

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: P1063538

Luminaire Tested: **GLAN-SA7B-827-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063538  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA7B-827-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 7xLight Square PACKAGE  
80CRI 2700K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (98) 2700K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 26792 lumens  
Efficiency: N/A  
Efficacy: 107.4 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

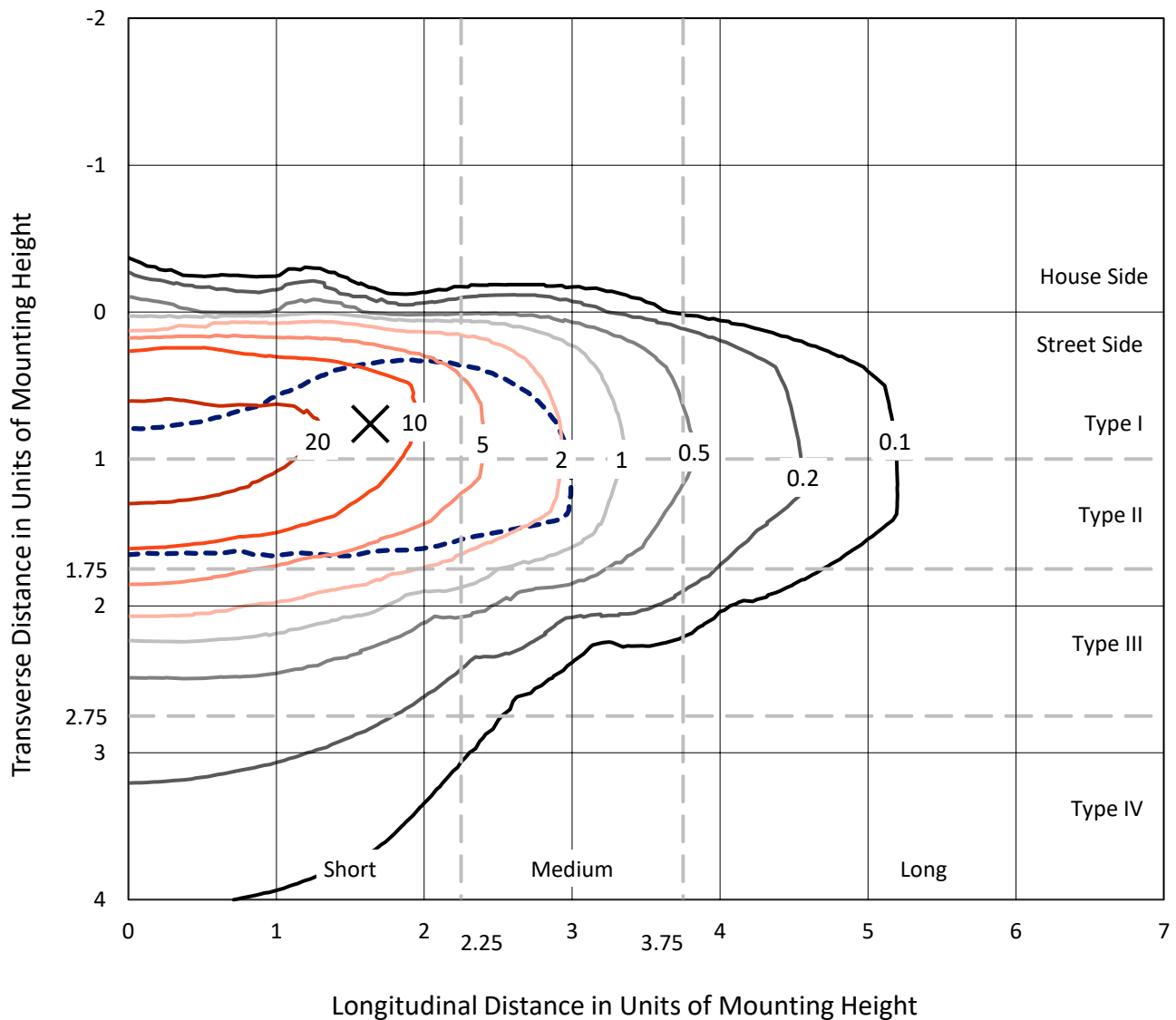


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

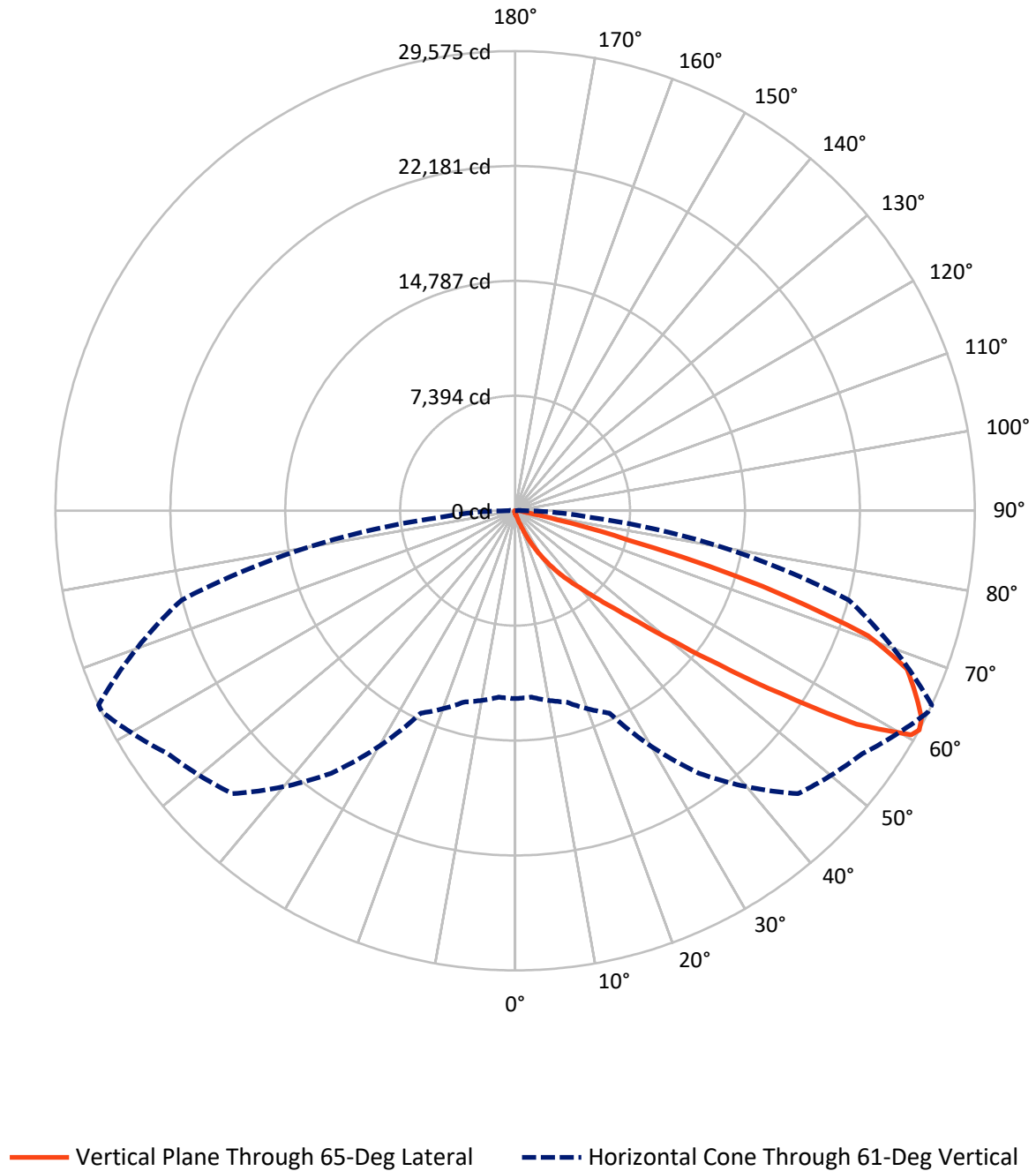


Based on 15 foot mounting height. Maximum calculated value = 35.4 fc  
 Type II - Short - N/A

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CATALOG NUMBER: GLAN-SA7B-827-U-T2BC

## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLAN-SA7B-827-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 114.4    | 0.0    | 114.4   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 26677.6  | 0.0    | 26677.6 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 26792.0  | 0.0    | 26792.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 20.9    | 0.1       |
| 10°-20°   | 220.3   | 0.8       |
| 20°-30°   | 790.7   | 3.0       |
| 30°-40°   | 2105.1  | 7.9       |
| 40°-50°   | 5530.0  | 20.6      |
| 50°-60°   | 8567.0  | 32.0      |
| 60°-70°   | 7183.3  | 26.8      |
| 70°-80°   | 2113.9  | 7.9       |
| 80°-90°   | 260.8   | 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°    | 26792.0 | 100.0     |
| 0°-180°   | 26792.0 | 100.0     |



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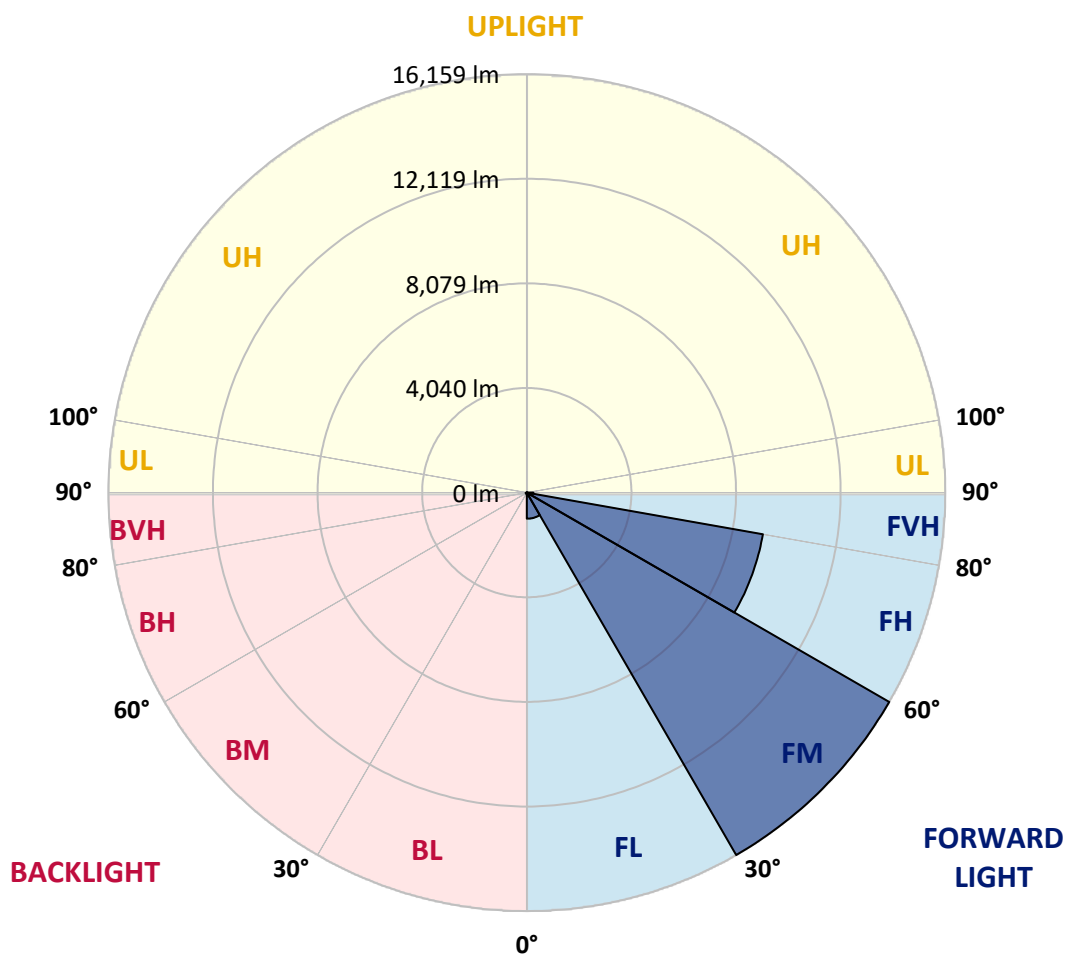
CATALOG NUMBER: GLAN-SA7B-827-U-T2BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1006.2  | 3.8       |                         |      |          |
| FM   | (30°-60°)   | 16158.6 | 60.3      |                         |      |          |
| FH   | (60°-80°)   | 9256.9  | 34.6      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 255.9   | 1.0       |                         |      | G3/500   |
| BL   | (0°-30°)    | 25.7    | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 43.5    | 0.2       | B0/220                  |      |          |
| BH   | (60°-80°)   | 40.3    | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 4.8     | 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



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 64°     | 65°     | 75°     | 85°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0   | 164.0  |
| 2.5°  | 199.0   | 200.9   | 197.2   | 189.8   | 184.3   | 184.3   | 182.5   | 176.9   | 176.9   | 171.4   | 167.7  |
| 5°    | 278.3   | 274.6   | 267.2   | 252.5   | 239.6   | 226.7   | 213.8   | 200.9   | 199.0   | 182.5   | 171.4  |
| 7.5°  | 455.2   | 458.9   | 434.9   | 388.9   | 350.2   | 300.4   | 254.3   | 226.7   | 223.0   | 195.4   | 173.2  |
| 10°   | 998.9   | 971.3   | 916.0   | 737.2   | 606.3   | 457.1   | 339.1   | 263.5   | 259.9   | 210.1   | 176.9  |
| 12.5° | 1820.9  | 1798.8  | 1697.4  | 1513.1  | 1175.8  | 818.3   | 495.8   | 326.2   | 315.2   | 223.0   | 178.8  |
| 15°   | 2624.4  | 2589.4  | 2534.1  | 2348.0  | 1953.6  | 1467.0  | 810.9   | 446.0   | 416.5   | 241.4   | 176.9  |
| 17.5° | 3136.8  | 3142.3  | 3092.6  | 3013.3  | 2759.0  | 2171.1  | 1400.7  | 665.3   | 608.2   | 274.6   | 173.2  |
| 20°   | 3584.6  | 3571.7  | 3599.4  | 3557.0  | 3378.2  | 2950.6  | 2038.4  | 1054.2  | 956.5   | 328.1   | 175.1  |
| 22.5° | 4100.7  | 4132.0  | 4152.3  | 4143.1  | 3945.9  | 3580.9  | 2762.7  | 1577.6  | 1454.1  | 425.7   | 180.6  |
| 25°   | 4791.8  | 4788.1  | 4790.0  | 4766.0  | 4574.3  | 4168.9  | 3488.8  | 2228.2  | 2102.9  | 584.2   | 193.5  |
| 27.5° | 5516.1  | 5538.2  | 5547.4  | 5460.8  | 5210.2  | 4812.1  | 4161.5  | 2939.6  | 2792.1  | 838.6   | 210.1  |
| 30°   | 6505.8  | 6487.4  | 6445.0  | 6268.0  | 5963.9  | 5470.0  | 4825.0  | 3686.0  | 3531.2  | 1194.3  | 235.9  |
| 32.5° | 7840.1  | 7819.8  | 7606.1  | 7215.3  | 6760.1  | 6155.6  | 5492.1  | 4434.3  | 4246.3  | 1638.4  | 270.9  |
| 35°   | 10038.8 | 10070.1 | 9544.9  | 8533.1  | 7716.6  | 6979.4  | 6231.2  | 5178.8  | 5013.0  | 2185.8  | 318.8  |
| 37.5° | 13406.0 | 13234.6 | 12521.3 | 10733.6 | 8975.4  | 8007.8  | 6937.0  | 5930.8  | 5787.0  | 2860.3  | 381.5  |
| 40°   | 16677.3 | 16507.7 | 16301.3 | 14607.6 | 11163.0 | 9141.3  | 7924.9  | 6813.6  | 6627.4  | 3621.5  | 473.7  |
| 42.5° | 20116.3 | 20022.3 | 20013.1 | 18735.9 | 15155.0 | 10923.5 | 9113.6  | 7847.5  | 7689.0  | 4456.4  | 624.8  |
| 45°   | 22552.8 | 22458.8 | 22656.0 | 22879.0 | 20591.8 | 14742.1 | 11183.3 | 9191.0  | 8960.7  | 5470.0  | 866.2  |
| 47.5° | 22880.8 | 22884.5 | 23411.6 | 24110.1 | 24631.7 | 20649.0 | 13940.4 | 10971.4 | 10691.2 | 6920.5  | 1271.7 |
| 50°   | 21789.8 | 21832.2 | 22670.7 | 23920.3 | 25324.6 | 25604.8 | 18802.3 | 13555.3 | 13140.6 | 8640.0  | 1846.7 |
| 52.5° | 19712.7 | 19760.6 | 20929.1 | 22984.0 | 24687.0 | 26795.4 | 24526.6 | 16935.3 | 16458.0 | 10785.2 | 2657.6 |
| 55°   | 17842.1 | 17871.6 | 19211.4 | 21808.2 | 23918.4 | 26148.5 | 27925.1 | 21448.8 | 20822.2 | 13424.4 | 3457.5 |
| 57.5° | 15989.9 | 15921.7 | 16793.4 | 19766.2 | 23787.6 | 25354.1 | 28426.4 | 26592.6 | 25901.5 | 16308.7 | 4080.4 |
| 60°   | 13512.9 | 13398.6 | 14098.9 | 15989.9 | 22066.2 | 25875.7 | 27488.3 | 29438.2 | 29281.6 | 20324.6 | 4561.4 |
| 61°   | 12088.2 | 12040.3 | 12744.3 | 14366.2 | 20617.6 | 25743.0 | 27263.5 | 29558.0 | 29574.6 | 22224.7 | 4777.1 |
| 62.5° | 8632.6  | 8769.0  | 9845.3  | 11953.7 | 17268.9 | 24882.3 | 27293.0 | 29187.6 | 29351.6 | 24749.6 | 5335.5 |
| 65°   | 3837.1  | 4056.4  | 4893.2  | 6609.0  | 10042.5 | 20698.7 | 27031.3 | 28374.8 | 28293.7 | 25442.6 | 7259.6 |
| 67.5° | 2276.1  | 2309.3  | 2725.8  | 3745.0  | 5318.9  | 11133.6 | 23853.9 | 27300.3 | 27191.6 | 22149.2 | 9032.5 |
| 70°   | 1793.2  | 1809.8  | 1942.5  | 2349.8  | 3087.0  | 4264.7  | 13614.2 | 23619.9 | 24093.5 | 17960.0 | 8842.7 |
| 72.5° | 1701.1  | 1697.4  | 1715.8  | 1787.7  | 1944.4  | 2115.8  | 5271.0  | 15700.5 | 16664.4 | 12934.2 | 7414.4 |
| 75°   | 1679.0  | 1671.6  | 1653.2  | 1625.5  | 1408.1  | 1245.9  | 1632.9  | 6944.4  | 7502.8  | 8837.2  | 5582.4 |
| 77.5° | 1629.2  | 1631.1  | 1634.7  | 1559.2  | 1207.2  | 881.0   | 790.6   | 2228.2  | 2740.5  | 5608.2  | 3968.0 |
| 80°   | 1102.1  | 1118.7  | 1146.3  | 1116.9  | 1085.5  | 637.7   | 558.4   | 792.5   | 803.5   | 3147.8  | 2620.7 |
| 82.5° | 558.4   | 558.4   | 545.5   | 486.6   | 420.2   | 414.7   | 444.2   | 575.0   | 582.4   | 1592.4  | 1233.0 |
| 85°   | 337.3   | 355.7   | 363.1   | 329.9   | 302.3   | 278.3   | 339.1   | 457.1   | 473.7   | 617.4   | 287.5  |
| 87.5° | 75.6    | 77.4    | 84.8    | 112.4   | 164.0   | 223.0   | 315.2   | 418.4   | 425.7   | 396.2   | 35.0   |
| 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-SA7B-827-U-T2BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 164.0  | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 | 164.0 |
| 2.5°  | 165.9  | 162.2 | 160.3 | 154.8 | 149.3 | 143.8 | 140.1 | 138.2 | 140.1 | 141.9 | 141.9 |
| 5°    | 164.0  | 158.5 | 149.3 | 140.1 | 132.7 | 125.3 | 118.0 | 116.1 | 116.1 | 118.0 | 118.0 |
| 7.5°  | 164.0  | 154.8 | 141.9 | 130.9 | 119.8 | 108.7 | 103.2 | 99.5  | 101.4 | 101.4 | 101.4 |
| 10°   | 164.0  | 153.0 | 136.4 | 119.8 | 106.9 | 94.0  | 84.8  | 81.1  | 81.1  | 81.1  | 81.1  |
| 12.5° | 162.2  | 151.1 | 130.9 | 110.6 | 92.1  | 77.4  | 66.3  | 60.8  | 62.7  | 62.7  | 62.7  |
| 15°   | 158.5  | 145.6 | 123.5 | 94.0  | 73.7  | 59.0  | 47.9  | 42.4  | 44.2  | 47.9  | 49.8  |
| 17.5° | 153.0  | 140.1 | 110.6 | 79.2  | 59.0  | 44.2  | 33.2  | 29.5  | 31.3  | 36.9  | 36.9  |
| 20°   | 151.1  | 134.5 | 97.7  | 64.5  | 44.2  | 31.3  | 22.1  | 18.4  | 20.3  | 27.6  | 29.5  |
| 22.5° | 151.1  | 130.9 | 88.5  | 53.4  | 33.2  | 20.3  | 12.9  | 7.4   | 7.4   | 12.9  | 12.9  |
| 25°   | 153.0  | 129.0 | 81.1  | 44.2  | 24.0  | 14.7  | 7.4   | 3.7   | 7.4   | 20.3  | 24.0  |
| 27.5° | 156.7  | 127.2 | 77.4  | 36.9  | 18.4  | 12.9  | 5.5   | 12.9  | 22.1  | 22.1  | 22.1  |
| 30°   | 160.3  | 123.5 | 71.9  | 31.3  | 16.6  | 9.2   | 9.2   | 18.4  | 18.4  | 22.1  | 24.0  |
| 32.5° | 165.9  | 121.6 | 68.2  | 27.6  | 12.9  | 7.4   | 12.9  | 11.1  | 11.1  | 12.9  | 14.7  |
| 35°   | 176.9  | 123.5 | 64.5  | 27.6  | 12.9  | 9.2   | 11.1  | 5.5   | 3.7   | 3.7   | 3.7   |
| 37.5° | 191.7  | 125.3 | 59.0  | 24.0  | 11.1  | 11.1  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 215.6  | 130.9 | 55.3  | 22.1  | 9.2   | 9.2   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 256.2  | 141.9 | 53.4  | 20.3  | 9.2   | 7.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 337.3  | 167.7 | 49.8  | 18.4  | 9.2   | 3.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 484.7  | 228.5 | 47.9  | 14.7  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 707.7  | 309.6 | 46.1  | 12.9  | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 903.1  | 326.2 | 31.3  | 11.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 925.2  | 224.8 | 24.0  | 7.4   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 737.2  | 145.6 | 20.3  | 5.5   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 558.4  | 110.6 | 18.4  | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 536.3  | 99.5  | 18.4  | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 591.6  | 86.6  | 16.6  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 962.0  | 71.9  | 14.7  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 1671.6 | 62.7  | 12.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 2112.1 | 59.0  | 11.1  | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1841.2 | 53.4  | 11.1  | 3.7   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1107.6 | 46.1  | 11.1  | 7.4   | 3.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 580.5  | 35.0  | 11.1  | 9.2   | 5.5   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 282.0  | 31.3  | 12.9  | 9.2   | 7.4   | 3.7   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 110.6  | 25.8  | 14.7  | 12.9  | 9.2   | 5.5   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 49.8   | 22.1  | 16.6  | 14.7  | 12.9  | 7.4   | 1.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 25.8   | 20.3  | 18.4  | 16.6  | 12.9  | 9.2   | 3.7   | 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: SP1-2407-184-8

Test Date: 10/10/2024

Luminaire Tested: GSS-SB1A-827-U-5WQ

Data in this report applies to families of products including GSS-SB1A-827-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-8  
 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-827-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 80 CRI  
 2700K CCT 26 LEDS

### Spectral Parameters

CCT (K): 2756  
 CIE  $u'$ : 0.2599  
 CIE  $v'$ : 0.5271  
 Duv: 0.0006  
 CIE x: 0.4563  
 CIE y: 0.4112  
 CIE z: 0.1325  
 Peak Wavelength (nm): 609  
 Dominant Wavelength (nm): 583  
 Purity: 60.41121  
 Rf: 82.2  
 Rg: 99.9

CRI (Ra): 82.9  
 R1: 81.6  
 R2: 88.8  
 R3: 96.0  
 R4: 83.4  
 R5: 81.4  
 R6: 87.0  
 R7: 84.0  
 R8: 60.8  
 R9: 10.8  
 R10: 74.8  
 R11: 84.3  
 R12: 72.1  
 R13: 82.9  
 R14: 97.3  
 R15: 73.7



### Test Conditions

Stabilization Time: 29M  
 Operation Time: 1H 29M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-8

| 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           |

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**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-8

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) | $\lambda$<br>(nm) | Power<br>$\text{W}^\wedge/\text{nm}$ | Lumens<br>( $\phi/\text{nm}$ ) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360               | 0                                    | NR                             | 490               | 158                                  | NR                             | 620               | 959                                  | NR                             | 750               | 35                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 211                                  | NR                             | 625               | 918                                  | NR                             | 755               | 30                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 264                                  | NR                             | 630               | 873                                  | NR                             | 760               | 26                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 318                                  | NR                             | 635               | 816                                  | NR                             | 765               | 22                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 363                                  | NR                             | 640               | 755                                  | NR                             | 770               | 19                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 403                                  | NR                             | 645               | 689                                  | NR                             | 775               | 16                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 435                                  | NR                             | 650               | 626                                  | NR                             | 780               | 14                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 459                                  | NR                             | 655               | 564                                  | NR                             | 785               | 12                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 481                                  | NR                             | 660               | 503                                  | NR                             | 790               | 10                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 6                                    | NR                             | 535               | 501                                  | NR                             | 665               | 447                                  | NR                             | 795               | 9                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 13                                   | NR                             | 540               | 519                                  | NR                             | 670               | 392                                  | NR                             | 800               | 8                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 26                                   | NR                             | 545               | 542                                  | NR                             | 675               | 343                                  | NR                             | 805               | 7                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 51                                   | NR                             | 550               | 565                                  | NR                             | 680               | 299                                  | NR                             | 810               | 6                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 93                                   | NR                             | 555               | 593                                  | NR                             | 685               | 260                                  | NR                             | 815               | 5                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 156                                  | NR                             | 560               | 624                                  | NR                             | 690               | 225                                  | NR                             | 820               | 4                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 250                                  | NR                             | 565               | 662                                  | NR                             | 695               | 194                                  | NR                             | 825               | 4                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 391                                  | NR                             | 570               | 707                                  | NR                             | 700               | 166                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 460                                  | NR                             | 575               | 756                                  | NR                             | 705               | 143                                  | NR                             | 835               | 3                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 293                                  | NR                             | 580               | 810                                  | NR                             | 710               | 122                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 188                                  | NR                             | 585               | 860                                  | NR                             | 715               | 105                                  | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 149                                  | NR                             | 590               | 910                                  | NR                             | 720               | 90                                   | NR                             | 850               | 2                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 103                                  | NR                             | 595               | 950                                  | NR                             | 725               | 77                                   | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 80                                   | NR                             | 600               | 980                                  | NR                             | 730               | 66                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 82                                   | NR                             | 605               | 995                                  | NR                             | 735               | 56                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 92                                   | NR                             | 610               | 998                                  | NR                             | 740               | 48                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 116                                  | NR                             | 615               | 985                                  | NR                             | 745               | 41                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.2

| 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       | 158                         | NR               | 620       | 959                         | NR               | 750       | 35                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 211                         | NR               | 625       | 918                         | NR               | 755       | 30                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 264                         | NR               | 630       | 873                         | NR               | 760       | 26                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 318                         | NR               | 635       | 816                         | NR               | 765       | 22                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 363                         | NR               | 640       | 755                         | NR               | 770       | 19                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 403                         | NR               | 645       | 689                         | NR               | 775       | 16                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 435                         | NR               | 650       | 626                         | NR               | 780       | 14                          | NR               | 910       | 0                           | NR               |
| 395       | 1                           | NR               | 525       | 459                         | NR               | 655       | 564                         | NR               | 785       | 12                          | NR               | 915       | 0                           | NR               |
| 400       | 3                           | NR               | 530       | 481                         | NR               | 660       | 503                         | NR               | 790       | 10                          | NR               | 920       | 0                           | NR               |
| 405       | 6                           | NR               | 535       | 501                         | NR               | 665       | 447                         | NR               | 795       | 9                           | NR               | 925       | 0                           | NR               |
| 410       | 13                          | NR               | 540       | 519                         | NR               | 670       | 392                         | NR               | 800       | 8                           | NR               | 930       | 0                           | NR               |
| 415       | 26                          | NR               | 545       | 542                         | NR               | 675       | 343                         | NR               | 805       | 7                           | NR               | 935       | 0                           | NR               |
| 420       | 51                          | NR               | 550       | 565                         | NR               | 680       | 299                         | NR               | 810       | 6                           | NR               | 940       | 0                           | NR               |
| 425       | 93                          | NR               | 555       | 593                         | NR               | 685       | 260                         | NR               | 815       | 5                           | NR               | 945       | 0                           | NR               |
| 430       | 156                         | NR               | 560       | 624                         | NR               | 690       | 225                         | NR               | 820       | 4                           | NR               | 950       | 0                           | NR               |
| 435       | 250                         | NR               | 565       | 662                         | NR               | 695       | 194                         | NR               | 825       | 4                           | NR               | 955       | 0                           | NR               |
| 440       | 391                         | NR               | 570       | 707                         | NR               | 700       | 166                         | NR               | 830       | 3                           | NR               | 960       | 0                           | NR               |
| 445       | 460                         | NR               | 575       | 756                         | NR               | 705       | 143                         | NR               | 835       | 3                           | NR               | 965       | 0                           | NR               |
| 450       | 293                         | NR               | 580       | 810                         | NR               | 710       | 122                         | NR               | 840       | 2                           | NR               | 970       | 0                           | NR               |
| 455       | 188                         | NR               | 585       | 860                         | NR               | 715       | 105                         | NR               | 845       | 2                           | NR               | 975       | 0                           | NR               |
| 460       | 149                         | NR               | 590       | 910                         | NR               | 720       | 90                          | NR               | 850       | 2                           | NR               | 980       | 0                           | NR               |
| 465       | 103                         | NR               | 595       | 950                         | NR               | 725       | 77                          | NR               | 855       | 2                           | NR               | 985       | 0                           | NR               |
| 470       | 80                          | NR               | 600       | 980                         | NR               | 730       | 66                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 82                          | NR               | 605       | 995                         | NR               | 735       | 56                          | NR               | 865       | 1                           | NR               | 995       | 0                           | NR               |
| 480       | 92                          | NR               | 610       | 998                         | NR               | 740       | 48                          | NR               | 870       | 1                           | NR               | 1000      | 0                           | NR               |
| 485       | 116                         | NR               | 615       | 985                         | NR               | 745       | 41                          | NR               | 875       | 1                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.16**

| $\lambda$<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               | 158                                  | NR                             | 620               | 959                                  | NR                             | 750               | 35                                   | NR                             | 880               | 1                                    | NR                             |
| 365               | 0                                    | NR                             | 495               | 211                                  | NR                             | 625               | 918                                  | NR                             | 755               | 30                                   | NR                             | 885               | 1                                    | NR                             |
| 370               | 0                                    | NR                             | 500               | 264                                  | NR                             | 630               | 873                                  | NR                             | 760               | 26                                   | NR                             | 890               | 1                                    | NR                             |
| 375               | 0                                    | NR                             | 505               | 318                                  | NR                             | 635               | 816                                  | NR                             | 765               | 22                                   | NR                             | 895               | 1                                    | NR                             |
| 380               | 0                                    | NR                             | 510               | 363                                  | NR                             | 640               | 755                                  | NR                             | 770               | 19                                   | NR                             | 900               | 1                                    | NR                             |
| 385               | 0                                    | NR                             | 515               | 403                                  | NR                             | 645               | 689                                  | NR                             | 775               | 16                                   | NR                             | 905               | 1                                    | NR                             |
| 390               | 0                                    | NR                             | 520               | 435                                  | NR                             | 650               | 626                                  | NR                             | 780               | 14                                   | NR                             | 910               | 0                                    | NR                             |
| 395               | 1                                    | NR                             | 525               | 459                                  | NR                             | 655               | 564                                  | NR                             | 785               | 12                                   | NR                             | 915               | 0                                    | NR                             |
| 400               | 3                                    | NR                             | 530               | 481                                  | NR                             | 660               | 503                                  | NR                             | 790               | 10                                   | NR                             | 920               | 0                                    | NR                             |
| 405               | 6                                    | NR                             | 535               | 501                                  | NR                             | 665               | 447                                  | NR                             | 795               | 9                                    | NR                             | 925               | 0                                    | NR                             |
| 410               | 13                                   | NR                             | 540               | 519                                  | NR                             | 670               | 392                                  | NR                             | 800               | 8                                    | NR                             | 930               | 0                                    | NR                             |
| 415               | 26                                   | NR                             | 545               | 542                                  | NR                             | 675               | 343                                  | NR                             | 805               | 7                                    | NR                             | 935               | 0                                    | NR                             |
| 420               | 51                                   | NR                             | 550               | 565                                  | NR                             | 680               | 299                                  | NR                             | 810               | 6                                    | NR                             | 940               | 0                                    | NR                             |
| 425               | 93                                   | NR                             | 555               | 593                                  | NR                             | 685               | 260                                  | NR                             | 815               | 5                                    | NR                             | 945               | 0                                    | NR                             |
| 430               | 156                                  | NR                             | 560               | 624                                  | NR                             | 690               | 225                                  | NR                             | 820               | 4                                    | NR                             | 950               | 0                                    | NR                             |
| 435               | 250                                  | NR                             | 565               | 662                                  | NR                             | 695               | 194                                  | NR                             | 825               | 4                                    | NR                             | 955               | 0                                    | NR                             |
| 440               | 391                                  | NR                             | 570               | 707                                  | NR                             | 700               | 166                                  | NR                             | 830               | 3                                    | NR                             | 960               | 0                                    | NR                             |
| 445               | 460                                  | NR                             | 575               | 756                                  | NR                             | 705               | 143                                  | NR                             | 835               | 3                                    | NR                             | 965               | 0                                    | NR                             |
| 450               | 293                                  | NR                             | 580               | 810                                  | NR                             | 710               | 122                                  | NR                             | 840               | 2                                    | NR                             | 970               | 0                                    | NR                             |
| 455               | 188                                  | NR                             | 585               | 860                                  | NR                             | 715               | 105                                  | NR                             | 845               | 2                                    | NR                             | 975               | 0                                    | NR                             |
| 460               | 149                                  | NR                             | 590               | 910                                  | NR                             | 720               | 90                                   | NR                             | 850               | 2                                    | NR                             | 980               | 0                                    | NR                             |
| 465               | 103                                  | NR                             | 595               | 950                                  | NR                             | 725               | 77                                   | NR                             | 855               | 2                                    | NR                             | 985               | 0                                    | NR                             |
| 470               | 80                                   | NR                             | 600               | 980                                  | NR                             | 730               | 66                                   | NR                             | 860               | 1                                    | NR                             | 990               | 0                                    | NR                             |
| 475               | 82                                   | NR                             | 605               | 995                                  | NR                             | 735               | 56                                   | NR                             | 865               | 1                                    | NR                             | 995               | 0                                    | NR                             |
| 480               | 92                                   | NR                             | 610               | 998                                  | NR                             | 740               | 48                                   | NR                             | 870               | 1                                    | NR                             | 1000              | 0                                    | NR                             |
| 485               | 116                                  | NR                             | 615               | 985                                  | NR                             | 745               | 41                                   | NR                             | 875               | 1                                    | NR                             |                   |                                      |                                |

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TM-30-18

### Summary

$R_f = 82.2$   
 $R_g = 99.9$   
 $CIE R_a = 82.9$   
 $R_9 = 10.8$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 76 | CES51 = 89 | CES76 = 75 |
| CES02 = 63 | CES27 = 89 | CES52 = 91 | CES77 = 87 |
| CES03 = 31 | CES28 = 90 | CES53 = 82 | CES78 = 76 |
| CES04 = 71 | CES29 = 68 | CES54 = 88 | CES79 = 91 |
| CES05 = 50 | CES30 = 69 | CES55 = 87 | CES80 = 90 |
| CES06 = 52 | CES31 = 72 | CES56 = 80 | CES81 = 74 |
| CES07 = 43 | CES32 = 71 | CES57 = 78 | CES82 = 95 |
| CES08 = 42 | CES33 = 71 | CES58 = 80 | CES83 = 90 |
| CES09 = 29 | CES34 = 84 | CES59 = 93 | CES84 = 94 |
| CES10 = 77 | CES35 = 92 | CES60 = 96 | CES85 = 83 |
| CES11 = 59 | CES36 = 92 | CES61 = 94 | CES86 = 69 |
| CES12 = 66 | CES37 = 89 | CES62 = 84 | CES87 = 85 |
| CES13 = 44 | CES38 = 75 | CES63 = 79 | CES88 = 84 |
| CES14 = 74 | CES39 = 93 | CES64 = 85 | CES89 = 74 |
| CES15 = 72 | CES40 = 89 | CES65 = 79 | CES90 = 81 |
| CES16 = 48 | CES41 = 85 | CES66 = 83 | CES91 = 96 |
| CES17 = 50 | CES42 = 88 | CES67 = 82 | CES92 = 72 |
| CES18 = 57 | CES43 = 81 | CES68 = 86 | CES93 = 84 |
| CES19 = 73 | CES44 = 98 | CES69 = 92 | CES94 = 63 |
| CES20 = 67 | CES45 = 87 | CES70 = 81 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 81 | CES96 = 85 |
| CES22 = 79 | CES47 = 76 | CES72 = 93 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 75 | CES98 = 82 |
| CES24 = 91 | CES49 = 81 | CES74 = 91 | CES99 = 76 |
| CES25 = 72 | CES50 = 88 | CES75 = 79 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)