

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: McGRAW-EDISON

Report Number: P991028

Luminaire Tested: **GPC-SA2D-730-U-T3BC**

Issue Date: 07/03/2025

**Test Information**

Test Method: LM-79-08  
Report Number: P991028  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 07/03/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: GPC-SA2D-730-U-T3BC  
Description: GALLEON PEDESTRAIAN COMPANION 1200mA 2xLight Square PACKAGE 70CRI  
3000K FIXTURE w/ TYPE III ANGLED BACKLIGHT CONTROL  
Light Source: (28) 3000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11374.6 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Luminous Opening: Rectangular (W 1.33' x L: 0.67' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B0 - U0 - G2

Input Watts (W): 108.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



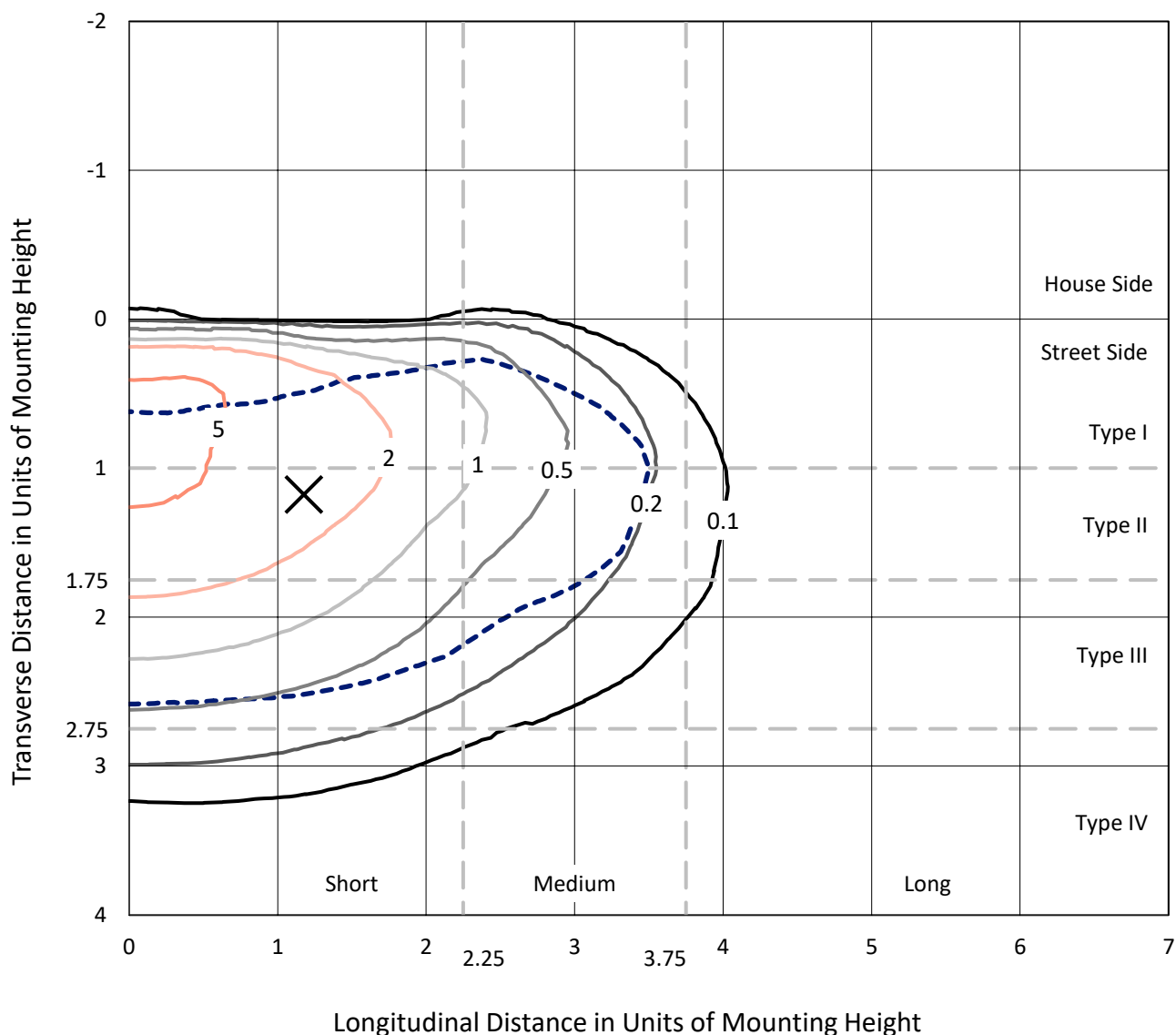
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CATALOG NUMBER: GPC-SA2D-730-U-T3BC

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

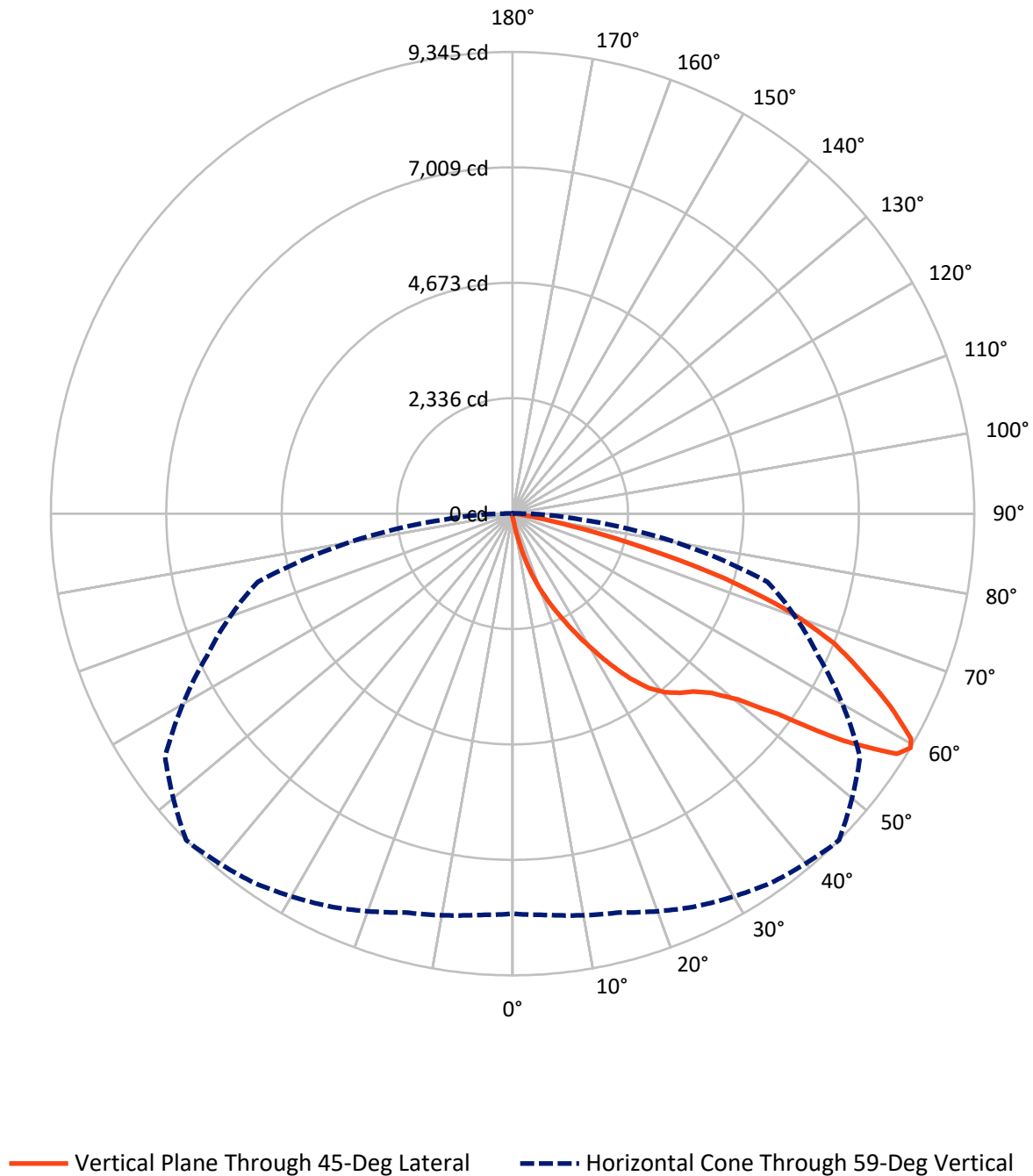


Based on 20 foot mounting height. Maximum calculated value = 7.1 fc

Type III - Short - N/A

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## Luminous Intensity Polar Plot



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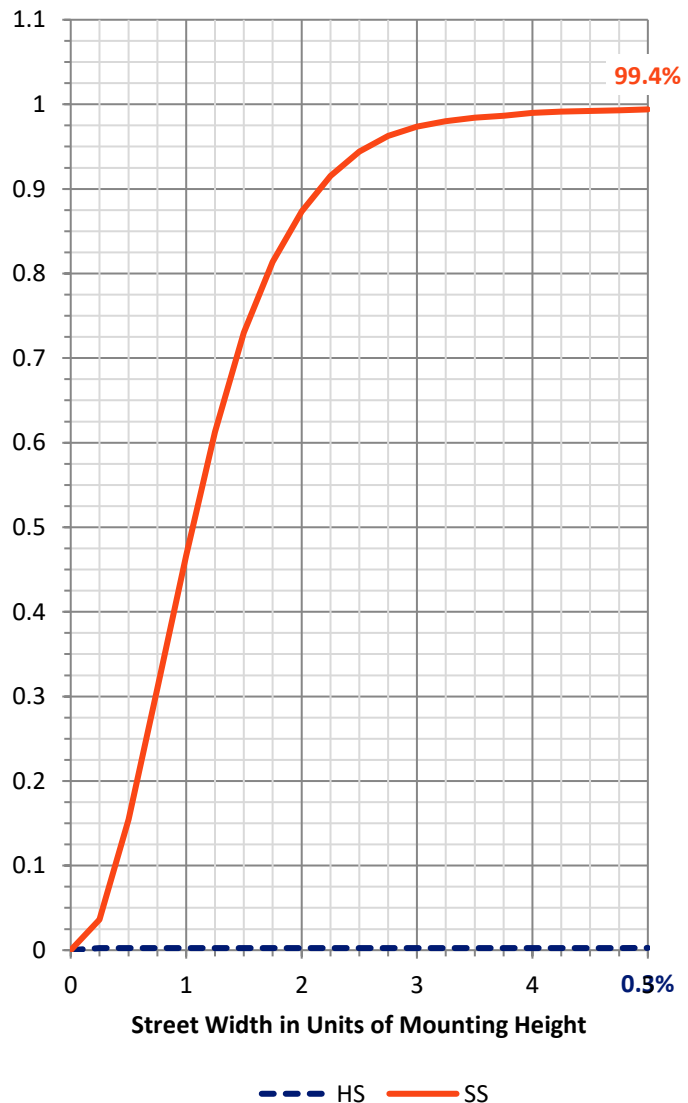
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 30.8     | 0.0    | 30.8    |
|                    | % Fixture | 0.3      | 0.0    | 0.3     |
| <b>Street Side</b> | Lumens    | 11343.8  | 0.0    | 11343.8 |
|                    | % Fixture | 99.7     | 0.0    | 99.7    |
| <b>Total</b>       | Lumens    | 11374.6  | 0.0    | 11374.6 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 11.1    | 0.1       |
| 10°-20°   | 131.7   | 1.2       |
| 20°-30°   | 465.6   | 4.1       |
| 30°-40°   | 1073.1  | 9.4       |
| 40°-50°   | 1810.4  | 15.9      |
| 50°-60°   | 2984.6  | 26.2      |
| 60°-70°   | 3390.5  | 29.8      |
| 70°-80°   | 1394.1  | 12.3      |
| 80°-90°   | 113.5   | 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°    | 11374.6 | 100.0     |
| 0°-180°   | 11374.6 | 100.0     |



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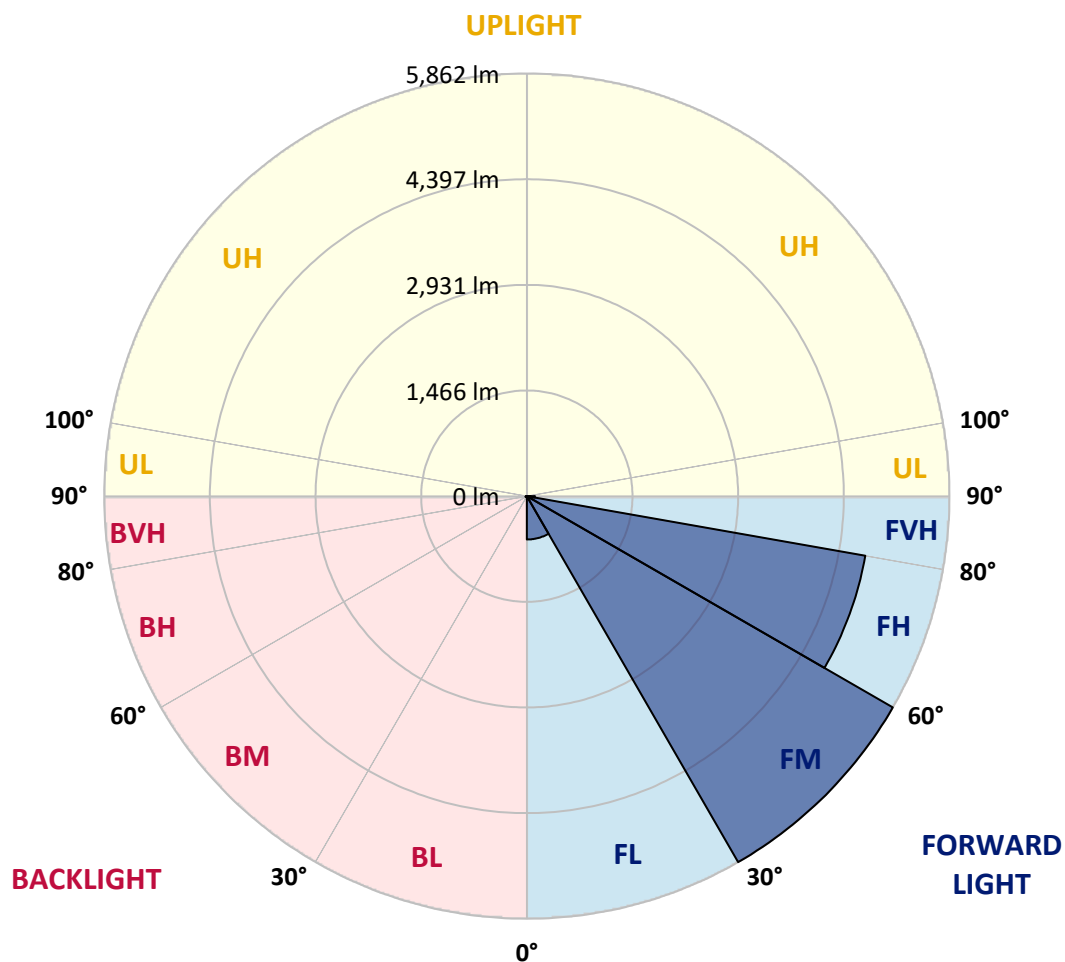
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 601.9  | 5.3       |                         |      |         |
| FM   | (30°-60°)   | 5862.2 | 51.5      |                         |      |         |
| FH   | (60°-80°)   | 4767.0 | 41.9      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 112.7  | 1.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 6.5    | 0.1       | B0/110                  |      |         |
| BM   | (30°-60°)   | 5.9    | 0.1       | B0/220                  |      |         |
| BH   | (60°-80°)   | 17.6   | 0.2       | B0/110                  |      | G0/110  |
| BVH  | (80°-90°)   | 0.9    | 0.0       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B0-U0-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   | 63.7   |
| 2.5°  | 84.9   | 85.8   | 84.9   | 84.0   | 80.3   | 76.6   | 76.6   | 73.8   | 71.1   | 68.3   | 65.5   |
| 5°    | 149.5  | 145.8  | 142.1  | 133.8  | 118.1  | 104.3  | 102.4  | 90.4   | 80.3   | 72.9   | 66.4   |
| 7.5°  | 379.3  | 369.2  | 334.1  | 292.6  | 222.4  | 170.7  | 168.9  | 128.3  | 96.9   | 79.4   | 67.4   |
| 10°   | 791.8  | 764.2  | 710.6  | 622.0  | 480.8  | 351.6  | 323.9  | 197.5  | 127.4  | 87.7   | 68.3   |
| 12.5° | 1203.5 | 1204.4 | 1153.6 | 1032.7 | 860.1  | 652.5  | 616.5  | 357.2  | 181.8  | 102.4  | 69.2   |
| 15°   | 1565.2 | 1556.0 | 1511.7 | 1425.9 | 1239.5 | 999.5  | 967.2  | 613.7  | 275.0  | 122.7  | 71.1   |
| 17.5° | 1842.1 | 1829.2 | 1802.4 | 1744.3 | 1607.7 | 1371.4 | 1337.3 | 925.7  | 426.4  | 149.5  | 72.0   |
| 20°   | 2167.0 | 2157.7 | 2123.6 | 2043.3 | 1918.7 | 1730.4 | 1681.5 | 1267.1 | 649.7  | 193.8  | 73.8   |
| 22.5° | 2569.4 | 2542.6 | 2501.1 | 2398.6 | 2244.5 | 2042.4 | 2025.8 | 1614.2 | 923.8  | 263.0  | 77.5   |
| 25°   | 3034.5 | 2996.7 | 2947.7 | 2818.5 | 2628.4 | 2382.9 | 2362.6 | 1954.7 | 1219.2 | 367.3  | 83.1   |
| 27.5° | 3598.4 | 3563.3 | 3475.6 | 3308.6 | 3080.6 | 2787.2 | 2764.1 | 2302.6 | 1546.8 | 509.4  | 90.4   |
| 30°   | 4209.3 | 4164.1 | 4019.2 | 3802.3 | 3585.5 | 3238.5 | 3183.1 | 2658.9 | 1874.4 | 686.6  | 100.6  |
| 32.5° | 4778.8 | 4720.6 | 4541.6 | 4285.0 | 4058.0 | 3691.6 | 3642.7 | 3061.3 | 2218.7 | 898.0  | 116.3  |
| 35°   | 5283.6 | 5215.3 | 4967.0 | 4687.4 | 4459.5 | 4136.4 | 4092.1 | 3452.6 | 2552.7 | 1137.9 | 135.7  |
| 37.5° | 5685.1 | 5639.8 | 5296.5 | 4980.9 | 4795.4 | 4509.3 | 4479.8 | 3872.5 | 2924.7 | 1414.8 | 162.4  |
| 40°   | 6099.4 | 6039.5 | 5636.2 | 5238.4 | 5028.0 | 4789.9 | 4754.8 | 4210.3 | 3281.8 | 1713.8 | 195.7  |
| 42.5° | 6450.2 | 6393.9 | 6014.5 | 5592.8 | 5264.2 | 4980.9 | 4958.7 | 4493.6 | 3627.9 | 2024.8 | 239.0  |
| 45°   | 6821.2 | 6770.4 | 6430.8 | 6100.4 | 5607.5 | 5171.0 | 5133.2 | 4728.0 | 3965.7 | 2388.5 | 296.3  |
| 47.5° | 7330.6 | 7263.2 | 6939.3 | 6685.5 | 6121.6 | 5463.6 | 5421.1 | 4957.8 | 4308.1 | 2768.7 | 375.6  |
| 50°   | 7968.3 | 7919.4 | 7685.0 | 7482.9 | 6884.8 | 5997.0 | 5906.6 | 5255.9 | 4633.0 | 3204.3 | 479.0  |
| 52.5° | 8587.6 | 8571.0 | 8587.6 | 8515.6 | 8060.6 | 6922.7 | 6746.4 | 5757.1 | 5046.4 | 3659.3 | 613.7  |
| 55°   | 8665.1 | 8715.9 | 8916.1 | 9146.9 | 9071.2 | 8248.9 | 8100.3 | 6520.3 | 5557.7 | 4233.3 | 819.5  |
| 57.5° | 8384.5 | 8413.2 | 8668.8 | 9075.8 | 9320.4 | 9194.9 | 9176.4 | 7783.7 | 6279.4 | 4915.4 | 1128.7 |
| 59°   | 8097.5 | 8153.8 | 8357.8 | 8773.1 | 9123.8 | 9330.5 | 9345.3 | 8585.7 | 6828.5 | 5339.9 | 1383.4 |
| 60°   | 7937.9 | 7955.4 | 8113.2 | 8522.1 | 8898.6 | 9225.3 | 9267.8 | 8996.4 | 7261.4 | 5660.1 | 1611.4 |
| 62.5° | 7434.0 | 7443.2 | 7528.1 | 7850.2 | 8183.4 | 8484.2 | 8573.7 | 9246.5 | 8463.0 | 6463.1 | 2417.1 |
| 65°   | 6775.0 | 6787.0 | 6915.3 | 7224.5 | 7541.9 | 7744.1 | 7781.9 | 8545.1 | 9096.1 | 7299.2 | 3542.1 |
| 67.5° | 5587.2 | 5654.6 | 5818.0 | 6305.3 | 6751.9 | 6993.7 | 7021.4 | 7308.4 | 8750.0 | 7865.0 | 4137.4 |
| 70°   | 3783.0 | 3719.3 | 4124.4 | 4802.8 | 5610.3 | 5973.9 | 5975.8 | 6101.3 | 7448.7 | 7725.6 | 3449.8 |
| 72.5° | 1652.0 | 1753.5 | 2048.8 | 2646.0 | 3624.2 | 4501.0 | 4482.5 | 4908.9 | 5940.7 | 6563.7 | 2564.7 |
| 75°   | 725.4  | 748.5  | 873.1  | 1189.6 | 1648.3 | 2444.8 | 2726.2 | 3940.8 | 4471.5 | 4292.4 | 1865.2 |
| 77.5° | 390.4  | 395.9  | 429.1  | 497.4  | 630.3  | 1154.5 | 1219.2 | 2496.4 | 3170.2 | 2474.3 | 1205.3 |
| 80°   | 148.6  | 148.6  | 155.0  | 178.1  | 263.0  | 451.3  | 484.5  | 1127.8 | 2187.3 | 1264.4 | 609.1  |
| 82.5° | 93.2   | 91.4   | 92.3   | 93.2   | 107.1  | 154.1  | 164.3  | 448.5  | 1032.7 | 623.9  | 160.6  |
| 85°   | 47.1   | 48.9   | 54.5   | 65.5   | 77.5   | 95.1   | 97.8   | 140.3  | 313.8  | 145.8  | 41.5   |
| 87.5° | 30.5   | 31.4   | 34.1   | 44.3   | 54.5   | 69.2   | 71.1   | 97.8   | 124.6  | 102.4  | 8.3    |
| 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: GPC-SA2D-730-U-T3BC

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|------|------|------|------|------|------|------|------|------|------|
| 0°    | 63.7   | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 | 63.7 |
| 2.5°  | 64.6   | 62.8 | 60.0 | 57.2 | 54.5 | 49.8 | 46.1 | 44.3 | 43.4 | 42.5 | 42.5 |
| 5°    | 63.7   | 60.9 | 55.4 | 50.8 | 46.1 | 40.6 | 36.0 | 33.2 | 32.3 | 31.4 | 31.4 |
| 7.5°  | 62.8   | 58.1 | 51.7 | 45.2 | 38.8 | 32.3 | 26.8 | 24.0 | 23.1 | 22.1 | 21.2 |
| 10°   | 61.8   | 56.3 | 47.1 | 39.7 | 32.3 | 24.9 | 19.4 | 15.7 | 14.8 | 13.8 | 13.8 |
| 12.5° | 60.9   | 53.5 | 43.4 | 35.1 | 25.8 | 17.5 | 12.9 | 9.2  | 7.4  | 6.5  | 6.5  |
| 15°   | 60.0   | 50.8 | 40.6 | 29.5 | 19.4 | 11.1 | 5.5  | 2.8  | 0.9  | 0.9  | 0.9  |
| 17.5° | 57.2   | 48.0 | 36.0 | 23.1 | 12.9 | 5.5  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  |
| 20°   | 55.4   | 45.2 | 31.4 | 17.5 | 7.4  | 2.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 22.5° | 54.5   | 43.4 | 26.8 | 12.0 | 5.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 25°   | 54.5   | 41.5 | 22.1 | 9.2  | 2.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 27.5° | 55.4   | 39.7 | 17.5 | 6.5  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 30°   | 53.5   | 37.8 | 12.9 | 4.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 32.5° | 53.5   | 34.1 | 9.2  | 2.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 35°   | 54.5   | 29.5 | 7.4  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 37.5° | 57.2   | 25.8 | 5.5  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 40°   | 61.8   | 24.0 | 4.6  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 42.5° | 68.3   | 23.1 | 3.7  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 45°   | 75.7   | 23.1 | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 47.5° | 86.8   | 24.0 | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 50°   | 99.7   | 24.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 52.5° | 114.4  | 25.8 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 55°   | 130.1  | 24.9 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 57.5° | 151.4  | 24.0 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 59°   | 173.5  | 22.1 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 60°   | 196.6  | 20.3 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 62.5° | 317.5  | 18.5 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 65°   | 623.0  | 16.6 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 67.5° | 1065.0 | 17.5 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 70°   | 1131.5 | 16.6 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 72.5° | 742.9  | 13.8 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 75°   | 378.4  | 14.8 | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 77.5° | 169.8  | 14.8 | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 80°   | 68.3   | 8.3  | 1.8  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 82.5° | 27.7   | 5.5  | 2.8  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 85°   | 11.1   | 5.5  | 3.7  | 1.8  | 0.9  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 87.5° | 7.4    | 5.5  | 4.6  | 3.7  | 1.8  | 0.0  | 0.0  | 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: SP1-2407-184-4

Test Date: 10/10/2024

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

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



REPORT NUMBER: SP1-2407-184-4

| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN0058                | 6/18/2024        | 12/18/2024           |
| Power Meter                    | INXT2011004           | 2/8/2024         | 2/8/2025             |
| AC Power Source                | IN0063                | 10/24/2023       | 10/24/2024           |
| DC Power Source                | IN0208                | 10/24/2023       | 10/24/2024           |
| Sphere Thermometer             | IN0085                | 10/24/2023       | 10/24/2024           |
| Room Thermometer               | IN0046                | 10/24/2023       | 10/24/2024           |

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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 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-184-4

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

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### Scotopic Flux vs. Wavelength


**Scotopic Lumens: NR**
**S/P: 1.19**

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

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### Melanopic Flux vs. Wavelength


**Melanopic Lumens: NR**
**M/P: 2.13**

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

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TM-30-18

### Summary

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

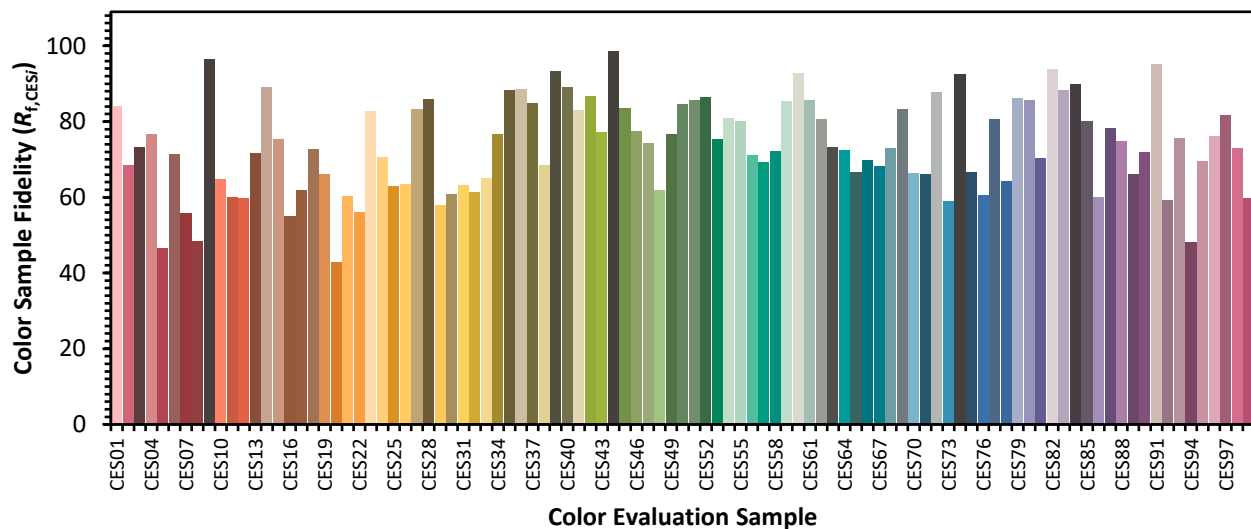


### Color Vector Graphics



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

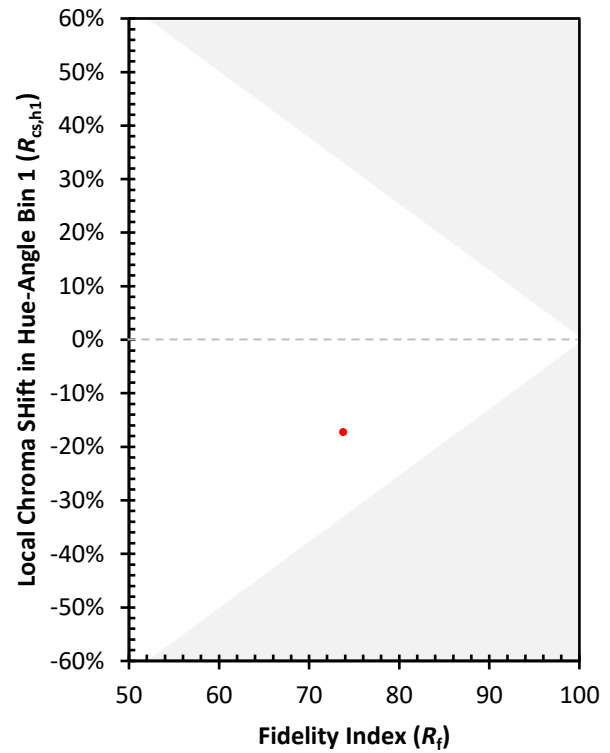
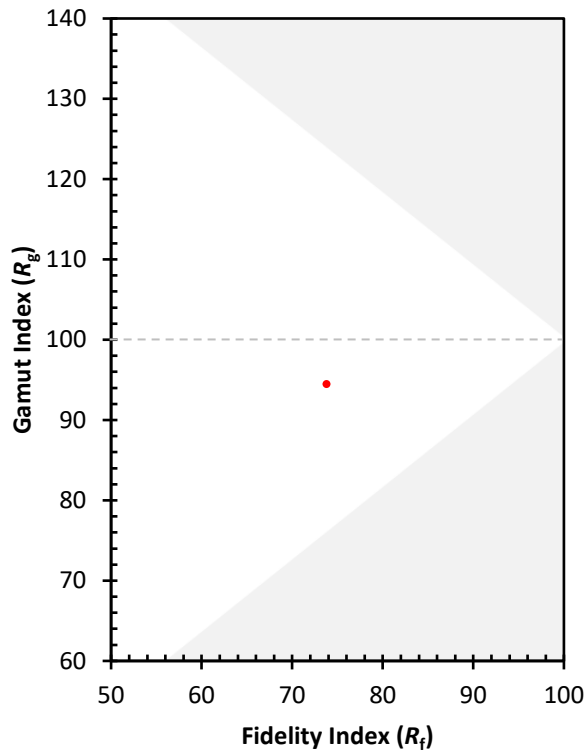
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 63 | CES51 = 86 | CES76 = 61 |
| CES02 = 62 | CES27 = 83 | CES52 = 86 | CES77 = 81 |
| CES03 = 31 | CES28 = 86 | CES53 = 75 | CES78 = 64 |
| CES04 = 71 | CES29 = 58 | CES54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



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)