH  | (80°-90°)   | 11.0   | 0.8       |                         |      | 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 II Medium



REPORT NUMBER: P1211985

CATALOG NUMBER: GKO-PB1B-840-U-T2U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 76°   | 85°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 |
| 2.5°  | 277.6 | 277.3 | 277.1 | 277.1 | 276.0 | 274.9 | 273.9 | 273.0 | 270.9 | 270.6 | 269.6 |
| 5°    | 285.9 | 285.9 | 285.1 | 284.8 | 283.2 | 280.6 | 278.1 | 275.7 | 272.8 | 272.2 | 269.8 |
| 7.5°  | 296.7 | 296.7 | 295.3 | 294.2 | 291.8 | 287.5 | 283.2 | 278.9 | 274.7 | 274.1 | 270.4 |
| 10°   | 310.3 | 310.3 | 309.3 | 306.8 | 301.7 | 296.1 | 289.1 | 282.4 | 276.8 | 276.3 | 270.9 |
| 12.5° | 324.5 | 324.8 | 323.2 | 319.7 | 313.5 | 305.0 | 296.4 | 286.7 | 279.5 | 278.7 | 272.0 |
| 15°   | 339.0 | 339.3 | 338.2 | 334.5 | 326.2 | 315.7 | 304.2 | 292.6 | 283.0 | 282.2 | 273.6 |
| 17.5° | 353.2 | 353.8 | 352.7 | 348.4 | 338.8 | 327.5 | 313.3 | 298.8 | 287.3 | 286.2 | 276.3 |
| 20°   | 366.7 | 366.7 | 366.7 | 361.8 | 352.4 | 339.6 | 323.2 | 306.3 | 292.1 | 291.0 | 279.5 |
| 22.5° | 378.7 | 379.3 | 380.1 | 377.4 | 366.7 | 352.4 | 334.7 | 314.6 | 298.3 | 296.9 | 283.5 |
| 25°   | 390.8 | 391.1 | 393.2 | 391.3 | 380.9 | 366.1 | 347.1 | 325.1 | 305.8 | 304.4 | 288.3 |
| 27.5° | 404.7 | 405.5 | 406.9 | 406.1 | 394.3 | 379.8 | 360.8 | 336.6 | 314.1 | 312.7 | 294.2 |
| 30°   | 421.1 | 421.1 | 421.9 | 420.6 | 408.8 | 394.3 | 374.4 | 348.7 | 324.5 | 322.4 | 301.5 |
| 32.5° | 434.5 | 435.9 | 435.3 | 434.8 | 422.4 | 408.0 | 388.4 | 362.1 | 336.6 | 333.9 | 311.4 |
| 35°   | 447.1 | 447.4 | 447.1 | 447.7 | 435.3 | 421.6 | 403.1 | 377.7 | 350.0 | 349.0 | 324.0 |
| 37.5° | 454.4 | 454.9 | 456.2 | 457.9 | 446.9 | 434.0 | 417.9 | 394.8 | 366.7 | 364.8 | 339.0 |
| 40°   | 457.9 | 458.7 | 465.9 | 468.3 | 456.5 | 445.8 | 433.4 | 410.4 | 382.7 | 380.6 | 354.0 |
| 42.5° | 463.2 | 469.7 | 473.4 | 473.9 | 463.8 | 454.4 | 446.9 | 428.1 | 402.6 | 400.7 | 374.2 |
| 45°   | 445.5 | 443.1 | 453.0 | 464.6 | 464.0 | 460.0 | 459.7 | 447.9 | 427.0 | 425.1 | 397.0 |
| 47.5° | 423.2 | 421.4 | 426.7 | 443.6 | 455.7 | 462.4 | 472.3 | 471.3 | 456.5 | 453.8 | 423.5 |
| 50°   | 370.1 | 373.4 | 399.6 | 422.7 | 443.6 | 463.2 | 483.1 | 495.7 | 485.2 | 483.1 | 451.7 |
| 52.5° | 320.5 | 322.7 | 340.6 | 395.6 | 428.1 | 460.8 | 492.5 | 521.4 | 518.7 | 516.3 | 482.5 |
| 55°   | 285.7 | 287.8 | 316.5 | 351.6 | 405.0 | 448.5 | 498.6 | 545.8 | 552.8 | 550.4 | 515.2 |
| 57.5° | 249.2 | 252.7 | 272.2 | 303.1 | 374.2 | 428.1 | 500.8 | 570.5 | 589.8 | 587.7 | 546.6 |
| 60°   | 214.0 | 218.9 | 230.4 | 263.9 | 336.1 | 403.9 | 495.1 | 590.4 | 625.5 | 625.5 | 579.1 |
| 62.5° | 181.6 | 184.3 | 196.3 | 226.6 | 287.8 | 373.1 | 480.9 | 603.0 | 658.2 | 656.9 | 607.5 |
| 65°   | 154.8 | 156.1 | 165.8 | 191.8 | 247.3 | 339.0 | 456.2 | 602.2 | 681.5 | 681.8 | 626.3 |
| 67°   | 130.6 | 132.8 | 143.5 | 167.1 | 216.5 | 306.8 | 427.8 | 590.1 | 689.9 | 690.4 | 630.9 |
| 67.5° | 122.3 | 124.7 | 136.5 | 160.9 | 210.0 | 298.0 | 421.1 | 585.0 | 689.3 | 690.4 | 629.5 |
| 70°   | 84.2  | 84.8  | 104.6 | 132.5 | 172.7 | 251.1 | 374.7 | 549.6 | 668.9 | 668.1 | 600.3 |
| 72.5° | 53.6  | 52.8  | 71.9  | 96.8  | 138.9 | 203.3 | 316.2 | 487.6 | 607.0 | 606.2 | 529.2 |
| 75°   | 35.7  | 36.5  | 48.5  | 69.2  | 97.6  | 157.2 | 246.5 | 368.0 | 421.6 | 418.4 | 349.2 |
| 77.5° | 25.5  | 24.9  | 30.0  | 49.9  | 65.4  | 95.5  | 133.8 | 195.8 | 224.0 | 224.0 | 191.8 |
| 80°   | 13.9  | 14.2  | 16.4  | 27.6  | 37.0  | 37.3  | 50.2  | 98.2  | 109.4 | 111.8 | 93.1  |
| 82.5° | 4.0   | 4.3   | 5.9   | 9.4   | 10.2  | 11.3  | 17.4  | 28.2  | 29.5  | 31.1  | 25.2  |
| 85°   | 0.0   | 0.0   | 0.0   | 0.3   | 1.1   | 1.3   | 1.3   | 1.6   | 2.7   | 2.7   | 3.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.3   | 0.3   | 0.5   | 1.1   | 1.1   | 1.3   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

REPORT NUMBER: P1211985

CATALOG NUMBER: GKO-PB1B-840-U-T2U

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 | 269.6 |
| 2.5°  | 269.3 | 269.6 | 268.5 | 267.1 | 266.1 | 265.5 | 263.9 | 262.6 | 263.4 | 264.2 | 264.2 |
| 5°    | 269.0 | 268.8 | 266.6 | 264.2 | 262.6 | 261.5 | 258.8 | 257.0 | 257.2 | 258.0 | 257.8 |
| 7.5°  | 269.0 | 268.0 | 265.0 | 261.5 | 258.8 | 256.7 | 253.2 | 251.1 | 250.8 | 251.3 | 250.8 |
| 10°   | 269.3 | 267.4 | 263.4 | 258.6 | 254.8 | 251.6 | 247.3 | 244.9 | 244.1 | 244.3 | 243.8 |
| 12.5° | 269.8 | 266.9 | 261.8 | 255.6 | 250.8 | 246.5 | 241.7 | 238.7 | 238.2 | 238.7 | 238.7 |
| 15°   | 270.6 | 266.9 | 260.4 | 252.9 | 246.5 | 241.7 | 236.8 | 234.2 | 234.2 | 234.4 | 234.4 |
| 17.5° | 272.2 | 267.7 | 259.4 | 250.0 | 242.2 | 236.8 | 232.5 | 230.7 | 230.9 | 231.7 | 231.7 |
| 20°   | 273.9 | 268.8 | 258.3 | 247.0 | 238.4 | 232.3 | 228.8 | 227.4 | 228.5 | 229.6 | 229.6 |
| 22.5° | 276.3 | 270.1 | 257.2 | 244.3 | 234.2 | 228.0 | 225.0 | 224.0 | 225.0 | 226.4 | 225.8 |
| 25°   | 280.0 | 272.5 | 256.4 | 241.9 | 230.1 | 223.4 | 220.5 | 219.4 | 219.9 | 221.0 | 221.0 |
| 27.5° | 284.3 | 275.5 | 256.1 | 239.0 | 225.3 | 218.1 | 214.6 | 213.0 | 213.0 | 213.2 | 213.5 |
| 30°   | 291.6 | 280.6 | 257.2 | 236.8 | 221.0 | 212.4 | 207.9 | 205.5 | 205.2 | 206.3 | 206.3 |
| 32.5° | 300.1 | 287.5 | 259.9 | 235.0 | 216.7 | 205.7 | 199.6 | 197.7 | 197.1 | 197.9 | 197.1 |
| 35°   | 309.8 | 295.3 | 263.4 | 234.7 | 212.4 | 198.5 | 191.5 | 189.4 | 187.8 | 187.2 | 186.7 |
| 37.5° | 323.5 | 306.0 | 266.9 | 233.4 | 208.1 | 190.7 | 183.2 | 178.6 | 176.8 | 176.2 | 176.2 |
| 40°   | 336.9 | 316.5 | 271.2 | 231.2 | 203.0 | 182.9 | 172.2 | 167.1 | 166.3 | 166.3 | 166.3 |
| 42.5° | 353.8 | 330.2 | 277.1 | 229.9 | 196.9 | 175.1 | 160.4 | 154.5 | 154.5 | 154.5 | 154.2 |
| 45°   | 374.7 | 348.1 | 284.6 | 229.3 | 191.0 | 165.8 | 147.8 | 140.0 | 139.7 | 139.5 | 139.2 |
| 47.5° | 399.1 | 366.9 | 291.8 | 228.0 | 184.0 | 154.5 | 133.3 | 124.7 | 122.8 | 122.3 | 121.5 |
| 50°   | 424.3 | 387.3 | 299.6 | 226.1 | 175.7 | 141.4 | 119.6 | 109.7 | 105.7 | 104.3 | 104.9 |
| 52.5° | 451.1 | 407.2 | 307.1 | 223.4 | 165.8 | 128.2 | 105.7 | 95.2  | 91.2  | 89.6  | 89.3  |
| 55°   | 477.4 | 427.3 | 314.1 | 219.9 | 155.0 | 114.8 | 93.9  | 83.7  | 80.2  | 79.7  | 79.7  |
| 57.5° | 504.0 | 446.6 | 319.4 | 214.8 | 143.2 | 103.0 | 83.7  | 75.4  | 73.0  | 74.0  | 74.0  |
| 60°   | 528.1 | 463.5 | 322.1 | 207.9 | 131.4 | 92.3  | 75.6  | 69.5  | 68.4  | 71.1  | 70.8  |
| 62.5° | 549.8 | 474.7 | 320.8 | 197.7 | 119.9 | 83.1  | 69.5  | 64.9  | 65.2  | 68.4  | 68.7  |
| 65°   | 560.3 | 476.6 | 313.0 | 183.7 | 107.0 | 75.4  | 63.0  | 58.7  | 59.3  | 62.8  | 63.6  |
| 67°   | 557.9 | 469.4 | 300.1 | 167.9 | 96.6  | 69.5  | 59.0  | 54.7  | 55.0  | 57.9  | 58.2  |
| 67.5° | 555.2 | 465.9 | 296.7 | 163.1 | 93.9  | 68.4  | 57.9  | 53.9  | 54.4  | 57.1  | 57.1  |
| 70°   | 519.5 | 430.5 | 264.5 | 138.4 | 81.3  | 60.9  | 52.8  | 50.2  | 50.7  | 52.3  | 52.3  |
| 72.5° | 454.1 | 372.8 | 214.0 | 111.0 | 68.9  | 53.9  | 47.7  | 46.1  | 46.1  | 46.1  | 44.8  |
| 75°   | 289.7 | 233.6 | 140.0 | 85.0  | 56.9  | 46.1  | 42.9  | 41.0  | 40.0  | 41.6  | 41.0  |
| 77.5° | 160.1 | 122.0 | 73.0  | 48.8  | 41.0  | 38.4  | 37.3  | 36.5  | 36.2  | 40.0  | 38.9  |
| 80°   | 75.9  | 60.3  | 41.0  | 27.9  | 23.6  | 28.4  | 32.2  | 31.6  | 37.8  | 51.8  | 52.0  |
| 82.5° | 24.1  | 19.8  | 16.6  | 15.3  | 15.8  | 20.4  | 24.9  | 28.7  | 49.1  | 55.5  | 54.7  |
| 85°   | 3.0   | 2.7   | 1.9   | 6.2   | 10.5  | 15.0  | 19.3  | 37.3  | 45.1  | 37.6  | 35.4  |
| 87.5° | 1.1   | 1.1   | 1.1   | 4.3   | 8.0   | 11.5  | 17.4  | 37.6  | 27.6  | 25.2  | 23.1  |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP3-2511-595-3

Test Date: 11/12/2025

Luminaire Tested: GKO-PB1C-840-U-T4W

Data in this report applies to families of products including GKO-PB1C-840\*

### Test Information

Test Method: LM-79-2019  
 Report Number: SP3-2511-595-3  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP3 - 3M SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/27/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1C-840-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

CCT (K): 3958  
 CIE  $u'$ : 0.2251  
 CIE  $v'$ : 0.5041  
 Duv: 0.0014  
 CIE x: 0.3833  
 CIE y: 0.3816  
 CIE z: 0.2351  
 Peak Wavelength (nm): 450  
 Dominant Wavelength (nm): 578  
 Purity: 29.56261  
 R<sub>f</sub>: 82.9  
 R<sub>g</sub>: 94.7

CRI (Ra): 80.8  
 R1: 78.3  
 R2: 87.6  
 R3: 95.0  
 R4: 79.6  
 R5: 78.8  
 R6: 83.3  
 R7: 84.3  
 R8: 59.4  
 R9: -5.1  
 R10: 71.4  
 R11: 78.5  
 R12: 60.5  
 R13: 80.5  
 R14: 97.5  
 R15: 70.7



### Test Conditions

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

REPORT NUMBER: SP3-2511-595-3

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

REPORT NUMBER: SP3-2511-595-3

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP3-2511-595-3

**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               | 296                                  | NR                             | 620               | 736                                  | NR                             | 750               | 18                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 355                                  | NR                             | 625               | 683                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 415                                  | NR                             | 630               | 628                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 468                                  | NR                             | 635               | 571                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 511                                  | NR                             | 640               | 515                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 545                                  | NR                             | 645               | 460                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 570                                  | NR                             | 650               | 408                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 3                                    | NR                             | 525               | 590                                  | NR                             | 655               | 359                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 5                                    | NR                             | 530               | 606                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 7                                    | NR                             | 535               | 623                                  | NR                             | 665               | 273                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 12                                   | NR                             | 540               | 641                                  | NR                             | 670               | 236                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 22                                   | NR                             | 545               | 664                                  | NR                             | 675               | 204                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 40                                   | NR                             | 550               | 690                                  | NR                             | 680               | 175                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 73                                   | NR                             | 555               | 715                                  | NR                             | 685               | 151                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 133                                  | NR                             | 560               | 747                                  | NR                             | 690               | 128                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 236                                  | NR                             | 565               | 781                                  | NR                             | 695               | 109                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 416                                  | NR                             | 570               | 809                                  | NR                             | 700               | 93                                   | NR                             | 830               | 1                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 757                                  | NR                             | 575               | 840                                  | NR                             | 705               | 78                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 1000                                 | NR                             | 580               | 863                                  | NR                             | 710               | 67                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 730                                  | NR                             | 585               | 880                                  | NR                             | 715               | 57                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 494                                  | NR                             | 590               | 890                                  | NR                             | 720               | 48                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 419                                  | NR                             | 595               | 890                                  | NR                             | 725               | 41                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 305                                  | NR                             | 600               | 879                                  | NR                             | 730               | 35                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 235                                  | NR                             | 605               | 856                                  | NR                             | 735               | 29                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 237                                  | NR                             | 610               | 824                                  | NR                             | 740               | 25                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 257                                  | NR                             | 615               | 783                                  | NR                             | 745               | 21                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

REPORT NUMBER: SP3-2511-595-3

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.65

| 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    | 296                      | NR            | 620    | 736                      | NR            | 750    | 18                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 355                      | NR            | 625    | 683                      | NR            | 755    | 15                       | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 415                      | NR            | 630    | 628                      | NR            | 760    | 13                       | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 468                      | NR            | 635    | 571                      | NR            | 765    | 11                       | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 511                      | NR            | 640    | 515                      | NR            | 770    | 9                        | NR            | 900    | 0                        | NR            |
| 385    | 0                        | NR            | 515    | 545                      | NR            | 645    | 460                      | NR            | 775    | 8                        | NR            | 905    | 0                        | NR            |
| 390    | 1                        | NR            | 520    | 570                      | NR            | 650    | 408                      | NR            | 780    | 7                        | NR            | 910    | 0                        | NR            |
| 395    | 3                        | NR            | 525    | 590                      | NR            | 655    | 359                      | NR            | 785    | 6                        | NR            | 915    | 0                        | NR            |
| 400    | 5                        | NR            | 530    | 606                      | NR            | 660    | 313                      | NR            | 790    | 5                        | NR            | 920    | 0                        | NR            |
| 405    | 7                        | NR            | 535    | 623                      | NR            | 665    | 273                      | NR            | 795    | 4                        | NR            | 925    | 0                        | NR            |
| 410    | 12                       | NR            | 540    | 641                      | NR            | 670    | 236                      | NR            | 800    | 4                        | NR            | 930    | 0                        | NR            |
| 415    | 22                       | NR            | 545    | 664                      | NR            | 675    | 204                      | NR            | 805    | 3                        | NR            | 935    | 0                        | NR            |
| 420    | 40                       | NR            | 550    | 690                      | NR            | 680    | 175                      | NR            | 810    | 3                        | NR            | 940    | 0                        | NR            |
| 425    | 73                       | NR            | 555    | 715                      | NR            | 685    | 151                      | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 133                      | NR            | 560    | 747                      | NR            | 690    | 128                      | NR            | 820    | 2                        | NR            | 950    | 0                        | NR            |
| 435    | 236                      | NR            | 565    | 781                      | NR            | 695    | 109                      | NR            | 825    | 2                        | NR            | 955    | 0                        | NR            |
| 440    | 416                      | NR            | 570    | 809                      | NR            | 700    | 93                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 757                      | NR            | 575    | 840                      | NR            | 705    | 78                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 1000                     | NR            | 580    | 863                      | NR            | 710    | 67                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 730                      | NR            | 585    | 880                      | NR            | 715    | 57                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 494                      | NR            | 590    | 890                      | NR            | 720    | 48                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 419                      | NR            | 595    | 890                      | NR            | 725    | 41                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 305                      | NR            | 600    | 879                      | NR            | 730    | 35                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 235                      | NR            | 605    | 856                      | NR            | 735    | 29                       | NR            | 865    | 1                        | NR            | 995    | 0                        | NR            |
| 480    | 237                      | NR            | 610    | 824                      | NR            | 740    | 25                       | NR            | 870    | 1                        | NR            | 1000   | 0                        | NR            |
| 485    | 257                      | NR            | 615    | 783                      | NR            | 745    | 21                       | NR            | 875    | 1                        | NR            |        |                          |               |

REPORT NUMBER: SP3-2511-595-3

### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.36

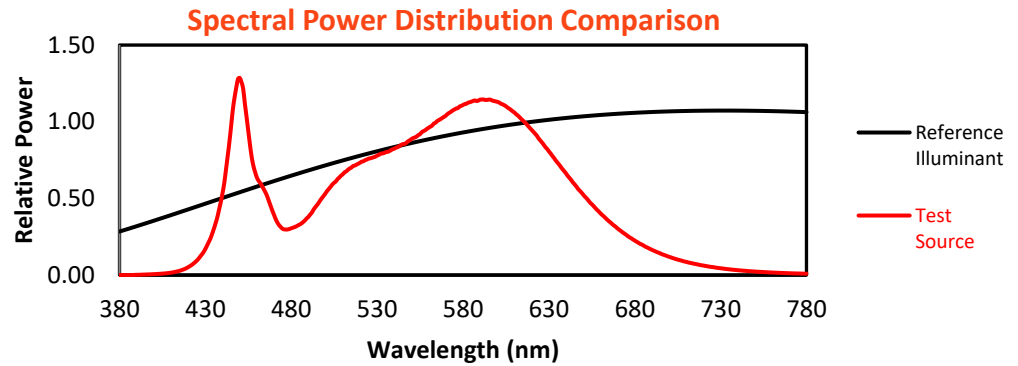
| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 296                         | NR               | 620       | 736                         | NR               | 750       | 18                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 355                         | NR               | 625       | 683                         | NR               | 755       | 15                          | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 415                         | NR               | 630       | 628                         | NR               | 760       | 13                          | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 468                         | NR               | 635       | 571                         | NR               | 765       | 11                          | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 511                         | NR               | 640       | 515                         | NR               | 770       | 9                           | NR               | 900       | 0                           | NR               |
| 385       | 0                           | NR               | 515       | 545                         | NR               | 645       | 460                         | NR               | 775       | 8                           | NR               | 905       | 0                           | NR               |
| 390       | 1                           | NR               | 520       | 570                         | NR               | 650       | 408                         | NR               | 780       | 7                           | NR               | 910       | 0                           | NR               |
| 395       | 3                           | NR               | 525       | 590                         | NR               | 655       | 359                         | NR               | 785       | 6                           | NR               | 915       | 0                           | NR               |
| 400       | 5                           | NR               | 530       | 606                         | NR               | 660       | 313                         | NR               | 790       | 5                           | NR               | 920       | 0                           | NR               |
| 405       | 7                           | NR               | 535       | 623                         | NR               | 665       | 273                         | NR               | 795       | 4                           | NR               | 925       | 0                           | NR               |
| 410       | 12                          | NR               | 540       | 641                         | NR               | 670       | 236                         | NR               | 800       | 4                           | NR               | 930       | 0                           | NR               |
| 415       | 22                          | NR               | 545       | 664                         | NR               | 675       | 204                         | NR               | 805       | 3                           | NR               | 935       | 0                           | NR               |
| 420       | 40                          | NR               | 550       | 690                         | NR               | 680       | 175                         | NR               | 810       | 3                           | NR               | 940       | 0                           | NR               |
| 425       | 73                          | NR               | 555       | 715                         | NR               | 685       | 151                         | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 133                         | NR               | 560       | 747                         | NR               | 690       | 128                         | NR               | 820       | 2                           | NR               | 950       | 0                           | NR               |
| 435       | 236                         | NR               | 565       | 781                         | NR               | 695       | 109                         | NR               | 825       | 2                           | NR               | 955       | 0                           | NR               |
| 440       | 416                         | NR               | 570       | 809                         | NR               | 700       | 93                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 757                         | NR               | 575       | 840                         | NR               | 705       | 78                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 1000                        | NR               | 580       | 863                         | NR               | 710       | 67                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 730                         | NR               | 585       | 880                         | NR               | 715       | 57                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 494                         | NR               | 590       | 890                         | NR               | 720       | 48                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 419                         | NR               | 595       | 890                         | NR               | 725       | 41                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 305                         | NR               | 600       | 879                         | NR               | 730       | 35                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 235                         | NR               | 605       | 856                         | NR               | 735       | 29                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 237                         | NR               | 610       | 824                         | NR               | 740       | 25                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 257                         | NR               | 615       | 783                         | NR               | 745       | 21                          | NR               | 875       | 1                           | NR               |           |                             |                  |

REPORT NUMBER: SP3-2511-595-3

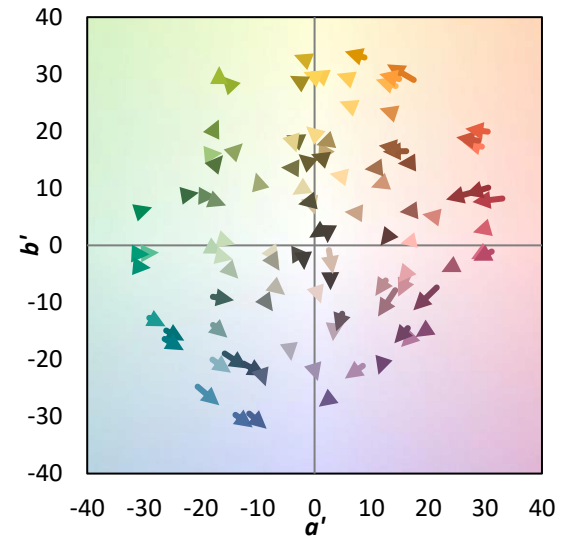
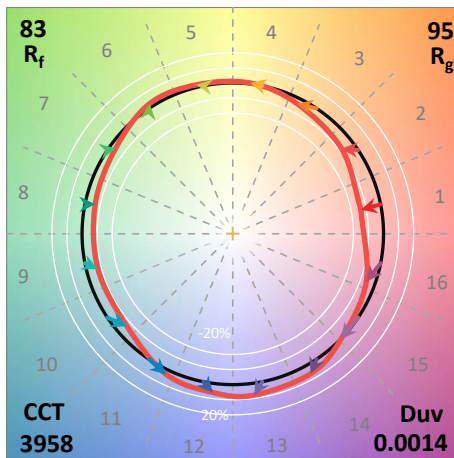
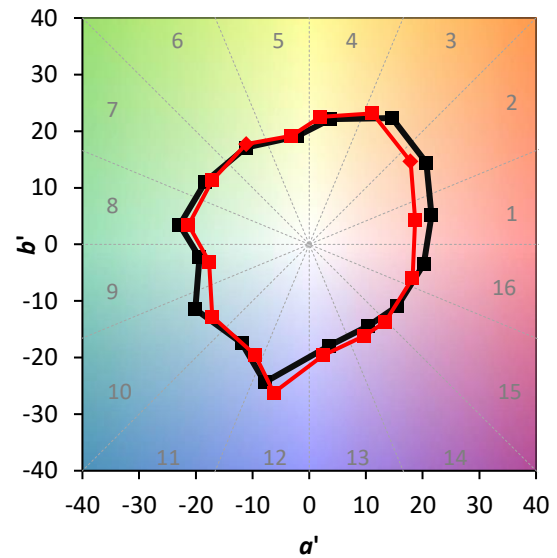
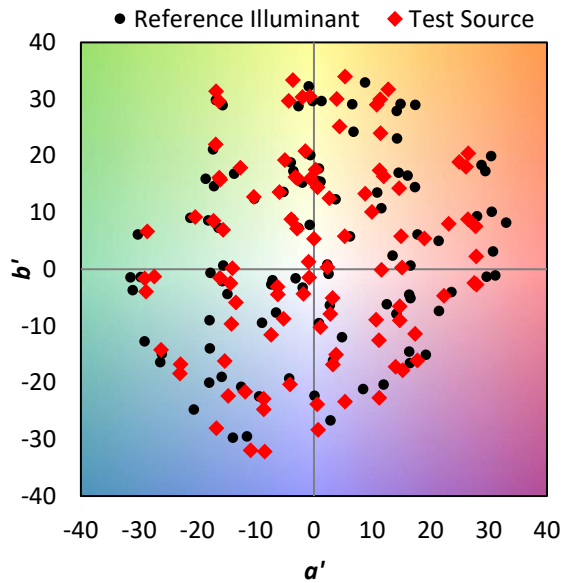
TM-30-18

### Summary

$R_f = 82.9$   
 $R_g = 94.7$   
 $CIE R_a = 80.8$   
 $R_g = -5.1$

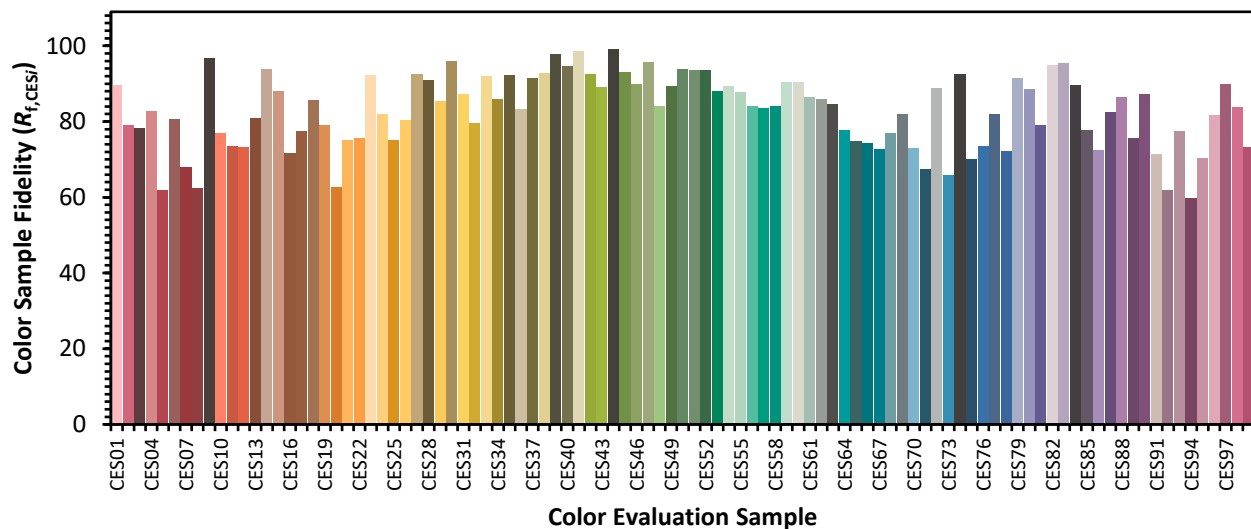


### Color Vector Graphics



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

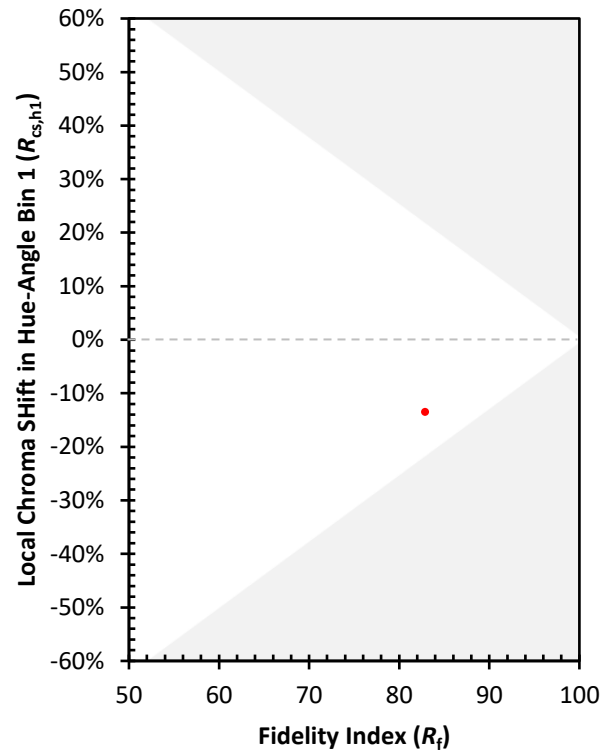
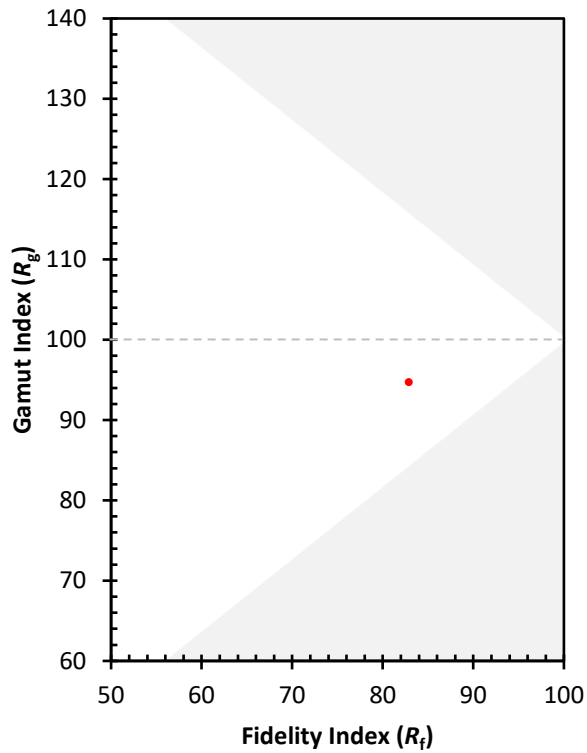
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 80 | CES51 = 94 | CES76 = 73 |
| CES02 = 61 | CES27 = 93 | CES52 = 94 | CES77 = 82 |
| CES03 = 31 | CES28 = 91 | CES53 = 88 | CES78 = 72 |
| CES04 = 70 | CES29 = 85 | CES54 = 89 | CES79 = 91 |
| CES05 = 48 | CES30 = 96 | CES55 = 88 | CES80 = 89 |
| CES06 = 50 | CES31 = 87 | CES56 = 84 | CES81 = 79 |
| CES07 = 40 | CES32 = 80 | CES57 = 83 | CES82 = 95 |
| CES08 = 39 | CES33 = 92 | CES58 = 84 | CES83 = 95 |
| CES09 = 29 | CES34 = 86 | CES59 = 90 | CES84 = 90 |
| CES10 = 74 | CES35 = 92 | CES60 = 90 | CES85 = 78 |
| CES11 = 57 | CES36 = 83 | CES61 = 86 | CES86 = 72 |
| CES12 = 63 | CES37 = 91 | CES62 = 86 | CES87 = 83 |
| CES13 = 42 | CES38 = 93 | CES63 = 85 | CES88 = 87 |
| CES14 = 74 | CES39 = 98 | CES64 = 78 | CES89 = 76 |
| CES15 = 71 | CES40 = 95 | CES65 = 75 | CES90 = 87 |
| CES16 = 47 | CES41 = 99 | CES66 = 74 | CES91 = 71 |
| CES17 = 49 | CES42 = 93 | CES67 = 73 | CES92 = 62 |
| CES18 = 56 | CES43 = 89 | CES68 = 77 | CES93 = 77 |
| CES19 = 71 | CES44 = 99 | CES69 = 82 | CES94 = 60 |
| CES20 = 65 | CES45 = 93 | CES70 = 73 | CES95 = 70 |
| CES21 = 86 | CES46 = 90 | CES71 = 67 | CES96 = 82 |
| CES22 = 78 | CES47 = 96 | CES72 = 89 | CES97 = 90 |
| CES23 = 91 | CES48 = 84 | CES73 = 66 | CES98 = 84 |
| CES24 = 90 | CES49 = 89 | CES74 = 93 | CES99 = 73 |
| CES25 = 71 | CES50 = 94 | CES75 = 70 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)