

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: P1063394

Luminaire Tested: **GLAN-SA7B-730-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063394  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA7B-730-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 7xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (98) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 30255.4 lumens  
Efficiency: N/A  
Efficacy: 121.3 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B0 - U0 - G4

Input Watts (W): 249.5  
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

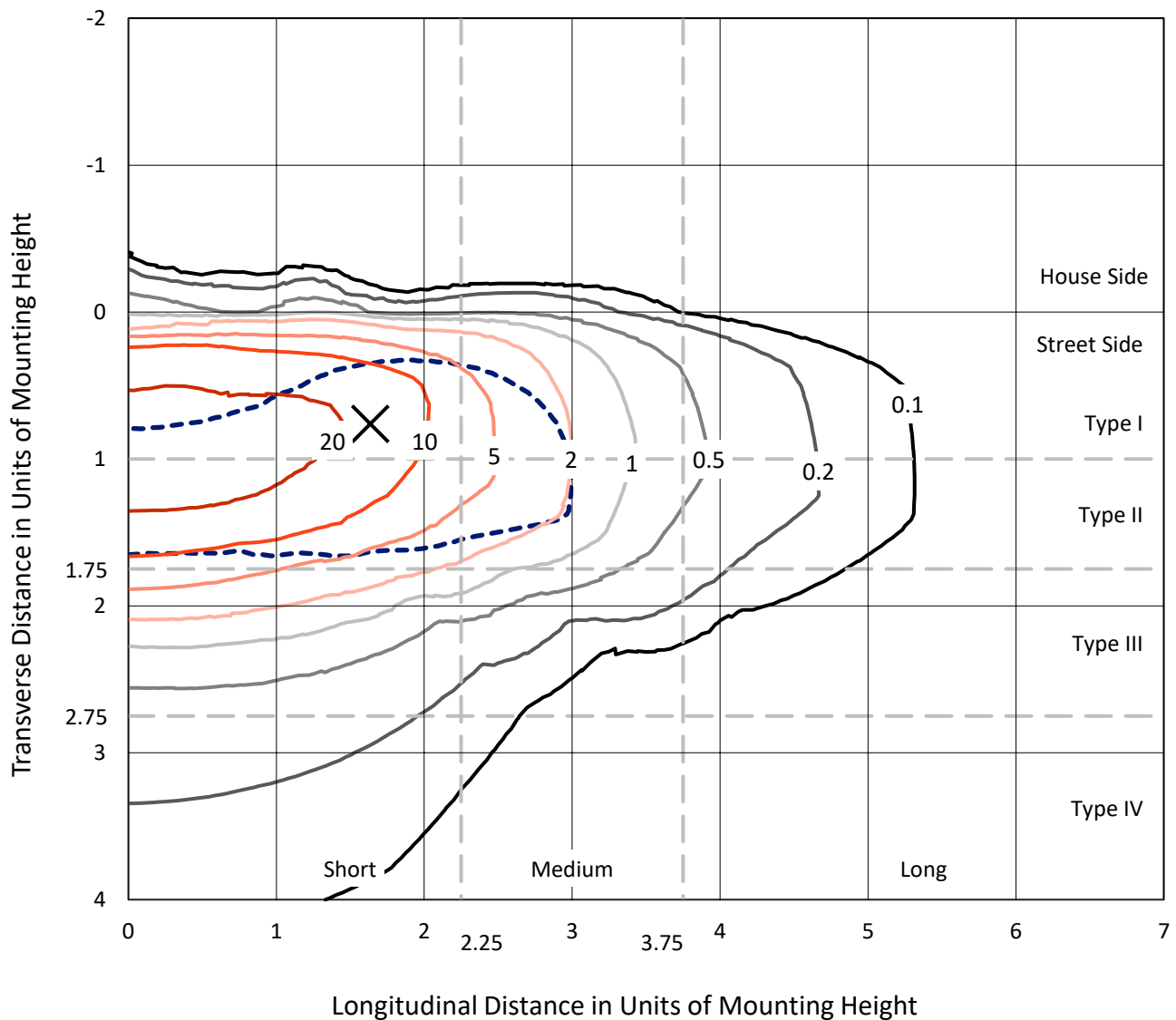


REPORT NUMBER: P1063394

CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
- - - 1/2 Max cd

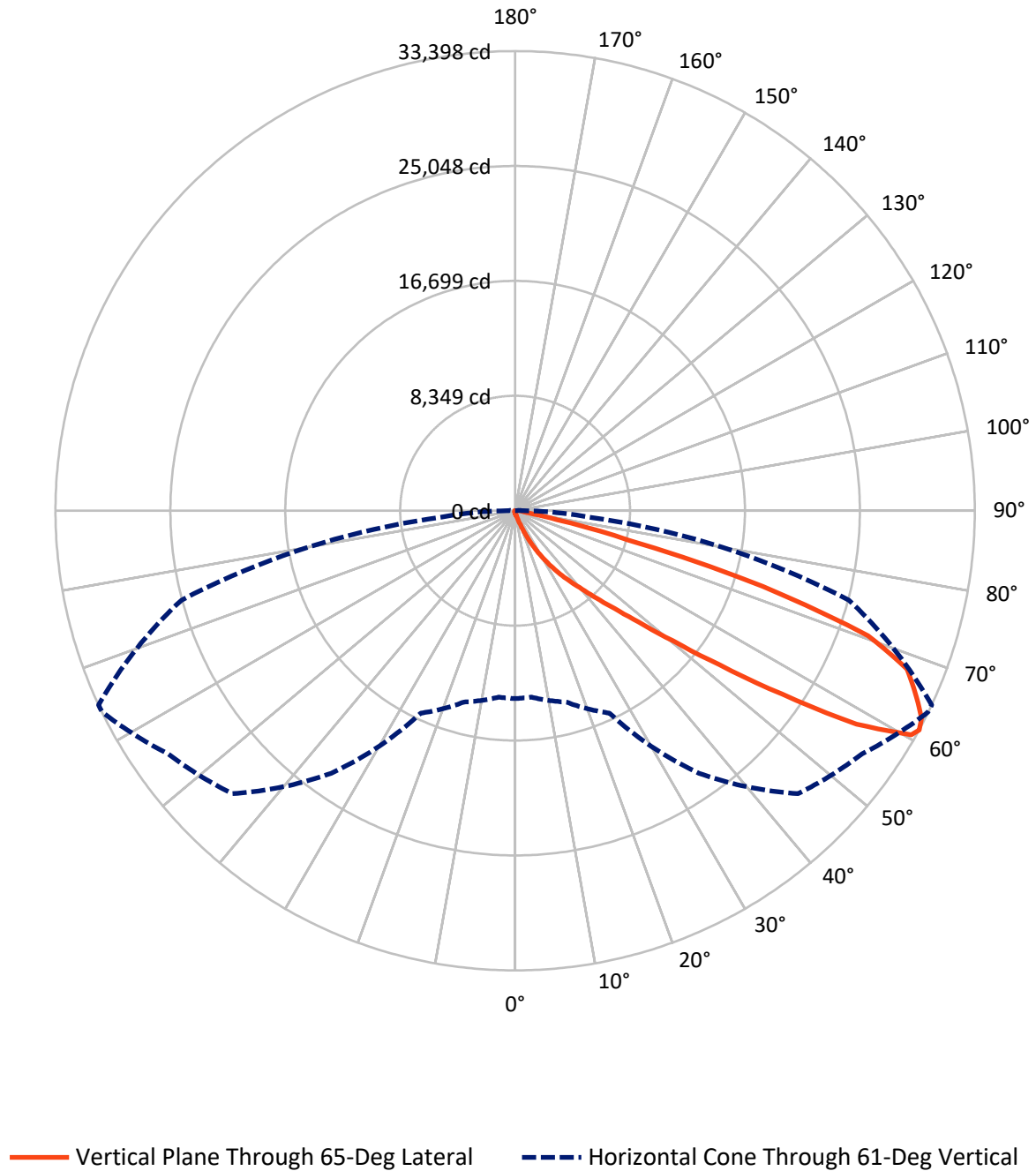


Based on 15 foot mounting height. Maximum calculated value = 40 fc  
Type II - Short - N/A

REPORT NUMBER: P1063394

CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

## Luminous Intensity Polar Plot



REPORT NUMBER: P1063394

CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 129.2    | 0.0    | 129.2   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 30126.3  | 0.0    | 30126.3 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 30255.4  | 0.0    | 30255.4 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 23.6    | 0.1       |
| 10°-20°   | 248.8   | 0.8       |
| 20°-30°   | 892.9   | 3.0       |
| 30°-40°   | 2377.2  | 7.9       |
| 40°-50°   | 6244.9  | 20.6      |
| 50°-60°   | 9674.5  | 32.0      |
| 60°-70°   | 8111.9  | 26.8      |
| 70°-80°   | 2387.2  | 7.9       |
| 80°-90°   | 294.5   | 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°    | 30255.4 | 100.0     |
| 0°-180°   | 30255.4 | 100.0     |



REPORT NUMBER: P1063394

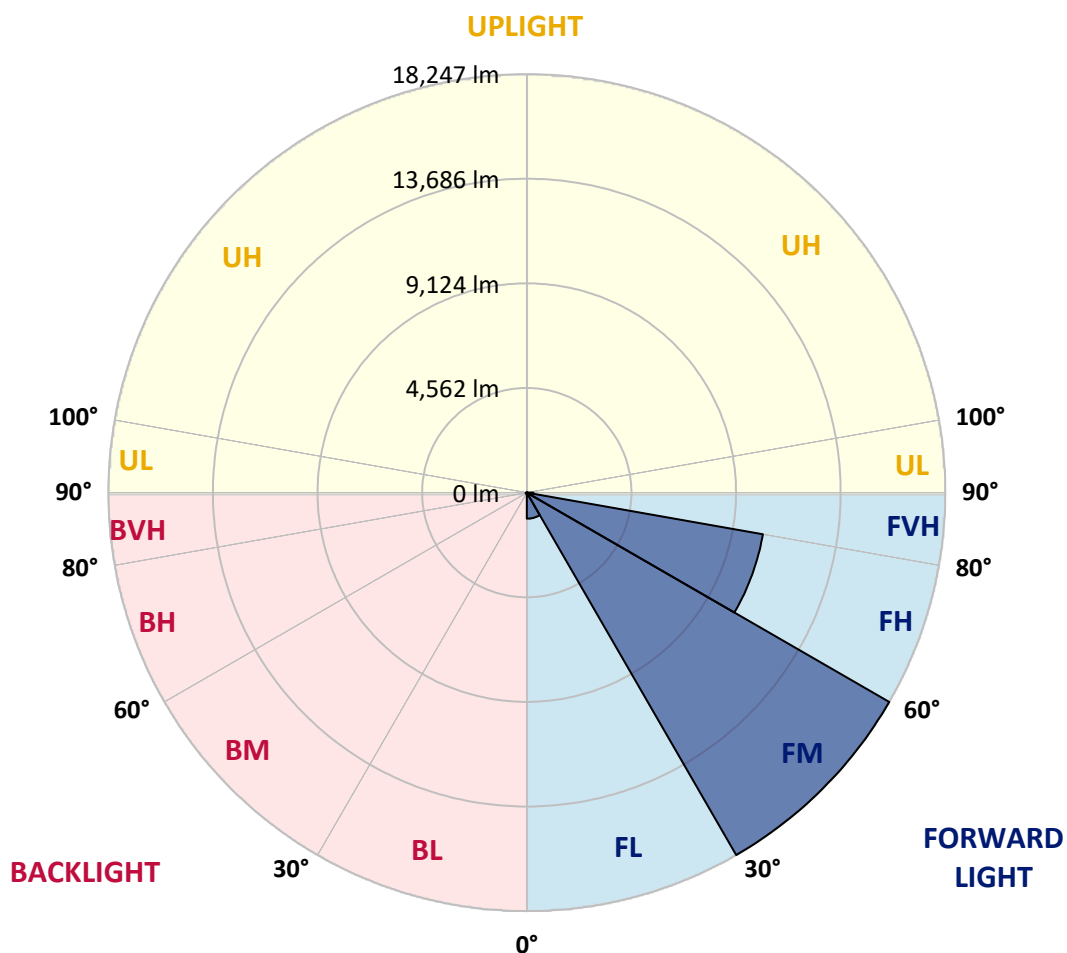
CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1136.2  | 3.8       |                         |      |          |
| FM   | (30°-60°)   | 18247.4 | 60.3      |                         |      |          |
| FH   | (60°-80°)   | 10453.6 | 34.6      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 289.0   | 1.0       |                         |      | G3/500   |
| BL   | (0°-30°)    | 29.0    | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 49.2    | 0.2       | B0/220                  |      |          |
| BH   | (60°-80°)   | 45.6    | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 5.5     | 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-G4**

Type II Short





REPORT NUMBER: P1063394

CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   | 185.2   |
| 2.5°  | 224.8   | 226.9   | 222.7   | 214.4   | 208.1   | 208.1   | 206.0   | 199.8   | 199.8   | 193.6   | 189.4   |
| 5°    | 314.3   | 310.1   | 301.8   | 285.1   | 270.6   | 256.0   | 241.4   | 226.9   | 224.8   | 206.0   | 193.6   |
| 7.5°  | 514.1   | 518.2   | 491.2   | 439.1   | 395.4   | 339.2   | 287.2   | 256.0   | 251.8   | 220.6   | 195.6   |
| 10°   | 1128.0  | 1096.8  | 1034.4  | 832.5   | 684.7   | 516.1   | 382.9   | 297.6   | 293.5   | 237.3   | 199.8   |
| 12.5° | 2056.3  | 2031.3  | 1916.8  | 1708.7  | 1327.8  | 924.1   | 559.9   | 368.4   | 355.9   | 251.8   | 201.9   |
| 15°   | 2963.7  | 2924.2  | 2861.7  | 2651.5  | 2206.1  | 1656.7  | 915.7   | 503.7   | 470.4   | 272.6   | 199.8   |
| 17.5° | 3542.3  | 3548.5  | 3492.3  | 3402.8  | 3115.6  | 2451.7  | 1581.7  | 751.3   | 686.8   | 310.1   | 195.6   |
| 20°   | 4048.0  | 4033.5  | 4064.7  | 4016.8  | 3814.9  | 3332.1  | 2301.9  | 1190.5  | 1080.2  | 370.5   | 197.7   |
| 22.5° | 4630.8  | 4666.2  | 4689.1  | 4678.6  | 4456.0  | 4043.9  | 3119.8  | 1781.5  | 1642.1  | 480.8   | 204.0   |
| 25°   | 5411.2  | 5407.1  | 5409.2  | 5382.1  | 5165.7  | 4707.8  | 3939.8  | 2516.2  | 2374.7  | 659.8   | 218.5   |
| 27.5° | 6229.2  | 6254.1  | 6264.6  | 6166.7  | 5883.7  | 5434.1  | 4699.5  | 3319.6  | 3153.1  | 947.0   | 237.3   |
| 30°   | 7346.8  | 7326.0  | 7278.1  | 7078.3  | 6734.9  | 6177.1  | 5448.7  | 4162.5  | 3987.7  | 1348.6  | 266.4   |
| 32.5° | 8853.6  | 8830.7  | 8589.3  | 8148.1  | 7634.0  | 6951.4  | 6202.1  | 5007.5  | 4795.2  | 1850.2  | 305.9   |
| 35°   | 11336.6 | 11371.9 | 10778.8 | 9636.2  | 8714.2  | 7881.7  | 7036.7  | 5848.3  | 5661.0  | 2468.4  | 360.1   |
| 37.5° | 15139.0 | 14945.4 | 14140.0 | 12121.2 | 10135.7 | 9043.0  | 7833.8  | 6697.5  | 6535.1  | 3230.1  | 430.8   |
| 40°   | 18833.2 | 18641.7 | 18408.6 | 16496.0 | 12606.1 | 10323.0 | 8949.4  | 7694.4  | 7484.2  | 4089.7  | 534.9   |
| 42.5° | 22716.8 | 22610.7 | 22600.3 | 21158.0 | 17114.1 | 12335.6 | 10291.8 | 8862.0  | 8683.0  | 5032.5  | 705.5   |
| 45°   | 25468.2 | 25362.1 | 25584.8 | 25836.6 | 23253.8 | 16647.9 | 12629.0 | 10379.2 | 10119.0 | 6177.1  | 978.2   |
| 47.5° | 25838.7 | 25842.9 | 26438.1 | 27226.9 | 27815.9 | 23318.3 | 15742.6 | 12389.7 | 12073.3 | 7815.1  | 1436.1  |
| 50°   | 24606.6 | 24654.5 | 25601.4 | 27012.5 | 28598.4 | 28914.8 | 21232.9 | 15307.6 | 14839.3 | 9756.9  | 2085.4  |
| 52.5° | 22261.0 | 22315.1 | 23634.6 | 25955.2 | 27878.3 | 30259.3 | 27697.2 | 19124.6 | 18585.5 | 12179.5 | 3001.2  |
| 55°   | 20148.6 | 20181.9 | 21694.9 | 24627.4 | 27010.4 | 29528.7 | 31535.1 | 24221.6 | 23513.9 | 15159.8 | 3904.4  |
| 57.5° | 18056.9 | 17979.9 | 18964.3 | 22321.4 | 26862.7 | 28631.7 | 32101.2 | 30030.3 | 29249.9 | 18417.0 | 4607.9  |
| 60°   | 15259.7 | 15130.7 | 15921.5 | 18056.9 | 24918.8 | 29220.7 | 31041.8 | 33243.8 | 33066.9 | 22952.0 | 5151.1  |
| 61°   | 13650.9 | 13596.8 | 14391.8 | 16223.3 | 23282.9 | 29070.9 | 30787.9 | 33379.0 | 33397.8 | 25097.8 | 5394.6  |
| 62.5° | 9748.6  | 9902.6  | 11118.0 | 13499.0 | 19501.3 | 28098.9 | 30821.2 | 32960.7 | 33145.9 | 27949.1 | 6025.2  |
| 65°   | 4333.2  | 4580.8  | 5525.7  | 7463.4  | 11340.7 | 23374.5 | 30525.7 | 32042.9 | 31951.3 | 28731.6 | 8198.0  |
| 67.5° | 2570.3  | 2607.8  | 3078.2  | 4229.1  | 6006.5  | 12572.8 | 26937.6 | 30829.5 | 30706.7 | 25012.4 | 10200.2 |
| 70°   | 2025.1  | 2043.8  | 2193.6  | 2653.6  | 3486.1  | 4816.0  | 15374.2 | 26673.3 | 27208.1 | 20281.8 | 9985.8  |
| 72.5° | 1921.0  | 1916.8  | 1937.6  | 2018.8  | 2195.7  | 2389.3  | 5952.4  | 17730.1 | 18818.6 | 14606.2 | 8372.9  |
| 75°   | 1896.0  | 1887.7  | 1866.9  | 1835.7  | 1590.1  | 1406.9  | 1844.0  | 7842.1  | 8472.8  | 9979.6  | 6304.1  |
| 77.5° | 1839.8  | 1841.9  | 1846.1  | 1760.7  | 1363.2  | 994.8   | 892.9   | 2516.2  | 3094.8  | 6333.2  | 4480.9  |
| 80°   | 1244.6  | 1263.3  | 1294.5  | 1261.2  | 1225.9  | 720.1   | 630.6   | 894.9   | 907.4   | 3554.8  | 2959.5  |
| 82.5° | 630.6   | 630.6   | 616.0   | 549.4   | 474.5   | 468.3   | 501.6   | 649.3   | 657.7   | 1798.2  | 1392.4  |
| 85°   | 380.9   | 401.7   | 410.0   | 372.5   | 341.3   | 314.3   | 382.9   | 516.1   | 534.9   | 697.2   | 324.7   |
| 87.5° | 85.3    | 87.4    | 95.7    | 127.0   | 185.2   | 251.8   | 355.9   | 472.4   | 480.8   | 447.5   | 39.5    |
| 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: P1063394

CATALOG NUMBER: GLAN-SA7B-730-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 185.2  | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 | 185.2 |
| 2.5°  | 187.3  | 183.1 | 181.1 | 174.8 | 168.6 | 162.3 | 158.2 | 156.1 | 158.2 | 160.3 | 160.3 |
| 5°    | 185.2  | 179.0 | 168.6 | 158.2 | 149.8 | 141.5 | 133.2 | 131.1 | 131.1 | 133.2 | 133.2 |
| 7.5°  | 185.2  | 174.8 | 160.3 | 147.8 | 135.3 | 122.8 | 116.5 | 112.4 | 114.5 | 114.5 | 114.5 |
| 10°   | 185.2  | 172.7 | 154.0 | 135.3 | 120.7 | 106.1 | 95.7  | 91.6  | 91.6  | 91.6  | 91.6  |
| 12.5° | 183.1  | 170.7 | 147.8 | 124.9 | 104.1 | 87.4  | 74.9  | 68.7  | 70.8  | 70.8  | 70.8  |
| 15°   | 179.0  | 164.4 | 139.4 | 106.1 | 83.2  | 66.6  | 54.1  | 47.9  | 49.9  | 54.1  | 56.2  |
| 17.5° | 172.7  | 158.2 | 124.9 | 89.5  | 66.6  | 49.9  | 37.5  | 33.3  | 35.4  | 41.6  | 41.6  |
| 20°   | 170.7  | 151.9 | 110.3 | 72.8  | 49.9  | 35.4  | 25.0  | 20.8  | 22.9  | 31.2  | 33.3  |
| 22.5° | 170.7  | 147.8 | 99.9  | 60.4  | 37.5  | 22.9  | 14.6  | 8.3   | 8.3   | 14.6  | 14.6  |
| 25°   | 172.7  | 145.7 | 91.6  | 49.9  | 27.1  | 16.6  | 8.3   | 4.2   | 8.3   | 22.9  | 27.1  |
| 27.5° | 176.9  | 143.6 | 87.4  | 41.6  | 20.8  | 14.6  | 6.2   | 14.6  | 25.0  | 25.0  | 25.0  |
| 30°   | 181.1  | 139.4 | 81.2  | 35.4  | 18.7  | 10.4  | 10.4  | 20.8  | 20.8  | 25.0  | 27.1  |
| 32.5° | 187.3  | 137.4 | 77.0  | 31.2  | 14.6  | 8.3   | 14.6  | 12.5  | 12.5  | 14.6  | 16.6  |
| 35°   | 199.8  | 139.4 | 72.8  | 31.2  | 14.6  | 10.4  | 12.5  | 6.2   | 4.2   | 4.2   | 4.2   |
| 37.5° | 216.4  | 141.5 | 66.6  | 27.1  | 12.5  | 12.5  | 6.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 243.5  | 147.8 | 62.4  | 25.0  | 10.4  | 10.4  | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 289.3  | 160.3 | 60.4  | 22.9  | 10.4  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 380.9  | 189.4 | 56.2  | 20.8  | 10.4  | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 547.4  | 258.1 | 54.1  | 16.6  | 6.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 799.2  | 349.6 | 52.0  | 14.6  | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 1019.8 | 368.4 | 35.4  | 12.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 1044.8 | 253.9 | 27.1  | 8.3   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 832.5  | 164.4 | 22.9  | 6.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 630.6  | 124.9 | 20.8  | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 605.6  | 112.4 | 20.8  | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 668.1  | 97.8  | 18.7  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1086.4 | 81.2  | 16.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 1887.7 | 70.8  | 14.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 2385.1 | 66.6  | 12.5  | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 2079.2 | 60.4  | 12.5  | 4.2   | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1250.8 | 52.0  | 12.5  | 8.3   | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 655.6  | 39.5  | 12.5  | 10.4  | 6.2   | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 318.4  | 35.4  | 14.6  | 10.4  | 8.3   | 4.2   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 124.9  | 29.1  | 16.6  | 14.6  | 10.4  | 6.2   | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 56.2   | 25.0  | 18.7  | 16.6  | 14.6  | 8.3   | 2.1   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 29.1   | 22.9  | 20.8  | 18.7  | 14.6  | 10.4  | 4.2   | 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

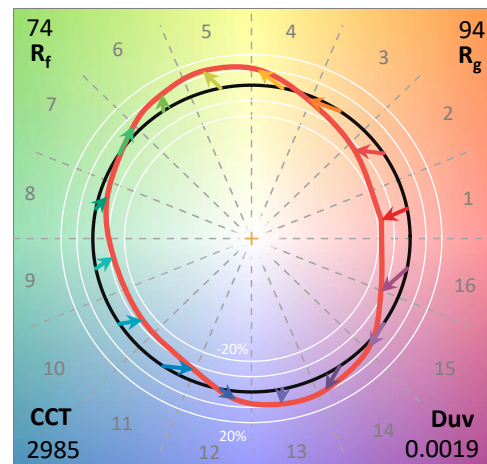
Data in this report applies to families of products including GSS-SB1A-730-U-5WQ

### 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

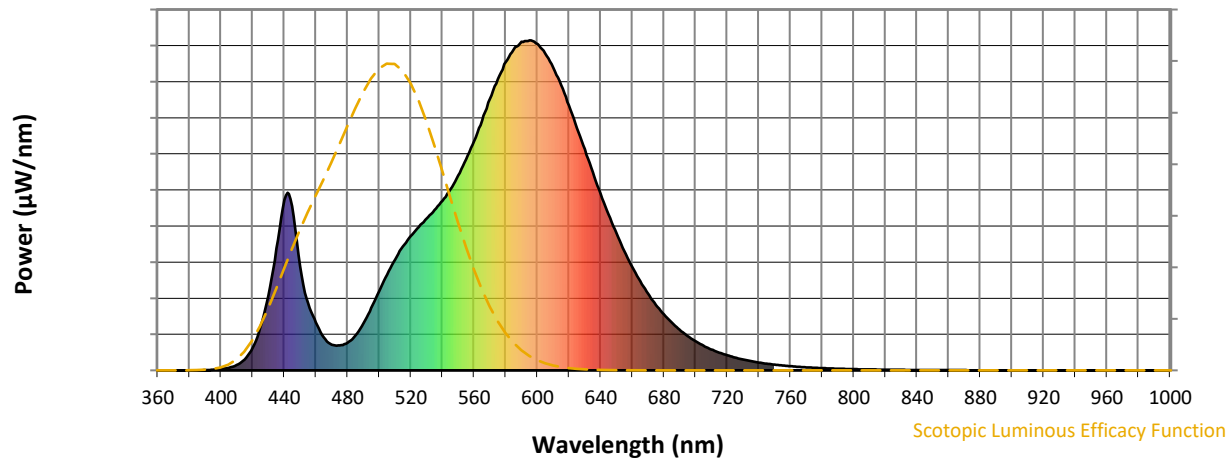


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/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               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-4

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.19

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/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               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-4

### 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                             |                   |                                      |                                |

REPORT NUMBER: SP1-2407-184-4

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)