

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P628869

Luminaire Tested: GWS-SA1A-740-U-T2R-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P628869
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-12)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1A-740-U-T2R-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (16) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1906.3 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B0 - U0 - G0

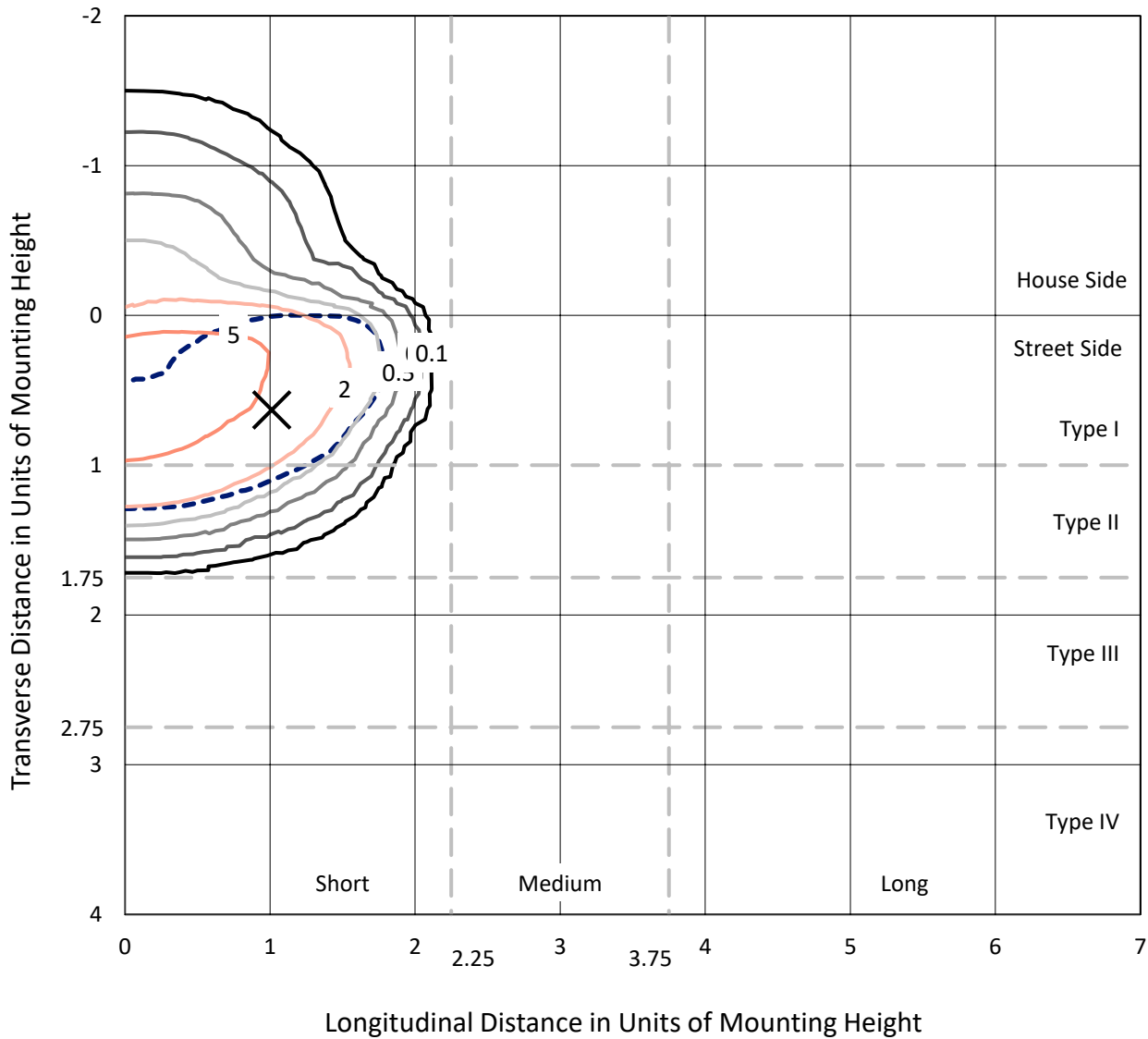
Input Watts (W): 19.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

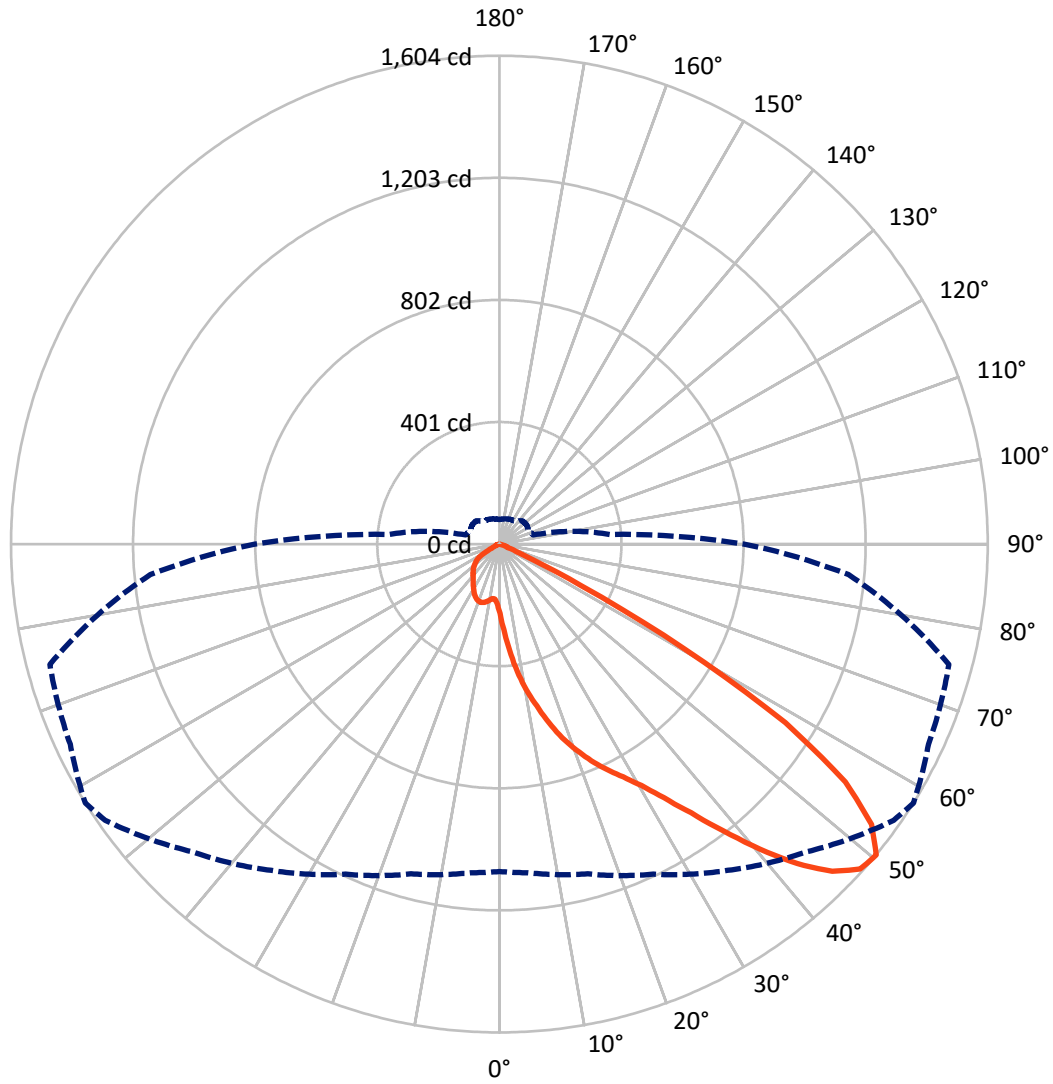
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 50-Deg Vertical

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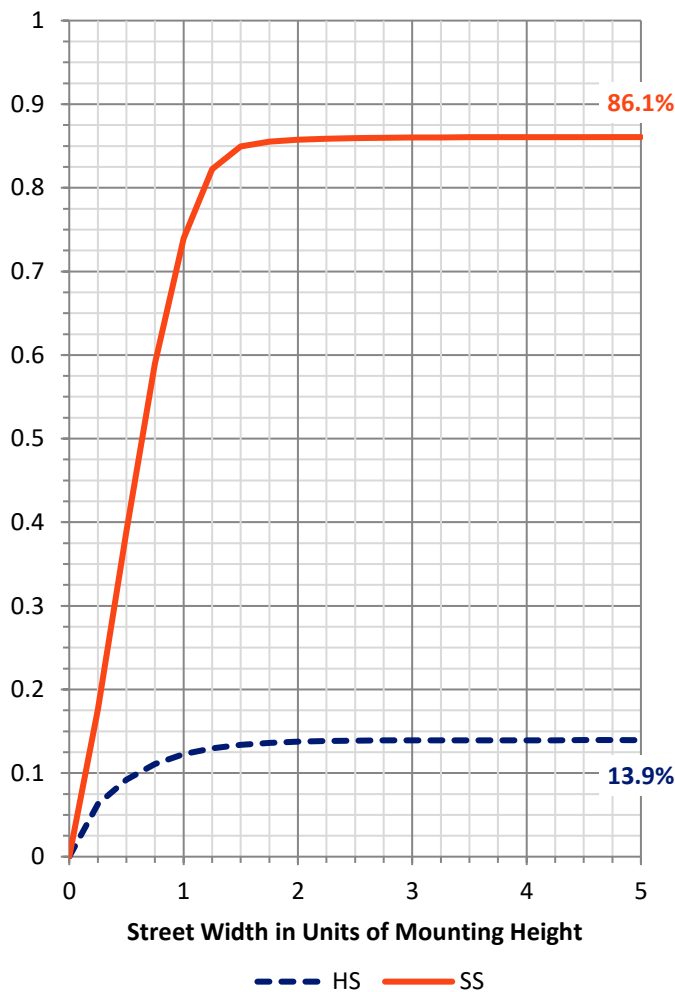
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 267.0 | 0.0 | 267.0 |
| | % Fixture | 14.0 | 0.0 | 14.0 |
| Street Side | Lumens | 1639.3 | 0.0 | 1639.3 |
| | % Fixture | 86.0 | 0.0 | 86.0 |
| Total | Lumens | 1906.3 | 0.0 | 1906.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 28.2 | 1.5 |
| 10°-20° | 111.7 | 5.9 |
| 20°-30° | 226.0 | 11.9 |
| 30°-40° | 399.8 | 21.0 |
| 40°-50° | 582.8 | 30.6 |
| 50°-60° | 467.1 | 24.5 |
| 60°-70° | 84.2 | 4.4 |
| 70°-80° | 6.6 | 0.3 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 1906.3 | 100.0 |
| 0°-180° | 1906.3 | 100.0 |

Coefficient of Utilization



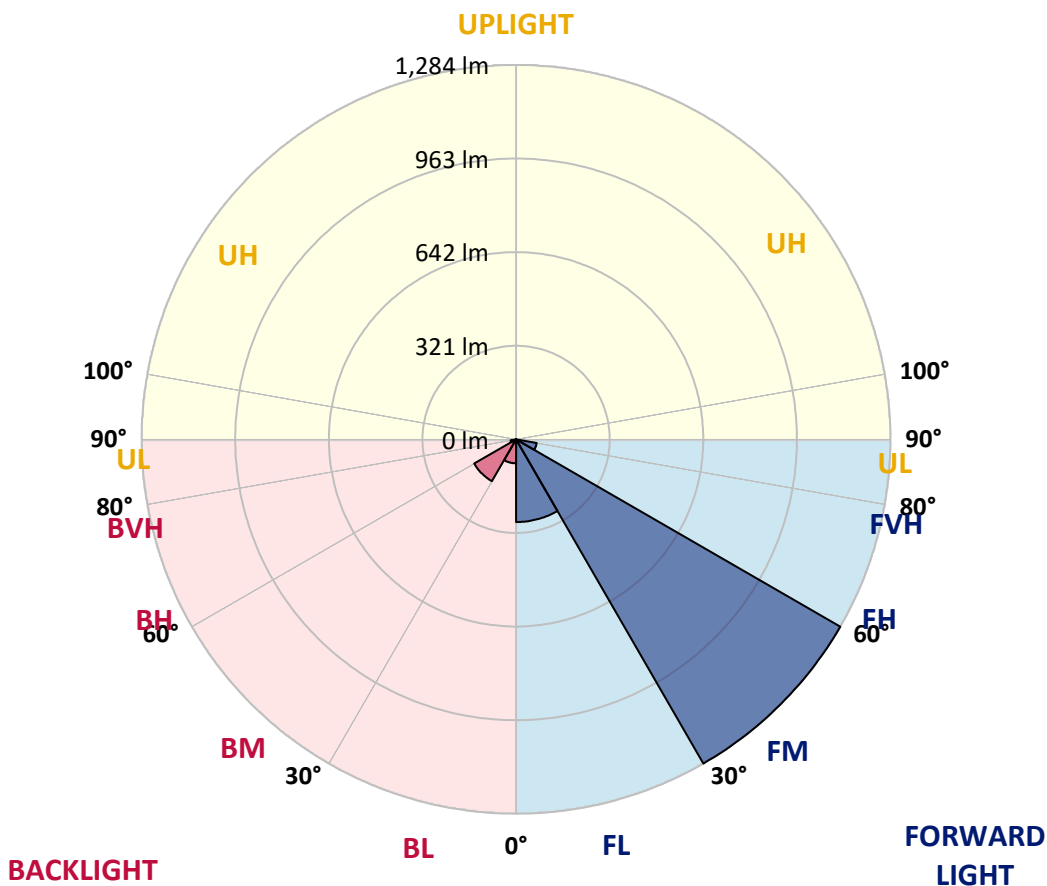
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 283.7 | 14.9 | | | |
| FM (30°-60°) | 1283.8 | 67.3 | | | |
| FH (60°-80°) | 71.8 | 3.8 | | | G0/660 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 82.2 | 4.3 | B0/110 | | |
| BM (30°-60°) | 165.8 | 8.7 | B0/220 | | |
| BH (60°-80°) | 19.0 | 1.0 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.0 | 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-G0
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 |
| 2.5° | 337.0 | 331.7 | 328.6 | 326.2 | 315.4 | 298.2 | 287.0 | 281.1 | 271.3 | 254.8 | 240.5 |
| 5° | 439.7 | 435.8 | 428.7 | 423.8 | 409.9 | 385.7 | 360.6 | 350.6 | 328.4 | 291.1 | 257.7 |
| 7.5° | 507.8 | 504.9 | 502.3 | 495.8 | 482.7 | 460.7 | 433.0 | 422.6 | 388.3 | 335.3 | 280.5 |
| 10° | 560.2 | 557.9 | 554.9 | 554.7 | 544.5 | 524.7 | 497.6 | 486.8 | 449.7 | 383.4 | 307.4 |
| 12.5° | 606.3 | 604.4 | 603.8 | 609.5 | 603.0 | 588.3 | 559.0 | 545.5 | 506.2 | 432.6 | 337.2 |
| 15° | 637.9 | 637.4 | 640.1 | 651.3 | 655.0 | 648.3 | 623.6 | 609.1 | 563.9 | 481.9 | 370.0 |
| 17.5° | 652.3 | 653.6 | 658.7 | 678.0 | 694.3 | 700.0 | 681.1 | 668.8 | 621.1 | 531.9 | 405.1 |
| 20° | 677.0 | 676.6 | 679.6 | 698.0 | 718.0 | 738.4 | 732.6 | 722.3 | 679.0 | 584.7 | 444.0 |
| 22.5° | 746.5 | 740.6 | 734.1 | 736.9 | 744.1 | 767.9 | 778.5 | 773.2 | 738.8 | 638.9 | 484.2 |
| 25° | 853.3 | 847.2 | 826.2 | 805.8 | 792.4 | 803.2 | 817.7 | 820.3 | 798.1 | 694.5 | 526.1 |
| 27.5° | 966.7 | 961.2 | 937.5 | 906.9 | 868.4 | 849.7 | 860.5 | 865.8 | 856.4 | 760.8 | 570.8 |
| 30° | 1072.9 | 1065.5 | 1039.7 | 1001.7 | 957.1 | 928.3 | 916.1 | 919.8 | 925.3 | 839.3 | 623.2 |
| 32.5° | 1165.0 | 1159.5 | 1128.5 | 1088.6 | 1045.6 | 1015.6 | 987.1 | 993.2 | 1006.6 | 935.3 | 690.2 |
| 35° | 1243.1 | 1240.2 | 1207.4 | 1167.7 | 1122.2 | 1106.9 | 1082.5 | 1083.7 | 1097.1 | 1051.3 | 772.0 |
| 37.5° | 1311.0 | 1306.1 | 1276.3 | 1239.4 | 1203.3 | 1200.9 | 1194.2 | 1194.8 | 1201.7 | 1186.4 | 866.0 |
| 40° | 1353.8 | 1349.3 | 1328.1 | 1305.3 | 1279.6 | 1280.0 | 1314.9 | 1317.5 | 1309.6 | 1319.1 | 965.2 |
| 42.5° | 1369.9 | 1366.6 | 1355.2 | 1355.4 | 1352.8 | 1364.8 | 1430.2 | 1435.1 | 1406.6 | 1423.3 | 1050.0 |
| 45° | 1342.0 | 1340.5 | 1341.4 | 1370.7 | 1402.5 | 1439.6 | 1524.6 | 1533.2 | 1492.8 | 1492.4 | 1116.3 |
| 47.5° | 1251.9 | 1249.0 | 1272.9 | 1322.8 | 1396.4 | 1468.6 | 1581.7 | 1594.9 | 1553.2 | 1532.0 | 1157.9 |
| 50° | 1075.3 | 1083.5 | 1121.2 | 1196.2 | 1308.1 | 1428.8 | 1581.1 | 1604.1 | 1555.4 | 1528.5 | 1151.0 |
| 52.5° | 778.9 | 777.3 | 859.9 | 963.0 | 1099.2 | 1301.6 | 1497.1 | 1530.7 | 1501.0 | 1494.4 | 1135.5 |
| 55° | 423.8 | 438.7 | 494.3 | 630.9 | 800.9 | 1060.9 | 1305.3 | 1378.7 | 1413.1 | 1482.0 | 1163.4 |
| 57.5° | 155.7 | 162.3 | 197.1 | 293.8 | 424.0 | 659.7 | 997.0 | 1107.7 | 1214.2 | 1447.4 | 1158.7 |
| 60° | 62.8 | 64.0 | 77.9 | 108.0 | 178.2 | 335.7 | 598.1 | 696.4 | 796.7 | 1107.9 | 889.2 |
| 62.5° | 45.7 | 47.3 | 52.8 | 63.2 | 90.1 | 146.8 | 257.9 | 299.9 | 327.8 | 548.8 | 438.1 |
| 65° | 36.9 | 38.1 | 42.6 | 47.3 | 59.5 | 78.9 | 83.2 | 80.1 | 79.7 | 141.9 | 100.5 |
| 67.5° | 30.6 | 31.8 | 35.1 | 38.3 | 42.8 | 39.3 | 28.5 | 30.0 | 24.5 | 24.3 | 19.8 |
| 70° | 22.4 | 23.9 | 27.1 | 30.6 | 25.7 | 10.6 | 16.5 | 24.5 | 18.6 | 15.5 | 15.1 |
| 72.5° | 16.9 | 17.9 | 21.0 | 20.0 | 7.5 | 4.1 | 11.0 | 17.7 | 14.3 | 11.4 | 11.2 |
| 75° | 12.6 | 13.3 | 10.6 | 3.3 | 0.8 | 1.0 | 4.1 | 7.3 | 8.0 | 6.5 | 6.5 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 |



REPORT NUMBER: P628869
 CATALOG NUMBER: GWS-SA1A-740-U-T2R-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 | 227.7 |
| 2.5° | 232.4 | 223.8 | 211.6 | 201.4 | 193.7 | 186.1 | 180.4 | 174.7 | 174.5 | 171.6 | 171.0 |
| 5° | 242.2 | 226.7 | 204.3 | 188.2 | 178.4 | 172.5 | 168.4 | 166.3 | 165.3 | 164.3 | 163.9 |
| 7.5° | 256.2 | 234.0 | 203.0 | 185.9 | 177.8 | 173.9 | 171.0 | 169.8 | 169.2 | 168.4 | 168.2 |
| 10° | 273.6 | 244.6 | 207.5 | 190.2 | 183.1 | 179.4 | 176.3 | 174.5 | 173.5 | 172.1 | 171.6 |
| 12.5° | 294.4 | 257.7 | 214.7 | 197.3 | 189.8 | 184.9 | 180.8 | 178.2 | 176.7 | 174.9 | 174.5 |
| 15° | 316.8 | 271.7 | 222.6 | 203.9 | 194.9 | 188.6 | 183.5 | 179.4 | 176.7 | 174.5 | 173.9 |
| 17.5° | 340.0 | 286.0 | 229.7 | 208.3 | 197.3 | 189.8 | 182.4 | 176.9 | 173.7 | 170.8 | 170.0 |
| 20° | 366.1 | 300.7 | 234.4 | 209.2 | 196.5 | 186.5 | 178.0 | 171.0 | 167.8 | 163.9 | 163.1 |
| 22.5° | 393.4 | 314.3 | 236.5 | 207.3 | 192.0 | 180.4 | 171.2 | 164.1 | 159.4 | 155.3 | 154.1 |
| 25° | 419.9 | 326.6 | 235.5 | 202.2 | 185.3 | 171.8 | 162.5 | 155.1 | 150.0 | 146.0 | 144.9 |
| 27.5° | 448.1 | 336.8 | 231.8 | 194.7 | 176.1 | 162.5 | 153.5 | 147.2 | 142.5 | 138.0 | 137.0 |
| 30° | 479.7 | 346.1 | 225.9 | 185.5 | 165.3 | 152.9 | 146.0 | 141.7 | 136.6 | 131.9 | 130.5 |
| 32.5° | 517.8 | 354.5 | 217.3 | 174.5 | 155.7 | 144.5 | 140.7 | 137.4 | 131.5 | 126.6 | 125.6 |
| 35° | 561.4 | 361.4 | 206.5 | 163.1 | 146.4 | 139.2 | 138.4 | 134.1 | 126.4 | 120.7 | 119.5 |
| 37.5° | 612.0 | 368.2 | 193.7 | 151.9 | 139.4 | 136.8 | 137.0 | 129.7 | 120.3 | 113.3 | 112.5 |
| 40° | 666.4 | 374.9 | 179.4 | 142.1 | 133.1 | 135.4 | 133.5 | 123.1 | 107.8 | 101.1 | 100.3 |
| 42.5° | 723.1 | 382.2 | 164.9 | 132.9 | 127.8 | 129.9 | 127.2 | 110.1 | 99.1 | 95.6 | 95.2 |
| 45° | 774.2 | 391.0 | 149.2 | 123.7 | 122.5 | 121.9 | 117.4 | 99.7 | 95.0 | 92.5 | 92.3 |
| 47.5° | 811.1 | 389.6 | 132.5 | 115.0 | 116.8 | 114.8 | 101.1 | 94.8 | 90.9 | 87.7 | 86.8 |
| 50° | 804.4 | 364.7 | 115.2 | 105.2 | 109.5 | 107.6 | 90.9 | 89.1 | 85.6 | 82.2 | 80.9 |
| 52.5° | 787.3 | 330.9 | 100.1 | 94.8 | 101.5 | 97.2 | 84.0 | 82.2 | 79.1 | 74.6 | 73.2 |
| 55° | 796.5 | 299.1 | 88.3 | 86.4 | 93.4 | 80.5 | 76.2 | 73.4 | 70.1 | 65.2 | 64.6 |
| 57.5° | 766.9 | 244.0 | 70.9 | 72.2 | 82.6 | 68.7 | 66.9 | 62.4 | 56.9 | 53.6 | 53.2 |
| 60° | 530.8 | 131.1 | 44.4 | 45.9 | 59.7 | 57.7 | 59.9 | 55.9 | 49.1 | 46.1 | 45.5 |
| 62.5° | 243.8 | 52.6 | 24.3 | 23.2 | 31.4 | 39.1 | 51.4 | 51.0 | 42.6 | 37.7 | 37.3 |
| 65° | 59.1 | 24.1 | 17.3 | 16.3 | 17.7 | 23.4 | 33.4 | 40.2 | 34.5 | 28.7 | 28.1 |
| 67.5° | 19.2 | 19.6 | 15.9 | 14.9 | 15.7 | 17.5 | 20.0 | 22.2 | 22.0 | 20.2 | 19.8 |
| 70° | 15.3 | 17.7 | 14.7 | 13.5 | 13.5 | 14.1 | 13.5 | 10.8 | 9.4 | 10.2 | 10.6 |
| 72.5° | 11.4 | 13.5 | 11.6 | 10.4 | 10.0 | 9.8 | 8.4 | 6.1 | 4.3 | 3.9 | 3.7 |
| 75° | 6.7 | 7.5 | 7.1 | 6.1 | 5.7 | 5.1 | 4.1 | 2.7 | 1.4 | 1.0 | 0.6 |
| 77.5° | 1.2 | 1.4 | 1.6 | 1.2 | 1.0 | 0.8 | 0.6 | 0.2 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K): | 3905 | CRI (Ra): | 71.2 | R9: | -29.7 |
| CIE u': | 0.2273 | R1: | 68.9 | R10: | 46.2 |
| CIE v': | 0.5024 | R2: | 77.0 | R11: | 68.8 |
| Duv: | -0.0008 | R3: | 84.0 | R12: | 45.6 |
| CIE x: | 0.3841 | R4: | 71.6 | R13: | 69.5 |
| CIE y: | 0.3774 | R5: | 68.9 | R14: | 90.7 |
| CIE z: | 0.2385 | R6: | 68.3 | | |
| Peak Wavelength (nm): | 443 | R7: | 78.7 | | |
| Dominant Wavelength (nm): | 579 | R8: | 52.2 | | |
| Purity: | 28.7 | | | | |
| Rf: | 71.7 | | | | |
| Rg: | 96.9 | | | | |



Test Conditions

Stabilization Time: 211M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/312%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | IN0046 | 12/1/2020 | 12/1/2021 |

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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 4000K 4-step quadrangle

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$

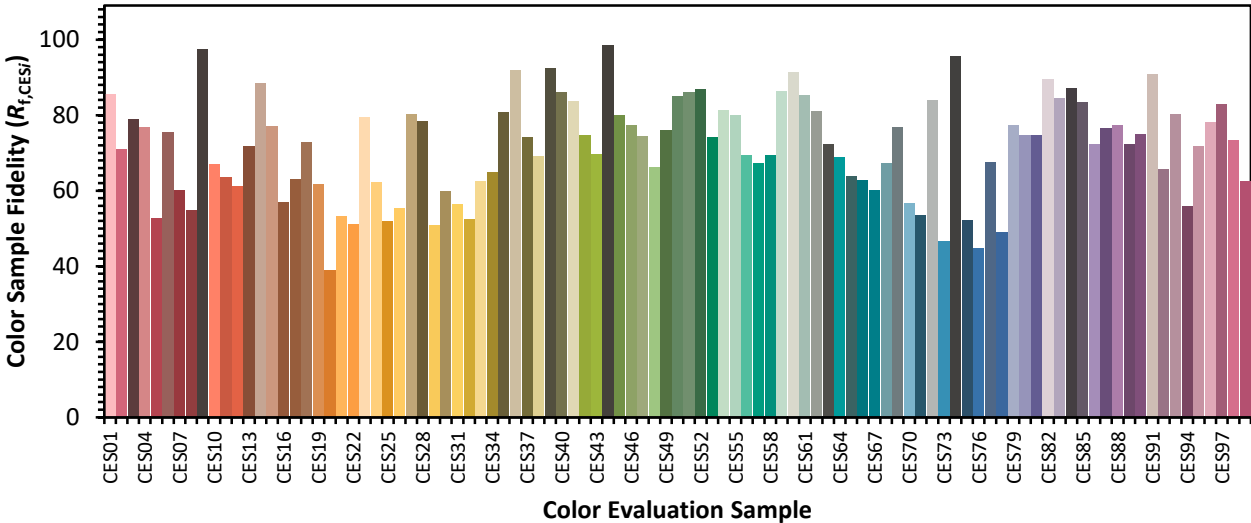


Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)