

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P630009

Luminaire Tested: GWS-SA1C-827-U-SLL-W-GRSBK

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P630009  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-38)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1C-827-U-SLL-W-GRSBK  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK  
Light Source: (16) 2700K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

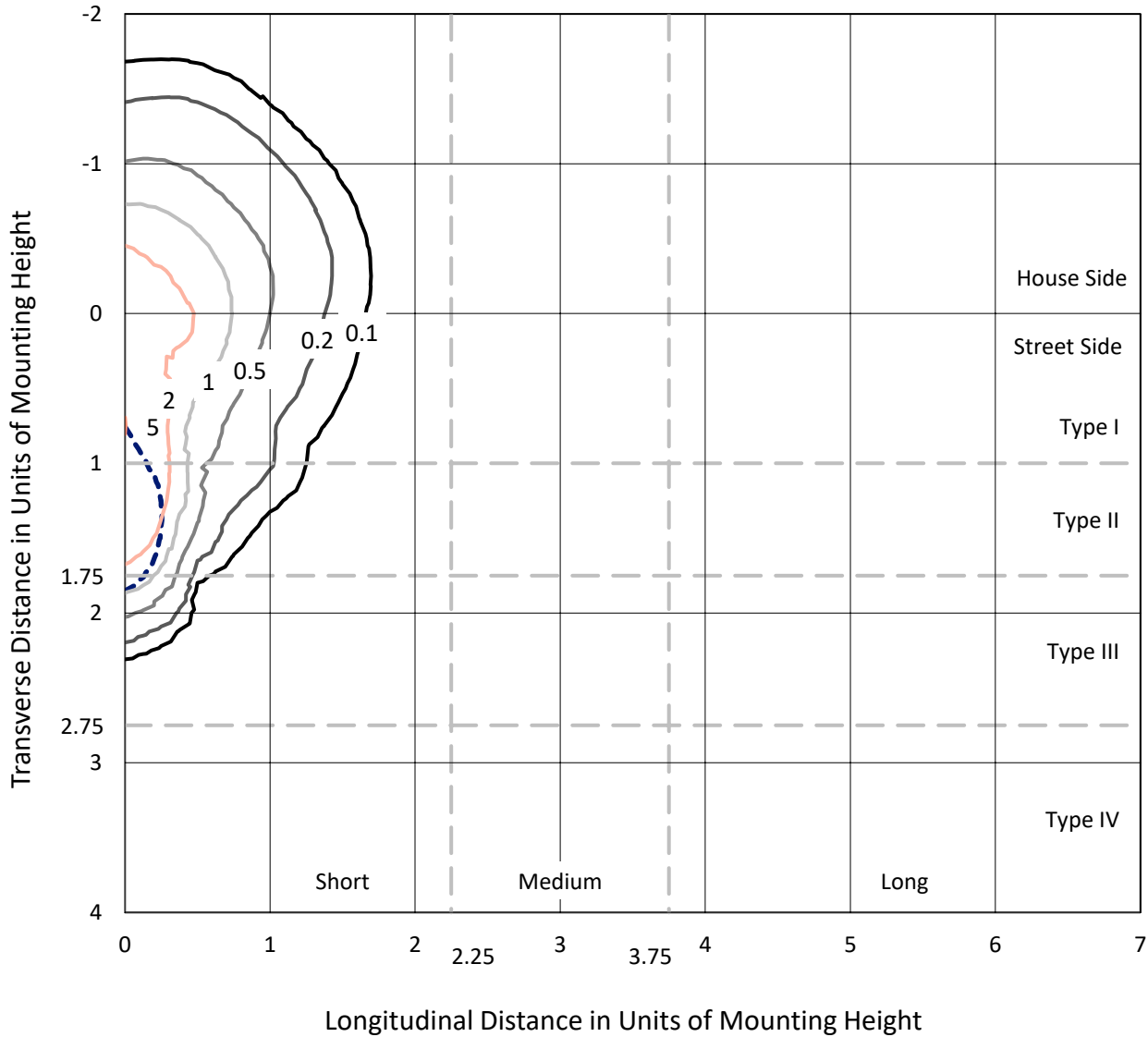
Lumens per Lamp: N/A  
Luminaire Lumens: 1894.7 lumens  
Efficiency: N/A  
Efficacy: 55.6 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B1 - U0 - G0  
  
Input Watts (W): 34.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
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

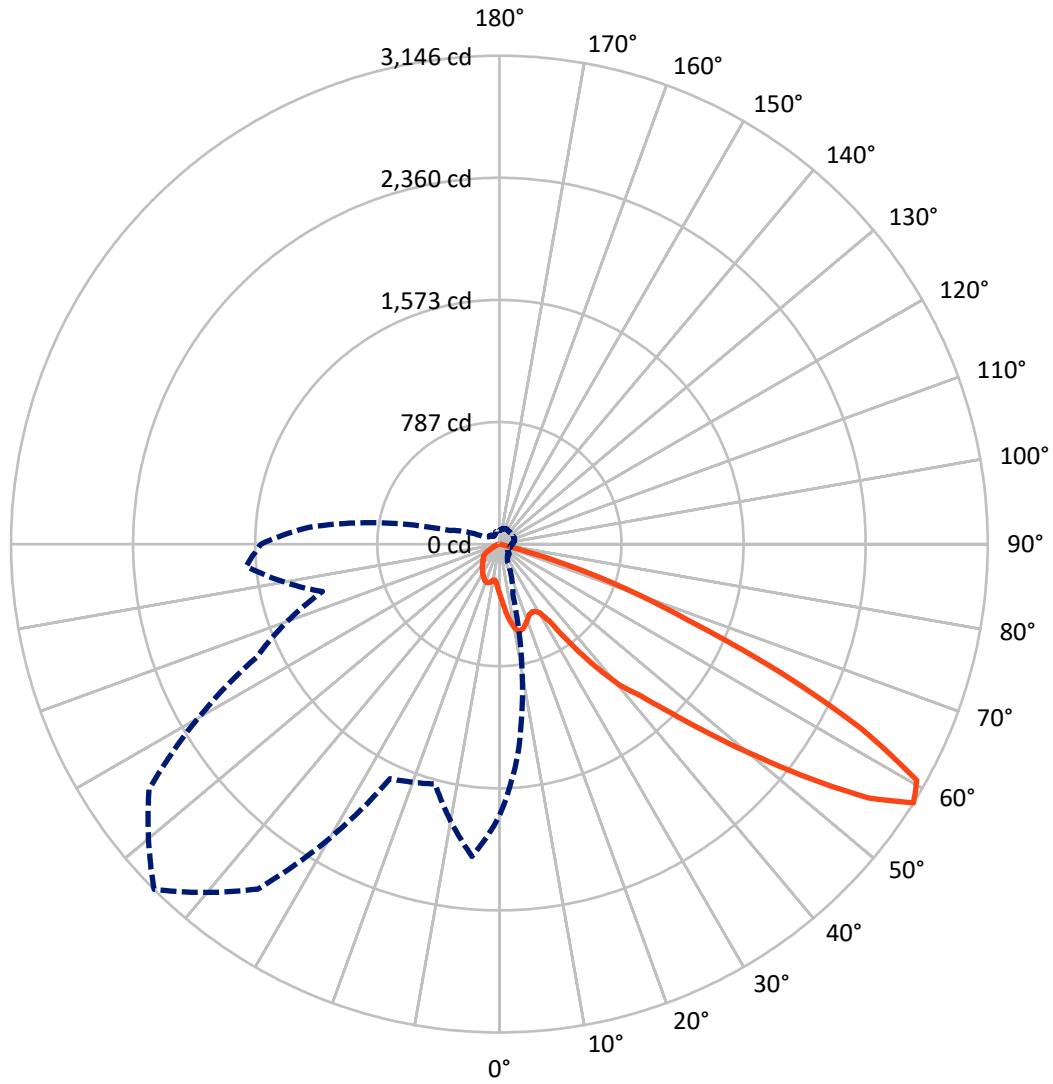
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.1 fc  
 Type III - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 315-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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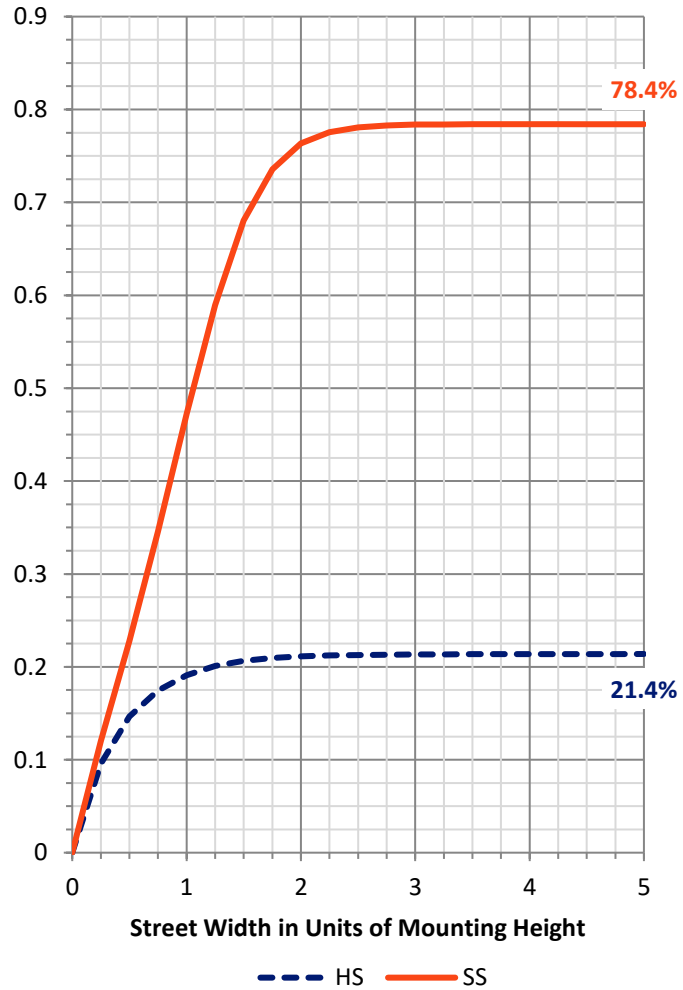
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 408.2    | 0.0    | 408.2  |
|                    | % Fixture | 21.5     | 0.0    | 21.5   |
| <b>Street Side</b> | Lumens    | 1486.5   | 0.0    | 1486.5 |
|                    | % Fixture | 78.5     | 0.0    | 78.5   |
| <b>Total</b>       | Lumens    | 1894.7   | 0.0    | 1894.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 31.8   | 1.7       |
| 10°-20°   | 104.7  | 5.5       |
| 20°-30°   | 169.9  | 9.0       |
| 30°-40°   | 260.8  | 13.8      |
| 40°-50°   | 416.5  | 22.0      |
| 50°-60°   | 583.2  | 30.8      |
| 60°-70°   | 299.0  | 15.8      |
| 70°-80°   | 28.8   | 1.5       |
| 80°-90°   | 0.0    | 0.0       |
| 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°    | 1894.7 | 100.0     |
| 0°-180°   | 1894.7 | 100.0     |

**Coefficient of Utilization**



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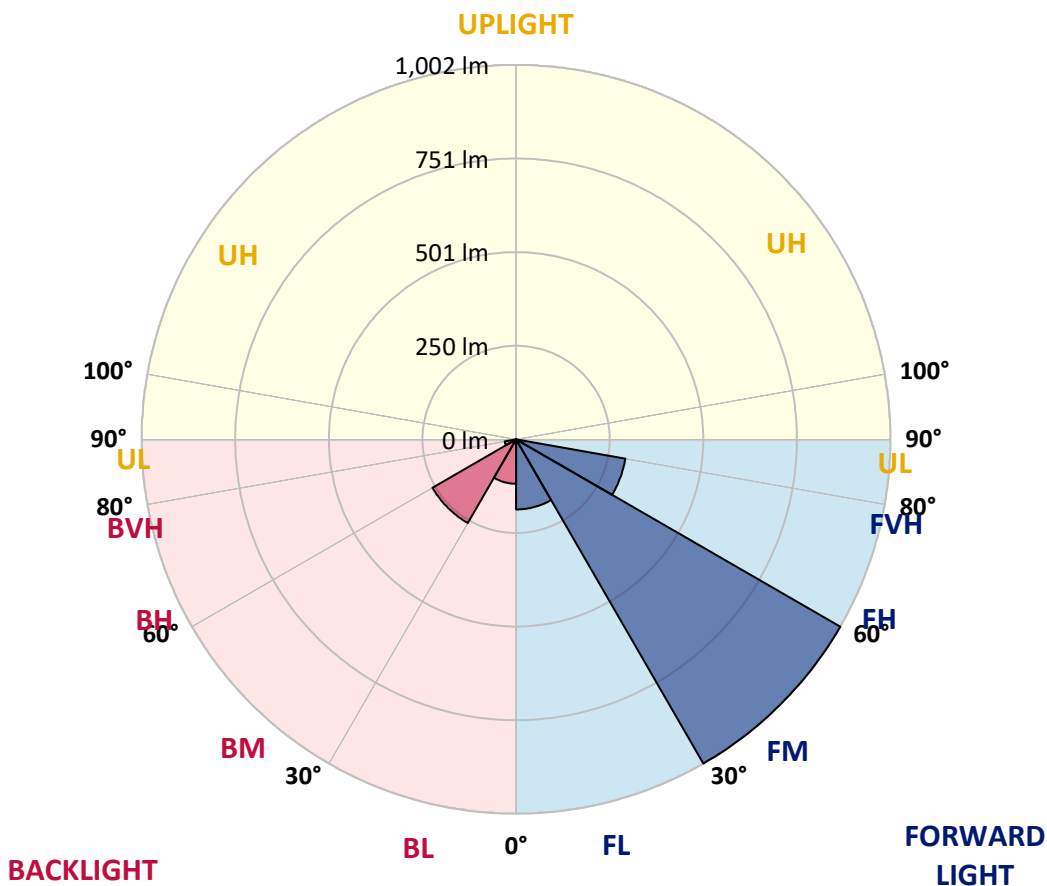
CATALOG NUMBER: GWS-SA1C-827-U-SLL-W-GRSBK

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

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|----------------|--------|-----------|-------------------------|------|--------|
|                |        |           | B                       | U    | G      |
| FL (0°-30°)    | 187.6  | 9.9       |                         |      |        |
| FM (30°-60°)   | 1002.0 | 52.9      |                         |      |        |
| FH (60°-80°)   | 297.0  | 15.7      |                         |      | G0/660 |
| FVH (80°-90°)  | 0.0    | 0.0       |                         |      | G0/10  |
| BL (0°-30°)    | 118.9  | 6.3       | B1/500                  |      |        |
| BM (30°-60°)   | 258.5  | 13.6      | B1/1000                 |      |        |
| BH (60°-80°)   | 30.8   | 1.6       | B0/110                  |      | G0/110 |
| BVH (80°-90°)  | 0.0    | 0.0       |                         |      | G0/10  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |        |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |        |

**BUG Rating: B1-U0-G0**

Type III Short





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CATALOG NUMBER: GWS-SA1C-827-U-SLL-W-GRSBK

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°   | 25°   | 35°   | 45°   | 55°   | 65°   | 75°   | 85°   |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 321.9  | 321.9  | 321.9  | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 |
| 2.5°  | 357.7  | 356.9  | 354.4  | 345.7 | 340.4 | 332.1 | 326.0 | 318.1 | 309.5 | 304.2 | 298.9 |
| 5°    | 395.6  | 393.6  | 386.8  | 367.0 | 351.8 | 335.4 | 322.2 | 307.8 | 292.3 | 282.2 | 272.8 |
| 7.5°  | 432.1  | 429.1  | 420.0  | 386.5 | 363.5 | 339.9 | 321.2 | 300.2 | 278.4 | 263.2 | 251.5 |
| 10°   | 467.8  | 461.0  | 446.6  | 405.5 | 374.4 | 346.0 | 324.0 | 299.9 | 274.3 | 255.1 | 242.1 |
| 12.5° | 497.2  | 492.2  | 472.4  | 423.5 | 383.5 | 347.3 | 320.2 | 297.9 | 280.7 | 267.7 | 255.8 |
| 15°   | 522.5  | 517.0  | 498.2  | 439.7 | 391.3 | 342.2 | 304.2 | 284.7 | 287.5 | 292.6 | 282.4 |
| 17.5° | 545.9  | 540.0  | 519.8  | 453.1 | 394.4 | 329.8 | 281.9 | 272.5 | 288.0 | 307.0 | 303.2 |
| 20°   | 569.9  | 563.3  | 538.5  | 464.0 | 393.4 | 310.3 | 259.4 | 262.2 | 283.9 | 305.7 | 307.8 |
| 22.5° | 598.0  | 591.2  | 562.3  | 478.0 | 392.6 | 287.0 | 239.9 | 253.0 | 276.3 | 294.8 | 298.4 |
| 25°   | 635.3  | 627.2  | 595.5  | 498.5 | 394.6 | 265.7 | 225.9 | 244.2 | 263.4 | 280.1 | 282.2 |
| 27.5° | 684.4  | 674.0  | 633.7  | 523.8 | 398.9 | 249.0 | 219.9 | 232.0 | 247.0 | 261.9 | 263.7 |
| 30°   | 748.5  | 735.3  | 677.6  | 545.9 | 396.9 | 237.3 | 215.8 | 219.9 | 228.7 | 240.9 | 241.1 |
| 32.5° | 823.5  | 805.5  | 726.7  | 564.8 | 379.4 | 228.7 | 210.2 | 207.4 | 209.5 | 218.8 | 220.6 |
| 35°   | 911.6  | 888.3  | 780.9  | 582.8 | 347.5 | 212.0 | 200.1 | 190.7 | 190.0 | 194.5 | 198.8 |
| 37.5° | 1012.7 | 984.8  | 849.3  | 605.9 | 309.8 | 194.5 | 185.2 | 175.8 | 171.7 | 174.0 | 180.6 |
| 40°   | 1105.9 | 1075.0 | 920.7  | 633.7 | 271.3 | 178.8 | 167.7 | 158.1 | 153.2 | 154.0 | 162.1 |
| 42.5° | 1215.3 | 1183.4 | 1008.1 | 670.2 | 239.4 | 168.2 | 149.4 | 139.6 | 133.2 | 136.8 | 146.2 |
| 45°   | 1381.5 | 1345.2 | 1135.5 | 701.9 | 214.0 | 165.7 | 133.5 | 119.6 | 116.5 | 122.6 | 133.7 |
| 47.5° | 1608.4 | 1564.1 | 1310.5 | 721.1 | 192.5 | 167.9 | 122.3 | 103.3 | 104.1 | 110.9 | 122.1 |
| 50°   | 1833.6 | 1785.7 | 1512.9 | 695.8 | 174.8 | 163.4 | 116.8 | 90.7  | 95.5  | 101.6 | 111.7 |
| 52.5° | 1988.4 | 1926.1 | 1611.5 | 622.6 | 158.6 | 146.2 | 116.3 | 78.8  | 87.9  | 89.9  | 98.5  |
| 55°   | 1994.4 | 1917.7 | 1561.1 | 490.9 | 136.5 | 123.4 | 110.9 | 68.9  | 79.5  | 80.3  | 87.6  |
| 57.5° | 1748.2 | 1678.8 | 1364.2 | 337.1 | 121.3 | 90.4  | 88.4  | 60.3  | 65.4  | 71.7  | 76.2  |
| 60°   | 1330.1 | 1271.0 | 1020.3 | 154.5 | 92.2  | 57.5  | 60.5  | 51.9  | 48.9  | 58.3  | 62.8  |
| 62.5° | 814.6  | 776.9  | 612.0  | 68.4  | 58.8  | 30.6  | 36.7  | 41.3  | 36.7  | 40.3  | 44.1  |
| 65°   | 323.5  | 306.7  | 232.3  | 29.1  | 24.1  | 15.5  | 16.7  | 24.1  | 25.8  | 28.4  | 31.9  |
| 67.5° | 56.2   | 53.2   | 39.0   | 12.9  | 9.9   | 9.4   | 8.1   | 11.1  | 15.7  | 17.5  | 20.3  |
| 70°   | 7.3    | 7.1    | 6.3    | 5.3   | 5.1   | 4.6   | 3.5   | 7.1   | 10.6  | 11.1  | 12.9  |
| 72.5° | 1.8    | 1.5    | 1.5    | 1.3   | 1.5   | 0.5   | 0.5   | 3.8   | 7.6   | 7.9   | 9.1   |
| 75°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 1.3   | 4.8   | 5.3   | 6.3   |
| 77.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.3   |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 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: GWS-SA1C-827-U-SLL-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

|       | 90°   | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 |
| 2.5°  | 294.6 | 289.5 | 287.7 | 285.2 | 281.9 | 282.9 | 278.4 | 276.9 | 279.1 | 282.2 | 281.4 |
| 5°    | 267.7 | 262.2 | 258.4 | 252.5 | 251.5 | 249.2 | 247.7 | 245.7 | 248.2 | 251.8 | 252.5 |
| 7.5°  | 246.5 | 241.6 | 237.8 | 236.1 | 234.8 | 233.8 | 230.8 | 229.2 | 229.2 | 230.8 | 232.0 |
| 10°   | 237.3 | 233.8 | 233.0 | 233.5 | 235.6 | 235.3 | 232.5 | 230.5 | 228.0 | 226.7 | 228.2 |
| 12.5° | 250.0 | 244.2 | 243.2 | 243.4 | 245.9 | 245.7 | 242.7 | 240.1 | 239.6 | 240.1 | 244.9 |
| 15°   | 271.5 | 262.7 | 256.1 | 254.8 | 256.1 | 255.6 | 253.3 | 251.8 | 252.5 | 259.9 | 268.0 |
| 17.5° | 290.8 | 277.1 | 265.2 | 260.6 | 260.4 | 259.6 | 257.3 | 256.8 | 260.6 | 274.3 | 286.2 |
| 20°   | 296.4 | 282.9 | 266.0 | 260.1 | 258.9 | 258.1 | 255.6 | 256.3 | 261.1 | 277.6 | 287.7 |
| 22.5° | 289.0 | 276.1 | 258.4 | 252.5 | 251.5 | 251.3 | 248.7 | 249.7 | 253.8 | 268.2 | 276.6 |
| 25°   | 275.1 | 264.2 | 245.7 | 240.6 | 240.6 | 240.1 | 237.8 | 238.4 | 240.9 | 253.5 | 261.7 |
| 27.5° | 258.1 | 247.7 | 232.3 | 227.2 | 228.0 | 228.7 | 225.9 | 225.2 | 227.2 | 239.1 | 243.9 |
| 30°   | 238.6 | 231.3 | 219.1 | 214.5 | 214.3 | 217.3 | 213.5 | 212.5 | 215.3 | 224.7 | 225.7 |
| 32.5° | 219.6 | 216.1 | 207.4 | 203.9 | 204.2 | 204.7 | 202.6 | 202.6 | 205.2 | 210.2 | 210.0 |
| 35°   | 201.1 | 198.8 | 197.3 | 194.8 | 194.5 | 193.5 | 193.5 | 194.0 | 196.8 | 198.6 | 195.3 |
| 37.5° | 183.4 | 185.7 | 187.4 | 184.9 | 182.9 | 182.9 | 182.9 | 185.2 | 187.7 | 186.9 | 181.4 |
| 40°   | 167.7 | 172.5 | 178.1 | 175.3 | 170.5 | 170.2 | 171.2 | 175.0 | 178.8 | 174.3 | 169.2 |
| 42.5° | 154.3 | 160.3 | 168.2 | 166.7 | 161.3 | 160.6 | 161.3 | 166.2 | 169.2 | 163.4 | 157.8 |
| 45°   | 141.1 | 148.7 | 158.1 | 158.1 | 152.2 | 151.5 | 151.7 | 158.1 | 159.8 | 153.0 | 145.9 |
| 47.5° | 129.9 | 138.3 | 148.2 | 148.2 | 143.4 | 141.8 | 143.1 | 149.7 | 151.0 | 141.3 | 134.8 |
| 50°   | 119.3 | 128.4 | 139.3 | 138.6 | 135.3 | 134.0 | 136.3 | 143.4 | 141.8 | 131.2 | 124.4 |
| 52.5° | 105.9 | 115.5 | 130.4 | 131.2 | 129.4 | 129.7 | 132.5 | 137.0 | 132.7 | 119.8 | 114.0 |
| 55°   | 93.7  | 103.6 | 118.5 | 122.6 | 122.6 | 122.3 | 123.6 | 127.2 | 123.6 | 108.2 | 101.1 |
| 57.5° | 80.5  | 88.9  | 101.3 | 102.3 | 103.1 | 100.3 | 102.1 | 106.9 | 105.1 | 91.9  | 87.9  |
| 60°   | 66.1  | 73.2  | 80.3  | 81.1  | 77.8  | 71.9  | 75.2  | 80.8  | 82.1  | 72.2  | 67.6  |
| 62.5° | 46.9  | 53.7  | 62.1  | 62.1  | 58.8  | 52.9  | 57.2  | 62.1  | 60.3  | 50.2  | 47.4  |
| 65°   | 35.0  | 41.3  | 47.6  | 50.4  | 47.6  | 43.6  | 46.9  | 50.4  | 47.6  | 39.3  | 35.2  |
| 67.5° | 22.5  | 26.8  | 30.6  | 32.9  | 33.4  | 32.9  | 34.4  | 33.4  | 30.1  | 24.6  | 22.3  |
| 70°   | 13.7  | 16.0  | 18.0  | 20.0  | 21.5  | 22.3  | 23.0  | 20.8  | 17.5  | 14.4  | 13.7  |
| 72.5° | 9.9   | 11.9  | 13.7  | 15.2  | 17.0  | 17.5  | 17.5  | 16.0  | 12.9  | 10.1  | 9.4   |
| 75°   | 6.8   | 8.6   | 10.1  | 11.1  | 12.7  | 13.2  | 13.2  | 11.9  | 9.6   | 7.3   | 6.6   |
| 77.5° | 0.3   | 1.8   | 1.8   | 1.5   | 2.0   | 2.5   | 2.5   | 3.0   | 2.8   | 2.0   | 1.8   |
| 80°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |





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**CANDELA DISTRIBUTION (continued):**

|       | 185°  | 195°  | 205°  | 215°  | 225°  | 235°  | 245°  | 255°  | 265°   | 270°   | 275°   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 0°    | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9 | 321.9  | 321.9  | 321.9  |
| 2.5°  | 282.9 | 292.0 | 294.6 | 304.0 | 312.3 | 320.7 | 330.8 | 336.9 | 346.0  | 352.3  | 355.9  |
| 5°    | 255.1 | 262.7 | 271.8 | 285.7 | 300.2 | 316.1 | 335.4 | 352.1 | 373.1  | 388.6  | 393.6  |
| 7.5°  | 234.8 | 244.7 | 255.3 | 272.8 | 292.6 | 313.8 | 340.9 | 368.3 | 400.5  | 421.5  | 434.9  |
| 10°   | 231.0 | 241.1 | 255.3 | 272.5 | 293.3 | 317.6 | 350.8 | 386.3 | 426.5  | 452.1  | 467.3  |
| 12.5° | 249.2 | 260.1 | 266.2 | 274.1 | 289.8 | 316.9 | 359.4 | 404.5 | 451.9  | 479.7  | 496.0  |
| 15°   | 276.1 | 285.7 | 275.8 | 266.0 | 276.1 | 308.8 | 364.2 | 419.7 | 474.2  | 506.3  | 523.1  |
| 17.5° | 294.6 | 295.3 | 273.8 | 252.8 | 255.6 | 294.1 | 366.0 | 434.9 | 498.0  | 531.7  | 549.1  |
| 20°   | 292.8 | 286.7 | 264.9 | 241.6 | 233.0 | 275.1 | 364.0 | 448.3 | 522.0  | 557.2  | 574.5  |
| 22.5° | 279.1 | 272.0 | 253.5 | 230.8 | 214.0 | 252.5 | 360.4 | 460.5 | 544.1  | 584.1  | 600.3  |
| 25°   | 262.7 | 255.1 | 239.9 | 219.9 | 201.9 | 230.8 | 357.7 | 477.2 | 571.9  | 619.1  | 631.7  |
| 27.5° | 243.4 | 236.8 | 223.9 | 209.5 | 196.8 | 214.3 | 356.9 | 499.2 | 605.6  | 661.6  | 670.5  |
| 30°   | 224.7 | 218.6 | 208.5 | 200.1 | 194.8 | 204.7 | 354.4 | 522.8 | 645.9  | 710.5  | 720.1  |
| 32.5° | 206.7 | 200.6 | 194.3 | 193.0 | 193.3 | 201.1 | 345.7 | 546.1 | 693.8  | 781.4  | 788.5  |
| 35°   | 191.2 | 184.1 | 181.6 | 184.7 | 190.2 | 195.0 | 321.4 | 565.4 | 745.2  | 858.7  | 864.5  |
| 37.5° | 176.5 | 169.5 | 169.2 | 176.5 | 182.6 | 185.7 | 292.8 | 584.4 | 814.6  | 937.2  | 944.5  |
| 40°   | 163.1 | 156.0 | 158.6 | 167.4 | 172.2 | 173.8 | 258.1 | 613.2 | 888.1  | 1020.0 | 1016.0 |
| 42.5° | 151.7 | 144.4 | 145.9 | 157.3 | 161.6 | 165.7 | 226.2 | 637.3 | 958.7  | 1098.5 | 1097.3 |
| 45°   | 140.6 | 135.0 | 134.0 | 146.4 | 150.2 | 166.4 | 202.9 | 655.8 | 1049.7 | 1198.6 | 1200.6 |
| 47.5° | 129.7 | 125.4 | 125.6 | 131.0 | 140.3 | 170.2 | 183.1 | 667.9 | 1181.6 | 1357.2 | 1321.9 |
| 50°   | 119.8 | 116.5 | 119.3 | 113.2 | 134.0 | 165.4 | 166.2 | 665.4 | 1329.0 | 1509.1 | 1438.5 |
| 52.5° | 108.9 | 108.2 | 109.4 | 94.7  | 123.9 | 145.9 | 150.2 | 631.7 | 1398.2 | 1613.0 | 1572.7 |
| 55°   | 97.8  | 97.5  | 87.4  | 75.7  | 103.6 | 116.5 | 128.7 | 527.1 | 1395.9 | 1668.2 | 1717.1 |
| 57.5° | 84.6  | 82.6  | 66.4  | 61.8  | 80.5  | 81.1  | 117.3 | 345.2 | 1237.1 | 1536.0 | 1637.3 |
| 60°   | 64.1  | 62.6  | 48.6  | 50.2  | 56.2  | 51.9  | 93.5  | 172.0 | 924.5  | 1196.6 | 1310.8 |
| 62.5° | 44.3  | 42.3  | 36.2  | 38.8  | 36.2  | 29.6  | 57.2  | 85.1  | 560.0  | 755.6  | 859.2  |
| 65°   | 32.4  | 30.1  | 24.8  | 21.3  | 17.0  | 17.0  | 21.8  | 32.7  | 216.8  | 321.2  | 387.3  |
| 67.5° | 20.0  | 19.0  | 14.7  | 10.6  | 10.4  | 11.1  | 11.4  | 16.2  | 35.0   | 55.7   | 68.1   |
| 70°   | 12.9  | 11.9  | 9.9   | 6.8   | 6.3   | 6.6   | 6.8   | 7.6   | 8.9    | 9.6    | 11.7   |
| 72.5° | 8.9   | 8.4   | 7.1   | 3.8   | 3.0   | 3.3   | 3.5   | 3.5   | 4.3    | 4.1    | 4.8    |
| 75°   | 6.3   | 5.8   | 5.1   | 1.8   | 1.0   | 1.3   | 1.5   | 1.3   | 1.5    | 1.0    | 1.3    |
| 77.5° | 1.8   | 1.8   | 1.3   | 0.3   | 0.0   | 0.3   | 0.5   | 0.5   | 0.3    | 0.0    | 0.0    |
| 80°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.3   | 0.3   | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0    |
| 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: P630009

CATALOG NUMBER: GWS-SA1C-827-U-SLL-W-GRSBK

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  | 321.9  |
| 2.5°  | 365.0  | 370.8  | 373.1  | 369.8  | 372.6  | 368.0  | 366.3  | 359.4  | 358.9  | 357.7  |
| 5°    | 414.1  | 427.3  | 435.2  | 440.0  | 434.4  | 428.3  | 419.2  | 403.5  | 398.7  | 395.6  |
| 7.5°  | 462.5  | 483.0  | 496.5  | 502.8  | 501.3  | 488.9  | 472.4  | 446.1  | 436.7  | 432.1  |
| 10°   | 504.6  | 529.6  | 545.9  | 553.7  | 550.4  | 539.5  | 516.0  | 483.0  | 470.6  | 467.8  |
| 12.5° | 533.9  | 557.0  | 568.1  | 575.0  | 575.2  | 570.9  | 548.6  | 515.5  | 500.8  | 497.2  |
| 15°   | 552.4  | 562.3  | 562.6  | 566.6  | 573.7  | 583.3  | 573.0  | 543.6  | 527.9  | 522.5  |
| 17.5° | 564.1  | 553.2  | 542.1  | 543.1  | 554.7  | 580.3  | 590.9  | 568.4  | 551.7  | 545.9  |
| 20°   | 572.4  | 538.0  | 517.2  | 517.5  | 529.4  | 568.1  | 603.3  | 592.5  | 575.2  | 569.9  |
| 22.5° | 577.8  | 524.6  | 494.9  | 494.2  | 506.8  | 553.7  | 614.7  | 621.1  | 604.1  | 598.0  |
| 25°   | 588.7  | 518.2  | 481.5  | 485.8  | 497.0  | 549.1  | 630.2  | 659.1  | 643.4  | 635.3  |
| 27.5° | 608.2  | 524.6  | 480.2  | 490.1  | 502.8  | 562.6  | 657.0  | 709.7  | 693.5  | 684.4  |
| 30°   | 641.8  | 548.4  | 499.8  | 513.4  | 528.6  | 597.8  | 702.1  | 780.4  | 757.1  | 748.5  |
| 32.5° | 696.1  | 597.8  | 560.0  | 589.4  | 604.1  | 655.5  | 769.8  | 859.7  | 840.7  | 823.5  |
| 35°   | 770.8  | 710.5  | 706.2  | 774.6  | 771.0  | 765.0  | 852.8  | 956.9  | 928.3  | 911.6  |
| 37.5° | 873.6  | 891.9  | 923.8  | 991.6  | 989.4  | 943.0  | 962.0  | 1048.9 | 1034.2 | 1012.7 |
| 40°   | 1002.0 | 1040.8 | 1095.0 | 1192.3 | 1161.9 | 1103.6 | 1096.0 | 1143.1 | 1131.2 | 1105.9 |
| 42.5° | 1077.8 | 1144.6 | 1248.0 | 1335.4 | 1311.1 | 1209.2 | 1200.6 | 1269.0 | 1242.9 | 1215.3 |
| 45°   | 1113.0 | 1229.2 | 1431.9 | 1550.2 | 1476.5 | 1279.4 | 1276.1 | 1433.1 | 1418.5 | 1381.5 |
| 47.5° | 1129.2 | 1314.6 | 1647.2 | 1826.3 | 1688.5 | 1340.9 | 1329.0 | 1671.2 | 1652.0 | 1608.4 |
| 50°   | 1147.2 | 1432.4 | 1906.5 | 2146.2 | 1944.5 | 1410.6 | 1419.2 | 1893.1 | 1885.0 | 1833.6 |
| 52.5° | 1186.7 | 1557.0 | 2226.0 | 2511.9 | 2255.1 | 1519.8 | 1574.0 | 2102.3 | 2047.6 | 1988.4 |
| 55°   | 1246.0 | 1692.8 | 2558.3 | 2885.5 | 2572.0 | 1666.4 | 1741.4 | 2213.5 | 2060.0 | 1994.4 |
| 57.5° | 1180.4 | 1726.7 | 2755.1 | 3146.4 | 2712.5 | 1666.9 | 1599.8 | 2020.8 | 1811.8 | 1748.2 |
| 60°   | 936.7  | 1606.4 | 2679.4 | 3089.9 | 2592.7 | 1480.3 | 1224.9 | 1577.8 | 1372.6 | 1330.1 |
| 62.5° | 633.2  | 1347.3 | 2358.7 | 2613.2 | 2219.1 | 1164.4 | 796.1  | 1026.1 | 849.8  | 814.6  |
| 65°   | 347.0  | 1005.1 | 1905.8 | 1977.0 | 1736.8 | 813.3  | 409.6  | 445.3  | 339.2  | 323.5  |
| 67.5° | 95.7   | 699.6  | 1402.2 | 1311.6 | 1218.6 | 529.6  | 105.9  | 79.5   | 56.7   | 56.2   |
| 70°   | 24.1   | 462.8  | 840.2  | 866.0  | 747.2  | 339.2  | 20.3   | 9.6    | 7.6    | 7.3    |
| 72.5° | 10.1   | 199.1  | 398.7  | 458.2  | 382.5  | 157.0  | 7.3    | 2.8    | 2.3    | 1.8    |
| 75°   | 1.3    | 16.0   | 33.9   | 51.4   | 35.2   | 17.0   | 0.0    | 0.0    | 0.0    | 0.0    |
| 77.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 80°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

Invue

Report Number: SP1-2407-157-9

Test Date: 10/03/2024

Luminaire Tested: EMM2-HTN-SA1A-827-U-5WQ

Data applicable to all product families utilizing light square engine

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-157-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/03/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Invue  
 Catalog Number: **EMM2-HTN-SA1A-827-U-5WQ**  
 Description: Epic Modern Light Square 40W 5WQ Optic

**Spectral Parameters**

CCT (K): 2764  
 CIE u': 0.2591  
 CIE v': 0.5290  
 Duv: 0.0020  
 CIE x: 0.4581  
 CIE y: 0.4156  
 CIE z: 0.1263  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 583  
 Purity: 62.2537  
 Rf: 84.7  
 Rg: 94.6

|           |      |      |      |
|-----------|------|------|------|
| CRI (Ra): | 80.9 |      |      |
| R1:       | 78.8 | R9:  | -1.5 |
| R2:       | 89.9 | R10: | 77.9 |
| R3:       | 96.2 | R11: | 78.9 |
| R4:       | 79.1 | R12: | 71.6 |
| R5:       | 79.1 | R13: | 81.2 |
| R6:       | 88.8 | R14: | 98.5 |
| R7:       | 81.3 | R15: | 69.9 |
| R8:       | 54.3 |      |      |



**Test Conditions**

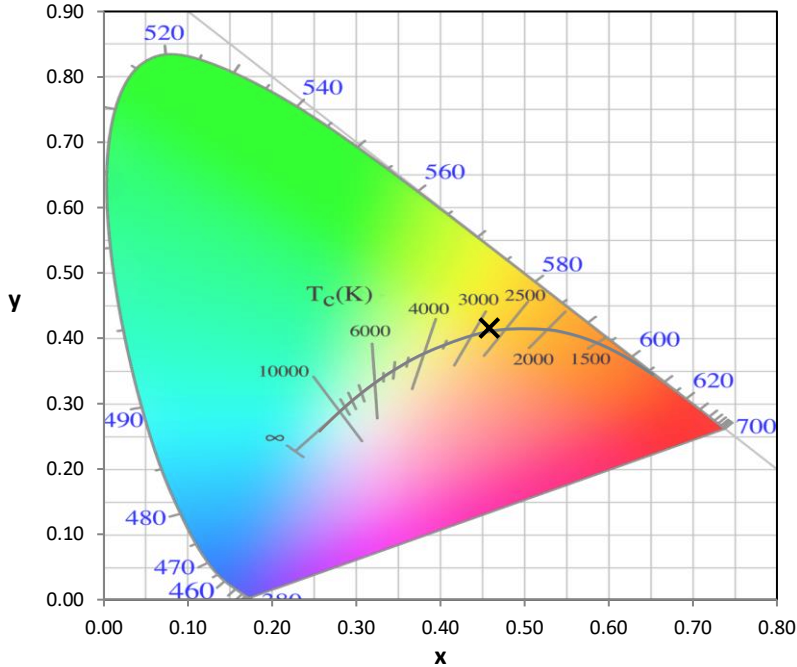
Stabilization Time: 81M  
 Operation Time: 2H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-157-9

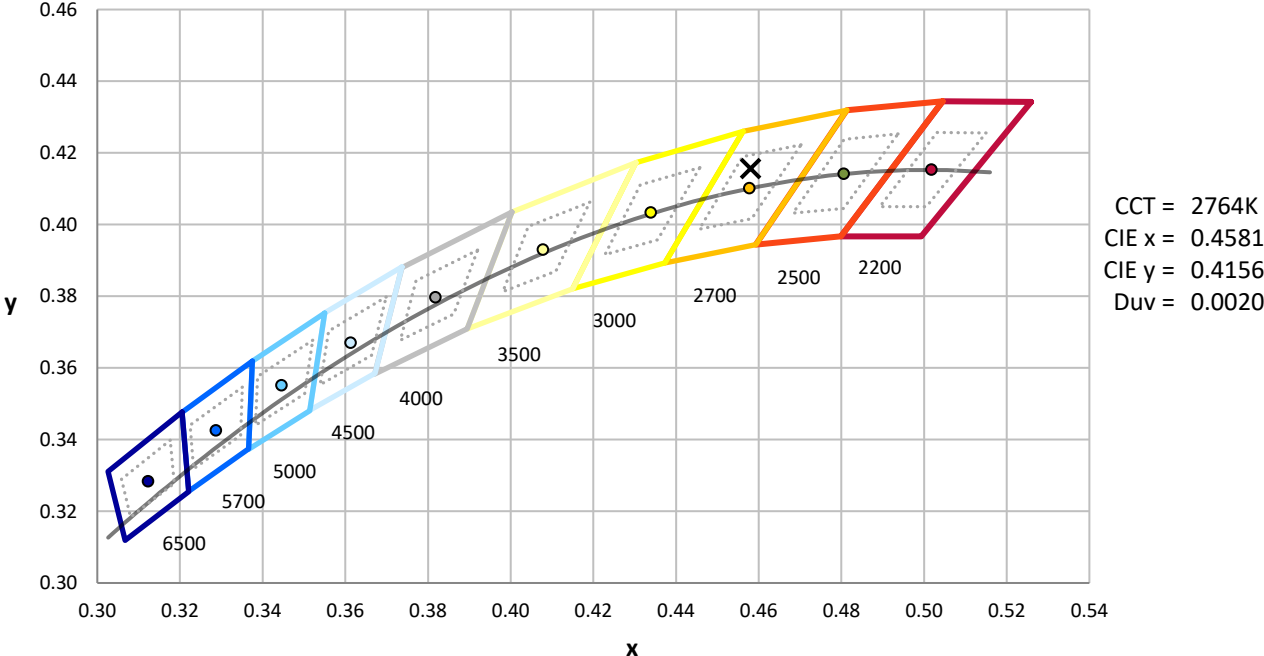
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

REPORT NUMBER: SP1-2407-157-9

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-9

**Photopic Flux vs. Wavelength**



**Photopic Lumens: 4337.9**

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 0             | 0.0           | 490    | 18018         | 2.6           | 620    | 87426         | 22.8          | 750    | 2680          | 0.0           | 880    | 58            | 0.0           |
| 365    | 0             | 0.0           | 495    | 22295         | 3.9           | 625    | 83013         | 18.2          | 755    | 2287          | 0.0           | 885    | 46            | 0.0           |
| 370    | 0             | 0.0           | 500    | 26478         | 5.8           | 630    | 78077         | 14.1          | 760    | 1944          | 0.0           | 890    | 45            | 0.0           |
| 375    | 0             | 0.0           | 505    | 30524         | 8.5           | 635    | 72080         | 10.7          | 765    | 1653          | 0.0           | 895    | 41            | 0.0           |
| 380    | 0             | 0.0           | 510    | 33611         | 11.5          | 640    | 66249         | 7.9           | 770    | 1413          | 0.0           | 900    | 38            | 0.0           |
| 385    | 0             | 0.0           | 515    | 36490         | 15.2          | 645    | 59973         | 5.7           | 775    | 1198          | 0.0           | 905    | 33            | 0.0           |
| 390    | 0             | 0.0           | 520    | 38610         | 18.7          | 650    | 53972         | 3.9           | 780    | 1025          | 0.0           | 910    | 30            | 0.0           |
| 395    | 0             | 0.0           | 525    | 40511         | 21.9          | 655    | 48369         | 2.7           | 785    | 874           | 0.0           | 915    | 23            | 0.0           |
| 400    | 48            | 0.0           | 530    | 42223         | 24.9          | 660    | 42641         | 1.8           | 790    | 747           | 0.0           | 920    | 24            | 0.0           |
| 405    | 201           | 0.0           | 535    | 44137         | 27.6          | 665    | 37602         | 1.1           | 795    | 639           | 0.0           | 925    | 22            | 0.0           |
| 410    | 457           | 0.0           | 540    | 46032         | 30.0          | 670    | 32798         | 0.7           | 800    | 547           | 0.0           | 930    | 22            | 0.0           |
| 415    | 925           | 0.0           | 545    | 48553         | 32.5          | 675    | 28558         | 0.5           | 805    | 473           | 0.0           | 935    | 17            | 0.0           |
| 420    | 1816          | 0.0           | 550    | 51408         | 34.9          | 680    | 24782         | 0.3           | 810    | 401           | 0.0           | 940    | 13            | 0.0           |
| 425    | 3217          | 0.0           | 555    | 54711         | 37.4          | 685    | 21386         | 0.2           | 815    | 351           | 0.0           | 945    | 6             | 0.0           |
| 430    | 5520          | 0.0           | 560    | 58847         | 40.0          | 690    | 18413         | 0.1           | 820    | 307           | 0.0           | 950    | 10            | 0.0           |
| 435    | 9225          | 0.1           | 565    | 63386         | 42.4          | 695    | 15721         | 0.1           | 825    | 261           | 0.0           | 955    | 11            | 0.0           |
| 440    | 15522         | 0.2           | 570    | 68196         | 44.3          | 700    | 13432         | 0.0           | 830    | 228           | 0.0           | 960    | 8             | 0.0           |
| 445    | 27642         | 0.6           | 575    | 73613         | 46.0          | 705    | 11513         | 0.0           | 835    | 193           | 0.0           | 965    | 12            | 0.0           |
| 450    | 36602         | 0.9           | 580    | 79207         | 47.1          | 710    | 9780          | 0.0           | 840    | 174           | 0.0           | 970    | 3             | 0.0           |
| 455    | 28292         | 0.9           | 585    | 84248         | 47.0          | 715    | 8356          | 0.0           | 845    | 151           | 0.0           | 975    | 8             | 0.0           |
| 460    | 21166         | 0.9           | 590    | 88397         | 45.7          | 720    | 7161          | 0.0           | 850    | 123           | 0.0           | 980    | 2             | 0.0           |
| 465    | 19092         | 1.0           | 595    | 91428         | 43.4          | 725    | 6067          | 0.0           | 855    | 106           | 0.0           | 985    | 13            | 0.0           |
| 470    | 14951         | 0.9           | 600    | 93452         | 40.3          | 730    | 5164          | 0.0           | 860    | 95            | 0.0           | 990    | 16            | 0.0           |
| 475    | 12606         | 1.0           | 605    | 93959         | 36.4          | 735    | 4393          | 0.0           | 865    | 82            | 0.0           | 995    | 20            | 0.0           |
| 480    | 13323         | 1.3           | 610    | 93079         | 32.0          | 740    | 3694          | 0.0           | 870    | 77            | 0.0           | 1000   | 0             | 0.0           |
| 485    | 15164         | 1.8           | 615    | 90707         | 27.3          | 745    | 3157          | 0.0           | 875    | 65            | 0.0           |        |               |               |

REPORT NUMBER: SP1-2407-157-9

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: 5286.7**

**S/P: 1.22**

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 0             | 0.0           | 490    | 18018         | 75.9          | 620    | 87426         | 0.4           | 750    | 2680          | 0.0           | 880    | 58            | 0.0           |
| 365    | 0             | 0.0           | 495    | 22295         | 93.2          | 625    | 83013         | 0.2           | 755    | 2287          | 0.0           | 885    | 46            | 0.0           |
| 370    | 0             | 0.0           | 500    | 26478         | 107.8         | 630    | 78077         | 0.1           | 760    | 1944          | 0.0           | 890    | 45            | 0.0           |
| 375    | 0             | 0.0           | 505    | 30524         | 118.7         | 635    | 72080         | 0.1           | 765    | 1653          | 0.0           | 895    | 41            | 0.0           |
| 380    | 0             | 0.0           | 510    | 33611         | 122.2         | 640    | 66249         | 0.1           | 770    | 1413          | 0.0           | 900    | 38            | 0.0           |
| 385    | 0             | 0.0           | 515    | 36490         | 120.8         | 645    | 59973         | 0.0           | 775    | 1198          | 0.0           | 905    | 33            | 0.0           |
| 390    | 0             | 0.0           | 520    | 38610         | 113.9         | 650    | 53972         | 0.0           | 780    | 1025          | 0.0           | 910    | 30            | 0.0           |
| 395    | 0             | 0.0           | 525    | 40511         | 104.1         | 655    | 48369         | 0.0           | 785    | 874           | 0.0           | 915    | 23            | 0.0           |
| 400    | 48            | 0.0           | 530    | 42223         | 92.4          | 660    | 42641         | 0.0           | 790    | 747           | 0.0           | 920    | 24            | 0.0           |
| 405    | 201           | 0.0           | 535    | 44137         | 80.5          | 665    | 37602         | 0.0           | 795    | 639           | 0.0           | 925    | 22            | 0.0           |
| 410    | 457           | 0.1           | 540    | 46032         | 68.2          | 670    | 32798         | 0.0           | 800    | 547           | 0.0           | 930    | 22            | 0.0           |
| 415    | 925           | 0.3           | 545    | 48553         | 57.1          | 675    | 28558         | 0.0           | 805    | 473           | 0.0           | 935    | 17            | 0.0           |
| 420    | 1816          | 1.1           | 550    | 51408         | 46.7          | 680    | 24782         | 0.0           | 810    | 401           | 0.0           | 940    | 13            | 0.0           |
| 425    | 3217          | 2.5           | 555    | 54711         | 37.4          | 685    | 21386         | 0.0           | 815    | 351           | 0.0           | 945    | 6             | 0.0           |
| 430    | 5520          | 5.9           | 560    | 58847         | 29.4          | 690    | 18413         | 0.0           | 820    | 307           | 0.0           | 950    | 10            | 0.0           |
| 435    | 9225          | 12.5          | 565    | 63386         | 22.5          | 695    | 15721         | 0.0           | 825    | 261           | 0.0           | 955    | 11            | 0.0           |
| 440    | 15522         | 26.3          | 570    | 68196         | 16.9          | 700    | 13432         | 0.0           | 830    | 228           | 0.0           | 960    | 8             | 0.0           |
| 445    | 27642         | 55.2          | 575    | 73613         | 12.4          | 705    | 11513         | 0.0           | 835    | 193           | 0.0           | 965    | 12            | 0.0           |
| 450    | 36602         | 85.4          | 580    | 79207         | 9.0           | 710    | 9780          | 0.0           | 840    | 174           | 0.0           | 970    | 3             | 0.0           |
| 455    | 28292         | 75.1          | 585    | 84248         | 6.3           | 715    | 8356          | 0.0           | 845    | 151           | 0.0           | 975    | 8             | 0.0           |
| 460    | 21166         | 63.2          | 590    | 88397         | 4.4           | 720    | 7161          | 0.0           | 850    | 123           | 0.0           | 980    | 2             | 0.0           |
| 465    | 19092         | 63.2          | 595    | 91428         | 3.0           | 725    | 6067          | 0.0           | 855    | 106           | 0.0           | 985    | 13            | 0.0           |
| 470    | 14951         | 54.2          | 600    | 93452         | 2.0           | 730    | 5164          | 0.0           | 860    | 95            | 0.0           | 990    | 16            | 0.0           |
| 475    | 12606         | 48.8          | 605    | 93959         | 1.3           | 735    | 4393          | 0.0           | 865    | 82            | 0.0           | 995    | 20            | 0.0           |
| 480    | 13323         | 54.2          | 610    | 93079         | 0.9           | 740    | 3694          | 0.0           | 870    | 77            | 0.0           | 1000   | 0             | 0.0           |
| 485    | 15164         | 63.3          | 615    | 90707         | 0.5           | 745    | 3157          | 0.0           | 875    | 65            | 0.0           |        |               |               |



REPORT NUMBER: SP1-2407-157-9

**Melanopic Flux vs. Wavelength**



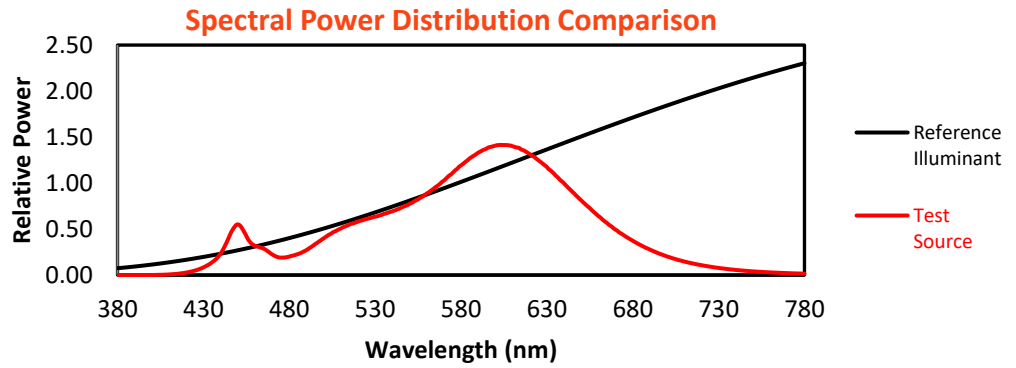
**Melanopic Lumens: 9797**

**M/P: 2.26**

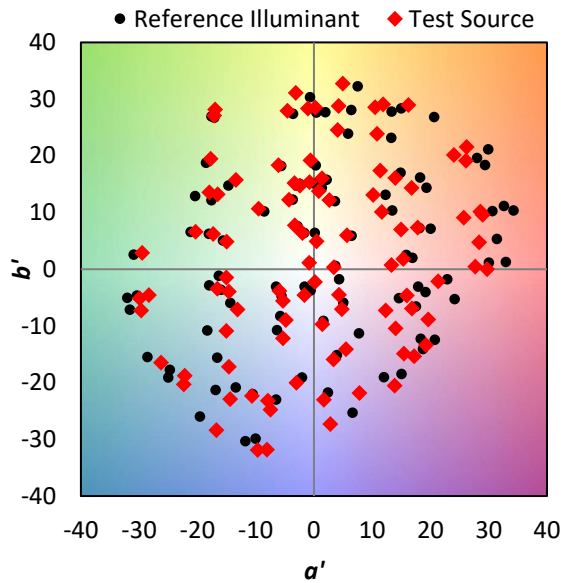
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 0             | 0.0           | 490    | 18018         | 27.7          | 620    | 87426         | 1.1           | 750    | 2680          | 0.0           | 880    | 58            | 0.0           |
| 365    | 0             | 0.0           | 495    | 22295         | 36.0          | 625    | 83013         | 0.7           | 755    | 2287          | 0.0           | 885    | 46            | 0.0           |
| 370    | 0             | 0.0           | 500    | 26478         | 44.2          | 630    | 78077         | 0.4           | 760    | 1944          | 0.0           | 890    | 45            | 0.0           |
| 375    | 0             | 0.0           | 505    | 30524         | 51.8          | 635    | 72080         | 0.3           | 765    | 1653          | 0.0           | 895    | 41            | 0.0           |
| 380    | 0             | 0.0           | 510    | 33611         | 57.0          | 640    | 66249         | 0.2           | 770    | 1413          | 0.0           | 900    | 38            | 0.0           |
| 385    | 0             | 0.0           | 515    | 36490         | 60.5          | 645    | 59973         | 0.1           | 775    | 1198          | 0.0           | 905    | 33            | 0.0           |
| 390    | 0             | 0.0           | 520    | 38610         | 61.4          | 650    | 53972         | 0.1           | 780    | 1025          | 0.0           | 910    | 30            | 0.0           |
| 395    | 0             | 0.0           | 525    | 40511         | 60.6          | 655    | 48369         | 0.0           | 785    | 874           | 0.0           | 915    | 23            | 0.0           |
| 400    | 48            | 0.0           | 530    | 42223         | 58.2          | 660    | 42641         | 0.0           | 790    | 747           | 0.0           | 920    | 24            | 0.0           |
| 405    | 201           | 0.0           | 535    | 44137         | 55.0          | 665    | 37602         | 0.0           | 795    | 639           | 0.0           | 925    | 22            | 0.0           |
| 410    | 457           | 0.0           | 540    | 46032         | 50.9          | 670    | 32798         | 0.0           | 800    | 547           | 0.0           | 930    | 22            | 0.0           |
| 415    | 925           | 0.1           | 545    | 48553         | 46.6          | 675    | 28558         | 0.0           | 805    | 473           | 0.0           | 935    | 17            | 0.0           |
| 420    | 1816          | 0.3           | 550    | 51408         | 42.0          | 680    | 24782         | 0.0           | 810    | 401           | 0.0           | 940    | 13            | 0.0           |
| 425    | 3217          | 0.8           | 555    | 54711         | 37.4          | 685    | 21386         | 0.0           | 815    | 351           | 0.0           | 945    | 6             | 0.0           |
| 430    | 5520          | 1.9           | 560    | 58847         | 32.9          | 690    | 18413         | 0.0           | 820    | 307           | 0.0           | 950    | 10            | 0.0           |
| 435    | 9225          | 4.1           | 565    | 63386         | 28.4          | 695    | 15721         | 0.0           | 825    | 261           | 0.0           | 955    | 11            | 0.0           |
| 440    | 15522         | 8.7           | 570    | 68196         | 24.1          | 700    | 13432         | 0.0           | 830    | 228           | 0.0           | 960    | 8             | 0.0           |
| 445    | 27642         | 18.5          | 575    | 73613         | 20.0          | 705    | 11513         | 0.0           | 835    | 193           | 0.0           | 965    | 12            | 0.0           |
| 450    | 36602         | 28.3          | 580    | 79207         | 16.3          | 710    | 9780          | 0.0           | 840    | 174           | 0.0           | 970    | 3             | 0.0           |
| 455    | 28292         | 24.7          | 585    | 84248         | 12.9          | 715    | 8356          | 0.0           | 845    | 151           | 0.0           | 975    | 8             | 0.0           |
| 460    | 21166         | 20.4          | 590    | 88397         | 9.8           | 720    | 7161          | 0.0           | 850    | 123           | 0.0           | 980    | 2             | 0.0           |
| 465    | 19092         | 20.1          | 595    | 91428         | 7.3           | 725    | 6067          | 0.0           | 855    | 106           | 0.0           | 985    | 13            | 0.0           |
| 470    | 14951         | 17.2          | 600    | 93452         | 5.3           | 730    | 5164          | 0.0           | 860    | 95            | 0.0           | 990    | 16            | 0.0           |
| 475    | 12606         | 15.7          | 605    | 93959         | 3.7           | 735    | 4393          | 0.0           | 865    | 82            | 0.0           | 995    | 20            | 0.0           |
| 480    | 13323         | 18.0          | 610    | 93079         | 2.5           | 740    | 3694          | 0.0           | 870    | 77            | 0.0           | 1000   | 0             | 0.0           |
| 485    | 15164         | 21.9          | 615    | 90707         | 1.7           | 745    | 3157          | 0.0           | 875    | 65            | 0.0           |        |               |               |

**Summary**

$R_f = 84.7$   
 $R_g = 94.6$   
 CIE  $R_a = 80.9$   
 $R_9 = -1.5$



**Color Vector Graphics**

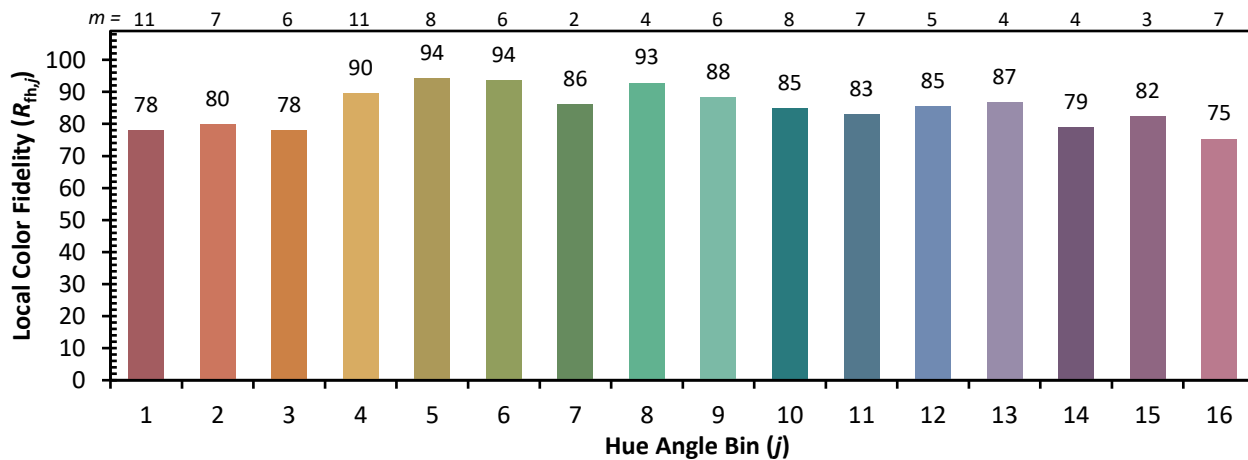


Individual Sample Fidelity Index ( $R_{f,i}$ )

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 84 | CES51 = 95 | CES76 = 81 |
| CES02 = 63 | CES27 = 95 | CES52 = 94 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 71 | CES29 = 87 | CES54 = 91 | CES79 = 89 |
| CES05 = 50 | CES30 = 94 | CES55 = 90 | CES80 = 89 |
| CES06 = 52 | CES31 = 89 | CES56 = 86 | CES81 = 69 |
| CES07 = 43 | CES32 = 82 | CES57 = 85 | CES82 = 96 |
| CES08 = 41 | CES33 = 91 | CES58 = 86 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 92 |
| CES10 = 77 | CES35 = 96 | CES60 = 94 | CES85 = 76 |
| CES11 = 60 | CES36 = 90 | CES61 = 89 | CES86 = 65 |
| CES12 = 66 | CES37 = 96 | CES62 = 94 | CES87 = 84 |
| CES13 = 44 | CES38 = 98 | CES63 = 87 | CES88 = 86 |
| CES14 = 74 | CES39 = 98 | CES64 = 82 | CES89 = 73 |
| CES15 = 72 | CES40 = 95 | CES65 = 78 | CES90 = 88 |
| CES16 = 48 | CES41 = 96 | CES66 = 81 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 80 | CES92 = 64 |
| CES18 = 57 | CES43 = 91 | CES68 = 83 | CES93 = 78 |
| CES19 = 73 | CES44 = 99 | CES69 = 88 | CES94 = 59 |
| CES20 = 67 | CES45 = 93 | CES70 = 80 | CES95 = 74 |
| CES21 = 87 | CES46 = 89 | CES71 = 79 | CES96 = 83 |
| CES22 = 79 | CES47 = 92 | CES72 = 92 | CES97 = 88 |
| CES23 = 92 | CES48 = 83 | CES73 = 75 | CES98 = 83 |
| CES24 = 91 | CES49 = 90 | CES74 = 91 | CES99 = 74 |
| CES25 = 72 | CES50 = 94 | CES75 = 81 |            |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)