

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: P637754

Luminaire Tested: GWS-SA4D-740-U-SL2-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P637754
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-28)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA4D-740-U-SL2-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (64) 4000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14379.7 lumens
Efficiency: N/A
Efficacy: 88.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G1

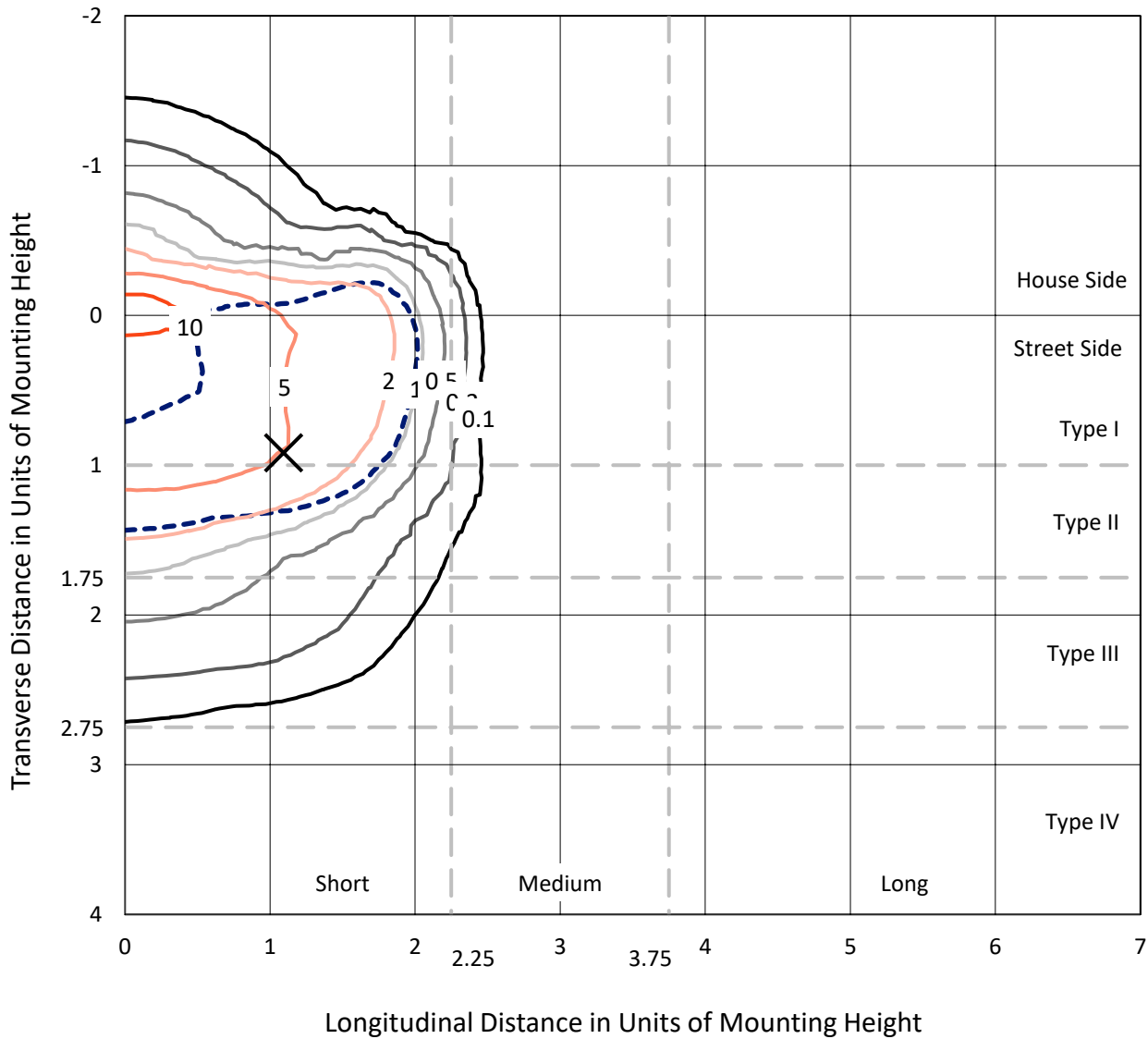
Input Watts (W): 162.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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 CATALOG NUMBER: GWS-SA4D-740-U-SL2-W-GRSBK

Iso-Footcandle Lines of Horizontal Illumination

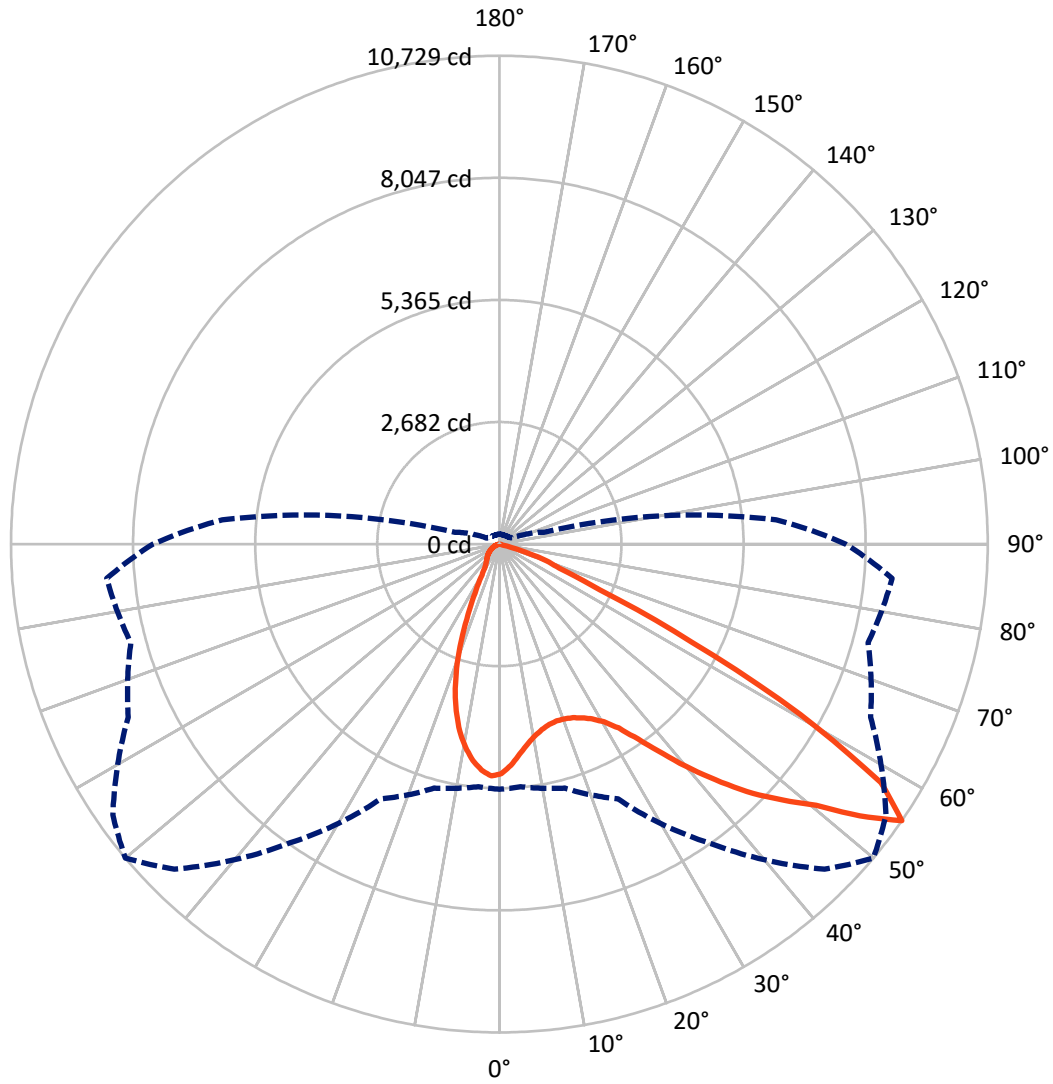
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.6 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 50-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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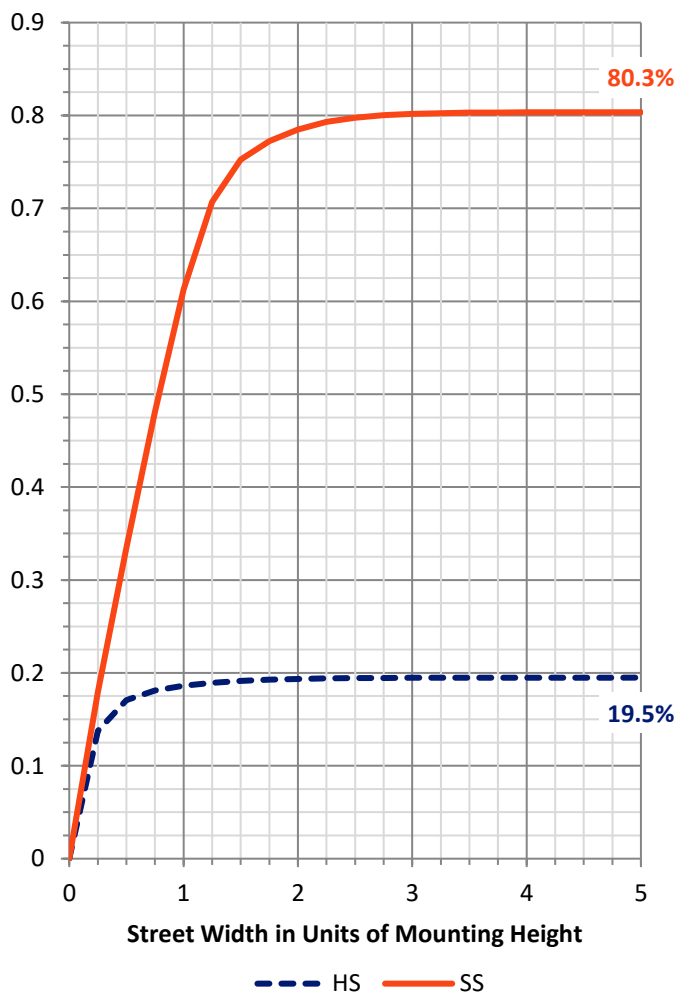
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2833.5 | 0.0 | 2833.5 |
| | % Fixture | 19.7 | 0.0 | 19.7 |
| Street Side | Lumens | 11546.2 | 0.0 | 11546.2 |
| | % Fixture | 80.3 | 0.0 | 80.3 |
| Total | Lumens | 14379.7 | 0.0 | 14379.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 443.1 | 3.1 |
| 10°-20° | 1090.3 | 7.6 |
| 20°-30° | 1537.9 | 10.7 |
| 30°-40° | 2275.9 | 15.8 |
| 40°-50° | 3283.3 | 22.8 |
| 50°-60° | 3872.9 | 26.9 |
| 60°-70° | 1727.6 | 12.0 |
| 70°-80° | 148.5 | 1.0 |
| 80°-90° | 0.1 | 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° | 14379.7 | 100.0 |
| 0°-180° | 14379.7 | 100.0 |

Coefficient of Utilization



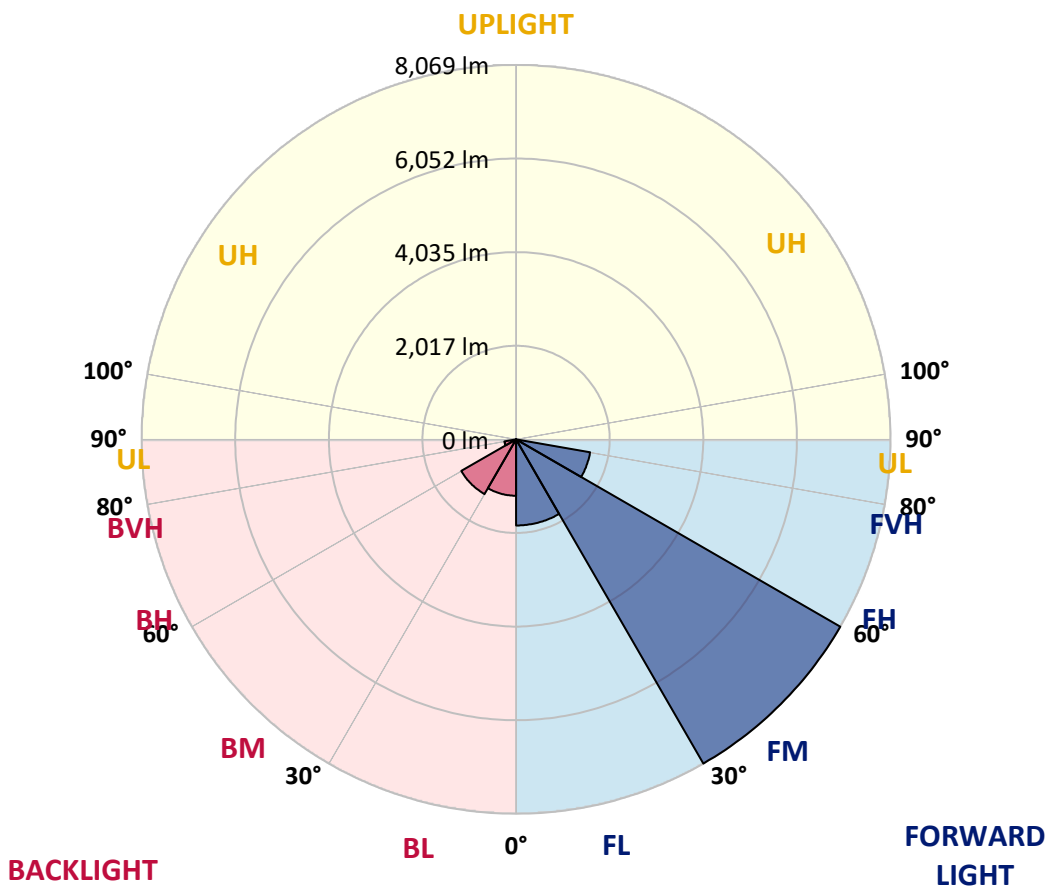
REPORT NUMBER: P637754

CATALOG NUMBER: GWS-SA4D-740-U-SL2-W-GRSBK

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1856.5 | 12.9 | | | |
| FM (30°-60°) | 8069.4 | 56.1 | | | |
| FH (60°-80°) | 1620.3 | 11.3 | | | G1/1800 |
| FVH (80°-90°) | 0.0 | 0.0 | | | G0/10 |
| BL (0°-30°) | 1214.9 | 8.4 | B3/2500 | | |
| BM (30°-60°) | 1362.7 | 9.5 | B2/2500 | | |
| BH (60°-80°) | 255.8 | 1.8 | B1/500 | | G1/500 |
| BVH (80°-90°) | 0.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G1
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 50° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|--------|--------|--------|
| 0° | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 |
| 2.5° | 4687.1 | 4690.6 | 4692.4 | 4739.7 | 4757.3 | 4827.5 | 4864.4 | 4883.7 | 4934.6 | 4994.3 | 5043.4 |
| 5° | 4372.9 | 4367.6 | 4376.4 | 4436.1 | 4474.7 | 4578.2 | 4634.4 | 4673.0 | 4785.4 | 4925.8 | 5043.4 |
| 7.5° | 4099.0 | 4109.5 | 4120.1 | 4185.0 | 4243.0 | 4355.3 | 4436.1 | 4494.0 | 4650.2 | 4859.1 | 5057.5 |
| 10° | 3905.9 | 3905.9 | 3921.7 | 3995.4 | 4063.9 | 4202.6 | 4283.3 | 4357.1 | 4543.1 | 4799.4 | 5073.3 |
| 12.5° | 3763.7 | 3765.5 | 3784.8 | 3869.0 | 3948.0 | 4092.0 | 4176.2 | 4248.2 | 4453.6 | 4739.7 | 5076.8 |
| 15° | 3697.0 | 3691.7 | 3707.5 | 3797.1 | 3884.8 | 4020.0 | 4107.8 | 4178.0 | 4390.4 | 4706.4 | 5094.4 |
| 17.5° | 3679.4 | 3675.9 | 3688.2 | 3776.0 | 3865.5 | 3997.2 | 4083.2 | 4153.4 | 4381.6 | 4716.9 | 5147.0 |
| 20° | 3730.4 | 3723.3 | 3718.1 | 3793.6 | 3877.8 | 4007.7 | 4097.2 | 4176.2 | 4423.8 | 4774.9 | 5227.8 |
| 22.5° | 3851.5 | 3851.5 | 3839.2 | 3876.1 | 3932.2 | 4049.9 | 4142.9 | 4246.5 | 4534.4 | 4890.7 | 5347.1 |
| 25° | 4074.4 | 4056.9 | 4034.1 | 4049.9 | 4042.8 | 4116.6 | 4227.2 | 4371.1 | 4743.3 | 5082.1 | 5492.8 |
| 27.5° | 4329.0 | 4344.8 | 4306.1 | 4307.9 | 4246.5 | 4220.1 | 4348.3 | 4566.0 | 5054.0 | 5352.4 | 5708.8 |
| 30° | 4674.8 | 4662.5 | 4664.3 | 4659.0 | 4516.8 | 4392.2 | 4530.8 | 4820.5 | 5445.4 | 5764.9 | 5989.6 |
| 32.5° | 4945.1 | 4962.7 | 5020.6 | 5054.0 | 4867.9 | 4667.8 | 4815.2 | 5166.3 | 5891.3 | 6235.4 | 6333.7 |
| 35° | 5231.3 | 5262.9 | 5380.5 | 5489.3 | 5333.1 | 5103.1 | 5261.1 | 5624.5 | 6310.9 | 6700.6 | 6728.7 |
| 37.5° | 5533.2 | 5596.4 | 5736.9 | 5928.2 | 5903.6 | 5700.0 | 5843.9 | 6163.4 | 6640.9 | 6981.5 | 7055.2 |
| 40° | 5879.0 | 5940.5 | 6170.4 | 6446.1 | 6504.0 | 6458.3 | 6505.7 | 6691.8 | 6858.6 | 6993.8 | 7195.6 |
| 42.5° | 6258.2 | 6342.5 | 6633.9 | 7002.5 | 7220.2 | 7260.6 | 7150.0 | 7130.7 | 6953.4 | 6853.3 | 7165.8 |
| 45° | 6705.9 | 6804.2 | 7134.2 | 7611.7 | 7957.5 | 8011.9 | 7820.6 | 7573.1 | 7013.1 | 6749.8 | 7076.3 |
| 47.5° | 7207.9 | 7301.0 | 7629.2 | 8203.3 | 8717.6 | 8738.7 | 8405.2 | 8006.7 | 7190.4 | 6869.1 | 7144.7 |
| 50° | 7376.5 | 7434.4 | 7718.8 | 8392.9 | 9340.8 | 9502.3 | 9019.6 | 8494.7 | 7546.7 | 7220.2 | 7478.3 |
| 52.5° | 6797.1 | 6820.0 | 7067.5 | 7748.6 | 9214.4 | 10251.9 | 9916.6 | 9223.2 | 8180.5 | 7755.6 | 7992.6 |
| 55° | 5385.8 | 5348.9 | 5549.0 | 6174.0 | 8008.4 | 10099.2 | 10729.4 | 10367.8 | 8996.7 | 8384.1 | 8661.5 |
| 57.5° | 3767.2 | 3723.3 | 3677.7 | 4100.8 | 5975.6 | 8561.4 | 9886.8 | 10527.5 | 9774.4 | 9007.3 | 9382.9 |
| 60° | 3096.6 | 3054.5 | 2833.3 | 2638.5 | 3612.7 | 6147.6 | 7594.1 | 8800.1 | 9711.2 | 8975.7 | 9360.1 |
| 62.5° | 2675.3 | 2650.7 | 2561.2 | 2296.1 | 2125.9 | 3509.2 | 4755.5 | 5910.6 | 7451.9 | 7048.2 | 7069.2 |
| 65° | 2101.3 | 2094.3 | 2155.7 | 2183.8 | 1880.1 | 1941.5 | 2426.0 | 3072.1 | 4028.8 | 3798.8 | 3602.2 |
| 67.5° | 1436.0 | 1420.2 | 1536.0 | 1888.9 | 1808.1 | 1532.5 | 1420.2 | 1432.5 | 1743.2 | 1065.6 | 846.1 |
| 70° | 912.8 | 876.0 | 877.7 | 1170.9 | 1471.1 | 1209.5 | 1095.4 | 963.7 | 867.2 | 158.0 | 179.1 |
| 72.5° | 584.6 | 561.7 | 482.8 | 528.4 | 681.1 | 589.8 | 595.1 | 512.6 | 342.3 | 84.3 | 98.3 |
| 75° | 245.8 | 226.5 | 173.8 | 138.7 | 136.9 | 86.0 | 75.5 | 70.2 | 47.4 | 47.4 | 50.9 |
| 77.5° | 1.8 | 0.0 | 0.0 | 1.8 | 3.5 | 1.8 | 1.8 | 3.5 | 7.0 | 10.5 | 12.3 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 |
| 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: P637754
 CATALOG NUMBER: GWS-SA4D-740-U-SL2-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 | 5045.2 |
| 2.5° | 5073.3 | 5031.2 | 5078.6 | 5096.1 | 5094.4 | 5096.1 | 5045.2 | 5010.1 | 5008.3 | 4964.4 | 4943.4 |
| 5° | 5092.6 | 5059.2 | 5094.4 | 5071.5 | 5017.1 | 4948.6 | 4857.4 | 4778.4 | 4743.3 | 4692.4 | 4667.8 |
| 7.5° | 5129.5 | 5094.4 | 5089.1 | 4997.8 | 4862.6 | 4718.7 | 4557.2 | 4413.2 | 4336.0 | 4243.0 | 4248.2 |
| 10° | 5155.8 | 5115.4 | 5047.0 | 4860.9 | 4636.2 | 4406.2 | 4165.7 | 3951.5 | 3816.4 | 3691.7 | 3670.7 |
| 12.5° | 5166.3 | 5106.6 | 4946.9 | 4666.0 | 4350.0 | 4049.9 | 3697.0 | 3391.6 | 3180.9 | 3017.6 | 2994.8 |
| 15° | 5185.6 | 5089.1 | 4818.7 | 4430.8 | 3997.2 | 3572.4 | 3123.0 | 2705.2 | 2426.0 | 2238.2 | 2254.0 |
| 17.5° | 5215.5 | 5069.8 | 4674.8 | 4167.5 | 3618.0 | 3017.6 | 2410.2 | 1931.0 | 1674.7 | 1565.9 | 1567.6 |
| 20° | 5257.6 | 5047.0 | 4516.8 | 3877.8 | 3163.3 | 2390.9 | 1685.2 | 1323.6 | 1251.6 | 1248.1 | 1242.9 |
| 22.5° | 5313.8 | 5024.1 | 4348.3 | 3560.1 | 2624.4 | 1674.7 | 1121.7 | 1009.4 | 1039.2 | 1097.2 | 1107.7 |
| 25° | 5380.5 | 4996.0 | 4160.4 | 3202.0 | 2036.3 | 1098.9 | 840.9 | 823.3 | 895.3 | 972.5 | 990.1 |
| 27.5° | 5484.1 | 4982.0 | 3946.3 | 2794.7 | 1428.9 | 788.2 | 688.1 | 698.7 | 763.6 | 828.6 | 844.4 |
| 30° | 5659.6 | 5008.3 | 3712.8 | 2338.3 | 918.1 | 628.5 | 596.9 | 612.7 | 647.8 | 681.1 | 695.2 |
| 32.5° | 5898.4 | 5085.6 | 3486.3 | 1839.7 | 654.8 | 545.9 | 538.9 | 547.7 | 561.7 | 581.1 | 586.3 |
| 35° | 6177.5 | 5219.0 | 3252.9 | 1316.6 | 540.7 | 498.6 | 491.5 | 491.5 | 498.6 | 502.1 | 503.8 |
| 37.5° | 6407.4 | 5359.4 | 3033.4 | 876.0 | 484.5 | 461.7 | 451.2 | 445.9 | 444.1 | 447.6 | 449.4 |
| 40° | 6507.5 | 5417.4 | 2794.7 | 637.2 | 444.1 | 428.3 | 412.5 | 396.7 | 396.7 | 409.0 | 410.8 |
| 42.5° | 6437.3 | 5352.4 | 2519.1 | 526.6 | 416.0 | 393.2 | 368.6 | 354.6 | 361.6 | 373.9 | 377.4 |
| 45° | 6288.1 | 5192.7 | 2215.4 | 465.2 | 388.0 | 358.1 | 330.0 | 321.2 | 328.3 | 344.1 | 347.6 |
| 47.5° | 6263.5 | 5087.3 | 1852.0 | 424.8 | 358.1 | 328.3 | 298.4 | 289.7 | 298.4 | 310.7 | 314.2 |
| 50° | 6507.5 | 5178.6 | 1448.3 | 389.7 | 330.0 | 296.7 | 272.1 | 263.3 | 268.6 | 275.6 | 279.1 |
| 52.5° | 6953.4 | 5517.4 | 1169.1 | 356.4 | 296.7 | 265.1 | 249.3 | 238.7 | 238.7 | 245.8 | 247.5 |
| 55° | 7611.7 | 6109.0 | 1009.4 | 317.7 | 258.1 | 240.5 | 226.5 | 215.9 | 215.9 | 219.4 | 221.2 |
| 57.5° | 8370.0 | 6825.2 | 1046.3 | 266.8 | 226.5 | 217.7 | 205.4 | 196.6 | 200.1 | 200.1 | 200.1 |
| 60° | 8264.7 | 6772.6 | 1120.0 | 224.7 | 200.1 | 196.6 | 186.1 | 182.6 | 191.3 | 184.3 | 180.8 |
| 62.5° | 6087.9 | 4678.3 | 586.3 | 184.3 | 172.0 | 168.5 | 161.5 | 168.5 | 180.8 | 161.5 | 154.5 |
| 65° | 2956.2 | 2264.5 | 235.2 | 151.0 | 145.7 | 142.2 | 138.7 | 149.2 | 156.2 | 126.4 | 119.4 |
| 67.5° | 695.2 | 565.3 | 152.7 | 128.1 | 121.1 | 114.1 | 117.6 | 119.4 | 114.1 | 86.0 | 82.5 |
| 70° | 180.8 | 177.3 | 119.4 | 107.1 | 96.6 | 89.5 | 89.5 | 87.8 | 75.5 | 54.4 | 50.9 |
| 72.5° | 98.3 | 96.6 | 86.0 | 80.8 | 66.7 | 59.7 | 61.4 | 54.4 | 42.1 | 31.6 | 29.8 |
| 75° | 49.2 | 52.7 | 49.2 | 45.6 | 36.9 | 33.4 | 33.4 | 29.8 | 21.1 | 12.3 | 12.3 |
| 77.5° | 10.5 | 12.3 | 12.3 | 10.5 | 8.8 | 7.0 | 7.0 | 8.8 | 3.5 | 0.0 | 0.0 |
| 80° | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 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



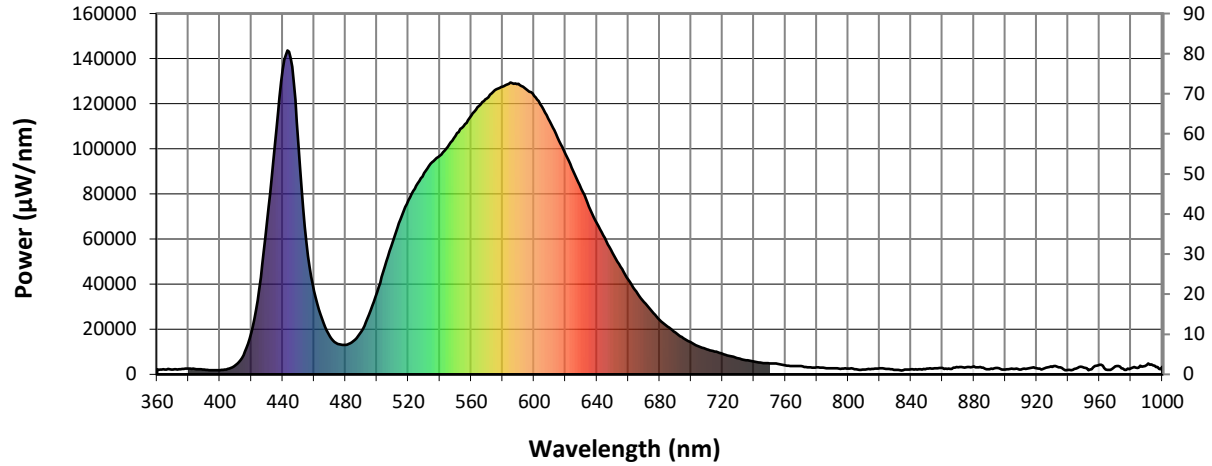
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

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 $R_a = 71.2$
 $R_g = -29.7$

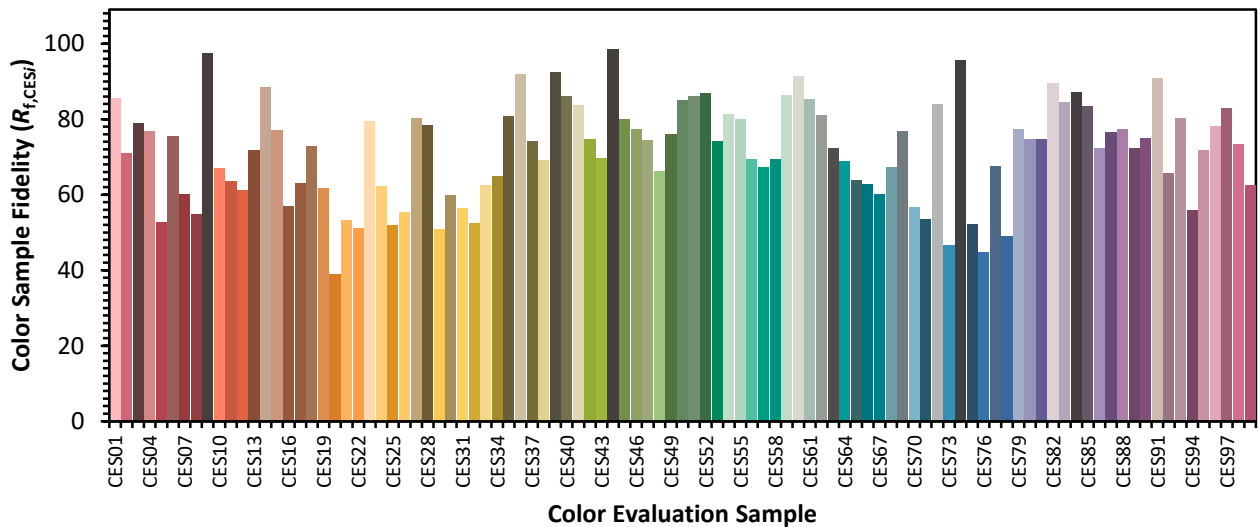


Color Vector Graphics



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)