

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: P1063330

Luminaire Tested: **GLAN-SA9B-722-U-T2BC**

Issue Date: 08/07/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P1063330  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 08/07/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: GLAN-SA9B-722-U-T2BC  
Description: GALLEON II AREA AND ROADWAY LUMINAIRE 800mA 9xLight Square PACKAGE  
70CRI 2200K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL  
Light Source: (126) 2200K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 28921.5 lumens  
Efficiency: N/A  
Efficacy: 92.5 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): 312.7  
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

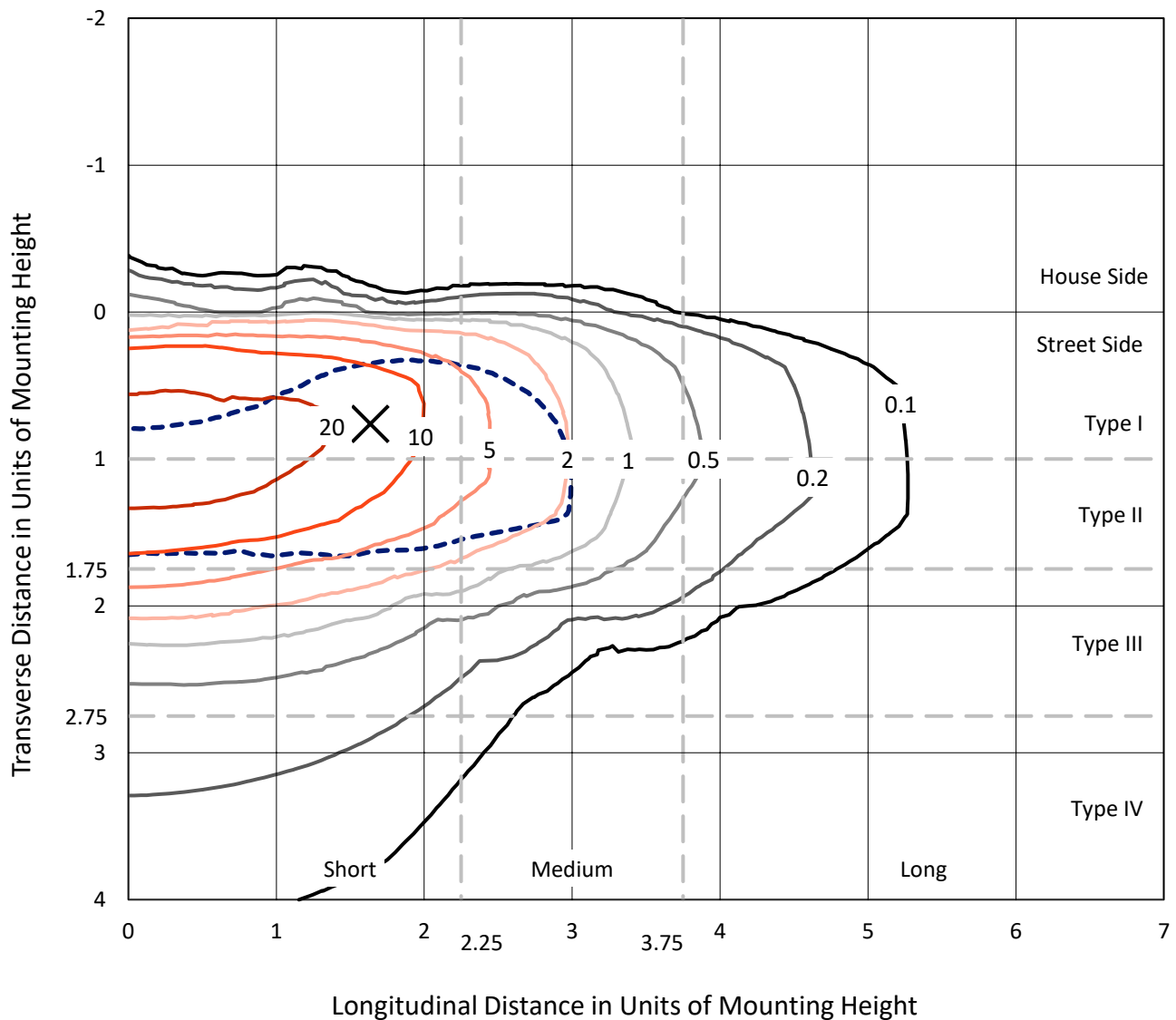


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

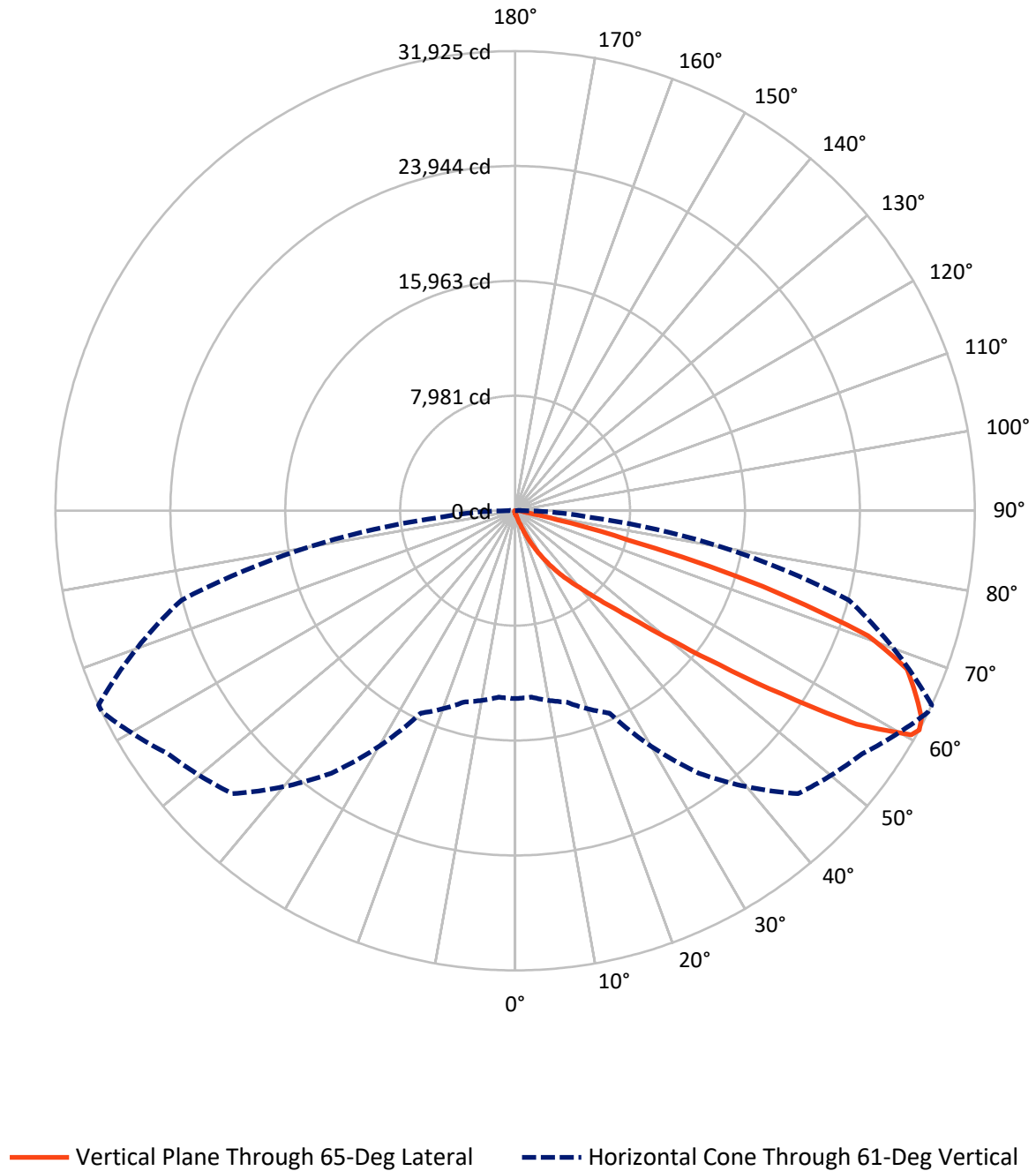


Based on 15 foot mounting height. Maximum calculated value = 38.3 fc  
 Type II - Short - N/A

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## Luminous Intensity Polar Plot



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CATALOG NUMBER: GLAN-SA9B-722-U-T2BC

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 123.5    | 0.0    | 123.5   |
|                    | % Fixture | 0.4      | 0.0    | 0.4     |
| <b>Street Side</b> | Lumens    | 28798.0  | 0.0    | 28798.0 |
|                    | % Fixture | 99.6     | 0.0    | 99.6    |
| <b>Total</b>       | Lumens    | 28921.5  | 0.0    | 28921.5 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 22.5    | 0.1       |
| 10°-20°   | 237.8   | 0.8       |
| 20°-30°   | 853.5   | 3.0       |
| 30°-40°   | 2272.4  | 7.9       |
| 40°-50°   | 5969.5  | 20.6      |
| 50°-60°   | 9248.0  | 32.0      |
| 60°-70°   | 7754.3  | 26.8      |
| 70°-80°   | 2281.9  | 7.9       |
| 80°-90°   | 281.5   | 1.0       |
| 90°-100°  | 0.0     | 0.0       |
| 100°-110° | 0.0     | 0.0       |
| 110°-120° | 0.0     | 0.0       |
| 120°-130° | 0.0     | 0.0       |
| 130°-140° | 0.0     | 0.0       |
| 140°-150° | 0.0     | 0.0       |
| 150°-160° | 0.0     | 0.0       |
| 160°-170° | 0.0     | 0.0       |
| 170°-180° | 0.0     | 0.0       |
| 0°-90°    | 28921.5 | 100.0     |
| 0°-180°   | 28921.5 | 100.0     |



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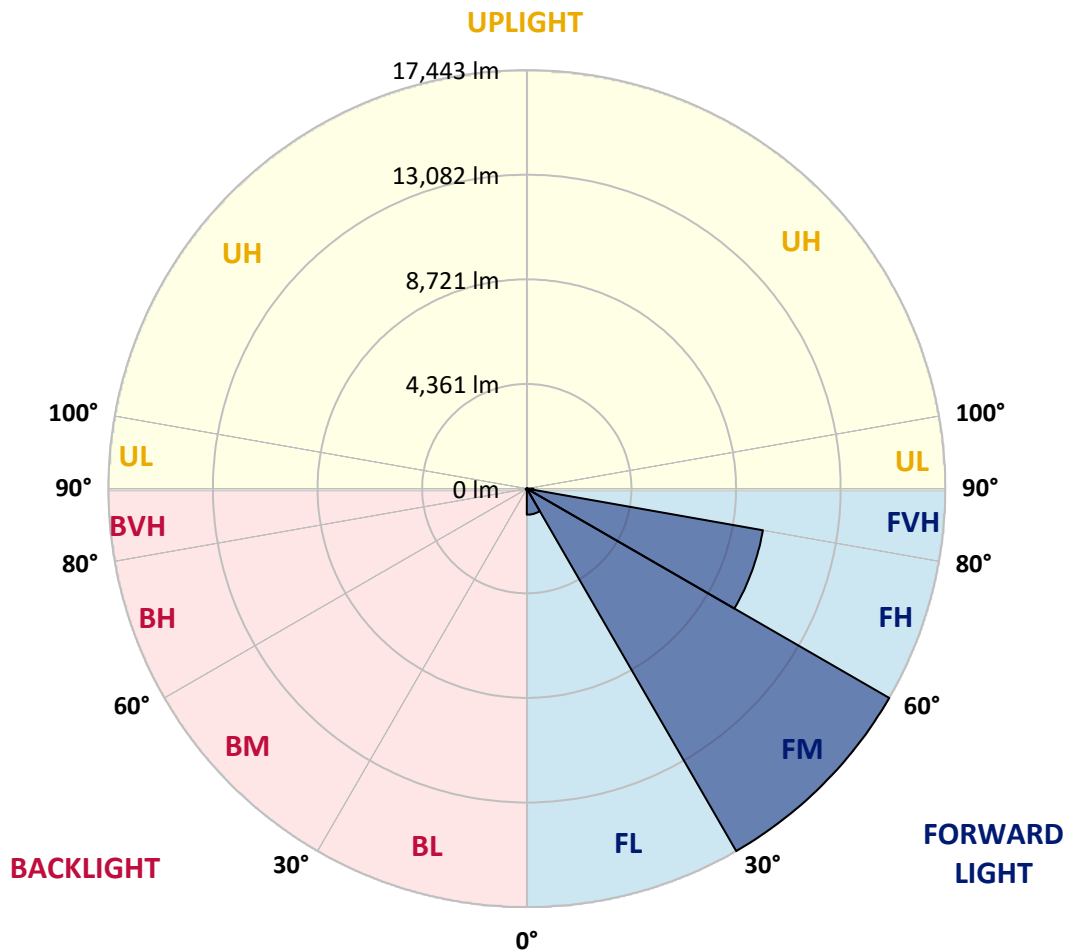
CATALOG NUMBER: GLAN-SA9B-722-U-T2BC

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

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1086.2  | 3.8       |                         |      |          |
| FM   | (30°-60°)   | 17442.9 | 60.3      |                         |      |          |
| FH   | (60°-80°)   | 9992.7  | 34.6      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 276.3   | 1.0       |                         |      | G3/500   |
| BL   | (0°-30°)    | 27.7    | 0.1       | B0/110                  |      |          |
| BM   | (30°-60°)   | 47.0    | 0.2       | B0/220                  |      |          |
| BH   | (60°-80°)   | 43.5    | 0.2       | B0/110                  |      | G0/110   |
| BVH  | (80°-90°)   | 5.2     | 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°    | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1   | 177.1  |
| 2.5°  | 214.9   | 216.9   | 212.9   | 204.9   | 198.9   | 198.9   | 197.0   | 191.0   | 191.0   | 185.0   | 181.0  |
| 5°    | 300.4   | 296.4   | 288.5   | 272.6   | 258.6   | 244.7   | 230.8   | 216.9   | 214.9   | 197.0   | 185.0  |
| 7.5°  | 491.4   | 495.4   | 469.5   | 419.8   | 378.0   | 324.3   | 274.5   | 244.7   | 240.7   | 210.9   | 187.0  |
| 10°   | 1078.3  | 1048.5  | 988.8   | 795.8   | 654.5   | 493.4   | 366.1   | 284.5   | 280.5   | 226.8   | 191.0  |
| 12.5° | 1965.6  | 1941.7  | 1832.3  | 1633.4  | 1269.3  | 883.3   | 535.2   | 352.1   | 340.2   | 240.7   | 193.0  |
| 15°   | 2833.0  | 2795.2  | 2735.5  | 2534.6  | 2108.9  | 1583.6  | 875.4   | 481.5   | 449.6   | 260.6   | 191.0  |
| 17.5° | 3386.1  | 3392.1  | 3338.4  | 3252.8  | 2978.3  | 2343.6  | 1512.0  | 718.2   | 656.5   | 296.4   | 187.0  |
| 20°   | 3869.5  | 3855.6  | 3885.5  | 3839.7  | 3646.7  | 3185.2  | 2200.4  | 1138.0  | 1032.5  | 354.1   | 189.0  |
| 22.5° | 4426.6  | 4460.4  | 4482.3  | 4472.4  | 4259.5  | 3865.6  | 2982.2  | 1703.0  | 1569.7  | 459.6   | 195.0  |
| 25°   | 5172.7  | 5168.7  | 5170.7  | 5144.8  | 4937.9  | 4500.2  | 3766.1  | 2405.3  | 2270.0  | 630.7   | 208.9  |
| 27.5° | 5954.5  | 5978.4  | 5988.4  | 5894.8  | 5624.3  | 5194.5  | 4492.3  | 3173.2  | 3014.1  | 905.2   | 226.8  |
| 30°   | 7022.9  | 7003.0  | 6957.2  | 6766.2  | 6438.0  | 5904.8  | 5208.5  | 3979.0  | 3811.9  | 1289.2  | 254.7  |
| 32.5° | 8463.3  | 8441.4  | 8210.6  | 7788.8  | 7297.4  | 6644.9  | 5928.7  | 4786.7  | 4583.8  | 1768.7  | 292.5  |
| 35°   | 10836.7 | 10870.5 | 10303.5 | 9211.3  | 8330.0  | 7534.2  | 6726.4  | 5590.5  | 5411.4  | 2359.5  | 344.2  |
| 37.5° | 14471.5 | 14286.5 | 13516.6 | 11586.8 | 9688.8  | 8644.3  | 7488.4  | 6402.2  | 6247.0  | 3087.7  | 411.8  |
| 40°   | 18002.9 | 17819.8 | 17597.0 | 15768.7 | 12050.3 | 9867.8  | 8554.8  | 7355.1  | 7154.2  | 3909.3  | 511.3  |
| 42.5° | 21715.2 | 21613.8 | 21603.8 | 20225.1 | 16359.5 | 11791.7 | 9838.0  | 8471.2  | 8300.1  | 4810.6  | 674.4  |
| 45°   | 24345.3 | 24243.9 | 24456.7 | 24697.5 | 22228.5 | 15913.9 | 12072.2 | 9921.6  | 9672.9  | 5904.8  | 935.1  |
| 47.5° | 24699.5 | 24703.4 | 25272.4 | 26026.4 | 26589.5 | 22290.2 | 15048.5 | 11843.4 | 11541.0 | 7470.5  | 1372.7 |
| 50°   | 23521.7 | 23567.4 | 24472.7 | 25821.5 | 27337.5 | 27639.9 | 20296.7 | 14632.7 | 14185.0 | 9326.7  | 1993.5 |
| 52.5° | 21279.5 | 21331.3 | 22592.6 | 24810.9 | 26649.2 | 28925.1 | 26476.1 | 18281.4 | 17766.1 | 11642.5 | 2868.8 |
| 55°   | 19260.2 | 19292.0 | 20738.4 | 23541.6 | 25819.5 | 28226.8 | 30144.7 | 23153.6 | 22477.2 | 14491.4 | 3732.3 |
| 57.5° | 17260.8 | 17187.2 | 18128.2 | 21337.2 | 25678.3 | 27369.3 | 30685.8 | 28706.3 | 27960.2 | 17605.0 | 4404.7 |
| 60°   | 14586.9 | 14463.6 | 15219.6 | 17260.8 | 23820.1 | 27932.4 | 29673.2 | 31778.0 | 31608.9 | 21940.0 | 4924.0 |
| 61°   | 13049.0 | 12997.3 | 13757.3 | 15508.0 | 22256.4 | 27789.1 | 29430.5 | 31907.4 | 31925.3 | 23991.2 | 5156.7 |
| 62.5° | 9318.7  | 9466.0  | 10627.8 | 12903.8 | 18641.5 | 26860.0 | 29462.3 | 31507.5 | 31684.5 | 26716.8 | 5759.6 |
| 65°   | 4142.1  | 4378.9  | 5282.1  | 7134.3  | 10840.7 | 22343.9 | 29179.8 | 30630.1 | 30542.6 | 27464.8 | 7836.6 |
| 67.5° | 2457.0  | 2492.8  | 2942.4  | 4042.6  | 5741.7  | 12018.5 | 25749.9 | 29470.2 | 29352.9 | 23909.6 | 9750.5 |
| 70°   | 1935.8  | 1953.7  | 2096.9  | 2536.6  | 3332.4  | 4603.7  | 14696.3 | 25497.2 | 26008.5 | 19387.5 | 9545.6 |
| 72.5° | 1836.3  | 1832.3  | 1852.2  | 1929.8  | 2098.9  | 2283.9  | 5689.9  | 16948.4 | 17988.9 | 13962.2 | 8003.7 |
| 75°   | 1812.4  | 1804.5  | 1784.6  | 1754.7  | 1520.0  | 1344.9  | 1762.7  | 7496.4  | 8099.2  | 9539.6  | 6026.2 |
| 77.5° | 1758.7  | 1760.7  | 1764.7  | 1683.1  | 1303.1  | 951.0   | 853.5   | 2405.3  | 2958.4  | 6054.0  | 4283.4 |
| 80°   | 1189.7  | 1207.6  | 1237.5  | 1205.6  | 1171.8  | 688.4   | 602.8   | 855.5   | 867.4   | 3398.0  | 2829.0 |
| 82.5° | 602.8   | 602.8   | 588.9   | 525.2   | 453.6   | 447.6   | 479.5   | 620.7   | 628.7   | 1718.9  | 1331.0 |
| 85°   | 364.1   | 384.0   | 391.9   | 356.1   | 326.3   | 300.4   | 366.1   | 493.4   | 511.3   | 666.5   | 310.4  |
| 87.5° | 81.6    | 83.6    | 91.5    | 121.4   | 177.1   | 240.7   | 340.2   | 451.6   | 459.6   | 427.7   | 37.8   |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0    |

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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 177.1  | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 | 177.1 |
| 2.5°  | 179.1  | 175.1 | 173.1 | 167.1 | 161.1 | 155.2 | 151.2 | 149.2 | 151.2 | 153.2 | 153.2 |
| 5°    | 177.1  | 171.1 | 161.1 | 151.2 | 143.2 | 135.3 | 127.3 | 125.3 | 125.3 | 127.3 | 127.3 |
| 7.5°  | 177.1  | 167.1 | 153.2 | 141.3 | 129.3 | 117.4 | 111.4 | 107.4 | 109.4 | 109.4 | 109.4 |
| 10°   | 177.1  | 165.1 | 147.2 | 129.3 | 115.4 | 101.5 | 91.5  | 87.5  | 87.5  | 87.5  | 87.5  |
| 12.5° | 175.1  | 163.1 | 141.3 | 119.4 | 99.5  | 83.6  | 71.6  | 65.7  | 67.6  | 67.6  | 67.6  |
| 15°   | 171.1  | 157.2 | 133.3 | 101.5 | 79.6  | 63.7  | 51.7  | 45.8  | 47.7  | 51.7  | 53.7  |
| 17.5° | 165.1  | 151.2 | 119.4 | 85.5  | 63.7  | 47.7  | 35.8  | 31.8  | 33.8  | 39.8  | 39.8  |
| 20°   | 163.1  | 145.2 | 105.4 | 69.6  | 47.7  | 33.8  | 23.9  | 19.9  | 21.9  | 29.8  | 31.8  |
| 22.5° | 163.1  | 141.3 | 95.5  | 57.7  | 35.8  | 21.9  | 13.9  | 8.0   | 8.0   | 13.9  | 13.9  |
| 25°   | 165.1  | 139.3 | 87.5  | 47.7  | 25.9  | 15.9  | 8.0   | 4.0   | 8.0   | 21.9  | 25.9  |
| 27.5° | 169.1  | 137.3 | 83.6  | 39.8  | 19.9  | 13.9  | 6.0   | 13.9  | 23.9  | 23.9  | 23.9  |
| 30°   | 173.1  | 133.3 | 77.6  | 33.8  | 17.9  | 9.9   | 9.9   | 19.9  | 19.9  | 23.9  | 25.9  |
| 32.5° | 179.1  | 131.3 | 73.6  | 29.8  | 13.9  | 8.0   | 13.9  | 11.9  | 11.9  | 13.9  | 15.9  |
| 35°   | 191.0  | 133.3 | 69.6  | 29.8  | 13.9  | 9.9   | 11.9  | 6.0   | 4.0   | 4.0   | 4.0   |
| 37.5° | 206.9  | 135.3 | 63.7  | 25.9  | 11.9  | 11.9  | 6.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 40°   | 232.8  | 141.3 | 59.7  | 23.9  | 9.9   | 9.9   | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 42.5° | 276.5  | 153.2 | 57.7  | 21.9  | 9.9   | 8.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 45°   | 364.1  | 181.0 | 53.7  | 19.9  | 9.9   | 4.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 47.5° | 523.2  | 246.7 | 51.7  | 15.9  | 6.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 50°   | 764.0  | 334.2 | 49.7  | 13.9  | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 52.5° | 974.8  | 352.1 | 33.8  | 11.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 55°   | 998.7  | 242.7 | 25.9  | 8.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 57.5° | 795.8  | 157.2 | 21.9  | 6.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 60°   | 602.8  | 119.4 | 19.9  | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 61°   | 578.9  | 107.4 | 19.9  | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 62.5° | 638.6  | 93.5  | 17.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 65°   | 1038.5 | 77.6  | 15.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 67.5° | 1804.5 | 67.6  | 13.9  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 70°   | 2280.0 | 63.7  | 11.9  | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 72.5° | 1987.5 | 57.7  | 11.9  | 4.0   | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 75°   | 1195.7 | 49.7  | 11.9  | 8.0   | 4.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 77.5° | 626.7  | 37.8  | 11.9  | 9.9   | 6.0   | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 80°   | 304.4  | 33.8  | 13.9  | 9.9   | 8.0   | 4.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 82.5° | 119.4  | 27.9  | 15.9  | 13.9  | 9.9   | 6.0   | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 85°   | 53.7   | 23.9  | 17.9  | 15.9  | 13.9  | 8.0   | 2.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 27.9   | 21.9  | 19.9  | 17.9  | 13.9  | 9.9   | 4.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

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

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP1-2407-184-2

Test Date: 10/09/2024

Luminaire Tested: GSS-SB1A-722-U-5WQ

Data in this report applies to families of products including GSS-SB1A-722-U-5WQ

### Test Information

Test Method: LM-79-2019  
 Report Number: SP1-2407-184-2  
 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-722-U-5WQ**  
 Description: GALLEON II SITE SLIM 1SQ 350MA 5WQ HIGH DENSITY LIGHTSQUARE WITH 70 CRI  
 2200K CCT 26 LEDS

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 2160     | CRI (Ra): | 71.9 |      |       |
| CIE u':                   | 0.2927   | R1:       | 68.7 | R9:  | -17.8 |
| CIE v':                   | 0.5388   | R2:       | 82.6 | R10: | 60.5  |
| Duv:                      | 0.0015   | R3:       | 95.5 | R11: | 60.2  |
| CIE x:                    | 0.5130   | R4:       | 66.4 | R12: | 48.2  |
| CIE y:                    | 0.4197   | R5:       | 65.4 | R13: | 70.7  |
| CIE z:                    | 0.0674   | R6:       | 75.9 | R14: | 96.8  |
| Peak Wavelength (nm):     | 609      | R7:       | 77.2 | R15: | 61.8  |
| Dominant Wavelength (nm): | 587      | R8:       | 43.5 |      |       |
| Purity:                   | 79.96089 |           |      |      |       |
| Rf:                       | 70.6     |           |      |      |       |
| Rg:                       | 97.6     |           |      |      |       |



### Test Conditions

Stabilization Time: 21M  
 Operation Time: 1H 21M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-184-2

| 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: SP1-2407-184-2

**CIE 1931 Chromaticity Diagram**



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



Point lies inside the ANSI 2200K 7-step quadrangle

REPORT NUMBER: SP1-2407-184-2

### Photopic Flux vs. Wavelength



### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

REPORT NUMBER: SP1-2407-184-2

### Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 0.8

| 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       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 1.21

| λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>λ</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 27                          | NR               | 620       | 966                         | NR               | 750       | 46                          | NR               | 880       | 1                           | NR               |
| 365       | 0                           | NR               | 495       | 42                          | NR               | 625       | 930                         | NR               | 755       | 39                          | NR               | 885       | 1                           | NR               |
| 370       | 0                           | NR               | 500       | 67                          | NR               | 630       | 888                         | NR               | 760       | 34                          | NR               | 890       | 1                           | NR               |
| 375       | 0                           | NR               | 505       | 101                         | NR               | 635       | 835                         | NR               | 765       | 30                          | NR               | 895       | 1                           | NR               |
| 380       | 0                           | NR               | 510       | 139                         | NR               | 640       | 778                         | NR               | 770       | 26                          | NR               | 900       | 1                           | NR               |
| 385       | 0                           | NR               | 515       | 183                         | NR               | 645       | 717                         | NR               | 775       | 22                          | NR               | 905       | 1                           | NR               |
| 390       | 0                           | NR               | 520       | 224                         | NR               | 650       | 656                         | NR               | 780       | 19                          | NR               | 910       | 1                           | NR               |
| 395       | 0                           | NR               | 525       | 262                         | NR               | 655       | 595                         | NR               | 785       | 17                          | NR               | 915       | 1                           | NR               |
| 400       | 1                           | NR               | 530       | 299                         | NR               | 660       | 536                         | NR               | 790       | 15                          | NR               | 920       | 1                           | NR               |
| 405       | 3                           | NR               | 535       | 332                         | NR               | 665       | 480                         | NR               | 795       | 13                          | NR               | 925       | 1                           | NR               |
| 410       | 7                           | NR               | 540       | 365                         | NR               | 670       | 425                         | NR               | 800       | 11                          | NR               | 930       | 1                           | NR               |
| 415       | 17                          | NR               | 545       | 400                         | NR               | 675       | 376                         | NR               | 805       | 10                          | NR               | 935       | 0                           | NR               |
| 420       | 36                          | NR               | 550       | 437                         | NR               | 680       | 332                         | NR               | 810       | 8                           | NR               | 940       | 0                           | NR               |
| 425       | 67                          | NR               | 555       | 479                         | NR               | 685       | 291                         | NR               | 815       | 8                           | NR               | 945       | 0                           | NR               |
| 430       | 105                         | NR               | 560       | 525                         | NR               | 690       | 255                         | NR               | 820       | 7                           | NR               | 950       | 0                           | NR               |
| 435       | 141                         | NR               | 565       | 579                         | NR               | 695       | 221                         | NR               | 825       | 6                           | NR               | 955       | 0                           | NR               |
| 440       | 169                         | NR               | 570       | 639                         | NR               | 700       | 192                         | NR               | 830       | 5                           | NR               | 960       | 0                           | NR               |
| 445       | 173                         | NR               | 575       | 703                         | NR               | 705       | 167                         | NR               | 835       | 4                           | NR               | 965       | 0                           | NR               |
| 450       | 136                         | NR               | 580       | 769                         | NR               | 710       | 144                         | NR               | 840       | 4                           | NR               | 970       | 0                           | NR               |
| 455       | 80                          | NR               | 585       | 832                         | NR               | 715       | 125                         | NR               | 845       | 3                           | NR               | 975       | 0                           | NR               |
| 460       | 45                          | NR               | 590       | 890                         | NR               | 720       | 109                         | NR               | 850       | 3                           | NR               | 980       | 0                           | NR               |
| 465       | 32                          | NR               | 595       | 937                         | NR               | 725       | 94                          | NR               | 855       | 3                           | NR               | 985       | 0                           | NR               |
| 470       | 23                          | NR               | 600       | 972                         | NR               | 730       | 81                          | NR               | 860       | 2                           | NR               | 990       | 0                           | NR               |
| 475       | 18                          | NR               | 605       | 992                         | NR               | 735       | 70                          | NR               | 865       | 2                           | NR               | 995       | 0                           | NR               |
| 480       | 18                          | NR               | 610       | 998                         | NR               | 740       | 61                          | NR               | 870       | 2                           | NR               | 1000      | 0                           | NR               |
| 485       | 20                          | NR               | 615       | 990                         | NR               | 745       | 53                          | NR               | 875       | 2                           | NR               |           |                             |                  |

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TM-30-18

### Summary

$R_f = 70.6$   
 $R_g = 97.6$   
 $CIE R_a = 71.9$   
 $R_g = -17.8$



### Color Vector Graphics



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 60 | CES51 = 74 | CES76 = 58 |
| CES02 = 65 | CES27 = 77 | CES52 = 77 | CES77 = 82 |
| CES03 = 32 | CES28 = 85 | CES53 = 65 | CES78 = 65 |
| CES04 = 72 | CES29 = 50 | CES54 = 77 | CES79 = 86 |
| CES05 = 52 | CES30 = 49 | CES55 = 74 | CES80 = 85 |
| CES06 = 53 | CES31 = 55 | CES56 = 64 | CES81 = 61 |
| CES07 = 44 | CES32 = 55 | CES57 = 60 | CES82 = 93 |
| CES08 = 43 | CES33 = 55 | CES58 = 64 | CES83 = 83 |
| CES09 = 29 | CES34 = 75 | CES59 = 84 | CES84 = 93 |
| CES10 = 79 | CES35 = 88 | CES60 = 89 | CES85 = 81 |
| CES11 = 62 | CES36 = 78 | CES61 = 84 | CES86 = 55 |
| CES12 = 68 | CES37 = 82 | CES62 = 68 | CES87 = 79 |
| CES13 = 45 | CES38 = 54 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 86 | CES65 = 66 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 89 |
| CES17 = 51 | CES42 = 83 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 68 | CES68 = 71 | CES93 = 78 |
| CES19 = 74 | CES44 = 98 | CES69 = 81 | CES94 = 52 |
| CES20 = 68 | CES45 = 76 | CES70 = 65 | CES95 = 76 |
| CES21 = 89 | CES46 = 68 | CES71 = 64 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 88 | CES97 = 76 |
| CES23 = 92 | CES48 = 47 | CES73 = 59 | CES98 = 71 |
| CES24 = 92 | CES49 = 65 | CES74 = 85 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)