

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: P319983

Luminaire Tested: **GLEON-SA9D-730-U-SL4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P319983
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-24)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA9D-730-U-SL4
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(9) 70 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 60026 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

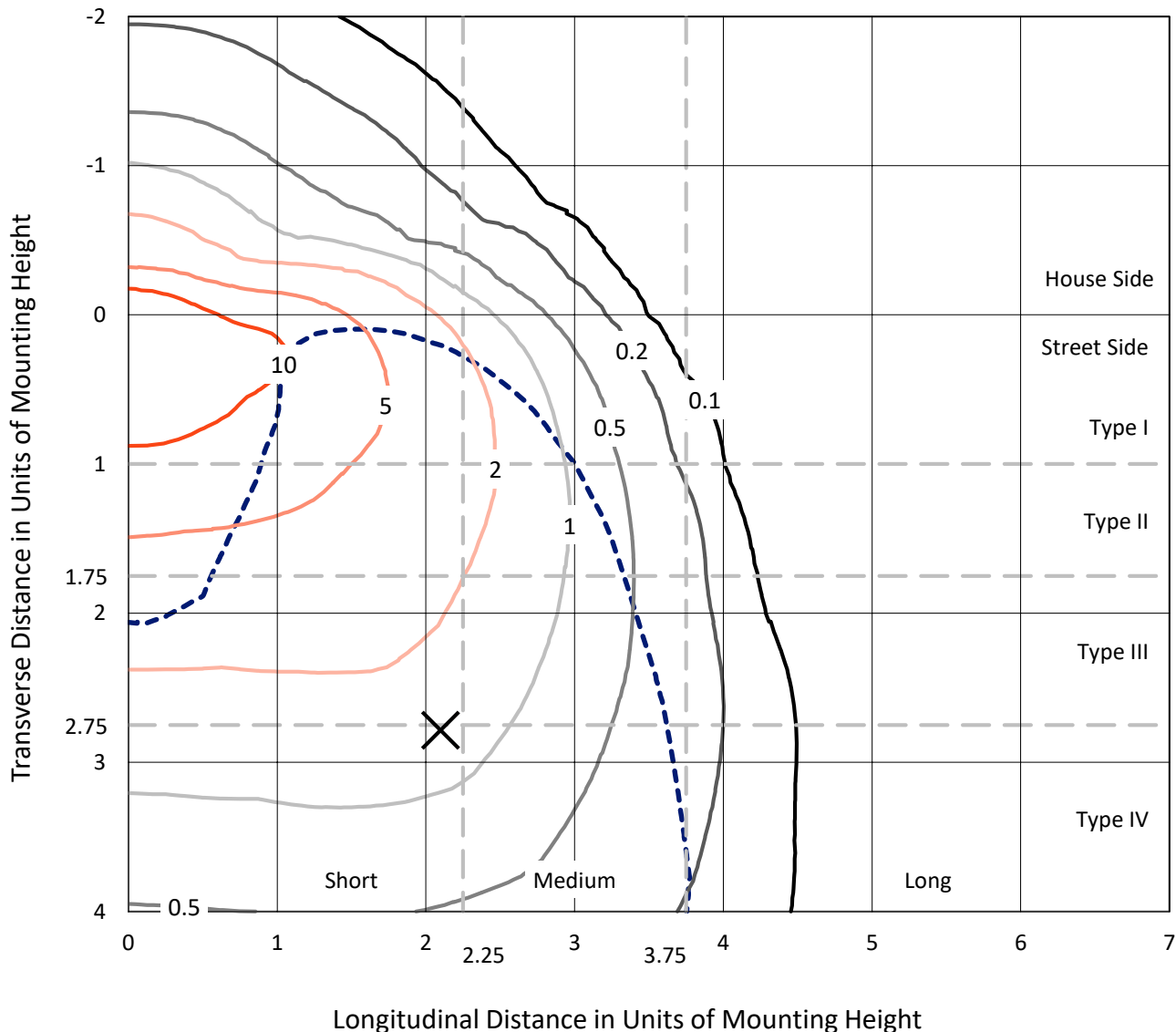
Input Watts (W): 575
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P319983
 CATALOG NUMBER: GLEON-SA9D-730-U-SL4

Iso-Footcandle Lines of Horizontal Illumination

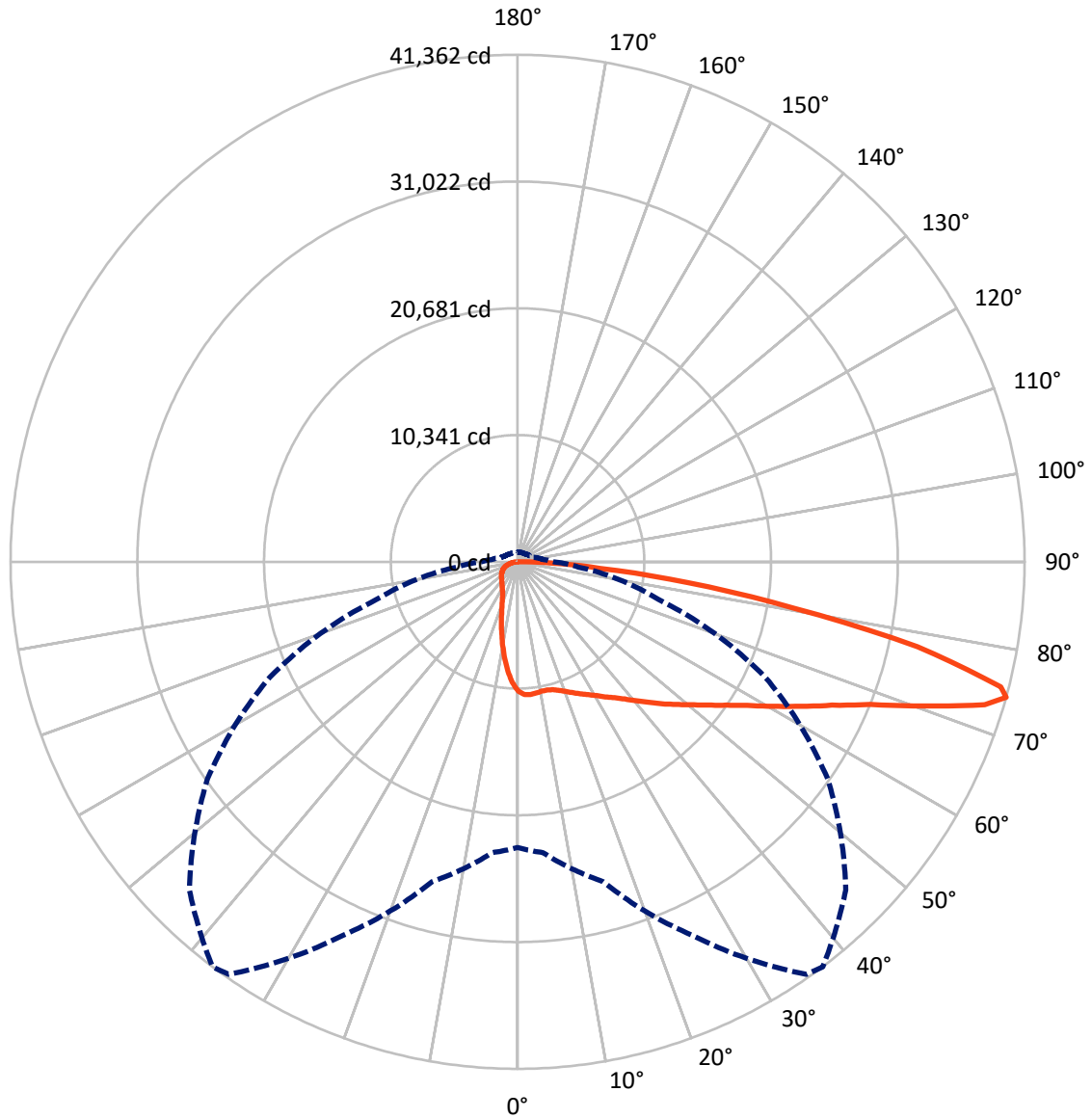
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 17.2 fc
 Type IV - Short - N/A

REPORT NUMBER: P319983
CATALOG NUMBER: GLEON-SA9D-730-U-SL4

Luminous Intensity Polar Plot



— Vertical Plane Through 37-Deg Lateral - - - Horizontal Cone Through 74-Deg Vertical

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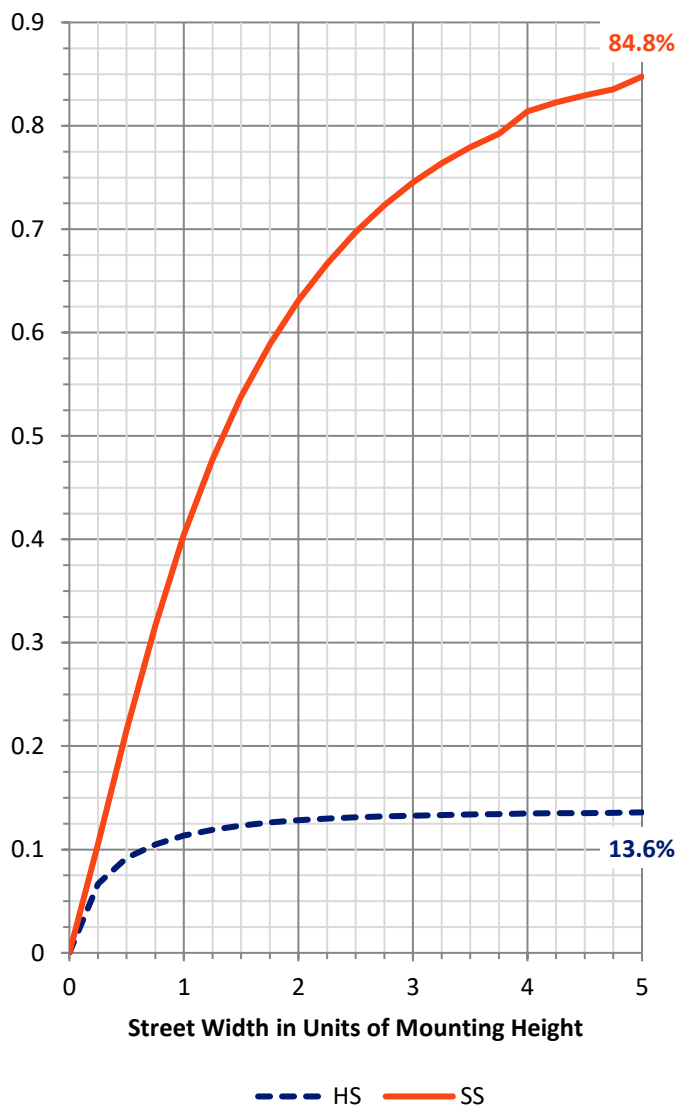
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 8259.2 | 0.0 | 8259.2 |
| | % Fixture | 13.8 | 0.0 | 13.8 |
| Street Side | Lumens | 51766.8 | 0.0 | 51766.8 |
| | % Fixture | 86.2 | 0.0 | 86.2 |
| Total | Lumens | 60026.0 | 0.0 | 60026.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 931.4 | 1.6 |
| 10°-20° | 2387.3 | 4.0 |
| 20°-30° | 3678.4 | 6.1 |
| 30°-40° | 5349.0 | 8.9 |
| 40°-50° | 7872.8 | 13.1 |
| 50°-60° | 11055.9 | 18.4 |
| 60°-70° | 13993.3 | 23.3 |
| 70°-80° | 12321.7 | 20.5 |
| 80°-90° | 2436.3 | 4.1 |
| 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° | 60026.0 | 100.0 |
| 0°-180° | 60026.0 | 100.0 |

Coefficient of Utilization



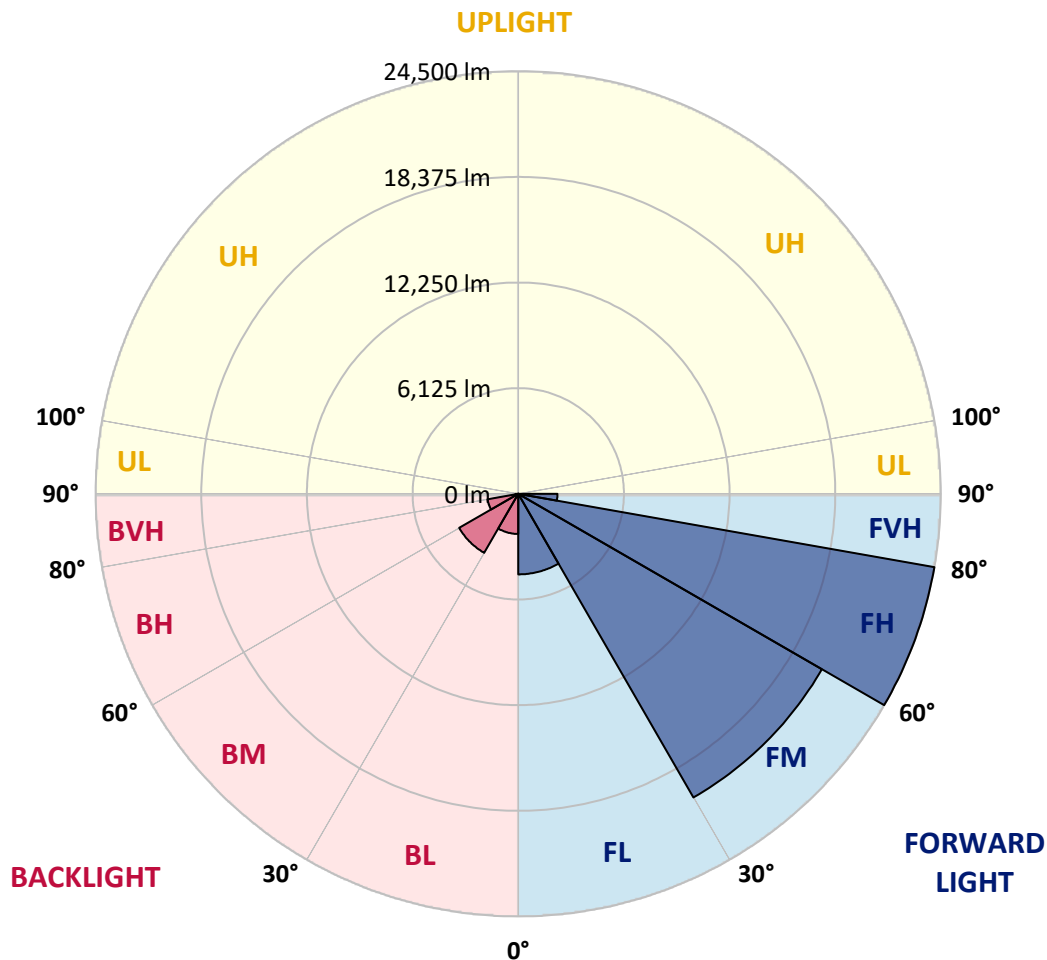
REPORT NUMBER: P319983
 CATALOG NUMBER: GLEON-SA9D-730-U-SL4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 4670.7 | 7.8 | | | |
| FM (30°-60°) | 20325.3 | 33.9 | | | |
| FH (60°-80°) | 24499.6 | 40.8 | | | G5 |
| FVH (80°-90°) | 2271.3 | 3.8 | | | G5 |
| BL (0°-30°) | 2326.4 | 3.9 | B3/2500 | | |
| BM (30°-60°) | 3952.3 | 6.6 | B3/5000 | | |
| BH (60°-80°) | 1815.5 | 3.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 165.0 | 0.3 | | | G2/225 |
| 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: P319983
 CATALOG NUMBER: GLEON-SA9D-730-U-SL4

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 37° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 |
| 2.5° | 10937.9 | 10940.0 | 10937.9 | 10921.0 | 10880.8 | 10847.0 | 10819.5 | 10779.3 | 10690.5 | 10622.9 | 10521.4 |
| 5° | 11041.5 | 11028.8 | 11020.4 | 10988.7 | 10925.2 | 10887.2 | 10834.3 | 10758.2 | 10612.3 | 10477.0 | 10312.0 |
| 7.5° | 10992.9 | 10978.1 | 10959.1 | 10921.0 | 10849.1 | 10817.4 | 10743.4 | 10644.0 | 10468.5 | 10290.9 | 10054.1 |
| 10° | 10842.8 | 10838.5 | 10830.1 | 10821.6 | 10760.3 | 10734.9 | 10667.3 | 10561.5 | 10388.2 | 10172.5 | 9895.5 |
| 12.5° | 10675.7 | 10686.3 | 10720.1 | 10764.5 | 10737.0 | 10724.4 | 10682.1 | 10610.2 | 10432.6 | 10200.0 | 9865.9 |
| 15° | 10570.0 | 10599.6 | 10690.5 | 10806.8 | 10830.1 | 10825.9 | 10815.3 | 10768.8 | 10580.6 | 10322.6 | 9933.6 |
| 17.5° | 10534.1 | 10582.7 | 10756.1 | 10948.5 | 11016.1 | 11030.9 | 11035.2 | 10954.8 | 10745.5 | 10472.7 | 10003.3 |
| 20° | 10599.6 | 10660.9 | 10914.7 | 11179.0 | 11286.8 | 11295.3 | 11276.2 | 11136.7 | 10902.0 | 10601.7 | 10041.4 |
| 22.5° | 10798.4 | 10853.3 | 11170.5 | 11468.6 | 11591.3 | 11604.0 | 11546.9 | 11335.4 | 11066.9 | 10754.0 | 10094.3 |
| 25° | 11181.1 | 11248.7 | 11565.9 | 11864.0 | 11927.5 | 11929.6 | 11847.1 | 11584.9 | 11282.6 | 10967.5 | 10208.4 |
| 27.5° | 11680.1 | 11747.7 | 12033.2 | 12325.0 | 12291.1 | 12272.1 | 12160.1 | 11897.9 | 11563.8 | 11261.4 | 10411.4 |
| 30° | 12236.2 | 12310.2 | 12580.8 | 12788.0 | 12707.7 | 12669.6 | 12578.7 | 12240.4 | 11955.0 | 11663.2 | 10722.2 |
| 32.5° | 12811.3 | 12879.0 | 13115.8 | 13257.4 | 13155.9 | 13139.0 | 13001.6 | 12692.9 | 12464.5 | 12276.3 | 11225.5 |
| 35° | 13401.2 | 13449.9 | 13682.4 | 13762.8 | 13627.5 | 13623.2 | 13585.2 | 13301.8 | 13158.1 | 13246.9 | 11957.1 |
| 37.5° | 14003.8 | 14016.5 | 14215.3 | 14219.5 | 14179.3 | 14196.2 | 14236.4 | 14058.8 | 14099.0 | 14376.0 | 12908.6 |
| 40° | 14540.9 | 14574.7 | 14718.5 | 14762.9 | 14832.7 | 14891.9 | 15092.8 | 14976.5 | 15287.3 | 15777.8 | 14092.6 |
| 42.5° | 14938.4 | 15004.0 | 15234.4 | 15348.6 | 15574.8 | 15667.9 | 15951.2 | 16059.0 | 16684.9 | 17420.7 | 15500.8 |
| 45° | 15274.6 | 15376.1 | 15746.1 | 15980.8 | 16363.5 | 16526.3 | 16932.3 | 17293.9 | 18264.4 | 19203.2 | 16983.1 |
| 47.5° | 15638.3 | 15767.3 | 16230.3 | 16678.6 | 17198.7 | 17382.7 | 18120.6 | 18661.9 | 19949.6 | 20996.2 | 18380.7 |
| 50° | 16173.2 | 16272.6 | 16725.1 | 17429.2 | 18078.3 | 18315.1 | 19336.4 | 20112.4 | 21662.3 | 22704.7 | 19592.3 |
| 52.5° | 16919.6 | 16881.6 | 17264.3 | 18251.7 | 19122.9 | 19414.6 | 20634.7 | 21655.9 | 23398.2 | 24250.3 | 20615.6 |
| 55° | 17670.2 | 17606.8 | 17875.3 | 19112.3 | 20340.8 | 20647.3 | 22064.0 | 23205.8 | 25049.6 | 25641.6 | 21400.1 |
| 57.5° | 18505.4 | 18384.9 | 18611.2 | 20082.8 | 21727.8 | 22093.6 | 23664.6 | 24852.9 | 26673.5 | 26766.5 | 21899.1 |
| 60° | 19366.0 | 19203.2 | 19456.9 | 21285.9 | 23489.1 | 23920.5 | 25538.0 | 26459.9 | 28204.3 | 27667.2 | 22059.8 |
| 62.5° | 20118.7 | 20004.6 | 20395.7 | 22628.6 | 25474.6 | 25948.2 | 27377.6 | 28168.4 | 29714.0 | 28041.5 | 21480.4 |
| 65° | 20776.3 | 20795.4 | 21472.0 | 24138.3 | 27688.4 | 28193.7 | 29487.8 | 30274.3 | 30902.3 | 27819.5 | 20125.1 |
| 67.5° | 21560.8 | 21668.6 | 22823.1 | 26125.8 | 30475.2 | 31029.2 | 32557.9 | 32570.6 | 31566.2 | 26517.0 | 17456.7 |
| 70° | 22704.7 | 22926.7 | 24681.7 | 28883.0 | 34437.6 | 35198.8 | 36378.7 | 33919.6 | 30633.8 | 22985.9 | 13735.3 |
| 72.5° | 23719.6 | 24134.0 | 26658.7 | 32037.8 | 39267.0 | 39844.2 | 38613.6 | 33141.5 | 26736.9 | 17226.2 | 8557.1 |
| 74° | 23307.3 | 23821.1 | 27018.1 | 33591.9 | 41085.4 | 41362.4 | 37858.8 | 30870.6 | 22292.4 | 11929.6 | 4973.1 |
| 75° | 22419.2 | 22977.4 | 26493.7 | 33577.1 | 40854.9 | 40700.5 | 36036.1 | 28276.2 | 18359.5 | 8136.3 | 3309.1 |
| 77.5° | 18093.1 | 18683.0 | 22324.1 | 28777.3 | 33498.8 | 33352.9 | 27682.0 | 18968.5 | 8041.2 | 2668.4 | 1681.0 |
| 80° | 10519.3 | 10969.6 | 13857.9 | 18275.0 | 22588.4 | 22852.7 | 18205.2 | 9385.9 | 3163.2 | 1499.1 | 1139.7 |
| 82.5° | 4672.9 | 4983.7 | 6694.3 | 9328.8 | 13631.7 | 13972.1 | 9533.9 | 4918.2 | 1953.7 | 911.3 | 685.1 |
| 85° | 3065.9 | 3296.4 | 4063.9 | 4442.4 | 6491.3 | 6723.9 | 4666.5 | 3829.2 | 1289.8 | 501.1 | 503.2 |
| 87.5° | 2205.3 | 2427.4 | 3019.4 | 2636.7 | 2979.2 | 2820.6 | 2539.4 | 3543.8 | 518.0 | 285.4 | 169.2 |
| 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: P319983
 CATALOG NUMBER: GLEON-SA9D-730-U-SL4

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 | 10576.3 |
| 2.5° | 10477.0 | 10443.1 | 10367.0 | 10223.2 | 10142.9 | 10075.2 | 9963.2 | 9897.6 | 9868.0 | 9865.9 | 9878.6 |
| 5° | 10216.9 | 10138.7 | 9942.0 | 9701.0 | 9508.6 | 9333.1 | 9115.3 | 8984.2 | 8891.2 | 8836.2 | 8851.0 |
| 7.5° | 9914.5 | 9791.9 | 9483.2 | 9098.4 | 8789.7 | 8449.2 | 8113.0 | 7912.2 | 7755.7 | 7639.4 | 7660.6 |
| 10° | 9707.3 | 9538.2 | 9087.8 | 8533.8 | 8020.0 | 7525.2 | 7062.2 | 6785.2 | 6565.3 | 6396.1 | 6408.8 |
| 12.5° | 9637.5 | 9409.2 | 8785.4 | 8045.4 | 7324.4 | 6647.7 | 6043.0 | 5618.0 | 5391.8 | 5199.4 | 5214.2 |
| 15° | 9648.1 | 9341.5 | 8531.7 | 7605.6 | 6698.5 | 5846.4 | 5112.7 | 4615.8 | 4309.2 | 4176.0 | 4178.1 |
| 17.5° | 9656.6 | 9263.3 | 8265.3 | 7134.1 | 6079.0 | 5097.9 | 4300.7 | 3797.5 | 3507.8 | 3385.2 | 3387.3 |
| 20° | 9629.1 | 9136.4 | 7935.4 | 6592.8 | 5432.0 | 4410.7 | 3638.9 | 3211.8 | 2991.9 | 2896.8 | 2896.8 |
| 22.5° | 9593.1 | 8986.3 | 7563.3 | 6049.4 | 4793.4 | 3814.4 | 3165.3 | 2839.7 | 2712.8 | 2649.4 | 2647.3 |
| 25° | 9610.1 | 8874.2 | 7182.7 | 5491.2 | 4205.6 | 3338.7 | 2850.2 | 2634.6 | 2550.0 | 2509.8 | 2507.7 |
| 27.5° | 9701.0 | 8821.4 | 6831.7 | 4935.1 | 3691.8 | 2981.3 | 2638.8 | 2486.6 | 2431.6 | 2406.2 | 2406.2 |
| 30° | 9865.9 | 8821.4 | 6465.9 | 4461.4 | 3264.7 | 2717.0 | 2476.0 | 2372.4 | 2334.3 | 2317.4 | 2317.4 |
| 32.5° | 10153.5 | 8870.0 | 6112.8 | 3992.0 | 2924.2 | 2509.8 | 2340.7 | 2270.9 | 2241.3 | 2232.8 | 2232.8 |
| 35° | 10648.2 | 9034.9 | 5768.1 | 3548.0 | 2649.4 | 2340.7 | 2211.7 | 2171.5 | 2150.4 | 2148.3 | 2154.6 |
| 37.5° | 11343.9 | 9371.1 | 5444.6 | 3220.3 | 2454.8 | 2203.2 | 2103.9 | 2072.1 | 2059.4 | 2070.0 | 2078.5 |
| 40° | 12219.3 | 9827.8 | 5150.7 | 2924.2 | 2306.8 | 2093.3 | 2004.5 | 1983.3 | 1977.0 | 1991.8 | 2004.5 |
| 42.5° | 13276.5 | 10445.3 | 4909.7 | 2710.7 | 2192.7 | 2000.2 | 1919.9 | 1894.5 | 1888.2 | 1905.1 | 1922.0 |
| 45° | 14420.4 | 11109.2 | 4740.5 | 2552.1 | 2103.9 | 1930.5 | 1845.9 | 1818.4 | 1805.7 | 1814.2 | 1833.2 |
| 47.5° | 15460.7 | 11737.2 | 4672.9 | 2440.0 | 2019.3 | 1871.3 | 1780.3 | 1746.5 | 1725.4 | 1721.1 | 1735.9 |
| 50° | 16338.2 | 12204.5 | 4704.6 | 2372.4 | 1951.6 | 1805.7 | 1716.9 | 1678.9 | 1647.1 | 1628.1 | 1638.7 |
| 52.5° | 16976.7 | 12498.4 | 4734.2 | 2342.8 | 1898.8 | 1733.8 | 1647.1 | 1611.2 | 1568.9 | 1537.2 | 1537.2 |
| 55° | 17439.8 | 12566.0 | 4668.6 | 2319.5 | 1858.6 | 1655.6 | 1568.9 | 1535.1 | 1492.8 | 1456.8 | 1452.6 |
| 57.5° | 17621.6 | 12375.7 | 4425.5 | 2285.7 | 1831.1 | 1581.6 | 1486.4 | 1461.1 | 1425.1 | 1382.8 | 1380.7 |
| 60° | 17376.3 | 11787.9 | 3956.1 | 2213.8 | 1795.1 | 1520.3 | 1404.0 | 1387.1 | 1370.1 | 1330.0 | 1327.9 |
| 62.5° | 16391.0 | 10498.1 | 3349.2 | 2067.9 | 1723.3 | 1454.7 | 1327.9 | 1336.3 | 1338.4 | 1310.9 | 1306.7 |
| 65° | 14604.3 | 8726.2 | 2757.2 | 1877.6 | 1615.4 | 1376.5 | 1249.6 | 1289.8 | 1313.1 | 1308.8 | 1302.5 |
| 67.5° | 12007.8 | 6791.5 | 2336.4 | 1676.7 | 1473.8 | 1268.7 | 1165.0 | 1211.6 | 1230.6 | 1245.4 | 1241.2 |
| 70° | 8912.3 | 4789.2 | 1932.6 | 1465.3 | 1302.5 | 1141.8 | 1055.1 | 1078.4 | 1065.7 | 1082.6 | 1088.9 |
| 72.5° | 4968.9 | 2873.5 | 1575.2 | 1253.9 | 1124.9 | 993.8 | 932.5 | 928.2 | 900.7 | 900.7 | 900.7 |
| 74° | 2981.3 | 2108.1 | 1384.9 | 1122.8 | 1017.0 | 896.5 | 843.7 | 824.6 | 799.3 | 801.4 | 799.3 |
| 75° | 2397.8 | 1812.1 | 1270.8 | 1036.1 | 940.9 | 839.4 | 786.6 | 761.2 | 742.2 | 742.2 | 740.0 |
| 77.5° | 1513.9 | 1376.5 | 1023.4 | 824.6 | 752.7 | 691.4 | 655.5 | 621.6 | 621.6 | 619.5 | 617.4 |
| 80° | 1143.9 | 1095.3 | 797.1 | 623.8 | 577.2 | 530.7 | 507.5 | 492.7 | 492.7 | 499.0 | 496.9 |
| 82.5° | 784.5 | 824.6 | 560.3 | 435.6 | 412.3 | 378.5 | 374.3 | 376.4 | 370.0 | 361.6 | 359.5 |
| 85° | 573.0 | 619.5 | 378.5 | 274.9 | 251.6 | 230.5 | 247.4 | 255.8 | 245.3 | 226.2 | 217.8 |
| 87.5° | 219.9 | 406.0 | 203.0 | 114.2 | 105.7 | 90.9 | 105.7 | 110.0 | 118.4 | 93.0 | 95.1 |
| 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: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-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-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-2-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: SP1-1908-441-2-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-2-R4

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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

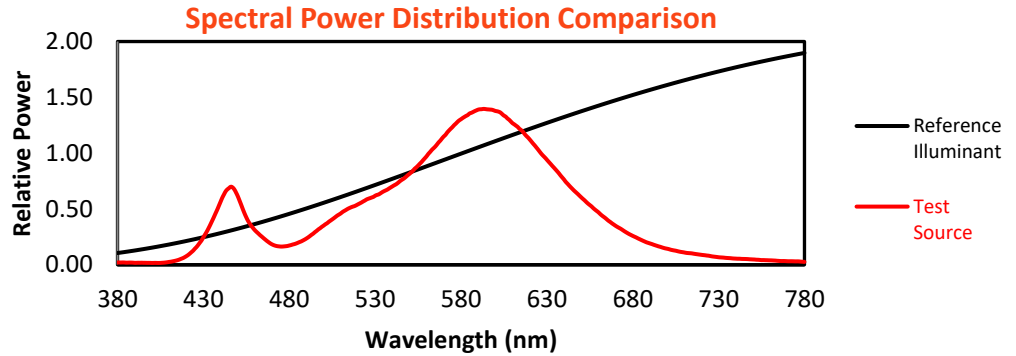
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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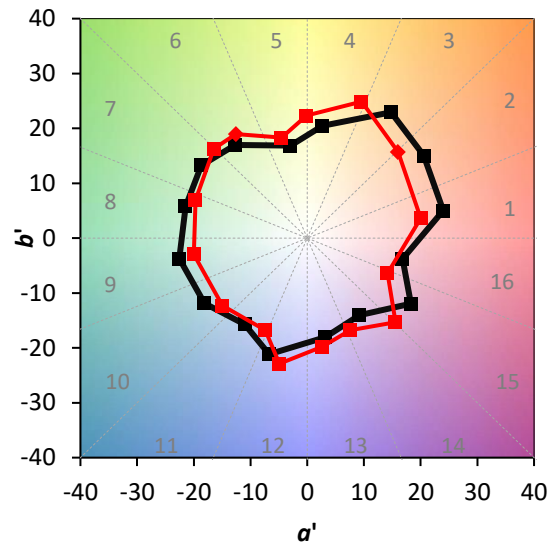
TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
 CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)