

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: P1063997

Luminaire Tested: **GLAN-SA5A-730-U-T4BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063997  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA5A-730-U-T4BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 5xLight Square PACKAGE  
70CRI 3000K FIXTURE w/ TYPE IV ANGLED BACKLIGHT CONTROL  
Light Source: (70) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17514.3 lumens  
Efficiency: N/A  
Efficacy: 128.2 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B0 - U0 - G4

Input Watts (W): 136.6  
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

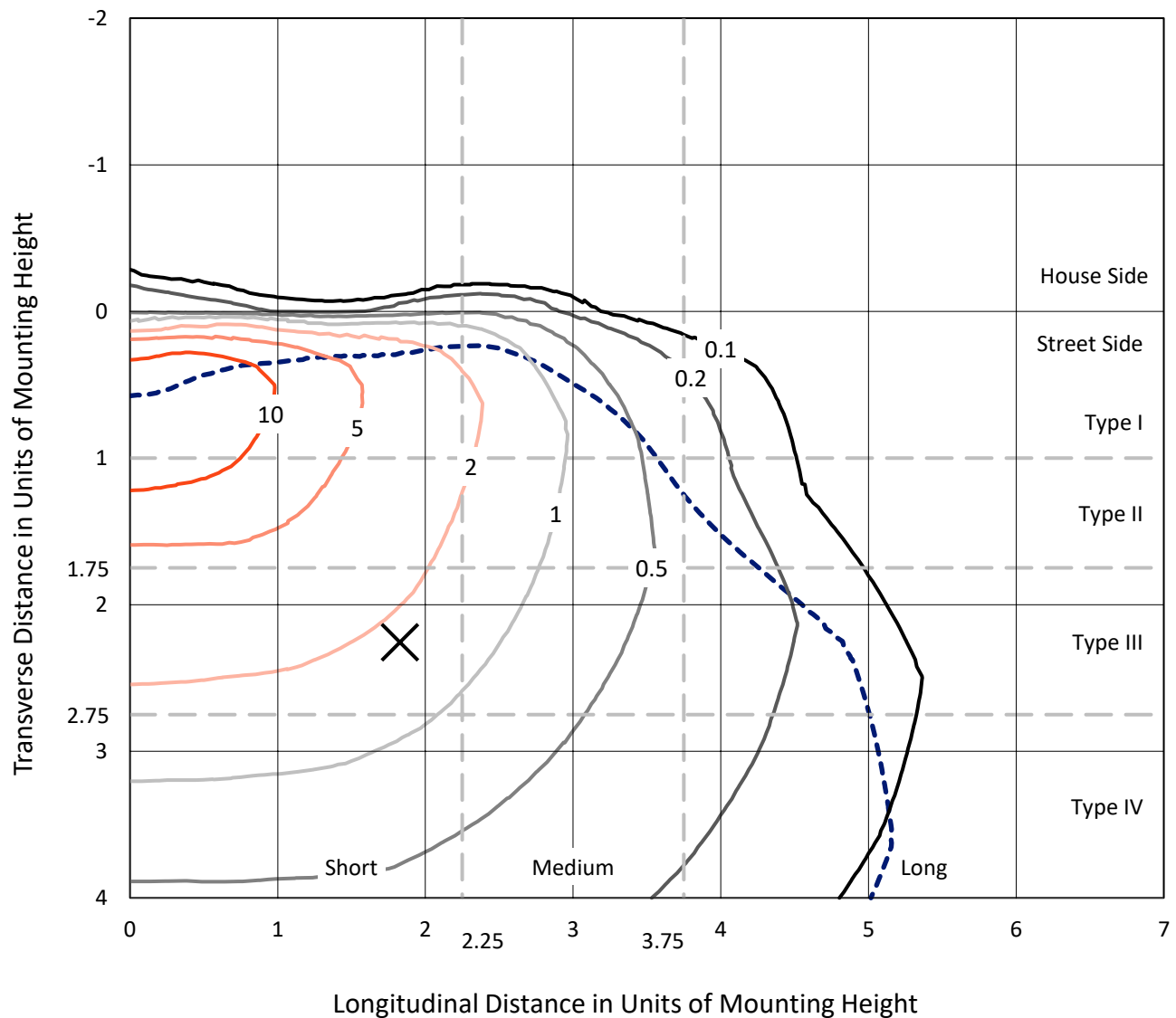


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

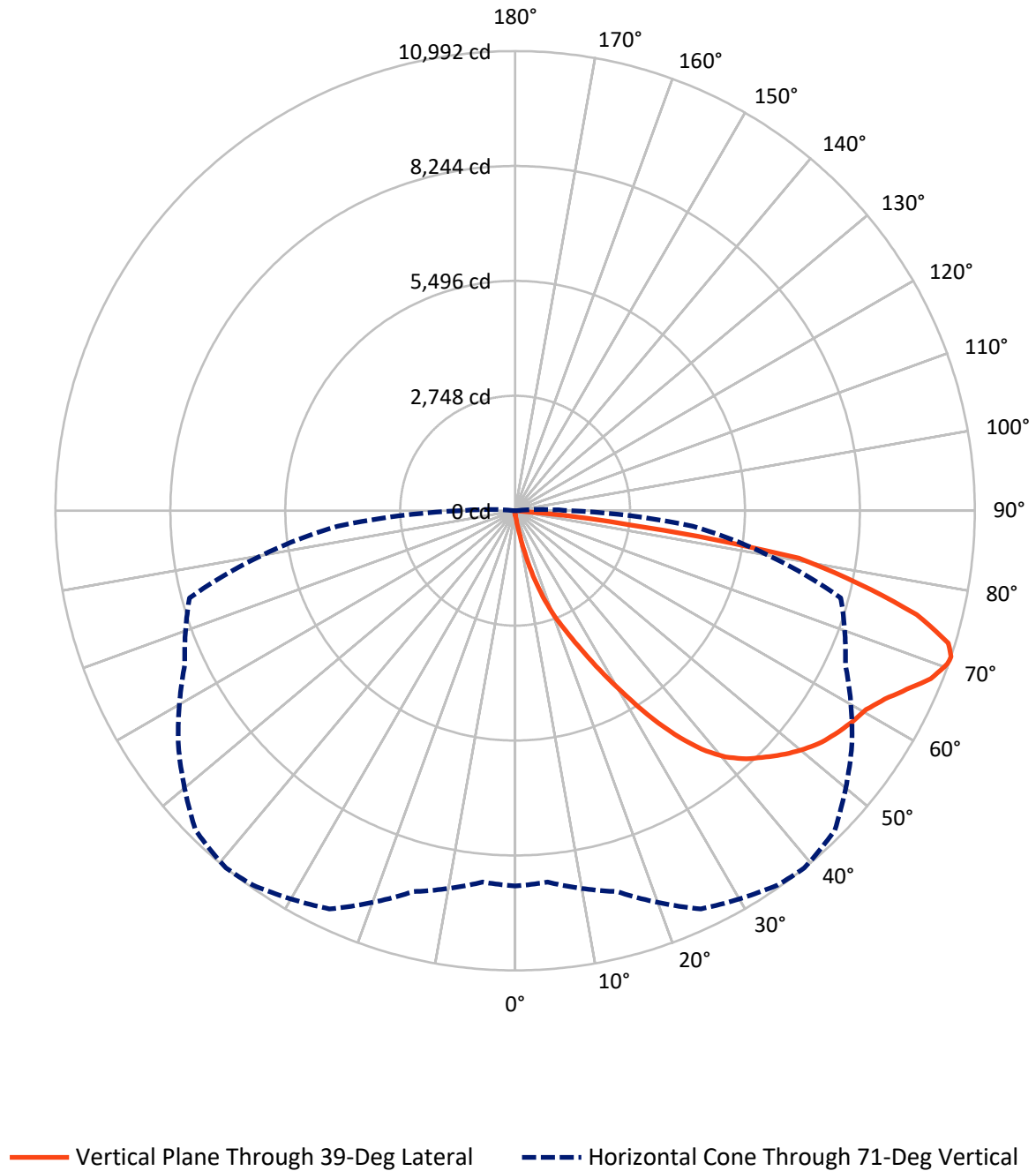


Based on 15 foot mounting height. Maximum calculated value = 18 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 62.2     | 0.0    | 62.2    |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 17452.1  | 0.0    | 17452.1 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 17514.3  | 0.0    | 17514.3 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 14.6    | 0.1       |
| 10°-20°   | 187.2   | 1.1       |
| 20°-30°   | 666.6   | 3.8       |
| 30°-40°   | 1606.7  | 9.2       |
| 40°-50°   | 2688.9  | 15.4      |
| 50°-60°   | 3453.5  | 19.7      |
| 60°-70°   | 4370.5  | 25.0      |
| 70°-80°   | 3896.5  | 22.2      |
| 80°-90°   | 629.8   | 3.6       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 17514.3 | 100.0     |
| 0°-180°   | 17514.3 | 100.0     |



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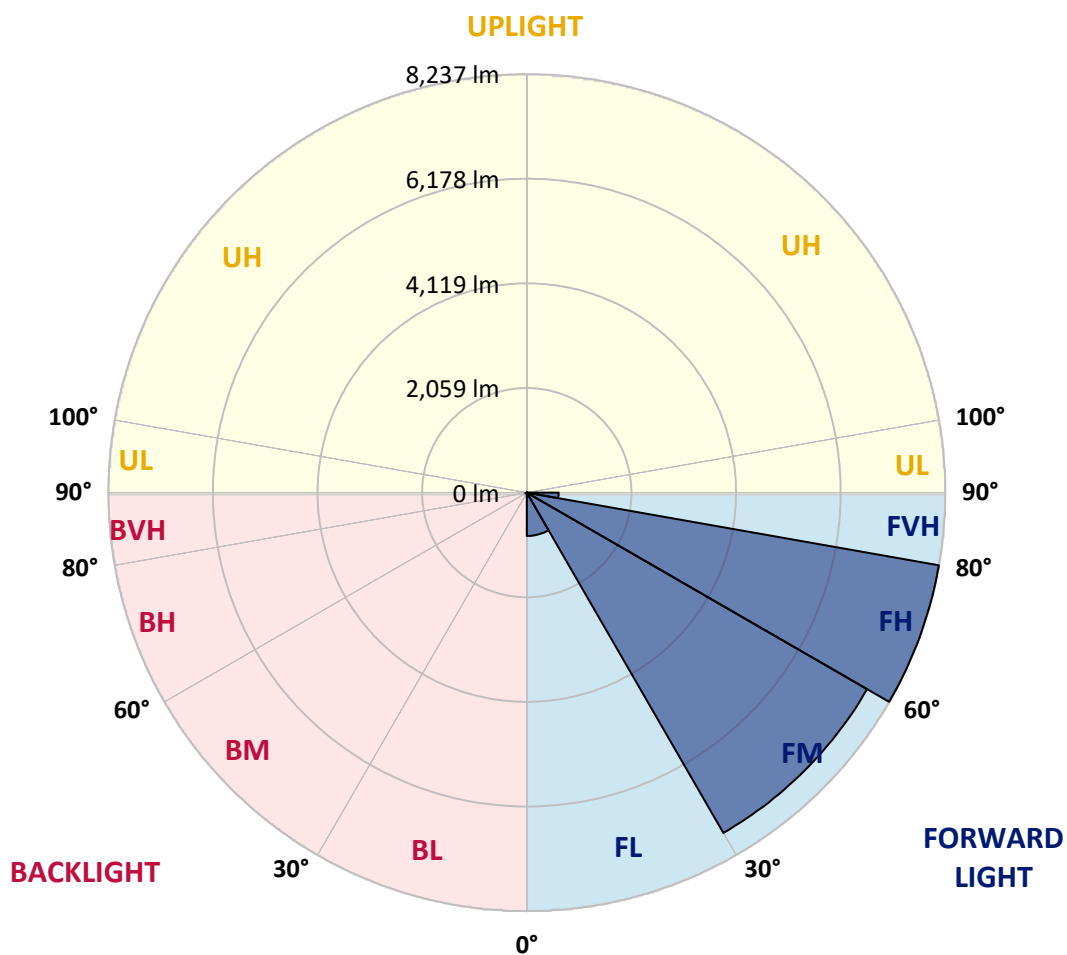
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 853.4  | 4.9       |                         |      |          |
| FM   | (30°-60°)   | 7734.7 | 44.2      |                         |      |          |
| FH   | (60°-80°)   | 8237.0 | 47.0      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 627.0  | 3.6       |                         |      | G4/750   |
| BL   | (0°-30°)    | 15.1   | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 14.4   | 0.1       | B0/220                  |      |          |
| BH   | (60°-80°)   | 29.9   | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 2.9    | 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 IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°     | 35°     | 39°     | 45°     | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|---------|---------|---------|---------|--------|--------|--------|--------|
| 0°    | 96.0   | 96.0   | 96.0   | 96.0    | 96.0    | 96.0    | 96.0    | 96.0   | 96.0   | 96.0   | 96.0   |
| 2.5°  | 110.3  | 110.3  | 110.3  | 106.7   | 106.7   | 105.5   | 104.3   | 104.3  | 102.0  | 100.8  | 98.4   |
| 5°    | 167.2  | 163.6  | 155.3  | 150.6   | 141.1   | 135.2   | 129.2   | 120.9  | 112.6  | 106.7  | 99.6   |
| 7.5°  | 378.2  | 386.5  | 359.2  | 308.3   | 256.1   | 233.6   | 195.6   | 157.7  | 130.4  | 112.6  | 100.8  |
| 10°   | 963.9  | 959.2  | 866.7  | 764.7   | 590.4   | 520.5   | 407.9   | 257.3  | 168.4  | 123.3  | 102.0  |
| 12.5° | 1639.7 | 1635.0 | 1525.9 | 1387.2  | 1157.2  | 1011.3  | 797.9   | 480.2  | 241.9  | 139.9  | 102.0  |
| 15°   | 2207.6 | 2188.7 | 2154.3 | 2016.7  | 1747.6  | 1625.5  | 1343.3  | 848.9  | 391.3  | 168.4  | 104.3  |
| 17.5° | 2583.5 | 2566.9 | 2534.9 | 2485.1  | 2314.3  | 2169.7  | 1943.2  | 1333.8 | 633.1  | 218.2  | 109.1  |
| 20°   | 2928.5 | 2916.6 | 2890.6 | 2881.1  | 2770.8  | 2693.7  | 2506.4  | 1891.1 | 986.4  | 296.4  | 116.2  |
| 22.5° | 3402.7 | 3377.8 | 3388.5 | 3331.6  | 3223.7  | 3131.2  | 3016.2  | 2474.4 | 1418.0 | 426.8  | 129.2  |
| 25°   | 3983.7 | 3971.8 | 3942.2 | 3901.9  | 3752.5  | 3671.9  | 3495.2  | 3024.5 | 1900.6 | 597.6  | 143.5  |
| 27.5° | 4685.6 | 4672.6 | 4665.4 | 4573.0  | 4401.0  | 4313.3  | 4066.7  | 3543.8 | 2443.6 | 837.1  | 162.4  |
| 30°   | 5494.2 | 5500.1 | 5453.9 | 5335.3  | 5134.9  | 5011.6  | 4757.9  | 4088.0 | 2999.6 | 1118.0 | 182.6  |
| 32.5° | 6331.2 | 6319.4 | 6248.2 | 6108.3  | 5929.3  | 5814.3  | 5491.8  | 4684.4 | 3583.0 | 1489.1 | 206.3  |
| 35°   | 7233.5 | 7211.0 | 7023.6 | 6863.6  | 6710.6  | 6566.0  | 6272.0  | 5376.8 | 4166.3 | 1905.3 | 238.3  |
| 37.5° | 8144.1 | 8038.5 | 7662.7 | 7460.0  | 7354.4  | 7235.9  | 6962.0  | 6115.5 | 4746.1 | 2370.1 | 277.4  |
| 40°   | 8831.7 | 8749.9 | 8304.1 | 7930.7  | 7846.5  | 7745.7  | 7541.8  | 6753.3 | 5362.6 | 2869.2 | 324.9  |
| 42.5° | 9212.3 | 9167.3 | 8766.5 | 8397.8  | 8199.8  | 8110.9  | 7936.6  | 7310.6 | 5972.0 | 3420.5 | 393.6  |
| 45°   | 9374.7 | 9304.8 | 9036.8 | 8864.9  | 8549.5  | 8402.5  | 8195.0  | 7731.5 | 6608.7 | 4046.5 | 489.7  |
| 47.5° | 9324.9 | 9284.6 | 9092.6 | 9155.4  | 8926.6  | 8697.8  | 8393.0  | 8054.0 | 7152.9 | 4765.0 | 621.3  |
| 50°   | 9011.9 | 8977.6 | 8918.3 | 9258.6  | 9230.1  | 8959.8  | 8649.1  | 8308.9 | 7597.5 | 5506.0 | 825.2  |
| 52.5° | 8416.8 | 8402.5 | 8554.3 | 9177.9  | 9402.0  | 9191.0  | 8895.8  | 8534.1 | 8012.5 | 6280.3 | 1116.9 |
| 55°   | 7649.7 | 7707.8 | 8141.7 | 9052.3  | 9489.7  | 9361.7  | 9113.9  | 8745.2 | 8345.6 | 6972.7 | 1547.2 |
| 57.5° | 7334.3 | 7349.7 | 7891.5 | 8963.3  | 9528.9  | 9512.3  | 9326.1  | 8946.7 | 8651.5 | 7526.4 | 2204.1 |
| 60°   | 7703.0 | 7679.3 | 7965.0 | 9030.9  | 9607.1  | 9647.4  | 9514.6  | 9134.1 | 8917.1 | 8001.8 | 3079.1 |
| 62.5° | 8369.3 | 8356.3 | 8447.6 | 9319.0  | 9836.0  | 9917.8  | 9776.7  | 9269.2 | 9151.8 | 8314.8 | 4077.4 |
| 65°   | 8964.5 | 8937.2 | 9106.8 | 9830.0  | 10237.9 | 10296.0 | 10172.7 | 9500.4 | 9255.0 | 8542.4 | 5015.2 |
| 67.5° | 9221.8 | 9215.9 | 9488.6 | 10316.1 | 10660.0 | 10722.8 | 10614.9 | 9819.4 | 9231.3 | 8614.8 | 5429.0 |
| 70°   | 9104.4 | 9081.9 | 9518.2 | 10522.4 | 10898.3 | 10969.4 | 10865.1 | 9937.9 | 8974.0 | 8385.9 | 4816.0 |
| 71°   | 8975.2 | 8914.7 | 9429.3 | 10508.2 | 10931.5 | 10991.9 | 10809.4 | 9830.0 | 8715.5 | 8061.1 | 4260.0 |
| 72.5° | 8574.4 | 8585.1 | 9185.0 | 10360.0 | 10852.0 | 10834.2 | 10494.0 | 9443.5 | 8403.7 | 7323.6 | 3421.7 |
| 75°   | 7588.0 | 7650.8 | 8394.2 | 9737.5  | 10143.0 | 9916.6  | 9396.1  | 8704.9 | 7777.7 | 5251.1 | 2376.0 |
| 77.5° | 6200.8 | 6294.5 | 7111.4 | 8540.1  | 8425.1  | 8402.5  | 8381.2  | 7669.8 | 6641.9 | 2820.6 | 1652.8 |
| 80°   | 2960.5 | 3163.2 | 4289.6 | 6096.5  | 6622.9  | 6877.8  | 6717.8  | 6180.7 | 5136.1 | 1343.3 | 987.6  |
| 82.5° | 193.3  | 190.9  | 270.3  | 512.2   | 2159.0  | 2791.0  | 4434.2  | 4417.6 | 3580.6 | 654.5  | 403.1  |
| 85°   | 91.3   | 93.7   | 103.1  | 117.4   | 136.3   | 149.4   | 206.3   | 1209.3 | 1713.2 | 311.8  | 87.7   |
| 87.5° | 53.4   | 54.5   | 64.0   | 81.8    | 106.7   | 118.6   | 141.1   | 181.4  | 222.9  | 171.9  | 19.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    | 0.0    | 0.0    | 0.0    |



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CATALOG NUMBER: GLAN-SA5A-730-U-T4BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 96.0   | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 | 96.0 |
| 2.5°  | 97.2   | 96.0 | 92.5 | 88.9 | 85.4 | 83.0 | 81.8 | 83.0 | 83.0 | 84.2 | 84.2 |
| 5°    | 97.2   | 93.7 | 87.7 | 80.6 | 75.9 | 71.1 | 68.8 | 67.6 | 68.8 | 68.8 | 68.8 |
| 7.5°  | 96.0   | 90.1 | 81.8 | 73.5 | 67.6 | 61.7 | 59.3 | 58.1 | 58.1 | 59.3 | 59.3 |
| 10°   | 93.7   | 87.7 | 77.1 | 67.6 | 60.5 | 53.4 | 49.8 | 46.2 | 46.2 | 46.2 | 47.4 |
| 12.5° | 92.5   | 84.2 | 71.1 | 61.7 | 52.2 | 43.9 | 36.8 | 33.2 | 34.4 | 34.4 | 34.4 |
| 15°   | 90.1   | 80.6 | 67.6 | 55.7 | 43.9 | 33.2 | 27.3 | 23.7 | 24.9 | 26.1 | 24.9 |
| 17.5° | 90.1   | 79.4 | 62.8 | 48.6 | 34.4 | 24.9 | 20.2 | 17.8 | 17.8 | 19.0 | 19.0 |
| 20°   | 90.1   | 77.1 | 59.3 | 41.5 | 26.1 | 19.0 | 14.2 | 13.0 | 13.0 | 15.4 | 16.6 |
| 22.5° | 92.5   | 77.1 | 54.5 | 34.4 | 21.3 | 14.2 | 10.7 | 9.5  | 10.7 | 13.0 | 14.2 |
| 25°   | 96.0   | 75.9 | 49.8 | 30.8 | 17.8 | 10.7 | 8.3  | 5.9  | 7.1  | 9.5  | 10.7 |
| 27.5° | 99.6   | 74.7 | 45.1 | 27.3 | 14.2 | 8.3  | 5.9  | 4.7  | 3.6  | 4.7  | 4.7  |
| 30°   | 103.1  | 74.7 | 40.3 | 22.5 | 11.9 | 5.9  | 3.6  | 2.4  | 1.2  | 0.0  | 0.0  |
| 32.5° | 105.5  | 72.3 | 36.8 | 17.8 | 9.5  | 4.7  | 2.4  | 1.2  | 0.0  | 0.0  | 0.0  |
| 35°   | 107.9  | 70.0 | 32.0 | 14.2 | 7.1  | 3.6  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 110.3  | 66.4 | 27.3 | 11.9 | 5.9  | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 112.6  | 61.7 | 22.5 | 10.7 | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 115.0  | 58.1 | 19.0 | 8.3  | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 120.9  | 55.7 | 15.4 | 7.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 131.6  | 53.4 | 14.2 | 4.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 147.0  | 51.0 | 13.0 | 3.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 168.4  | 49.8 | 11.9 | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 206.3  | 48.6 | 10.7 | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 271.5  | 47.4 | 10.7 | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 416.2  | 45.1 | 10.7 | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 743.4  | 43.9 | 9.5  | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 1295.9 | 45.1 | 9.5  | 2.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1857.9 | 47.4 | 8.3  | 3.6  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1589.9 | 41.5 | 8.3  | 4.7  | 2.4  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 71°   | 1295.9 | 36.8 | 8.3  | 4.7  | 2.4  | 1.2  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 833.5  | 28.5 | 7.1  | 4.7  | 2.4  | 2.4  | 1.2  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 352.1  | 23.7 | 7.1  | 4.7  | 3.6  | 2.4  | 2.4  | 1.2  | 0.0  | 0.0  | 0.0  |
| 77.5° | 150.6  | 17.8 | 7.1  | 5.9  | 4.7  | 3.6  | 3.6  | 2.4  | 1.2  | 0.0  | 0.0  |
| 80°   | 56.9   | 14.2 | 8.3  | 7.1  | 5.9  | 5.9  | 4.7  | 2.4  | 1.2  | 0.0  | 0.0  |
| 82.5° | 26.1   | 11.9 | 8.3  | 7.1  | 7.1  | 5.9  | 4.7  | 3.6  | 2.4  | 0.0  | 0.0  |
| 85°   | 16.6   | 10.7 | 8.3  | 7.1  | 7.1  | 5.9  | 5.9  | 3.6  | 2.4  | 0.0  | 0.0  |
| 87.5° | 13.0   | 10.7 | 8.3  | 8.3  | 7.1  | 7.1  | 4.7  | 3.6  | 1.2  | 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  
 CIE  $u'$ : 0.2504  
 CIE  $v'$ : 0.5243  
 Duv: 0.0019  
 CIE x: 0.4408  
 CIE y: 0.4101  
 CIE z: 0.1491  
 Peak Wavelength (nm): 595  
 Dominant Wavelength (nm): 582  
 Purity: 55.41818  
 R<sub>f</sub>: 73.8  
 R<sub>g</sub>: 94.4

CRI (Ra): 70.8  
 R1: 66.3  
 R2: 80.6  
 R3: 94.5  
 R4: 68.2  
 R5: 66.5  
 R6: 74.7  
 R7: 76.2  
 R8: 39.6  
 R9: -43.2  
 R10: 57.6  
 R11: 64.8  
 R12: 53.5  
 R13: 68.7  
 R14: 97.0  
 R15: 56.4



### 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

### 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                             |                   |                               |                                |

REPORT NUMBER: SP1-2407-184-4

### 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                             |                   |                                      |                                |

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                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 73.8$   
 $R_g = 94.4$   
 $CIE R_a = 70.8$   
 $R_g = -43.2$



### 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)