

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: STREETWORKS

Report Number: P1063399

Luminaire Tested: **GLAN-SA8C-730-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063399  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA8C-730-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 1050mA 8xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (112) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 42733.8 lumens  
Efficiency: N/A  
Efficacy: 114.6 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G5

Input Watts (W): 372.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

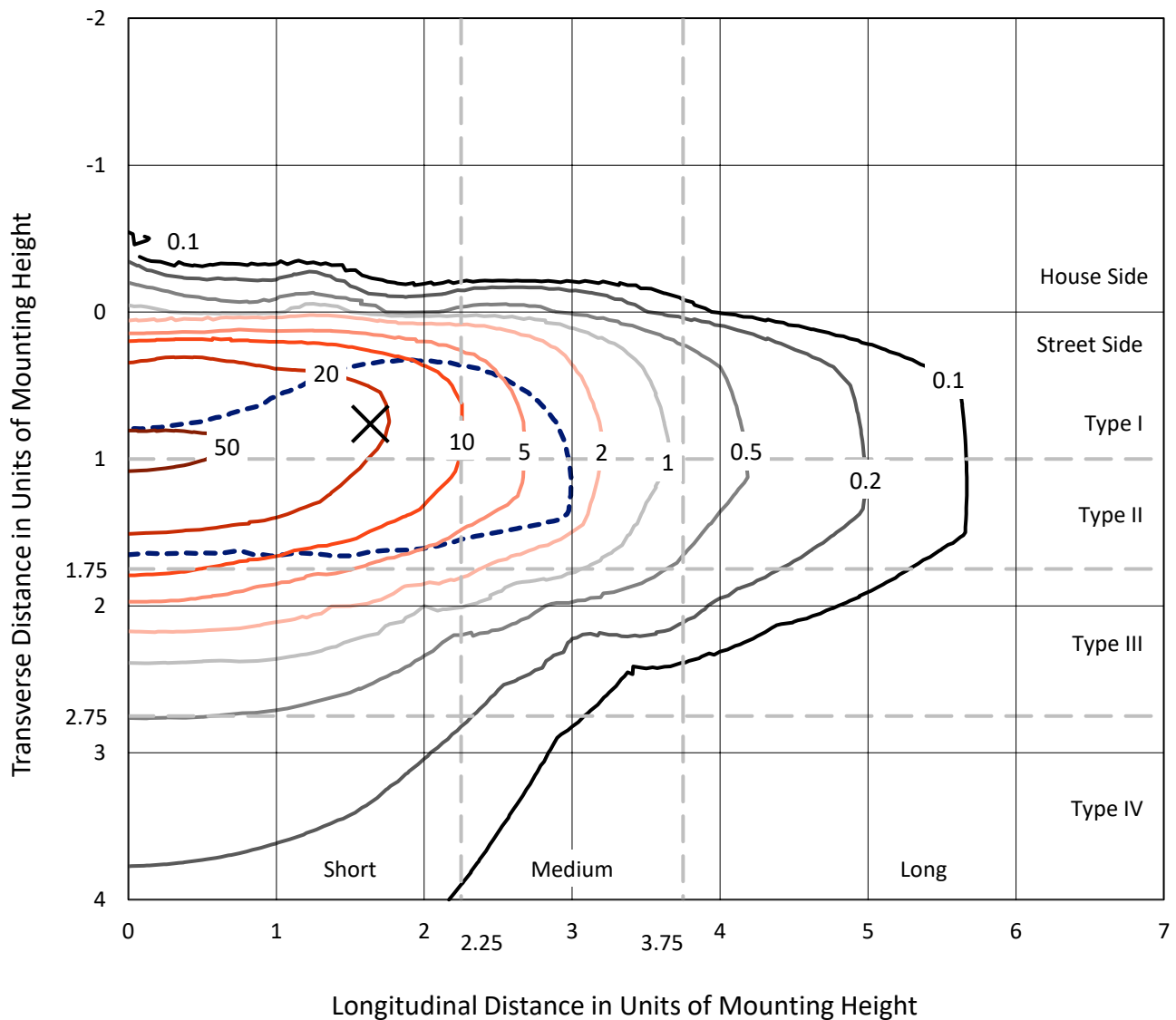


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

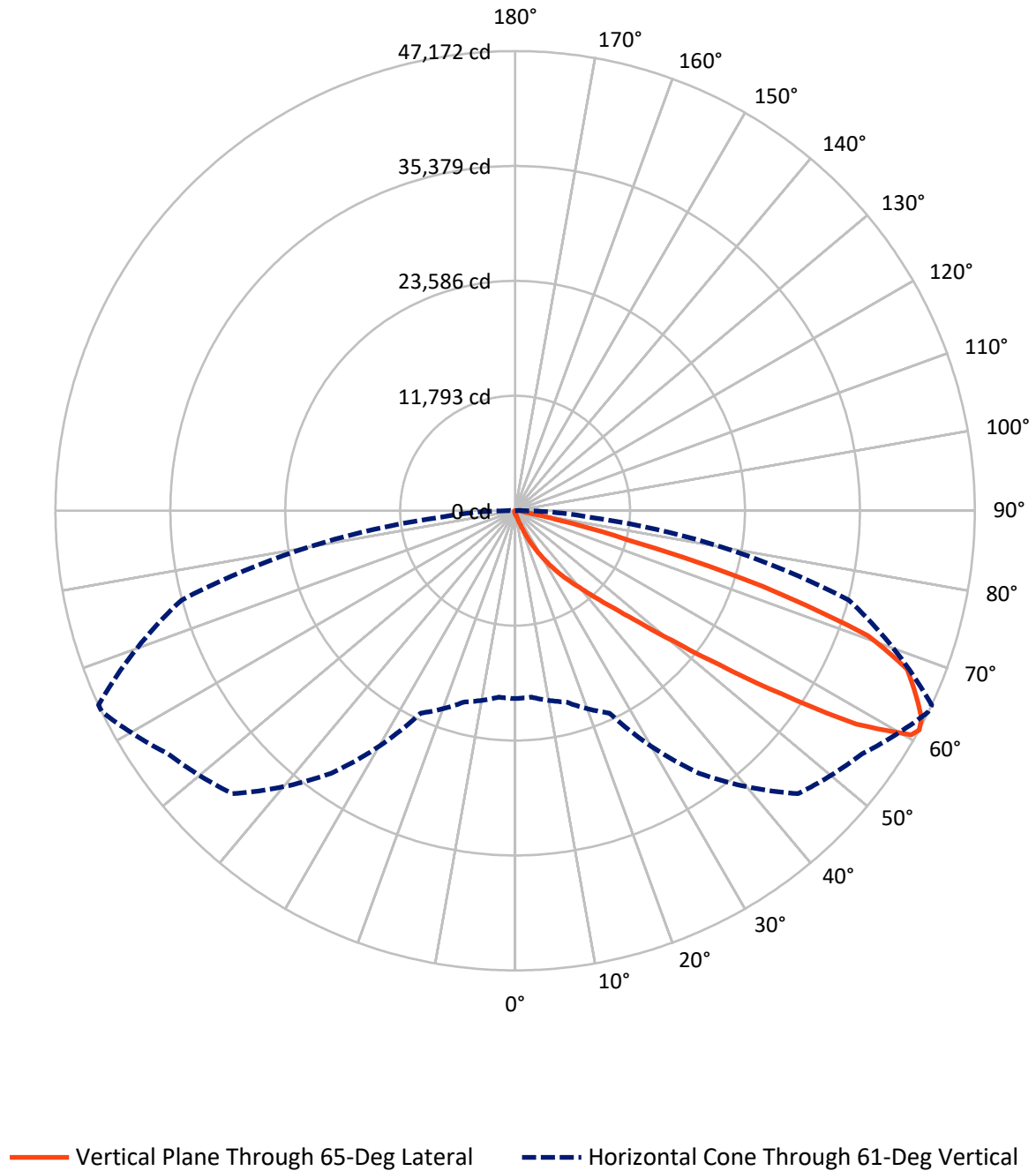


Based on 15 foot mounting height. Maximum calculated value = 56.5 fc  
 Type II - Short - N/A

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CATALOG NUMBER: GLAN-SA8C-730-U-T2BC

## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLAN-SA8C-730-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 182.4    | 0.0    | 182.4   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 42551.4  | 0.0    | 42551.4 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 42733.8  | 0.0    | 42733.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 33.3    | 0.1       |
| 10°-20°   | 351.4   | 0.8       |
| 20°-30°   | 1261.1  | 3.0       |
| 30°-40°   | 3357.6  | 7.9       |
| 40°-50°   | 8820.5  | 20.6      |
| 50°-60°   | 13664.6 | 32.0      |
| 60°-70°   | 11457.6 | 26.8      |
| 70°-80°   | 3371.8  | 7.9       |
| 80°-90°   | 415.9   | 1.0       |
| 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°    | 42733.8 | 100.0     |
| 0°-180°   | 42733.8 | 100.0     |



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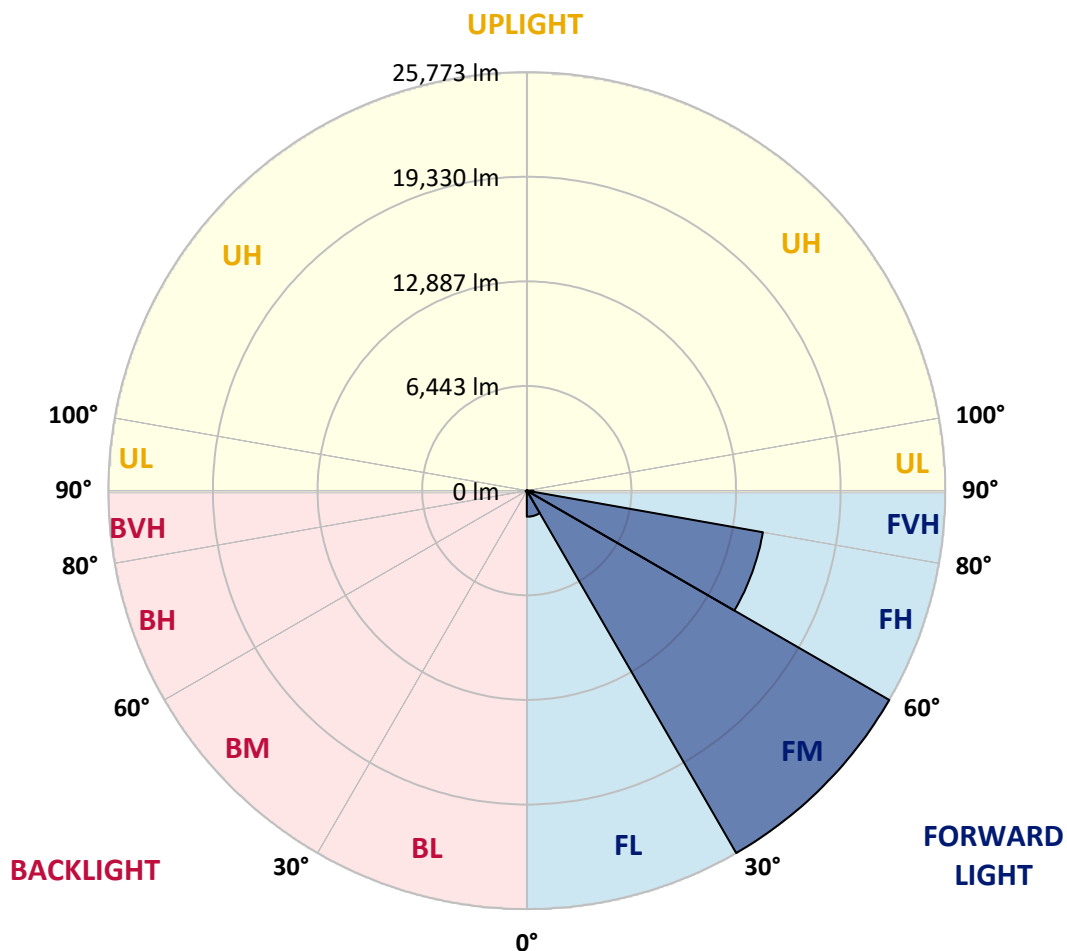
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|---------|-----------|-------------------------|------|--------|
|      |             |         |           | B                       | U    | G      |
| FL   | (0°-30°)    | 1604.9  | 3.8       |                         |      |        |
| FM   | (30°-60°)   | 25773.3 | 60.3      |                         |      |        |
| FH   | (60°-80°)   | 14765.0 | 34.6      |                         |      | G5     |
| FVH  | (80°-90°)   | 408.2   | 1.0       |                         |      | G3/500 |
| BL   | (0°-30°)    | 40.9    | 0.1       | B0/110                  |      |        |
| BM   | (30°-60°)   | 69.4    | 0.2       | B0/220                  |      |        |
| BH   | (60°-80°)   | 64.3    | 0.2       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 7.7     | 0.0       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |        |

**BUG Rating: B0-U0-G5**

Type II Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   | 261.6   |
| 2.5°  | 317.5   | 320.4   | 314.5   | 302.8   | 294.0   | 294.0   | 291.0   | 282.2   | 282.2   | 273.4   | 267.5   |
| 5°    | 443.9   | 438.0   | 426.2   | 402.7   | 382.2   | 361.6   | 341.0   | 320.4   | 317.5   | 291.0   | 273.4   |
| 7.5°  | 726.1   | 732.0   | 693.8   | 620.3   | 558.5   | 479.2   | 405.7   | 361.6   | 355.7   | 311.6   | 276.3   |
| 10°   | 1593.3  | 1549.2  | 1461.0  | 1175.9  | 967.1   | 729.0   | 540.9   | 420.4   | 414.5   | 335.1   | 282.2   |
| 12.5° | 2904.4  | 2869.1  | 2707.4  | 2413.4  | 1875.5  | 1305.2  | 790.8   | 520.3   | 502.7   | 355.7   | 285.1   |
| 15°   | 4186.0  | 4130.2  | 4042.0  | 3745.1  | 3116.0  | 2339.9  | 1293.4  | 711.4   | 664.4   | 385.1   | 282.2   |
| 17.5° | 5003.2  | 5012.1  | 4932.7  | 4806.3  | 4400.6  | 3462.9  | 2234.1  | 1061.2  | 970.1   | 438.0   | 276.3   |
| 20°   | 5717.6  | 5697.0  | 5741.1  | 5673.5  | 5388.3  | 4706.3  | 3251.2  | 1681.5  | 1525.7  | 523.3   | 279.3   |
| 22.5° | 6540.7  | 6590.6  | 6623.0  | 6608.3  | 6293.7  | 5711.7  | 4406.5  | 2516.3  | 2319.4  | 679.1   | 288.1   |
| 25°   | 7643.0  | 7637.2  | 7640.1  | 7601.9  | 7296.2  | 6649.4  | 5564.7  | 3554.0  | 3354.1  | 931.9   | 308.7   |
| 27.5° | 8798.3  | 8833.6  | 8848.3  | 8710.1  | 8310.3  | 7675.4  | 6637.7  | 4688.7  | 4453.5  | 1337.5  | 335.1   |
| 30°   | 10376.9 | 10347.5 | 10279.9 | 9997.7  | 9512.6  | 8724.8  | 7695.9  | 5879.3  | 5632.3  | 1904.9  | 376.3   |
| 32.5° | 12505.2 | 12472.8 | 12131.8 | 11508.6 | 10782.6 | 9818.4  | 8760.1  | 7072.7  | 6772.9  | 2613.3  | 432.1   |
| 35°   | 16012.1 | 16062.1 | 15224.3 | 13610.5 | 12308.2 | 11132.4 | 9938.9  | 8260.4  | 7995.8  | 3486.4  | 508.6   |
| 37.5° | 21382.8 | 21109.5 | 19971.8 | 17120.4 | 14316.0 | 12772.7 | 11064.8 | 9459.7  | 9230.4  | 4562.3  | 608.5   |
| 40°   | 26600.7 | 26330.2 | 26001.0 | 23299.5 | 17805.3 | 14580.6 | 12640.4 | 10867.8 | 10570.9 | 5776.4  | 755.5   |
| 42.5° | 32086.0 | 31936.1 | 31921.4 | 29884.2 | 24172.6 | 17423.2 | 14536.5 | 12516.9 | 12264.1 | 7108.0  | 996.5   |
| 45°   | 35972.2 | 35822.3 | 36136.8 | 36492.5 | 32844.5 | 23514.1 | 17837.7 | 14659.9 | 14292.5 | 8724.8  | 1381.6  |
| 47.5° | 36495.5 | 36501.3 | 37342.1 | 38456.2 | 39288.1 | 32935.6 | 22235.3 | 17499.6 | 17052.8 | 11038.3 | 2028.3  |
| 50°   | 34755.2 | 34822.8 | 36160.4 | 38153.4 | 40393.4 | 40840.2 | 29990.1 | 21621.0 | 20959.5 | 13781.0 | 2945.5  |
| 52.5° | 31442.3 | 31518.7 | 33382.4 | 36660.1 | 39376.3 | 42739.2 | 39120.6 | 27012.2 | 26250.9 | 17202.7 | 4238.9  |
| 55°   | 28458.5 | 28505.6 | 30642.7 | 34784.6 | 38150.5 | 41707.4 | 44541.2 | 34211.4 | 33211.9 | 21412.2 | 5514.7  |
| 57.5° | 25504.2 | 25395.4 | 26785.9 | 31527.5 | 37941.8 | 40440.4 | 45340.8 | 42415.9 | 41313.5 | 26012.8 | 6508.3  |
| 60°   | 21553.3 | 21371.1 | 22488.1 | 25504.2 | 35196.2 | 41272.4 | 43844.5 | 46954.7 | 46704.8 | 32418.2 | 7275.6  |
| 61°   | 19281.0 | 19204.6 | 20327.5 | 22914.4 | 32885.6 | 41060.7 | 43485.9 | 47145.7 | 47172.2 | 35449.0 | 7619.5  |
| 62.5° | 13769.2 | 13986.7 | 15703.5 | 19066.4 | 27544.3 | 39687.9 | 43532.9 | 46554.9 | 46816.5 | 39476.3 | 8510.2  |
| 65°   | 6120.3  | 6470.1  | 7804.7  | 10541.5 | 16018.0 | 33015.0 | 43115.5 | 45258.5 | 45129.2 | 40581.6 | 11579.2 |
| 67.5° | 3630.4  | 3683.4  | 4347.7  | 5973.3  | 8483.8  | 17758.3 | 38047.6 | 43544.7 | 43371.3 | 35328.4 | 14407.1 |
| 70°   | 2860.3  | 2886.7  | 3098.4  | 3748.0  | 4923.9  | 6802.3  | 21715.0 | 37674.3 | 38429.7 | 28646.7 | 14104.3 |
| 72.5° | 2713.3  | 2707.4  | 2736.8  | 2851.4  | 3101.3  | 3374.7  | 8407.3  | 25042.7 | 26580.1 | 20630.3 | 11826.1 |
| 75°   | 2678.0  | 2666.2  | 2636.8  | 2592.8  | 2245.9  | 1987.2  | 2604.5  | 11076.5 | 11967.2 | 14095.5 | 8904.1  |
| 77.5° | 2598.6  | 2601.6  | 2607.4  | 2486.9  | 1925.5  | 1405.1  | 1261.1  | 3554.0  | 4371.2  | 8945.3  | 6329.0  |
| 80°   | 1757.9  | 1784.4  | 1828.4  | 1781.4  | 1731.4  | 1017.1  | 890.7   | 1264.0  | 1281.7  | 5020.9  | 4180.1  |
| 82.5° | 890.7   | 890.7   | 870.1   | 776.1   | 670.2   | 661.4   | 708.5   | 917.2   | 928.9   | 2539.8  | 1966.6  |
| 85°   | 538.0   | 567.3   | 579.1   | 526.2   | 482.1   | 443.9   | 540.9   | 729.0   | 755.5   | 984.8   | 458.6   |
| 87.5° | 120.5   | 123.5   | 135.2   | 179.3   | 261.6   | 355.7   | 502.7   | 667.3   | 679.1   | 632.0   | 55.9    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

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CATALOG NUMBER: GLAN-SA8C-730-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 261.6  | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 | 261.6 |
| 2.5°  | 264.6  | 258.7 | 255.7 | 246.9 | 238.1 | 229.3 | 223.4 | 220.5 | 223.4 | 226.4 | 226.4 |
| 5°    | 261.6  | 252.8 | 238.1 | 223.4 | 211.7 | 199.9 | 188.1 | 185.2 | 185.2 | 188.1 | 188.1 |
| 7.5°  | 261.6  | 246.9 | 226.4 | 208.7 | 191.1 | 173.4 | 164.6 | 158.7 | 161.7 | 161.7 | 161.7 |
| 10°   | 261.6  | 244.0 | 217.5 | 191.1 | 170.5 | 149.9 | 135.2 | 129.3 | 129.3 | 129.3 | 129.3 |
| 12.5° | 258.7  | 241.0 | 208.7 | 176.4 | 147.0 | 123.5 | 105.8 | 97.0  | 99.9  | 99.9  | 99.9  |
| 15°   | 252.8  | 232.2 | 197.0 | 149.9 | 117.6 | 94.1  | 76.4  | 67.6  | 70.6  | 76.4  | 79.4  |
| 17.5° | 244.0  | 223.4 | 176.4 | 126.4 | 94.1  | 70.6  | 52.9  | 47.0  | 50.0  | 58.8  | 58.8  |
| 20°   | 241.0  | 214.6 | 155.8 | 102.9 | 70.6  | 50.0  | 35.3  | 29.4  | 32.3  | 44.1  | 47.0  |
| 22.5° | 241.0  | 208.7 | 141.1 | 85.2  | 52.9  | 32.3  | 20.6  | 11.8  | 11.8  | 20.6  | 20.6  |
| 25°   | 244.0  | 205.8 | 129.3 | 70.6  | 38.2  | 23.5  | 11.8  | 5.9   | 11.8  | 32.3  | 38.2  |
| 27.5° | 249.9  | 202.8 | 123.5 | 58.8  | 29.4  | 20.6  | 8.8   | 20.6  | 35.3  | 35.3  | 35.3  |
| 30°   | 255.7  | 197.0 | 114.6 | 50.0  | 26.5  | 14.7  | 14.7  | 29.4  | 29.4  | 35.3  | 38.2  |
| 32.5° | 264.6  | 194.0 | 108.8 | 44.1  | 20.6  | 11.8  | 20.6  | 17.6  | 17.6  | 20.6  | 23.5  |
| 35°   | 282.2  | 197.0 | 102.9 | 44.1  | 20.6  | 14.7  | 17.6  | 8.8   | 5.9   | 5.9   | 5.9   |
| 37.5° | 305.7  | 199.9 | 94.1  | 38.2  | 17.6  | 17.6  | 8.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 343.9  | 208.7 | 88.2  | 35.3  | 14.7  | 14.7  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 408.6  | 226.4 | 85.2  | 32.3  | 14.7  | 11.8  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 538.0  | 267.5 | 79.4  | 29.4  | 14.7  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 773.1  | 364.5 | 76.4  | 23.5  | 8.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 1128.8 | 493.9 | 73.5  | 20.6  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 1440.4 | 520.3 | 50.0  | 17.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 1475.7 | 358.6 | 38.2  | 11.8  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 1175.9 | 232.2 | 32.3  | 8.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 890.7  | 176.4 | 29.4  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 855.4  | 158.7 | 29.4  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 943.6  | 138.2 | 26.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1534.5 | 114.6 | 23.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 2666.2 | 99.9  | 20.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 3368.8 | 94.1  | 17.6  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 2936.7 | 85.2  | 17.6  | 5.9   | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1766.7 | 73.5  | 17.6  | 11.8  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 926.0  | 55.9  | 17.6  | 14.7  | 8.8   | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 449.8  | 50.0  | 20.6  | 14.7  | 11.8  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 176.4  | 41.2  | 23.5  | 20.6  | 14.7  | 8.8   | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 79.4   | 35.3  | 26.5  | 23.5  | 20.6  | 11.8  | 2.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 41.2   | 32.3  | 29.4  | 26.5  | 20.6  | 14.7  | 5.9   | 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   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-4

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-730-U-5WQ

Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 10/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GSS-SB1A-730-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 3000K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2985     | CRI (Ra): | 70.8 |      |       |
| CIE u':                   | 0.2504   | R1:       | 66.3 | R9:  | -43.2 |
| CIE v':                   | 0.5243   | R2:       | 80.6 | R10: | 57.6  |
| Duv:                      | 0.0019   | R3:       | 94.5 | R11: | 64.8  |
| CIE x:                    | 0.4408   | R4:       | 68.2 | R12: | 53.5  |
| CIE y:                    | 0.4101   | R5:       | 66.5 | R13: | 68.7  |
| CIE z:                    | 0.1491   | R6:       | 74.7 | R14: | 97.0  |
| Peak Wavelength (nm):     | 595      | R7:       | 76.2 | R15: | 56.4  |
| Dominant Wavelength (nm): | 582      | R8:       | 39.6 |      |       |
| Purity:                   | 55.41818 |           |      |      |       |
| Rf:                       | 73.8     |           |      |      |       |
| Rg:                       | 94.4     |           |      |      |       |



### Test Conditions

Stabilization Time: 36M  
 Operation Time: 1H 36M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-4

| 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: SP1-2407-184-4

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-4

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|-------------------|-------------------------------|--------------------------------|
| 360               | 0                             | NR                             | 490               | 142                           | NR                             | 620               | 803                           | NR                             | 750               | 17                            | NR                             | 880               | 0                             | NR                             |
| 365               | 0                             | NR                             | 495               | 189                           | NR                             | 625               | 734                           | NR                             | 755               | 15                            | NR                             | 885               | 0                             | NR                             |
| 370               | 0                             | NR                             | 500               | 240                           | NR                             | 630               | 670                           | NR                             | 760               | 13                            | NR                             | 890               | 0                             | NR                             |
| 375               | 0                             | NR                             | 505               | 290                           | NR                             | 635               | 600                           | NR                             | 765               | 11                            | NR                             | 895               | 0                             | NR                             |
| 380               | 0                             | NR                             | 510               | 335                           | NR                             | 640               | 535                           | NR                             | 770               | 9                             | NR                             | 900               | 0                             | NR                             |
| 385               | 0                             | NR                             | 515               | 375                           | NR                             | 645               | 473                           | NR                             | 775               | 8                             | NR                             | 905               | 0                             | NR                             |
| 390               | 1                             | NR                             | 520               | 408                           | NR                             | 650               | 415                           | NR                             | 780               | 7                             | NR                             | 910               | 0                             | NR                             |
| 395               | 2                             | NR                             | 525               | 434                           | NR                             | 655               | 362                           | NR                             | 785               | 6                             | NR                             | 915               | 0                             | NR                             |
| 400               | 4                             | NR                             | 530               | 461                           | NR                             | 660               | 313                           | NR                             | 790               | 5                             | NR                             | 920               | 0                             | NR                             |
| 405               | 8                             | NR                             | 535               | 486                           | NR                             | 665               | 271                           | NR                             | 795               | 4                             | NR                             | 925               | 0                             | NR                             |
| 410               | 16                            | NR                             | 540               | 514                           | NR                             | 670               | 231                           | NR                             | 800               | 4                             | NR                             | 930               | 0                             | NR                             |
| 415               | 33                            | NR                             | 545               | 549                           | NR                             | 675               | 198                           | NR                             | 805               | 3                             | NR                             | 935               | 0                             | NR                             |
| 420               | 69                            | NR                             | 550               | 591                           | NR                             | 680               | 169                           | NR                             | 810               | 3                             | NR                             | 940               | 0                             | NR                             |
| 425               | 131                           | NR                             | 555               | 640                           | NR                             | 685               | 144                           | NR                             | 815               | 2                             | NR                             | 945               | 0                             | NR                             |
| 430               | 227                           | NR                             | 560               | 695                           | NR                             | 690               | 123                           | NR                             | 820               | 2                             | NR                             | 950               | 0                             | NR                             |
| 435               | 369                           | NR                             | 565               | 757                           | NR                             | 695               | 104                           | NR                             | 825               | 2                             | NR                             | 955               | 0                             | NR                             |
| 440               | 517                           | NR                             | 570               | 822                           | NR                             | 700               | 88                            | NR                             | 830               | 2                             | NR                             | 960               | 0                             | NR                             |
| 445               | 498                           | NR                             | 575               | 882                           | NR                             | 705               | 75                            | NR                             | 835               | 1                             | NR                             | 965               | 0                             | NR                             |
| 450               | 315                           | NR                             | 580               | 935                           | NR                             | 710               | 63                            | NR                             | 840               | 1                             | NR                             | 970               | 0                             | NR                             |
| 455               | 204                           | NR                             | 585               | 972                           | NR                             | 715               | 54                            | NR                             | 845               | 1                             | NR                             | 975               | 0                             | NR                             |
| 460               | 145                           | NR                             | 590               | 996                           | NR                             | 720               | 46                            | NR                             | 850               | 1                             | NR                             | 980               | 0                             | NR                             |
| 465               | 100                           | NR                             | 595               | 1000                          | NR                             | 725               | 39                            | NR                             | 855               | 1                             | NR                             | 985               | 0                             | NR                             |
| 470               | 78                            | NR                             | 600               | 989                           | NR                             | 730               | 33                            | NR                             | 860               | 1                             | NR                             | 990               | 0                             | NR                             |
| 475               | 76                            | NR                             | 605               | 960                           | NR                             | 735               | 28                            | NR                             | 865               | 1                             | NR                             | 995               | 0                             | NR                             |
| 480               | 83                            | NR                             | 610               | 918                           | NR                             | 740               | 24                            | NR                             | 870               | 1                             | NR                             | 1000              | 0                             | NR                             |
| 485               | 105                           | NR                             | 615               | 864                           | NR                             | 745               | 20                            | NR                             | 875               | 1                             | NR                             |                   |                               |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.19

| $\lambda$<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               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.13

| $\lambda$<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               | 142                                  | NR                             | 620               | 803                                  | NR                             | 750               | 17                                   | NR                             | 880               | 0                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 189                                  | NR                             | 625               | 734                                  | NR                             | 755               | 15                                   | NR                             | 885               | 0                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 240                                  | NR                             | 630               | 670                                  | NR                             | 760               | 13                                   | NR                             | 890               | 0                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 290                                  | NR                             | 635               | 600                                  | NR                             | 765               | 11                                   | NR                             | 895               | 0                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 335                                  | NR                             | 640               | 535                                  | NR                             | 770               | 9                                    | NR                             | 900               | 0                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 375                                  | NR                             | 645               | 473                                  | NR                             | 775               | 8                                    | NR                             | 905               | 0                                    | NR                             |
| 390               | 1                                    | NR                             | 520               | 408                                  | NR                             | 650               | 415                                  | NR                             | 780               | 7                                    | NR                             | 910               | 0                                    | NR                             |
| 395               | 2                                    | NR                             | 525               | 434                                  | NR                             | 655               | 362                                  | NR                             | 785               | 6                                    | NR                             | 915               | 0                                    | NR                             |
| 400               | 4                                    | NR                             | 530               | 461                                  | NR                             | 660               | 313                                  | NR                             | 790               | 5                                    | NR                             | 920               | 0                                    | NR                             |
| 405               | 8                                    | NR                             | 535               | 486                                  | NR                             | 665               | 271                                  | NR                             | 795               | 4                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 16                                   | NR                             | 540               | 514                                  | NR                             | 670               | 231                                  | NR                             | 800               | 4                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 33                                   | NR                             | 545               | 549                                  | NR                             | 675               | 198                                  | NR                             | 805               | 3                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 69                                   | NR                             | 550               | 591                                  | NR                             | 680               | 169                                  | NR                             | 810               | 3                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 131                                  | NR                             | 555               | 640                                  | NR                             | 685               | 144                                  | NR                             | 815               | 2                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 227                                  | NR                             | 560               | 695                                  | NR                             | 690               | 123                                  | NR                             | 820               | 2                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 369                                  | NR                             | 565               | 757                                  | NR                             | 695               | 104                                  | NR                             | 825               | 2                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 517                                  | NR                             | 570               | 822                                  | NR                             | 700               | 88                                   | NR                             | 830               | 2                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 498                                  | NR                             | 575               | 882                                  | NR                             | 705               | 75                                   | NR                             | 835               | 1                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 315                                  | NR                             | 580               | 935                                  | NR                             | 710               | 63                                   | NR                             | 840               | 1                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 204                                  | NR                             | 585               | 972                                  | NR                             | 715               | 54                                   | NR                             | 845               | 1                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 145                                  | NR                             | 590               | 996                                  | NR                             | 720               | 46                                   | NR                             | 850               | 1                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 100                                  | NR                             | 595               | 1000                                 | NR                             | 725               | 39                                   | NR                             | 855               | 1                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 78                                   | NR                             | 600               | 989                                  | NR                             | 730               | 33                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 76                                   | NR                             | 605               | 960                                  | NR                             | 735               | 28                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 83                                   | NR                             | 610               | 918                                  | NR                             | 740               | 24                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 105                                  | NR                             | 615               | 864                                  | NR                             | 745               | 20                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $\text{CIE } R_a = 70.8$   
 $R_g = -43.2$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54 = 81 | CES79 = 86 |
| CES05 = 49 | CES30 = 61 | CES55 = 80 | CES80 = 86 |
| CES06 = 51 | CES31 = 63 | CES56 = 71 | CES81 = 70 |
| CES07 = 41 | CES32 = 61 | CES57 = 69 | CES82 = 94 |
| CES08 = 40 | CES33 = 65 | CES58 = 72 | CES83 = 88 |
| CES09 = 29 | CES34 = 77 | CES59 = 85 | CES84 = 90 |
| CES10 = 76 | CES35 = 88 | CES60 = 93 | CES85 = 80 |
| CES11 = 59 | CES36 = 89 | CES61 = 86 | CES86 = 60 |
| CES12 = 65 | CES37 = 85 | CES62 = 81 | CES87 = 78 |
| CES13 = 43 | CES38 = 69 | CES63 = 73 | CES88 = 75 |
| CES14 = 74 | CES39 = 93 | CES64 = 72 | CES89 = 66 |
| CES15 = 71 | CES40 = 89 | CES65 = 67 | CES90 = 72 |
| CES16 = 47 | CES41 = 83 | CES66 = 70 | CES91 = 95 |
| CES17 = 50 | CES42 = 87 | CES67 = 68 | CES92 = 59 |
| CES18 = 56 | CES43 = 77 | CES68 = 73 | CES93 = 76 |
| CES19 = 73 | CES44 = 99 | CES69 = 83 | CES94 = 48 |
| CES20 = 66 | CES45 = 83 | CES70 = 66 | CES95 = 70 |
| CES21 = 87 | CES46 = 77 | CES71 = 66 | CES96 = 76 |
| CES22 = 79 | CES47 = 74 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 62 | CES73 = 59 | CES98 = 73 |
| CES24 = 91 | CES49 = 77 | CES74 = 93 | CES99 = 60 |
| CES25 = 73 | CES50 = 85 | CES75 = 67 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)