

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: P318642

Luminaire Tested: **GLEON-SA8B-727-U-T4FT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P318642
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA8B-727-U-T4FT
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(8) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 38531 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

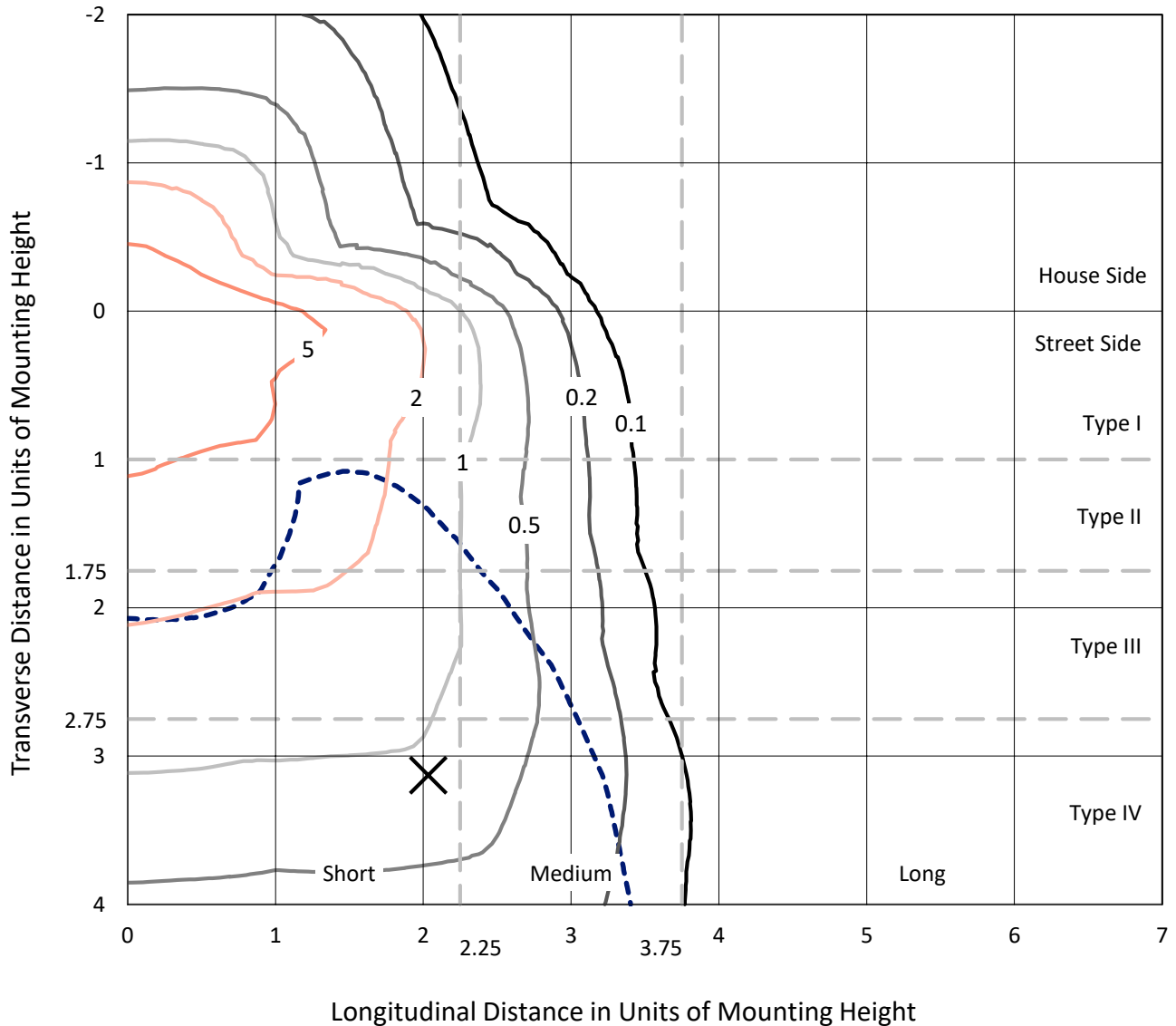
Input Watts (W): 334
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P318642
 CATALOG NUMBER: GLEON-SA8B-727-U-T4FT

Iso-Footcandle Lines of Horizontal Illumination

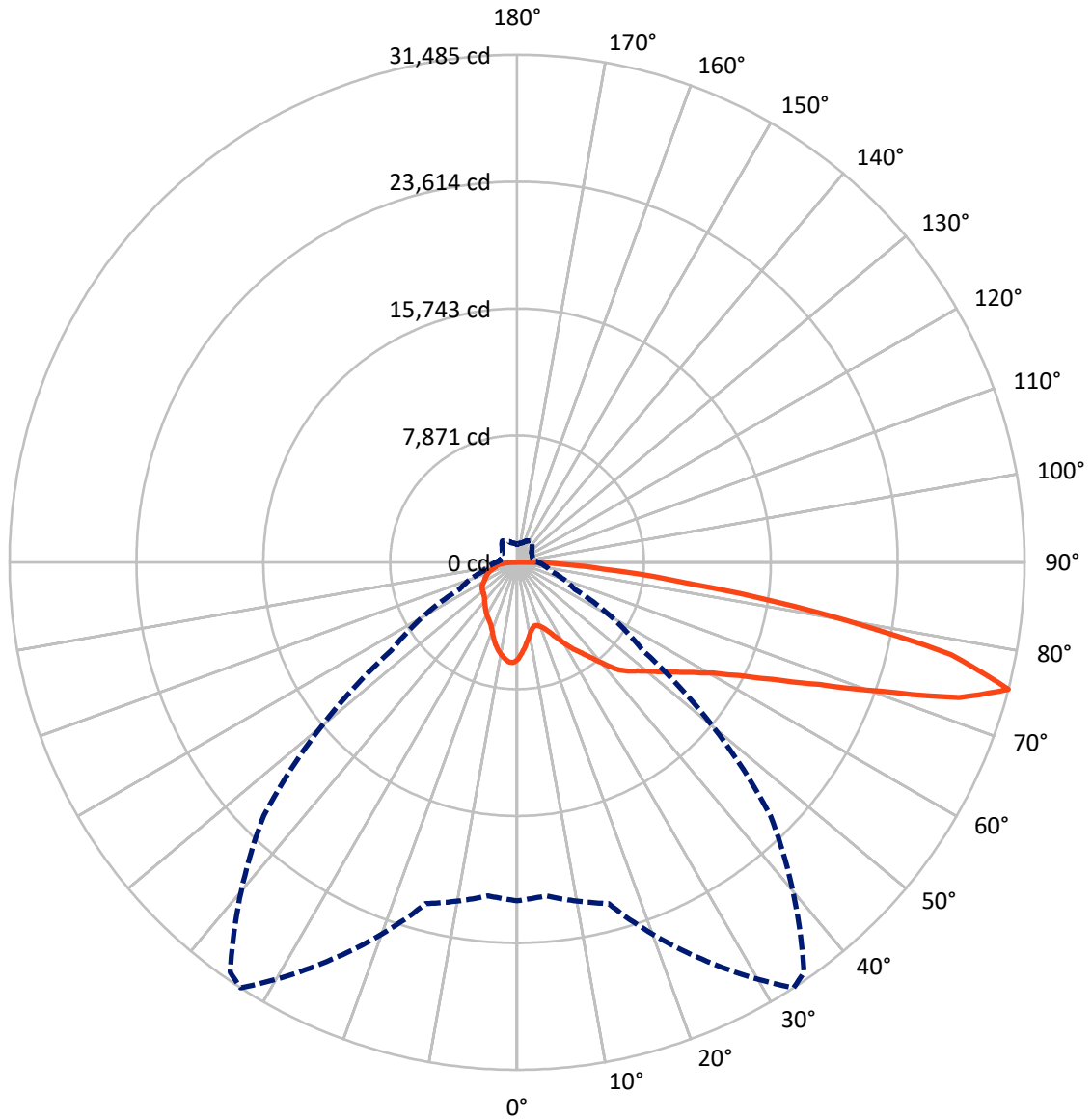
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.6 fc
 Type IV - Short - N/A

REPORT NUMBER: P318642
CATALOG NUMBER: GLEON-SA8B-727-U-T4FT

Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral - - - Horizontal Cone Through 75-Deg Vertical

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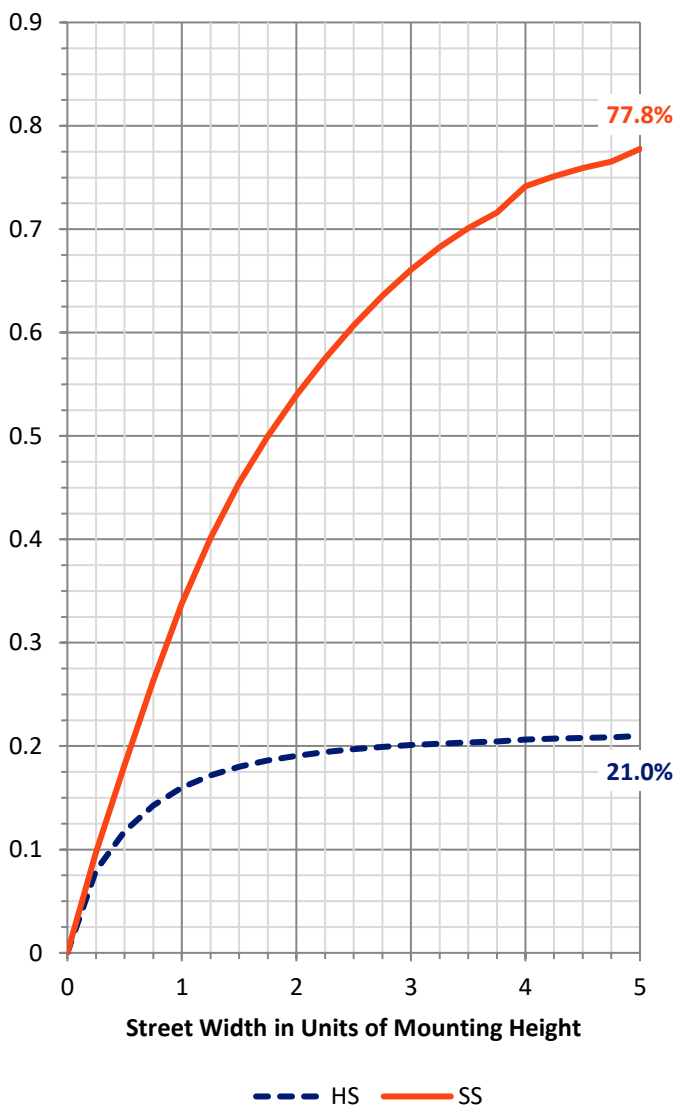
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8273.6 | 0.0 | 8273.6 |
| | % Fixture | 21.5 | 0.0 | 21.5 |
| Street Side | Lumens | 30257.4 | 0.0 | 30257.4 |
| | % Fixture | 78.5 | 0.0 | 78.5 |
| Total | Lumens | 38531.0 | 0.0 | 38531.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 544.7 | 1.4 |
| 10°-20° | 1475.2 | 3.8 |
| 20°-30° | 2409.2 | 6.3 |
| 30°-40° | 3587.9 | 9.3 |
| 40°-50° | 5146.0 | 13.4 |
| 50°-60° | 7064.7 | 18.3 |
| 60°-70° | 8844.6 | 23.0 |
| 70°-80° | 8001.3 | 20.8 |
| 80°-90° | 1457.5 | 3.8 |
| 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° | 38531.0 | 100.0 |
| 0°-180° | 38531.0 | 100.0 |

Coefficient of Utilization

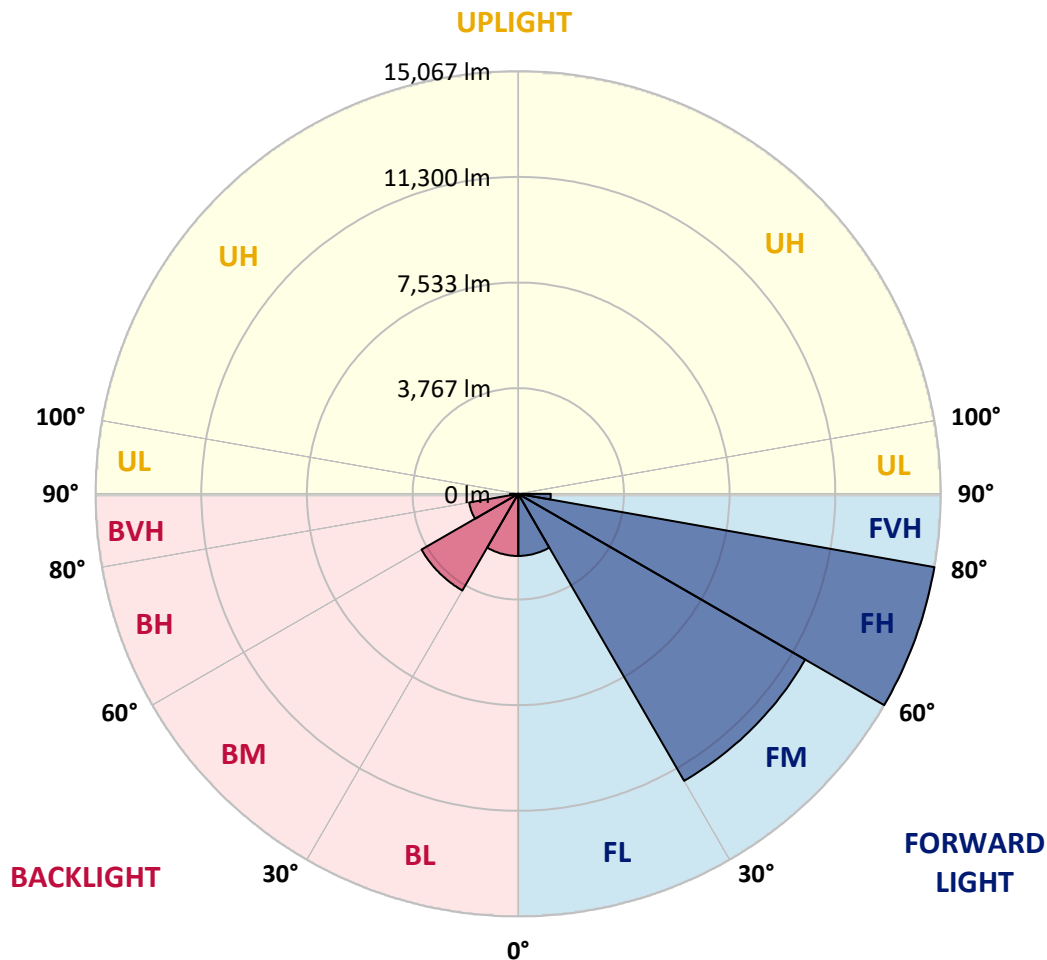


REPORT NUMBER: P318642
 CATALOG NUMBER: GLEON-SA8B-727-U-T4FT

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2213.0 | 5.7 | | | |
| FM (30°-60°) | 11816.7 | 30.7 | | | |
| FH (60°-80°) | 15067.0 | 39.1 | | | G5 |
| FVH (80°-90°) | 1160.8 | 3.0 | | | G5 |
| BL (0°-30°) | 2216.1 | 5.8 | B3/2500 | | |
| BM (30°-60°) | 3981.9 | 10.3 | B3/5000 | | |
| BH (60°-80°) | 1779.0 | 4.6 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 296.7 | 0.8 | | | G3/500 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5
 Type IV Short





REPORT NUMBER: P318642
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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 |
| 2.5° | 5592.7 | 5571.4 | 5611.3 | 5616.7 | 5651.3 | 5664.6 | 5712.5 | 5787.0 | 5848.3 | 5918.8 | 5982.7 |
| 5° | 5085.6 | 5071.0 | 5126.9 | 5166.8 | 5242.7 | 5274.6 | 5387.7 | 5546.1 | 5687.2 | 5846.9 | 5992.0 |
| 7.5° | 4603.8 | 4595.8 | 4658.4 | 4748.9 | 4836.7 | 4880.6 | 5076.3 | 5306.6 | 5542.1 | 5800.3 | 6022.6 |
| 10° | 4197.9 | 4195.2 | 4255.1 | 4344.3 | 4473.4 | 4522.6 | 4775.5 | 5079.0 | 5409.0 | 5764.4 | 6074.5 |
| 12.5° | 3970.3 | 3979.6 | 4007.5 | 4082.1 | 4201.9 | 4251.1 | 4531.9 | 4888.6 | 5297.2 | 5752.4 | 6150.4 |
| 15° | 4026.2 | 4040.8 | 3992.9 | 3990.2 | 4075.4 | 4114.0 | 4377.5 | 4752.9 | 5217.4 | 5772.4 | 6260.9 |
| 17.5° | 4264.4 | 4267.1 | 4140.6 | 4060.8 | 4112.7 | 4132.6 | 4329.6 | 4675.7 | 5170.8 | 5817.6 | 6399.3 |
| 20° | 4599.8 | 4593.2 | 4369.6 | 4236.5 | 4264.4 | 4269.7 | 4397.5 | 4677.0 | 5166.8 | 5896.2 | 6579.0 |
| 22.5° | 5044.4 | 4995.1 | 4694.3 | 4513.3 | 4506.6 | 4498.7 | 4571.9 | 4775.5 | 5225.4 | 6023.9 | 6793.2 |
| 25° | 5624.7 | 5578.1 | 5164.1 | 4916.6 | 4863.3 | 4843.4 | 4854.0 | 4985.8 | 5341.2 | 6161.0 | 7032.8 |
| 27.5° | 6270.2 | 6189.0 | 5789.7 | 5439.6 | 5329.2 | 5301.2 | 5237.3 | 5282.6 | 5467.6 | 6292.8 | 7317.6 |
| 30° | 6810.5 | 6766.6 | 6417.9 | 6002.6 | 5872.2 | 5832.3 | 5664.6 | 5615.3 | 5649.9 | 6472.5 | 7677.0 |
| 32.5° | 7112.7 | 7083.4 | 6871.8 | 6536.4 | 6415.2 | 6359.3 | 6122.4 | 6023.9 | 5942.8 | 6756.0 | 8164.1 |
| 35° | 7478.7 | 7460.1 | 7332.3 | 7088.7 | 6909.0 | 6850.5 | 6666.8 | 6564.3 | 6355.4 | 7145.9 | 8793.7 |
| 37.5° | 7944.5 | 7924.6 | 7927.2 | 7730.2 | 7516.0 | 7461.4 | 7340.3 | 7232.5 | 6890.4 | 7658.4 | 9477.8 |
| 40° | 8471.6 | 8433.0 | 8418.3 | 8409.0 | 8273.3 | 8242.7 | 8178.8 | 8032.4 | 7561.2 | 8270.6 | 10152.6 |
| 42.5° | 9264.8 | 9127.7 | 8834.9 | 8945.4 | 9079.8 | 9063.9 | 9115.8 | 8905.5 | 8306.5 | 8994.7 | 10811.4 |
| 45° | 10030.1 | 9805.2 | 9299.4 | 9323.4 | 9617.5 | 9706.7 | 10095.4 | 9946.3 | 9114.4 | 9787.9 | 11492.9 |
| 47.5° | 10378.9 | 10208.5 | 9778.6 | 9779.9 | 10071.4 | 10256.4 | 11108.2 | 11001.7 | 9963.6 | 10689.0 | 12324.7 |
| 50° | 10768.8 | 10598.5 | 10212.5 | 10357.6 | 10611.8 | 10808.8 | 12086.5 | 12031.9 | 10771.5 | 11675.2 | 13321.6 |
| 52.5° | 11194.7 | 10905.9 | 10661.0 | 10920.6 | 11277.3 | 11506.2 | 13066.1 | 12917.0 | 11512.8 | 12668.1 | 14467.6 |
| 55° | 11200.1 | 11121.5 | 11307.9 | 11498.2 | 12031.9 | 12312.7 | 14092.2 | 13698.3 | 12117.1 | 13643.7 | 15400.6 |
| 57.5° | 11837.6 | 11709.8 | 12105.1 | 12193.0 | 12890.4 | 13207.2 | 15113.1 | 14378.4 | 12732.0 | 14391.7 | 15903.7 |
| 60° | 12681.4 | 12572.3 | 12895.7 | 13127.3 | 13952.5 | 14375.7 | 16203.2 | 15077.2 | 13215.1 | 14956.0 | 15879.7 |
| 62.5° | 14138.8 | 14015.0 | 14011.1 | 14335.8 | 15447.2 | 15939.6 | 17426.3 | 15762.6 | 13406.8 | 15067.8 | 15202.3 |
| 65° | 16272.4 | 16075.4 | 15704.0 | 15858.4 | 17511.5 | 18002.6 | 18793.2 | 16259.1 | 13153.9 | 14468.9 | 13457.4 |
| 67.5° | 18348.7 | 18342.0 | 17885.5 | 18202.3 | 20237.3 | 20631.3 | 20350.4 | 16308.3 | 12364.7 | 12383.3 | 10361.6 |
| 70° | 20418.3 | 20444.9 | 20367.7 | 21469.8 | 23920.1 | 24330.0 | 22008.8 | 15646.8 | 10590.5 | 8942.7 | 6207.6 |
| 72.5° | 22058.1 | 22051.4 | 22440.1 | 25281.7 | 28699.6 | 28607.7 | 23406.3 | 13642.4 | 7603.8 | 4827.4 | 2966.7 |
| 75° | 20996.0 | 20764.4 | 21922.3 | 27169.0 | 31485.3 | 31036.7 | 22217.8 | 9516.4 | 3946.3 | 2197.4 | 1597.2 |
| 77.5° | 13694.3 | 13913.9 | 15613.5 | 22444.0 | 27540.3 | 26994.6 | 16300.3 | 4440.1 | 1859.4 | 1441.4 | 1157.9 |
| 80° | 4959.2 | 5190.8 | 7311.0 | 12713.4 | 18974.2 | 18885.0 | 8027.0 | 1824.8 | 1257.8 | 1088.7 | 843.8 |
| 82.5° | 1706.3 | 1791.5 | 2884.2 | 5645.9 | 10712.9 | 11112.2 | 3020.0 | 1036.8 | 914.4 | 772.0 | 577.6 |
| 85° | 669.5 | 766.6 | 1319.0 | 2716.5 | 5403.7 | 5443.6 | 1223.2 | 620.2 | 636.2 | 505.8 | 316.8 |
| 87.5° | 254.2 | 308.8 | 630.9 | 1261.8 | 2467.6 | 2266.6 | 437.9 | 295.5 | 362.0 | 300.8 | 150.4 |
| 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: P318642
 CATALOG NUMBER: GLEON-SA8B-727-U-T4FT

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 | 6022.6 |
| 2.5° | 6031.9 | 6059.9 | 6118.4 | 6158.4 | 6201.0 | 6212.9 | 6218.3 | 6228.9 | 6239.6 | 6235.6 | 6236.9 |
| 5° | 6069.2 | 6123.8 | 6218.3 | 6258.2 | 6276.8 | 6255.5 | 6214.3 | 6181.0 | 6157.0 | 6143.7 | 6139.7 |
| 7.5° | 6130.4 | 6207.6 | 6308.8 | 6302.1 | 6259.5 | 6165.0 | 6058.5 | 5978.7 | 5912.1 | 5888.2 | 5874.9 |
| 10° | 6211.6 | 6302.1 | 6372.7 | 6296.8 | 6173.0 | 6009.3 | 5849.6 | 5725.8 | 5626.0 | 5587.4 | 5580.7 |
| 12.5° | 6315.4 | 6407.3 | 6420.6 | 6259.5 | 6054.6 | 5831.0 | 5614.0 | 5450.3 | 5301.2 | 5253.3 | 5242.7 |
| 15° | 6449.9 | 6536.4 | 6453.8 | 6194.3 | 5908.1 | 5607.4 | 5326.5 | 5104.2 | 4947.2 | 4888.6 | 4867.3 |
| 17.5° | 6590.9 | 6673.5 | 6460.5 | 6086.5 | 5716.5 | 5342.5 | 4989.8 | 4762.2 | 4582.5 | 4514.6 | 4506.6 |
| 20° | 6760.0 | 6797.2 | 6432.5 | 5932.1 | 5453.0 | 4999.1 | 4627.8 | 4413.5 | 4317.6 | 4269.7 | 4264.4 |
| 22.5° | 6968.9 | 6929.0 | 6368.7 | 5723.1 | 5118.9 | 4602.5 | 4300.3 | 4200.5 | 4176.6 | 4165.9 | 4169.9 |
| 25° | 7189.9 | 7067.4 | 6274.2 | 5450.3 | 4697.0 | 4205.8 | 4060.8 | 4088.7 | 4120.7 | 4116.7 | 4116.7 |
| 27.5° | 7433.4 | 7208.5 | 6129.1 | 5088.3 | 4229.8 | 3881.1 | 3898.4 | 4000.9 | 4048.8 | 4047.5 | 4046.1 |
| 30° | 7746.2 | 7368.2 | 5944.1 | 4653.0 | 3793.2 | 3652.2 | 3757.3 | 3882.4 | 3947.6 | 3945.0 | 3946.3 |
| 32.5° | 8130.9 | 7543.9 | 5692.5 | 4167.2 | 3477.8 | 3483.1 | 3604.3 | 3728.0 | 3803.9 | 3797.2 | 3798.6 |
| 35° | 8580.7 | 7740.9 | 5351.8 | 3688.1 | 3268.8 | 3348.7 | 3444.5 | 3531.0 | 3602.9 | 3593.6 | 3584.3 |
| 37.5° | 9070.5 | 7933.9 | 4899.3 | 3259.5 | 3098.5 | 3223.6 | 3303.5 | 3318.1 | 3351.4 | 3327.4 | 3310.1 |
| 40° | 9536.4 | 8081.6 | 4316.3 | 2908.2 | 2926.8 | 3117.1 | 3169.0 | 3110.5 | 3050.6 | 3042.6 | 3018.6 |
| 42.5° | 9942.3 | 8130.9 | 3726.7 | 2627.3 | 2745.8 | 3005.3 | 3037.3 | 2914.8 | 2807.0 | 2756.4 | 2735.1 |
| 45° | 10370.9 | 8148.2 | 3177.0 | 2391.7 | 2571.4 | 2905.5 | 2940.1 | 2776.4 | 2624.7 | 2515.5 | 2479.6 |
| 47.5° | 10931.2 | 8273.3 | 2749.8 | 2217.4 | 2438.3 | 2838.9 | 2888.2 | 2665.9 | 2468.9 | 2313.2 | 2279.9 |
| 50° | 11664.6 | 8520.8 | 2402.4 | 2084.3 | 2351.8 | 2795.0 | 2850.9 | 2558.1 | 2341.2 | 2153.5 | 2120.2 |
| 52.5° | 12479.1 | 8748.4 | 2121.6 | 1976.5 | 2268.0 | 2717.8 | 2803.0 | 2480.9 | 2221.4 | 2005.8 | 1969.8 |
| 55° | 13048.8 | 8574.1 | 1895.3 | 1864.7 | 2158.8 | 2607.4 | 2736.5 | 2415.7 | 2049.7 | 1862.0 | 1830.1 |
| 57.5° | 13157.9 | 7977.8 | 1723.6 | 1748.9 | 2027.1 | 2468.9 | 2634.0 | 2270.6 | 1956.5 | 1799.5 | 1766.2 |
| 60° | 12859.8 | 7147.3 | 1595.8 | 1642.4 | 1886.0 | 2294.6 | 2442.3 | 2168.1 | 1867.3 | 1732.9 | 1705.0 |
| 62.5° | 12110.4 | 6296.8 | 1501.3 | 1546.6 | 1754.2 | 2117.6 | 2322.5 | 2060.3 | 1776.8 | 1657.0 | 1629.1 |
| 65° | 10597.1 | 5286.6 | 1410.8 | 1461.4 | 1631.8 | 1964.5 | 2214.7 | 1960.5 | 1687.7 | 1595.8 | 1569.2 |
| 67.5° | 7999.1 | 3959.6 | 1325.6 | 1370.9 | 1522.6 | 1831.4 | 2097.6 | 1862.0 | 1601.1 | 1542.6 | 1510.6 |
| 70° | 4710.3 | 2479.6 | 1228.5 | 1276.4 | 1408.2 | 1693.0 | 1972.5 | 1754.2 | 1493.3 | 1466.7 | 1425.5 |
| 72.5° | 2192.1 | 1492.0 | 1118.0 | 1164.6 | 1264.4 | 1508.0 | 1811.4 | 1613.1 | 1365.6 | 1307.0 | 1251.1 |
| 75° | 1308.3 | 1091.4 | 987.6 | 1028.8 | 1099.4 | 1311.0 | 1609.1 | 1469.4 | 1244.5 | 1167.3 | 1108.7 |
| 77.5° | 978.3 | 834.5 | 843.8 | 887.8 | 945.0 | 1147.3 | 1425.5 | 1356.3 | 1151.3 | 1091.4 | 1051.5 |
| 80° | 704.1 | 633.5 | 688.1 | 736.0 | 795.9 | 1043.5 | 1365.6 | 1253.8 | 1040.8 | 961.0 | 923.7 |
| 82.5° | 469.8 | 455.2 | 517.7 | 567.0 | 625.6 | 913.0 | 1283.0 | 1098.0 | 889.1 | 787.9 | 705.4 |
| 85° | 259.5 | 274.2 | 348.7 | 370.0 | 420.6 | 642.9 | 1051.5 | 882.4 | 669.5 | 539.0 | 515.1 |
| 87.5° | 107.8 | 126.4 | 187.7 | 181.0 | 223.6 | 383.3 | 692.1 | 532.4 | 425.9 | 318.1 | 247.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-1-R4

Test Date: 08/20/2019

Luminaire Tested: SA1C-727-U-5WQ

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-1-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-727-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-1-R3. TO UPDATE THE CATALOG NUMBER.TESTED IN SITU. (1) 70 CRI, 2700K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2741
 CIE u': 0.2605
 CIE v': 0.5272
 Duv: 0.0005
 CIE x: 0.4573
 CIE y: 0.4113
 CIE z: 0.1313
 Peak Wavelength (nm): 602
 Dominant Wavelength (nm): 583
 Purity: 61.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.5 | | |
| R1: | 69.2 | R9: | -16.1 |
| R2: | 79.4 | R10: | 51.4 |
| R3: | 87.8 | R11: | 63.1 |
| R4: | 69.4 | R12: | 42.0 |
| R5: | 66.4 | R13: | 70.2 |
| R6: | 69.8 | R14: | 92.4 |
| R7: | 79.8 | | |
| R8: | 50.1 | | |

Rf: 69.9
 Rg: 98.3



Test Conditions

Stabilization Time: 56M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.3./42%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-1-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

REPORT NUMBER: SP1-1908-441-1-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-1-R4

Photopic Flux vs. Wavelength



Photopic Lumens: 6211.7

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360 | 2044 | 0.0 | 490 | 7179 | 1.0 | 620 | 118034 | 30.7 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 1.9 | 625 | 111884 | 24.7 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 3.4 | 630 | 106119 | 19.2 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 6.3 | 635 | 99706 | 15.0 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 10.4 | 640 | 92142 | 11.0 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 16.3 | 645 | 84987 | 8.2 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 22.9 | 650 | 78016 | 5.7 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 29.7 | 655 | 71541 | 4.1 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 36.7 | 660 | 64863 | 2.7 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.0 | 535 | 68520 | 42.5 | 665 | 58485 | 1.9 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.0 | 540 | 73435 | 47.8 | 670 | 51641 | 1.1 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.0 | 545 | 78677 | 52.4 | 675 | 46030 | 0.8 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 0.0 | 550 | 83331 | 56.6 | 680 | 40590 | 0.5 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 0.1 | 555 | 89120 | 60.9 | 685 | 35691 | 0.3 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 0.3 | 560 | 94613 | 64.3 | 690 | 31631 | 0.2 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 0.6 | 565 | 99818 | 66.4 | 695 | 27437 | 0.1 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 0.9 | 570 | 106526 | 69.3 | 700 | 24589 | 0.1 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 1.1 | 575 | 111610 | 69.4 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 1.0 | 580 | 117163 | 69.6 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 0.8 | 585 | 122201 | 67.9 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 0.6 | 590 | 125662 | 65.0 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 0.5 | 595 | 127415 | 60.4 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 0.4 | 600 | 129155 | 55.7 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 0.4 | 605 | 128057 | 49.6 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 0.5 | 610 | 126031 | 43.3 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 0.7 | 615 | 123059 | 37.1 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 6474.3

S/P: 1.04

| 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 | 2044 | 0.0 | 490 | 7179 | 6.0 | 620 | 118034 | 0.1 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 8.6 | 625 | 111884 | 0.1 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 12.5 | 630 | 106119 | 0.0 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 17.3 | 635 | 99706 | 0.0 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 21.8 | 640 | 92142 | 0.0 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 25.7 | 645 | 84987 | 0.0 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 27.5 | 650 | 78016 | 0.0 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 28.1 | 655 | 71541 | 0.0 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 27.0 | 660 | 64863 | 0.0 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.0 | 535 | 68520 | 24.7 | 665 | 58485 | 0.0 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.1 | 540 | 73435 | 21.5 | 670 | 51641 | 0.0 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.5 | 545 | 78677 | 18.3 | 675 | 46030 | 0.0 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 1.6 | 550 | 83331 | 15.0 | 680 | 40590 | 0.0 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 3.9 | 555 | 89120 | 12.0 | 685 | 35691 | 0.0 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 8.1 | 560 | 94613 | 9.3 | 690 | 31631 | 0.0 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 13.3 | 565 | 99818 | 7.0 | 695 | 27437 | 0.0 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 19.1 | 570 | 106526 | 5.2 | 700 | 24589 | 0.0 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 21.6 | 575 | 111610 | 3.7 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 18.1 | 580 | 117163 | 2.6 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 11.8 | 585 | 122201 | 1.8 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 8.1 | 590 | 125662 | 1.2 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 6.2 | 595 | 127415 | 0.8 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 4.8 | 600 | 129155 | 0.5 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 4.1 | 605 | 128057 | 0.4 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 4.1 | 610 | 126031 | 0.2 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 4.6 | 615 | 123059 | 0.1 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 2145.7 M/P: 0.35

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|----------------|-----------------------------------|-----------------------------|
| 360 | 2044 | 0.0 | 490 | 7179 | 11.1 | 620 | 118034 | 1.5 | 750 | 8362 | 0.0 | 880 | 3128 | 0.0 |
| 365 | 2016 | 0.0 | 495 | 10476 | 16.9 | 625 | 111884 | 0.9 | 755 | 7635 | 0.0 | 885 | 3110 | 0.0 |
| 370 | 2020 | 0.0 | 500 | 15549 | 26.0 | 630 | 106119 | 0.6 | 760 | 6582 | 0.0 | 890 | 2632 | 0.0 |
| 375 | 2137 | 0.0 | 505 | 22477 | 38.2 | 635 | 99706 | 0.4 | 765 | 5777 | 0.0 | 895 | 2709 | 0.0 |
| 380 | 2046 | 0.0 | 510 | 30417 | 51.6 | 640 | 92142 | 0.2 | 770 | 5474 | 0.0 | 900 | 2016 | 0.0 |
| 385 | 1925 | 0.0 | 515 | 39274 | 65.1 | 645 | 84987 | 0.1 | 775 | 4977 | 0.0 | 905 | 1748 | 0.0 |
| 390 | 1893 | 0.0 | 520 | 47282 | 75.2 | 650 | 78016 | 0.1 | 780 | 4723 | 0.0 | 910 | 2046 | 0.0 |
| 395 | 1695 | 0.0 | 525 | 55413 | 82.9 | 655 | 71541 | 0.1 | 785 | 4219 | 0.0 | 915 | 1844 | 0.0 |
| 400 | 1633 | 0.0 | 530 | 62377 | 86.0 | 660 | 64863 | 0.0 | 790 | 3969 | 0.0 | 920 | 2734 | 0.0 |
| 405 | 2065 | 0.1 | 535 | 68520 | 85.4 | 665 | 58485 | 0.0 | 795 | 4122 | 0.0 | 925 | 2307 | 0.0 |
| 410 | 3449 | 0.2 | 540 | 73435 | 81.1 | 670 | 51641 | 0.0 | 800 | 2864 | 0.0 | 930 | 2039 | 0.0 |
| 415 | 7117 | 0.7 | 545 | 78677 | 75.4 | 675 | 46030 | 0.0 | 805 | 3151 | 0.0 | 935 | 1784 | 0.0 |
| 420 | 13992 | 2.3 | 550 | 83331 | 68.1 | 680 | 40590 | 0.0 | 810 | 3022 | 0.0 | 940 | 2464 | 0.0 |
| 425 | 25176 | 6.2 | 555 | 89120 | 60.9 | 685 | 35691 | 0.0 | 815 | 3471 | 0.0 | 945 | 2794 | 0.0 |
| 430 | 38151 | 13.0 | 560 | 94613 | 52.9 | 690 | 31631 | 0.0 | 820 | 2749 | 0.0 | 950 | 3090 | 0.0 |
| 435 | 49673 | 22.2 | 565 | 99818 | 44.8 | 695 | 27437 | 0.0 | 825 | 2729 | 0.0 | 955 | 1866 | 0.0 |
| 440 | 57273 | 32.0 | 570 | 106526 | 37.6 | 700 | 24589 | 0.0 | 830 | 2282 | 0.0 | 960 | 3110 | 0.0 |
| 445 | 54802 | 36.7 | 575 | 111610 | 30.4 | 705 | 21832 | 0.0 | 835 | 3140 | 0.0 | 965 | 3880 | 0.0 |
| 450 | 39184 | 30.4 | 580 | 117163 | 24.1 | 710 | 19500 | 0.0 | 840 | 2365 | 0.0 | 970 | 3243 | 0.0 |
| 455 | 22506 | 19.7 | 585 | 122201 | 18.7 | 715 | 17870 | 0.0 | 845 | 3024 | 0.0 | 975 | 2014 | 0.0 |
| 460 | 13692 | 13.2 | 590 | 125662 | 14.0 | 720 | 15924 | 0.0 | 850 | 2510 | 0.0 | 980 | 1688 | 0.0 |
| 465 | 9446 | 10.0 | 595 | 127415 | 10.2 | 725 | 14268 | 0.0 | 855 | 2739 | 0.0 | 985 | 2827 | 0.0 |
| 470 | 6698 | 7.7 | 600 | 129155 | 7.3 | 730 | 12438 | 0.0 | 860 | 3515 | 0.0 | 990 | 4172 | 0.0 |
| 475 | 5328 | 6.7 | 605 | 128057 | 5.0 | 735 | 11255 | 0.0 | 865 | 3600 | 0.0 | 995 | 3177 | 0.0 |
| 480 | 5081 | 6.9 | 610 | 126031 | 3.4 | 740 | 9951 | 0.0 | 870 | 3609 | 0.0 | 1000 | 3241 | 0.0 |
| 485 | 5579 | 8.1 | 615 | 123059 | 2.3 | 745 | 8870 | 0.0 | 875 | 3208 | 0.0 | | | |

REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

Summary

$R_f = 69.9$
 $R_g = 98.3$
 $CIE R_a = 71.5$
 $R_9 = -16.1$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

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

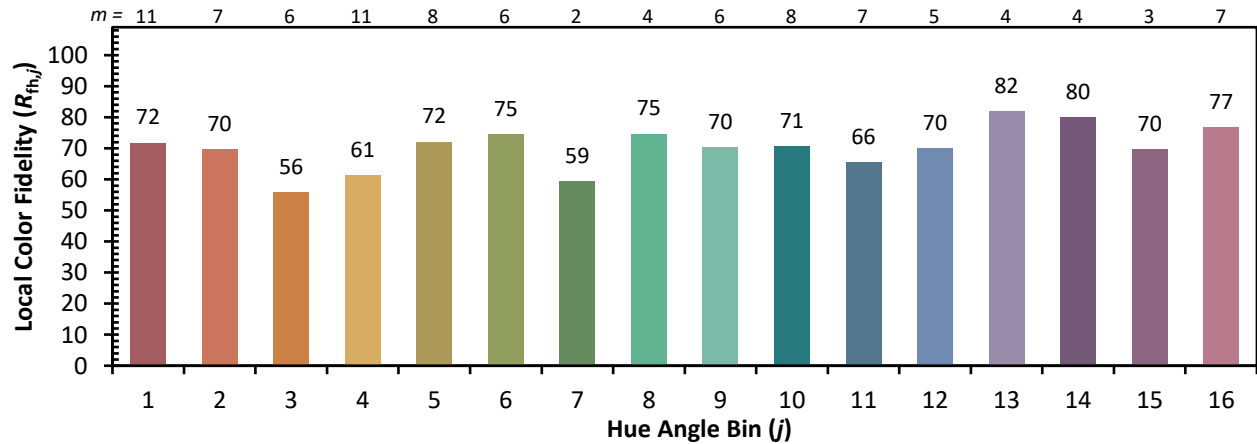
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 54 | CES51 = 77 | CES76 = 48 |
| CES02 = 63 | CES27 = 74 | CES52 = 80 | CES77 = 75 |
| CES03 = 31 | CES28 = 80 | CES53 = 66 | CES78 = 56 |
| CES04 = 71 | CES29 = 44 | CES54 = 77 | CES79 = 81 |
| CES05 = 50 | CES30 = 46 | CES55 = 74 | CES80 = 80 |
| CES06 = 52 | CES31 = 50 | CES56 = 63 | CES81 = 73 |
| CES07 = 42 | CES32 = 49 | CES57 = 60 | CES82 = 91 |
| CES08 = 41 | CES33 = 53 | CES58 = 63 | CES83 = 84 |
| CES09 = 29 | CES34 = 66 | CES59 = 85 | CES84 = 90 |
| CES10 = 77 | CES35 = 82 | CES60 = 89 | CES85 = 87 |
| CES11 = 60 | CES36 = 78 | CES61 = 85 | CES86 = 65 |
| CES12 = 66 | CES37 = 75 | CES62 = 69 | CES87 = 78 |
| CES13 = 43 | CES38 = 53 | CES63 = 68 | CES88 = 73 |
| CES14 = 74 | CES39 = 91 | CES64 = 68 | CES89 = 68 |
| CES15 = 71 | CES40 = 85 | CES65 = 65 | CES90 = 68 |
| CES16 = 48 | CES41 = 76 | CES66 = 62 | CES91 = 91 |
| CES17 = 50 | CES42 = 76 | CES67 = 60 | CES92 = 71 |
| CES18 = 57 | CES43 = 65 | CES68 = 68 | CES93 = 82 |
| CES19 = 73 | CES44 = 98 | CES69 = 77 | CES94 = 57 |
| CES20 = 67 | CES45 = 75 | CES70 = 60 | CES95 = 78 |
| CES21 = 88 | CES46 = 70 | CES71 = 57 | CES96 = 80 |
| CES22 = 80 | CES47 = 63 | CES72 = 86 | CES97 = 79 |
| CES23 = 92 | CES48 = 51 | CES73 = 52 | CES98 = 71 |
| CES24 = 91 | CES49 = 68 | CES74 = 90 | CES99 = 64 |
| CES25 = 73 | CES50 = 77 | CES75 = 58 | |



REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-1-R4

TM-30-18

Measure Comparisons



(END OF REPORT)