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: P1047685

Luminaire Tested: **GALN-SA7A-722-U-T2BC**

Issue Date: 07/10/2025

Report Generated By 670347003

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P1047685 |
| Test Lab: | INNOVATION CENTER(G3) |
| Issue Date: | 07/10/2025 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GALN-SA7A-722-U-T2BC |
| Description: | GALLEON II AREA AND ROADWAY LUMINAIRE 615mA 7xLight Square PACKAGE 70CRI 2200K FIXTURE w/ TYPE II ANGLED BACKLIGHT CONTROL |
| Light Source: | (98) 2200K CCT, 70 CRI LEDS |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 18172.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 94.1 lumens/watt |
| Luminous Opening: | Rectangular (W 1.5' x L: 1.5' x H: 0') |
| IES Classification: | Type II - Short |
| BUG Rating: | B0 - U0 - G3 |

| | |
|---|---|
| Input Watts (W): | 193.1 |
| 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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Scaled Data Report

REPORT NUMBER: P1047685
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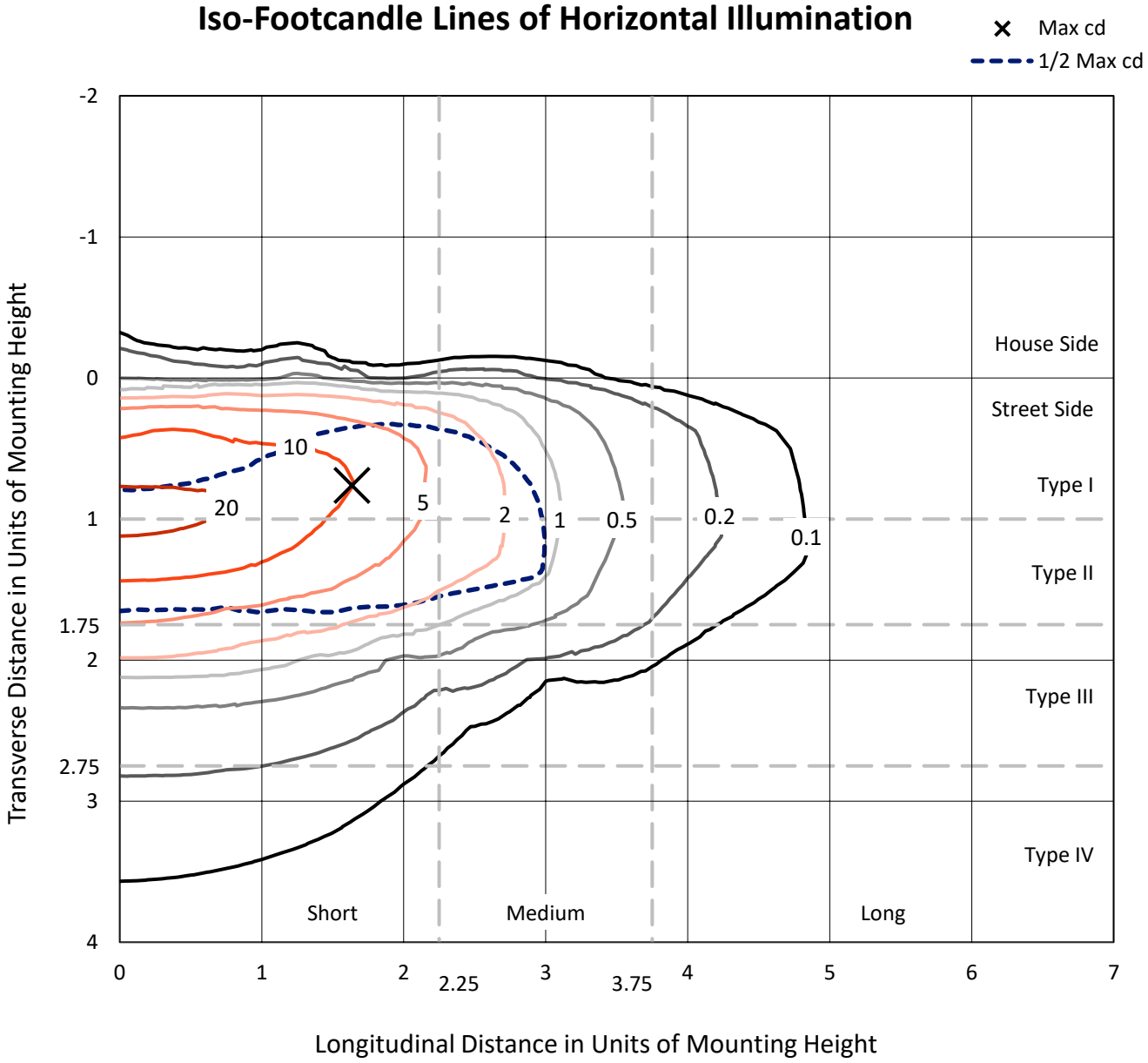
## Iso-Footcandle Lines of Horizontal Illumination




Based on 15 foot mounting height. Maximum calculated value = 24 fc
Type II - Short - N/A

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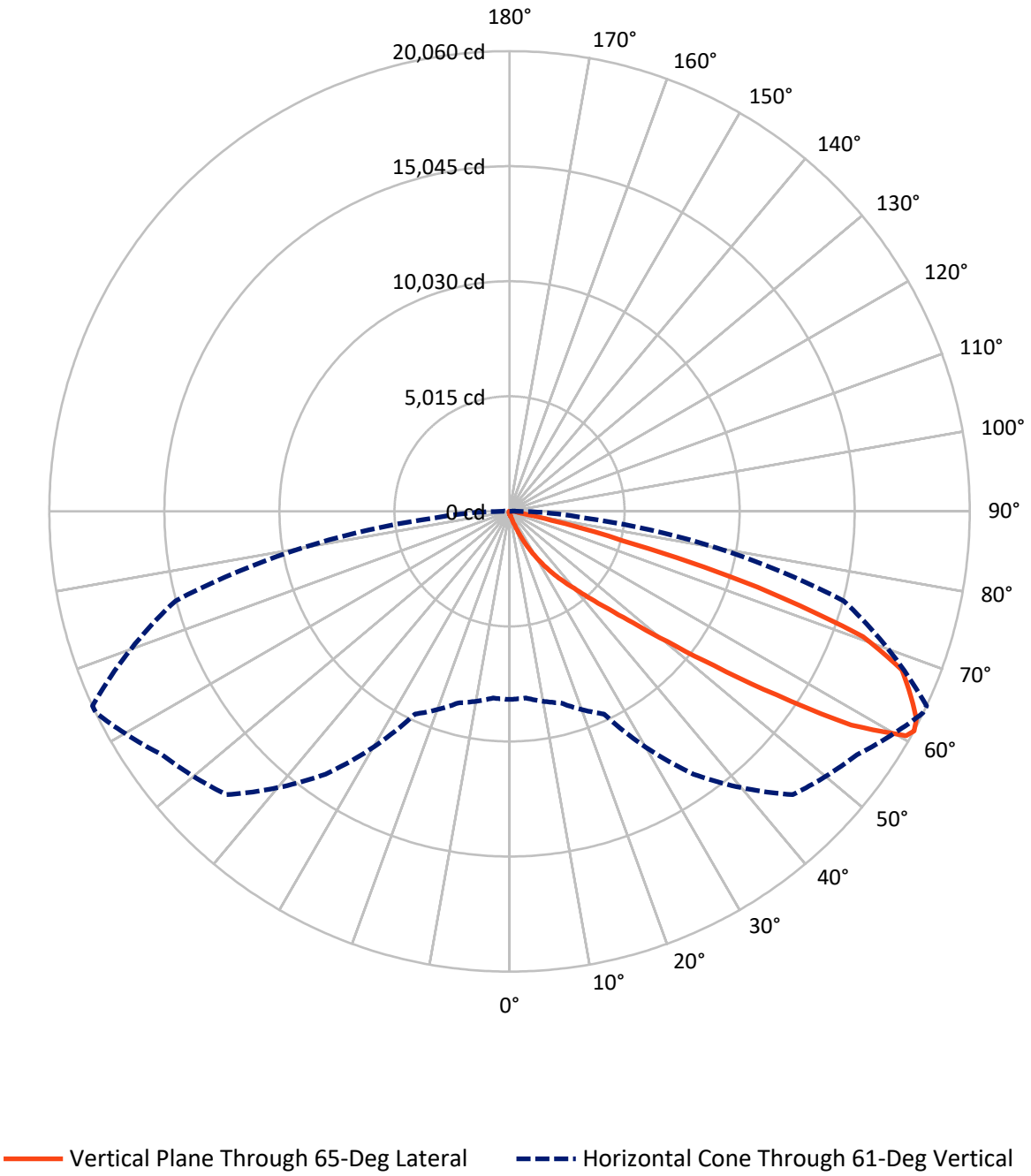
## Luminous Intensity Polar Plot



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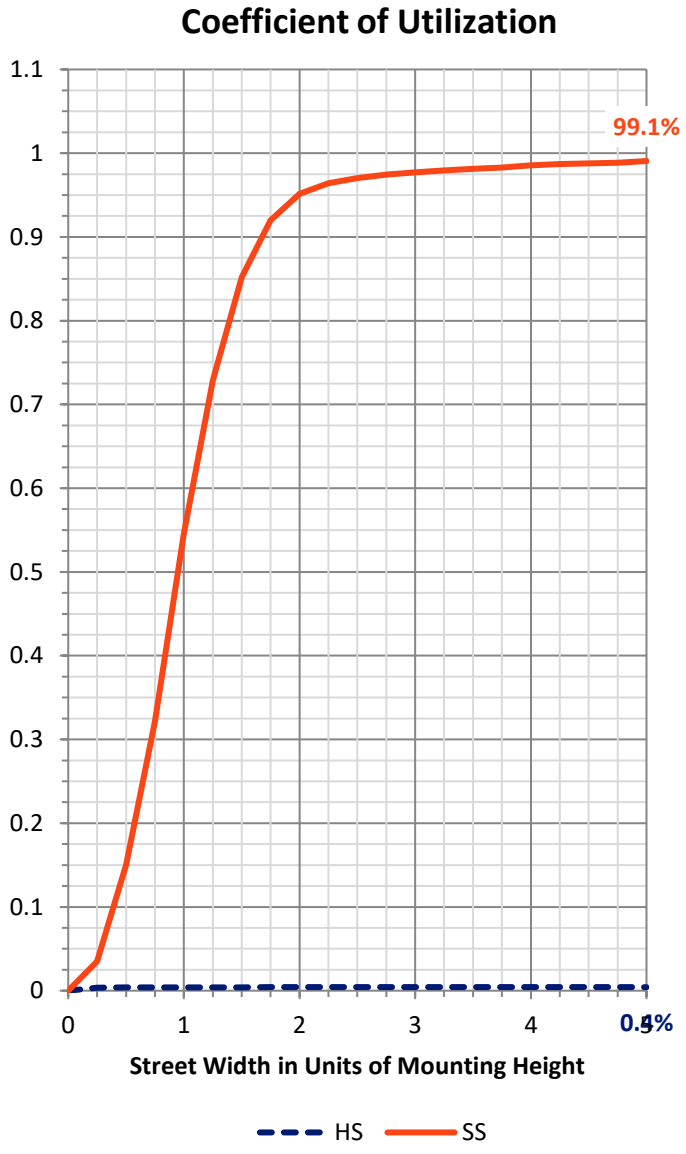
REPORT NUMBER: P1047685
CATALOG NUMBER: GALN-SA7A-722-U-T2BC

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 77.6 | 0.0 | 77.6 |
| | % Fixture | 0.4 | 0.0 | 0.4 |
| **Street Side** | Lumens | 18095.3 | 0.0 | 18095.3 |
| | % Fixture | 99.6 | 0.0 | 99.6 |
| **Total** | Lumens | 18172.9 | 0.0 | 18172.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 14.2 | 0.1 |
| 10°-20° | 149.4 | 0.8 |
| 20°-30° | 536.3 | 3.0 |
| 30°-40° | 1427.9 | 7.9 |
| 40°-50° | 3751.0 | 20.6 |
| 50°-60° | 5811.0 | 32.0 |
| 60°-70° | 4872.4 | 26.8 |
| 70°-80° | 1433.9 | 7.9 |
| 80°-90° | 176.9 | 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° | 18172.9 | 100.0 |
| 0°-180° | 18172.9 | 100.0 |



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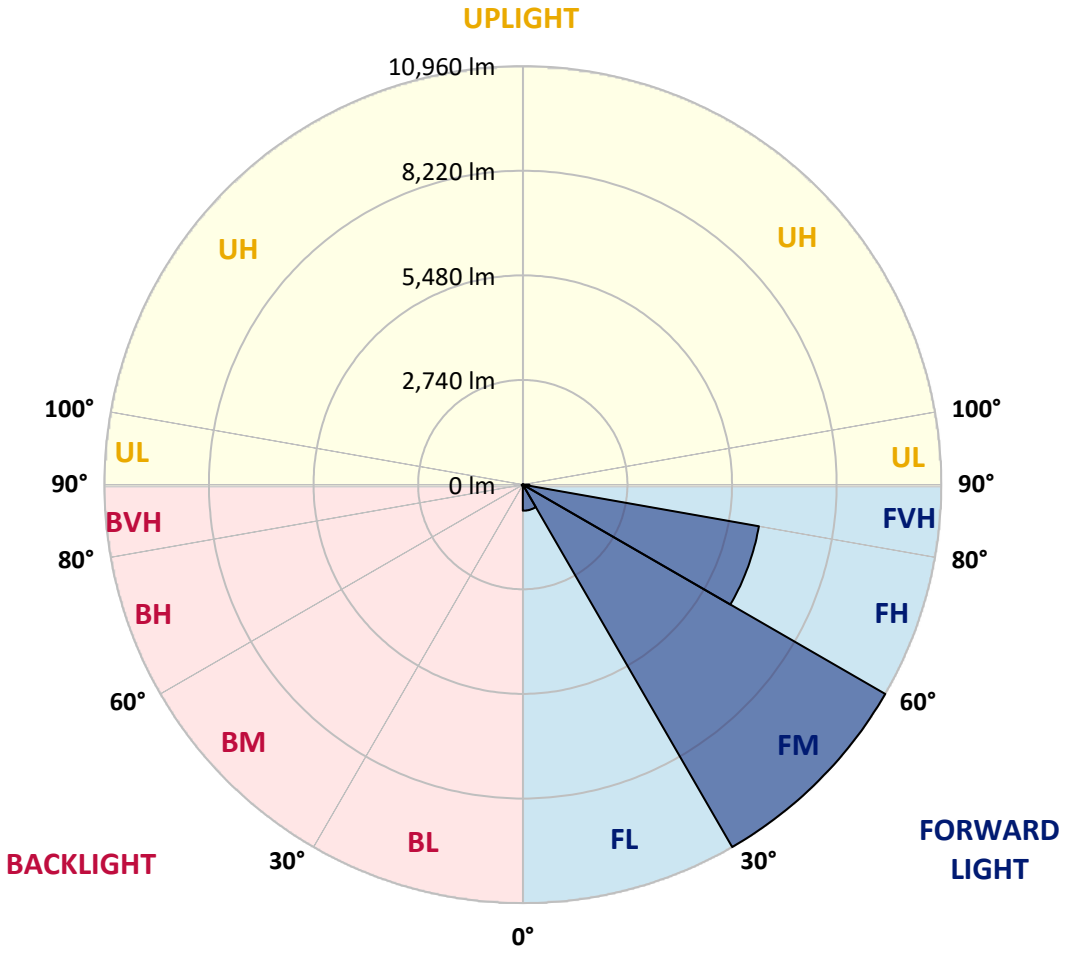
## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 682.5 | 3.8 | | | |
| FM | (30°-60°) | 10960.3 | 60.3 | | | |
| FH | (60°-80°) | 6278.9 | 34.6 | | | G3/7500 |
| FVH | (80°-90°) | 173.6 | 1.0 | | | G2/225 |
| BL | (0°-30°) | 17.4 | 0.1 | B0/110 | | |
| BM | (30°-60°) | 29.5 | 0.2 | B0/220 | | |
| BH | (60°-80°) | 27.4 | 0.2 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 3.3 | 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-G3**
Type II Short



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CATALOG NUMBER: GALN-SA7A-722-U-T2BC

**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | *111.3* | 111.3 | 111.3 |
| 2.5° | 135.0 | 136.3 | 133.8 | 128.8 | 125.0 | 125.0 | 123.8 | 120.0 | *120.0* | 116.3 | 113.8 |
| 5° | 188.8 | 186.3 | 181.3 | 171.3 | 162.5 | 153.8 | 145.0 | 136.3 | *135.0* | 123.8 | 116.3 |
| 7.5° | 308.8 | 311.3 | 295.0 | 263.8 | 237.5 | 203.8 | 172.5 | 153.8 | *151.3* | 132.5 | 117.5 |
| 10° | 677.6 | 658.8 | 621.3 | 500.0 | 411.3 | 310.0 | 230.0 | 178.8 | *176.3* | 142.5 | 120.0 |
| 12.5° | 1235.1 | 1220.1 | 1151.3 | 1026.3 | 797.6 | 555.0 | 336.3 | 221.3 | *213.8* | 151.3 | 121.3 |
| 15° | 1780.1 | 1756.4 | 1718.9 | 1592.6 | 1325.1 | 995.1 | 550.0 | 302.5 | *282.5* | 163.8 | 120.0 |
| 17.5° | 2127.7 | 2131.4 | 2097.7 | 2043.9 | 1871.4 | 1472.6 | 950.1 | 451.3 | *412.5* | 186.3 | 117.5 |
| 20° | 2431.4 | 2422.7 | 2441.4 | 2412.7 | 2291.4 | 2001.4 | 1382.6 | 715.1 | *648.8* | 222.5 | 118.8 |
| 22.5° | 2781.5 | 2802.7 | 2816.5 | 2810.2 | 2676.5 | 2428.9 | 1873.9 | 1070.1 | *986.3* | 288.8 | 122.5 |
| 25° | 3250.3 | 3247.8 | 3249.0 | 3232.8 | 3102.7 | 2827.7 | 2366.4 | 1511.4 | *1426.4* | 396.3 | 131.3 |
| 27.5° | 3741.5 | 3756.5 | 3762.8 | 3704.0 | 3534.0 | 3264.0 | 2822.7 | 1993.9 | *1893.9* | 568.8 | 142.5 |
| 30° | 4412.8 | 4400.3 | 4371.6 | 4251.6 | 4045.3 | 3710.3 | 3272.8 | 2500.2 | *2395.2* | 810.1 | 160.0 |
| 32.5° | 5317.9 | 5304.2 | 5159.2 | 4894.1 | 4585.4 | 4175.3 | 3725.3 | 3007.7 | *2880.2* | 1111.3 | 183.8 |
| 35° | 6809.3 | 6830.5 | 6474.3 | 5787.9 | 5234.2 | 4734.1 | 4226.6 | 3512.8 | *3400.3* | 1482.6 | 216.3 |
| 37.5° | 9093.2 | 8976.9 | 8493.2 | 7280.6 | 6088.0 | 5431.7 | 4705.4 | 4022.8 | *3925.3* | 1940.2 | 258.8 |
| 40° | 11312.1 | 11197.1 | 11057.1 | 9908.3 | 7571.8 | 6200.5 | 5375.4 | 4621.6 | *4495.3* | 2456.4 | 321.3 |
| 42.5° | 13644.8 | 13581.1 | 13574.8 | 12708.5 | 10279.5 | 7409.3 | 6181.7 | 5322.9 | *5215.4* | 3022.7 | 423.8 |
| 45° | 15297.4 | 15233.7 | 15367.4 | 15518.7 | 13967.3 | 9999.5 | 7585.6 | 6234.2 | *6078.0* | 3710.3 | 587.5 |
| 47.5° | 15520.0 | 15522.5 | 15880.0 | 16353.8 | 16707.5 | 14006.1 | 9455.7 | 7441.8 | *7251.8* | 4694.1 | 862.6 |
| 50° | 14779.9 | 14808.7 | 15377.4 | 16225.0 | 17177.6 | 17367.6 | 12753.5 | 9194.5 | *8913.2* | 5860.5 | 1252.6 |
| 52.5° | 13371.0 | 13403.5 | 14196.1 | 15590.0 | 16745.1 | 18175.2 | 16636.3 | 11487.1 | *11163.4* | 7315.6 | 1802.6 |
| 55° | 12102.2 | 12122.2 | 13031.0 | 14792.4 | 16223.8 | 17736.4 | 18941.5 | 14548.6 | *14123.6* | 9105.7 | 2345.2 |
| 57.5° | 10845.8 | 10799.6 | 11390.9 | 13407.3 | 16135.0 | 17197.6 | 19281.5 | 18037.7 | *17568.9* | 11062.1 | 2767.7 |
| 60° | 9165.7 | 9088.2 | 9563.2 | 10845.8 | 14967.4 | 17551.4 | 18645.2 | 19967.8 | *19861.5* | 13786.1 | 3094.0 |
| 61° | *8199.4* | *8166.9* | *8644.4* | *9744.5* | *13984.8* | *17461.4* | *18492.7* | *20049.1* | *20060.3* | *15074.9* | *3240.3* |
| 62.5° | 5855.5 | 5948.0 | 6678.0 | 8108.1 | 11713.4 | 16877.6 | 18512.7 | 19797.8 | *19909.0* | 16787.6 | 3619.0 |
| 65° | 2602.7 | 2751.5 | 3319.0 | 4482.8 | 6811.8 | 14039.8 | 18335.2 | 19246.5 | *19191.5* | 17257.6 | 4924.1 |
| 67.5° | 1543.9 | 1566.4 | 1848.9 | 2540.2 | 3607.8 | 7551.8 | 16180.0 | 18517.7 | *18443.9* | 15023.7 | 6126.7 |
| 70° | 1216.3 | 1227.6 | 1317.6 | 1593.9 | 2093.9 | 2892.7 | 9234.5 | 16021.2 | *16342.5* | 12182.2 | 5998.0 |
| 72.5° | 1153.8 | 1151.3 | 1163.8 | 1212.6 | 1318.9 | 1435.1 | 3575.3 | 10649.6 | *11303.4* | 8773.2 | 5029.1 |
| 75° | 1138.8 | 1133.8 | 1121.3 | 1102.6 | 955.1 | 845.1 | 1107.6 | 4710.4 | *5089.1* | 5994.2 | 3786.5 |
| 77.5° | 1105.1 | 1106.3 | 1108.8 | 1057.6 | 818.8 | 597.5 | 536.3 | 1511.4 | *1858.9* | 3804.0 | 2691.5 |
| 80° | 747.6 | 758.8 | 777.6 | 757.6 | 736.3 | 432.5 | 378.8 | 537.5 | *545.0* | 2135.2 | 1777.6 |
| 82.5° | 378.8 | 378.8 | 370.0 | 330.0 | 285.0 | 281.3 | 301.3 | 390.0 | *395.0* | 1080.1 | 836.3 |
| 85° | 228.8 | 241.3 | 246.3 | 223.8 | 205.0 | 188.8 | 230.0 | 310.0 | *321.3* | 418.8 | 195.0 |
| 87.5° | 51.3 | 52.5 | 57.5 | 76.3 | 111.3 | 151.3 | 213.8 | 283.8 | *288.8* | 268.8 | 23.8 |
| 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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Scaled Data Report

REPORT NUMBER: P1047685
CATALOG NUMBER: GALN-SA7A-722-U-T2BC

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 | 111.3 |
| 2.5° | 112.5 | 110.0 | 108.8 | 105.0 | 101.3 | 97.5 | 95.0 | 93.8 | 95.0 | 96.3 | 96.3 |
| 5° | 111.3 | 107.5 | 101.3 | 95.0 | 90.0 | 85.0 | 80.0 | 78.8 | 78.8 | 80.0 | 80.0 |
| 7.5° | 111.3 | 105.0 | 96.3 | 88.8 | 81.3 | 73.8 | 70.0 | 67.5 | 68.8 | 68.8 | 68.8 |
| 10° | 111.3 | 103.8 | 92.5 | 81.3 | 72.5 | 63.8 | 57.5 | 55.0 | 55.0 | 55.0 | 55.0 |
| 12.5° | 110.0 | 102.5 | 88.8 | 75.0 | 62.5 | 52.5 | 45.0 | 41.3 | 42.5 | 42.5 | 42.5 |
| 15° | 107.5 | 98.8 | 83.8 | 63.8 | 50.0 | 40.0 | 32.5 | 28.8 | 30.0 | 32.5 | 33.8 |
| 17.5° | 103.8 | 95.0 | 75.0 | 53.8 | 40.0 | 30.0 | 22.5 | 20.0 | 21.3 | 25.0 | 25.0 |
| 20° | 102.5 | 91.3 | 66.3 | 43.8 | 30.0 | 21.3 | 15.0 | 12.5 | 13.8 | 18.8 | 20.0 |
| 22.5° | 102.5 | 88.8 | 60.0 | 36.3 | 22.5 | 13.8 | 8.8 | 5.0 | 5.0 | 8.8 | 8.8 |
| 25° | 103.8 | 87.5 | 55.0 | 30.0 | 16.3 | 10.0 | 5.0 | 2.5 | 5.0 | 13.8 | 16.3 |
| 27.5° | 106.3 | 86.3 | 52.5 | 25.0 | 12.5 | 8.8 | 3.8 | 8.8 | 15.0 | 15.0 | 15.0 |
| 30° | 108.8 | 83.8 | 48.8 | 21.3 | 11.3 | 6.3 | 6.3 | 12.5 | 12.5 | 15.0 | 16.3 |
| 32.5° | 112.5 | 82.5 | 46.3 | 18.8 | 8.8 | 5.0 | 8.8 | 7.5 | 7.5 | 8.8 | 10.0 |
| 35° | 120.0 | 83.8 | 43.8 | 18.8 | 8.8 | 6.3 | 7.5 | 3.8 | 2.5 | 2.5 | 2.5 |
| 37.5° | 130.0 | 85.0 | 40.0 | 16.3 | 7.5 | 7.5 | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 40° | 146.3 | 88.8 | 37.5 | 15.0 | 6.3 | 6.3 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42.5° | 173.8 | 96.3 | 36.3 | 13.8 | 6.3 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 45° | 228.8 | 113.8 | 33.8 | 12.5 | 6.3 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47.5° | 328.8 | 155.0 | 32.5 | 10.0 | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50° | 480.0 | 210.0 | 31.3 | 8.8 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 52.5° | 612.5 | 221.3 | 21.3 | 7.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 55° | 627.5 | 152.5 | 16.3 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 57.5° | 500.0 | 98.8 | 13.8 | 3.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 60° | 378.8 | 75.0 | 12.5 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 61° | *363.8* | *67.5* | *12.5* | *1.3* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* |
| 62.5° | 401.3 | 58.8 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65° | 652.6 | 48.8 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 67.5° | 1133.8 | 42.5 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 1432.6 | 40.0 | 7.5 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 1248.8 | 36.3 | 7.5 | 2.5 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 751.3 | 31.3 | 7.5 | 5.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 393.8 | 23.8 | 7.5 | 6.3 | 3.8 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 191.3 | 21.3 | 8.8 | 6.3 | 5.0 | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 75.0 | 17.5 | 10.0 | 8.8 | 6.3 | 3.8 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 33.8 | 15.0 | 11.3 | 10.0 | 8.8 | 5.0 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 17.5 | 13.8 | 12.5 | 11.3 | 8.8 | 6.3 | 2.5 | 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 |

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# 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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

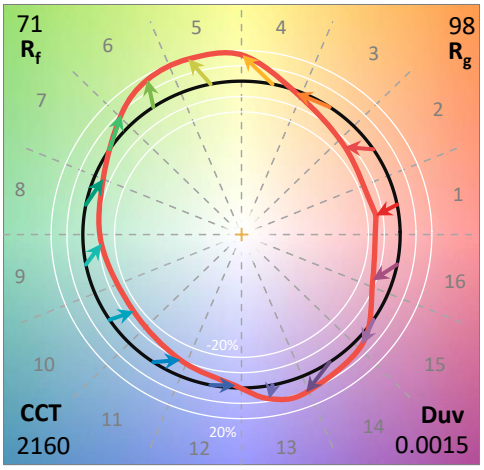
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-184-2 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| 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 |
| CIE u': | 0.2927 |
| CIE v': | 0.5388 |
| Duv: | 0.0015 |
| CIE x: | 0.5130 |
| CIE y: | 0.4197 |
| CIE z: | 0.0674 |
| Peak Wavelength (nm): | 609 |
| Dominant Wavelength (nm): | 587 |
| Purity: | 79.96089 |
| Rf: | 70.6 |
| Rg: | 97.6 |

| | |
|---|---|
| CRI (Ra): | 71.9 |
| R1: | 68.7 |
| R2: | 82.6 |
| R3: | 95.5 |
| R4: | 66.4 |
| R5: | 65.4 |
| R6: | 75.9 |
| R7: | 77.2 |
| R8: | 43.5 |
| R9: | -17.8 |
| R10: | 60.5 |
| R11: | 60.2 |
| R12: | 48.2 |
| R13: | 70.7 |
| R14: | 96.8 |
| R15: | 61.8 |




## Test Conditions

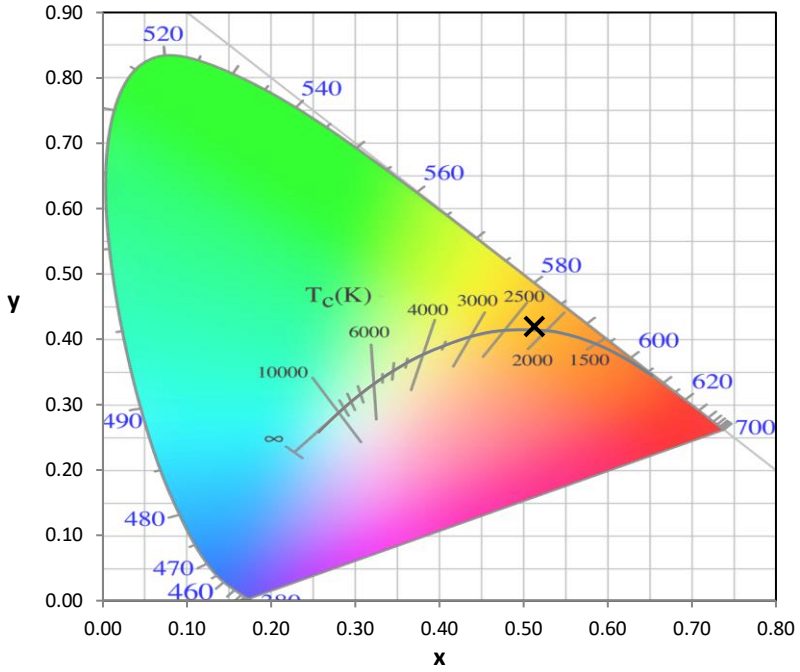
| | |
|---|---|
| Stabilization Time: | 21M |
| Operation Time: | 1H 21M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-184-2

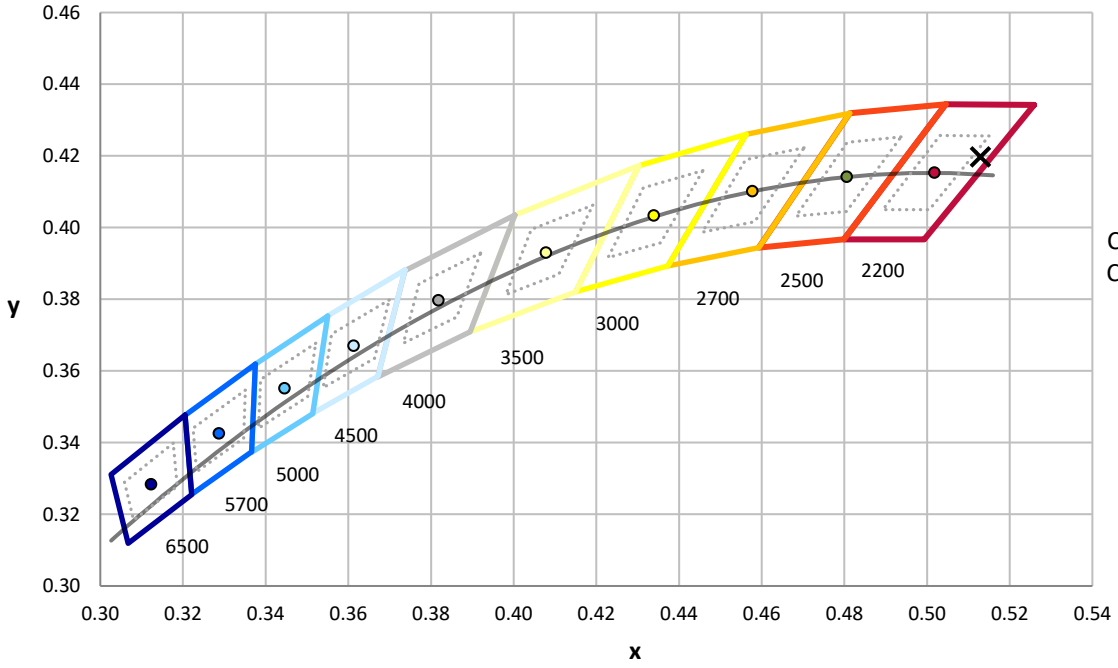
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC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




CCT = 2160K
CIE x = 0.5130
CIE y = 0.4197
Duv = 0.0015

Point lies inside the ANSI 2200K 7-step quadrangle

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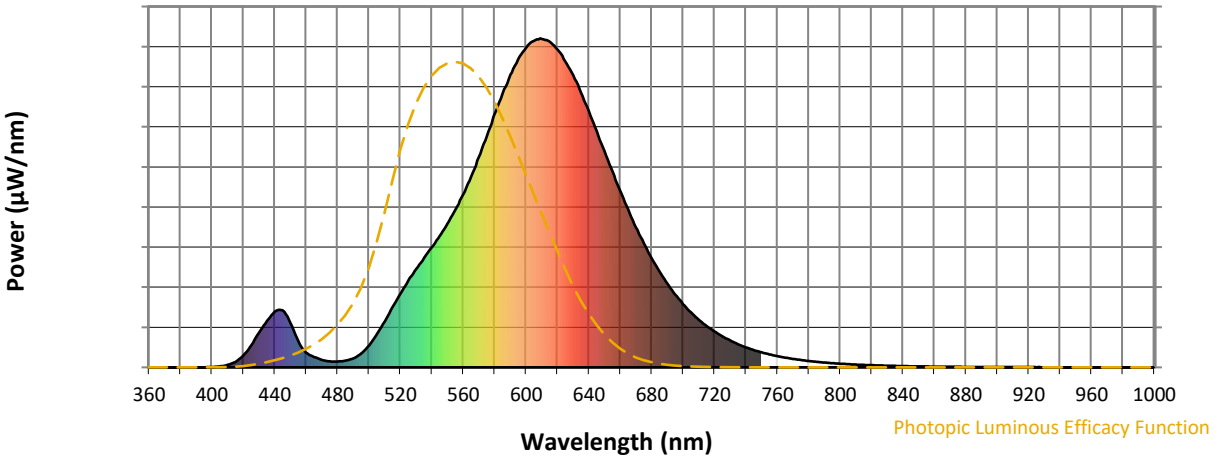
## Photopic Flux vs. Wavelength




## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (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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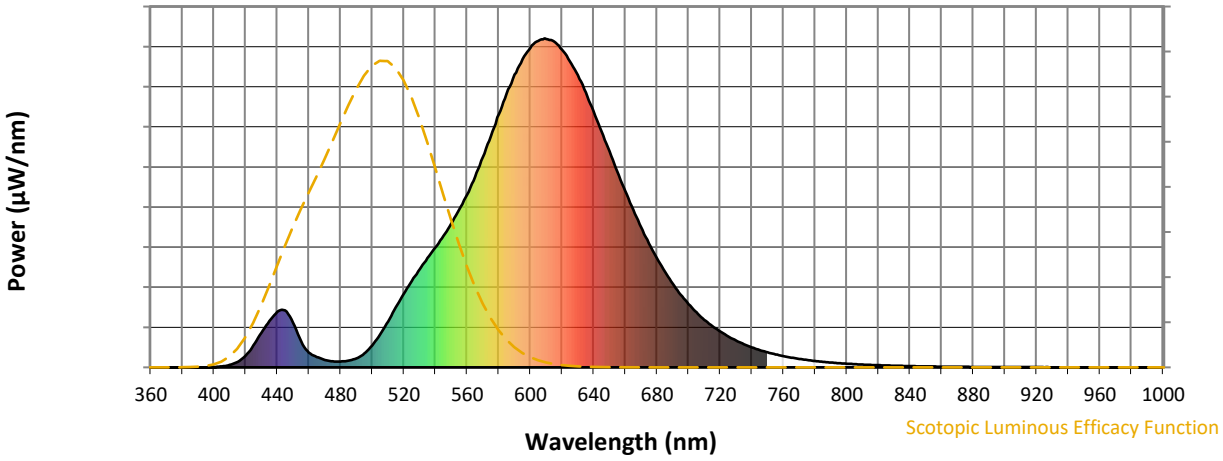
## Scotopic Flux vs. Wavelength




**Scotopic Lumens: NR** **S/P: 0.8**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (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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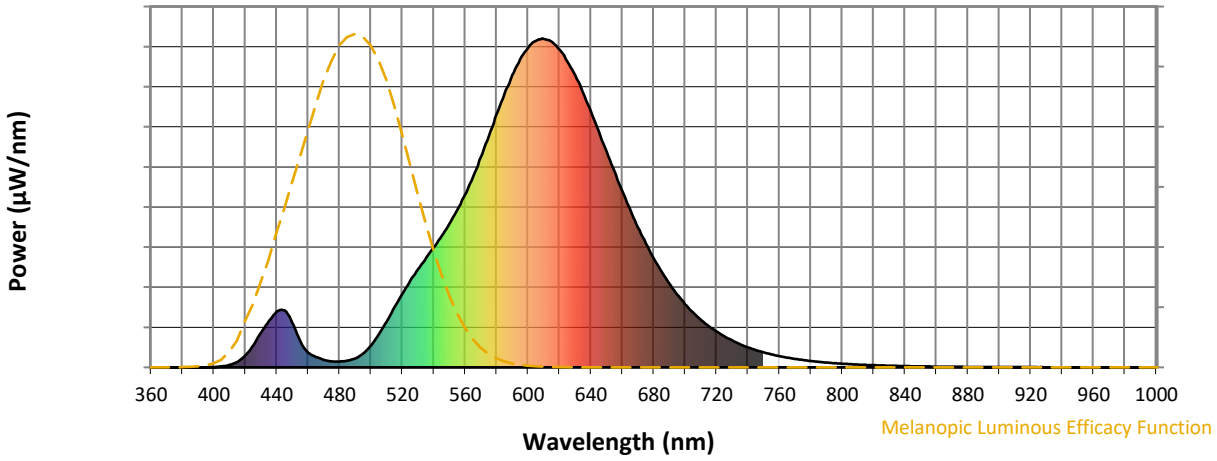
## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 1.21**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (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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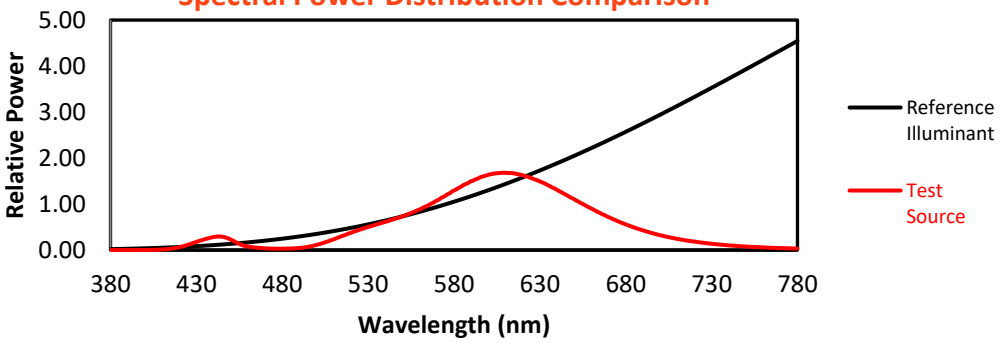
# TM-30-18

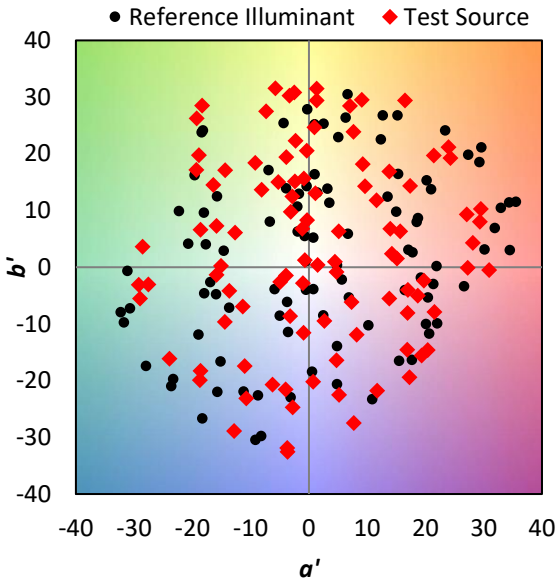
## Summary

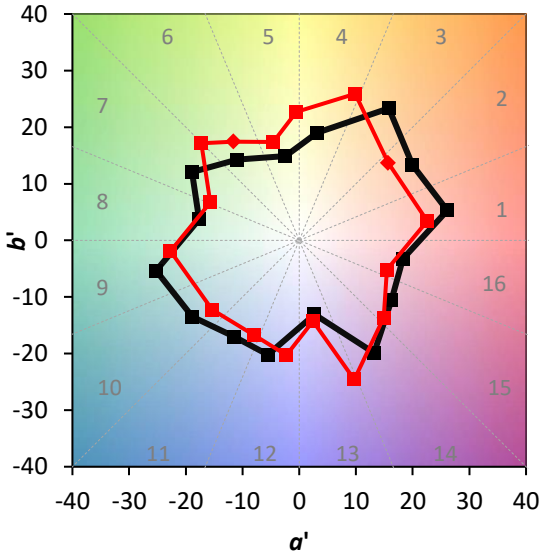
$R_f$ = 70.6
$R_g$ = 97.6
CIE $R_a$ = 71.9
$R_9$ = -17.8

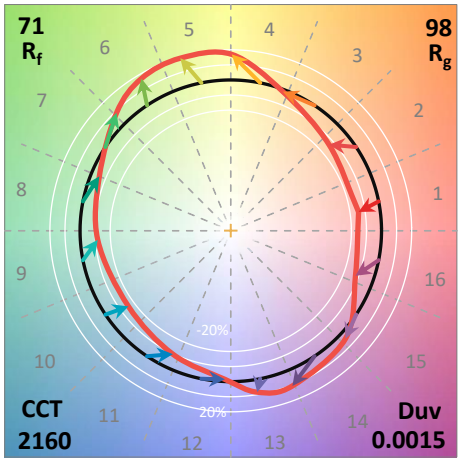
## Spectral Power Distribution Comparison

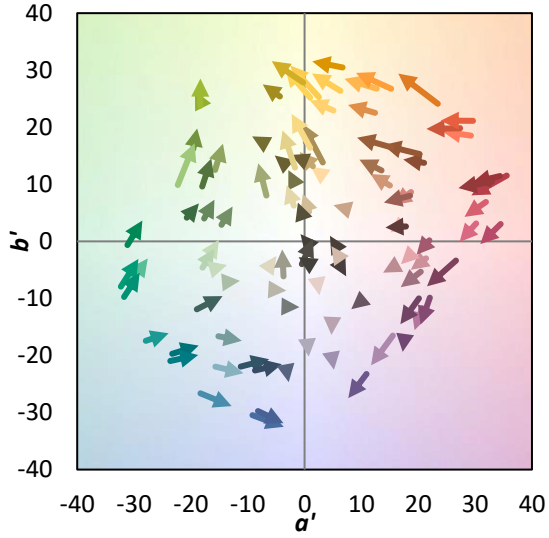



## Color Vector Graphics



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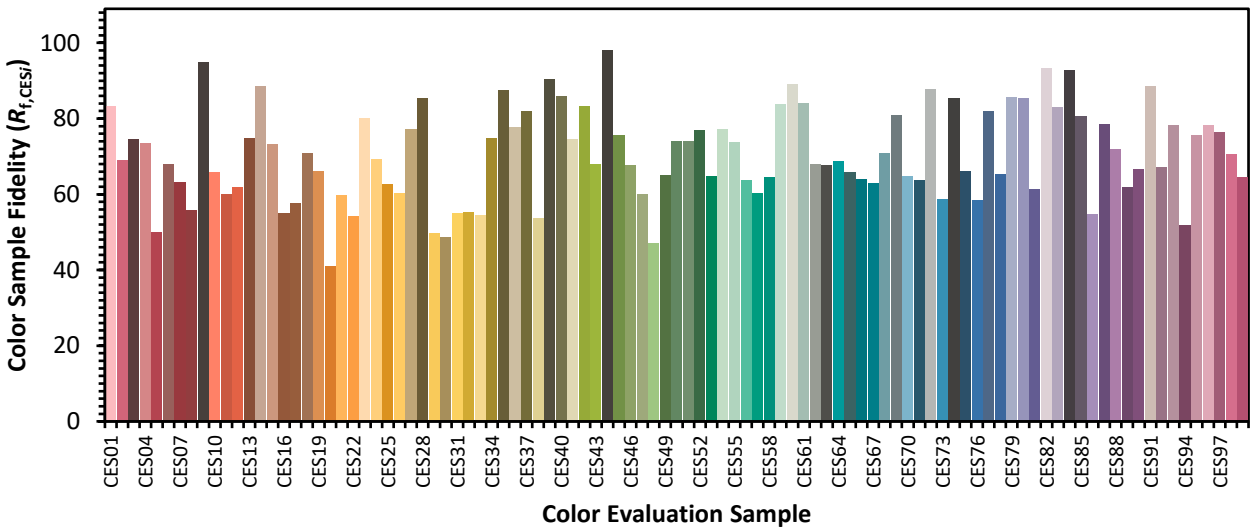
**Individual Sample Fidelity Index ($R_{f,i}$)**

| | | | |
|---|---|---|---|
| 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 | |



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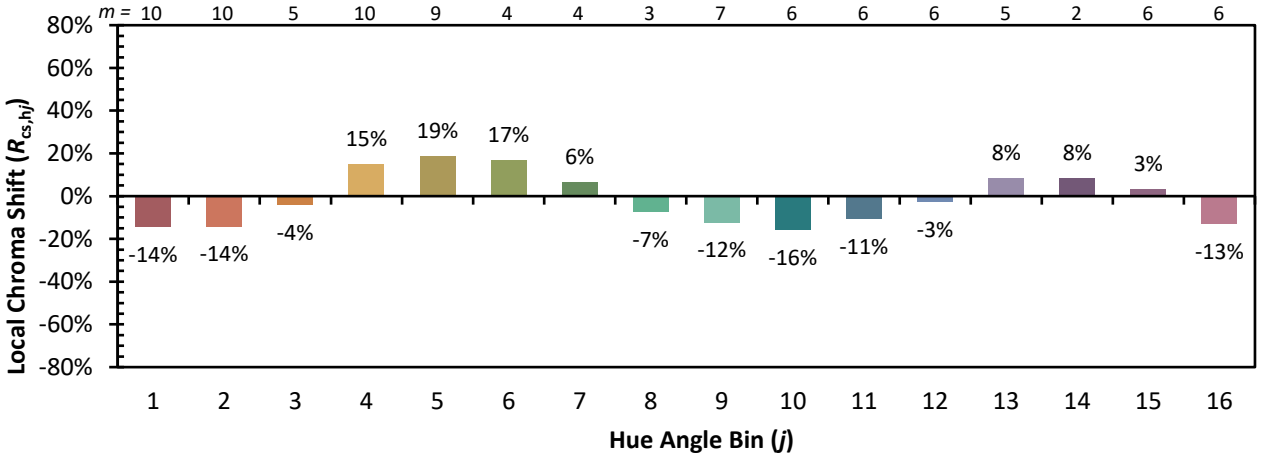
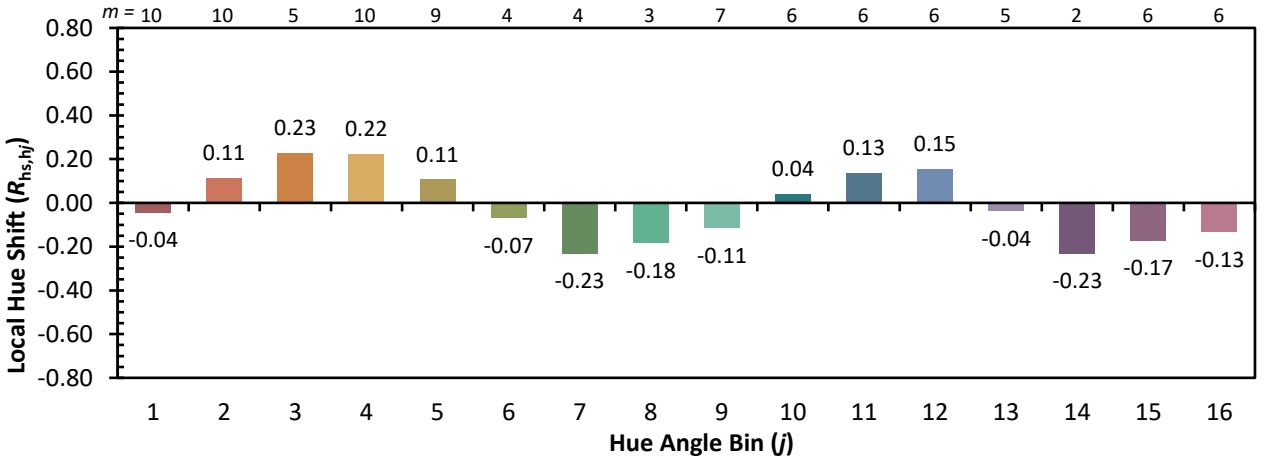
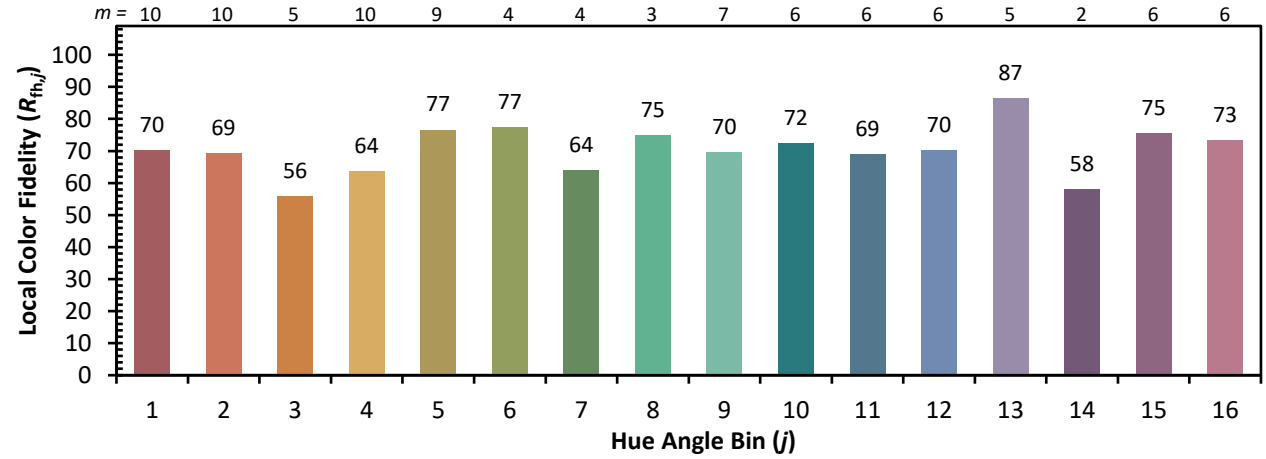
**TM-30-18**

## Color Rendition by Hue-Angle Bin



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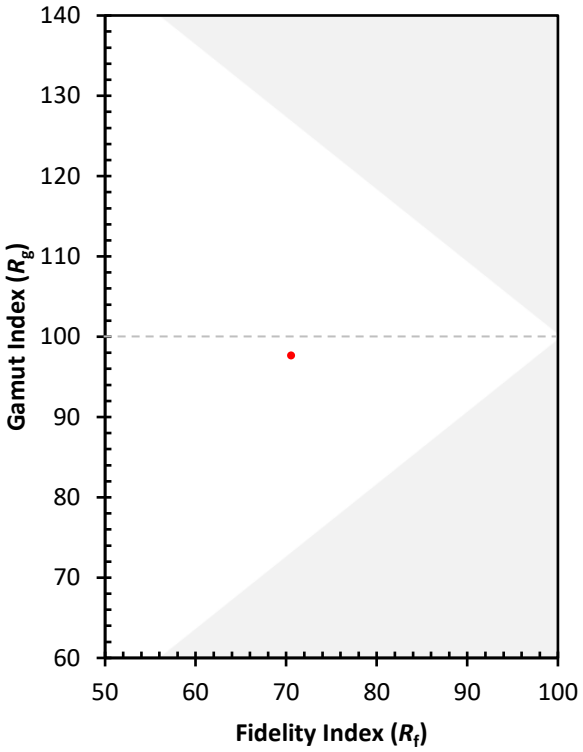
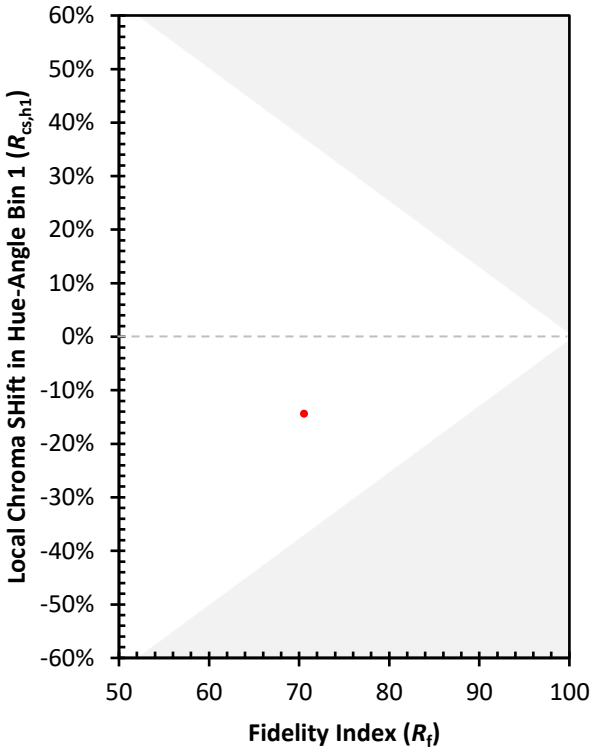
## Measure Comparisons




(END OF REPORT)