

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: P323892

Luminaire Tested: **GLEON-SA8C-750-U-SL4-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P323892
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-25)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA8C-750-U-SL4-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(8) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 46007 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

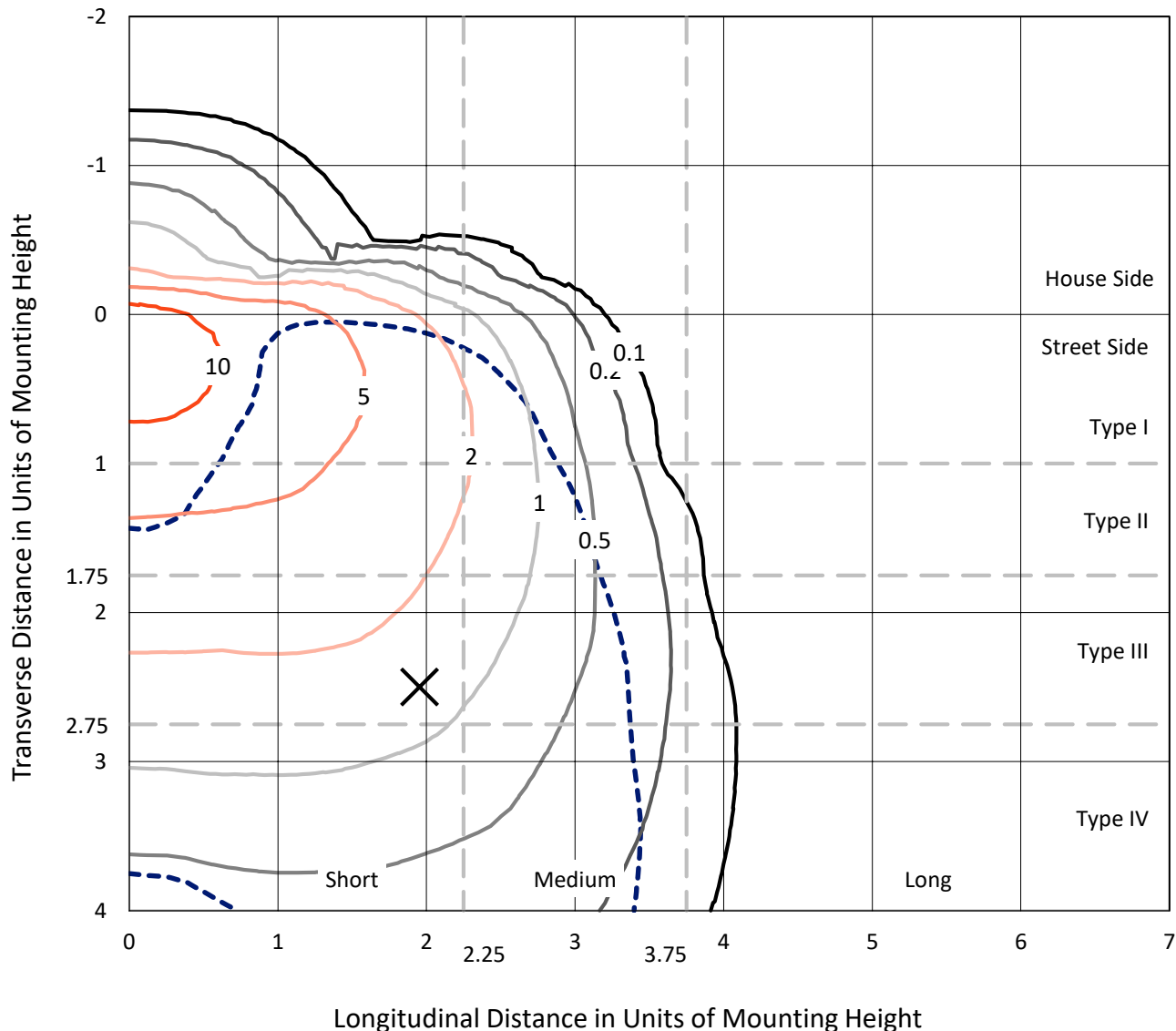
Input Watts (W): 445
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P323892
 CATALOG NUMBER: GLEON-SA8C-750-U-SL4-HSS

Iso-Footcandle Lines of Horizontal Illumination

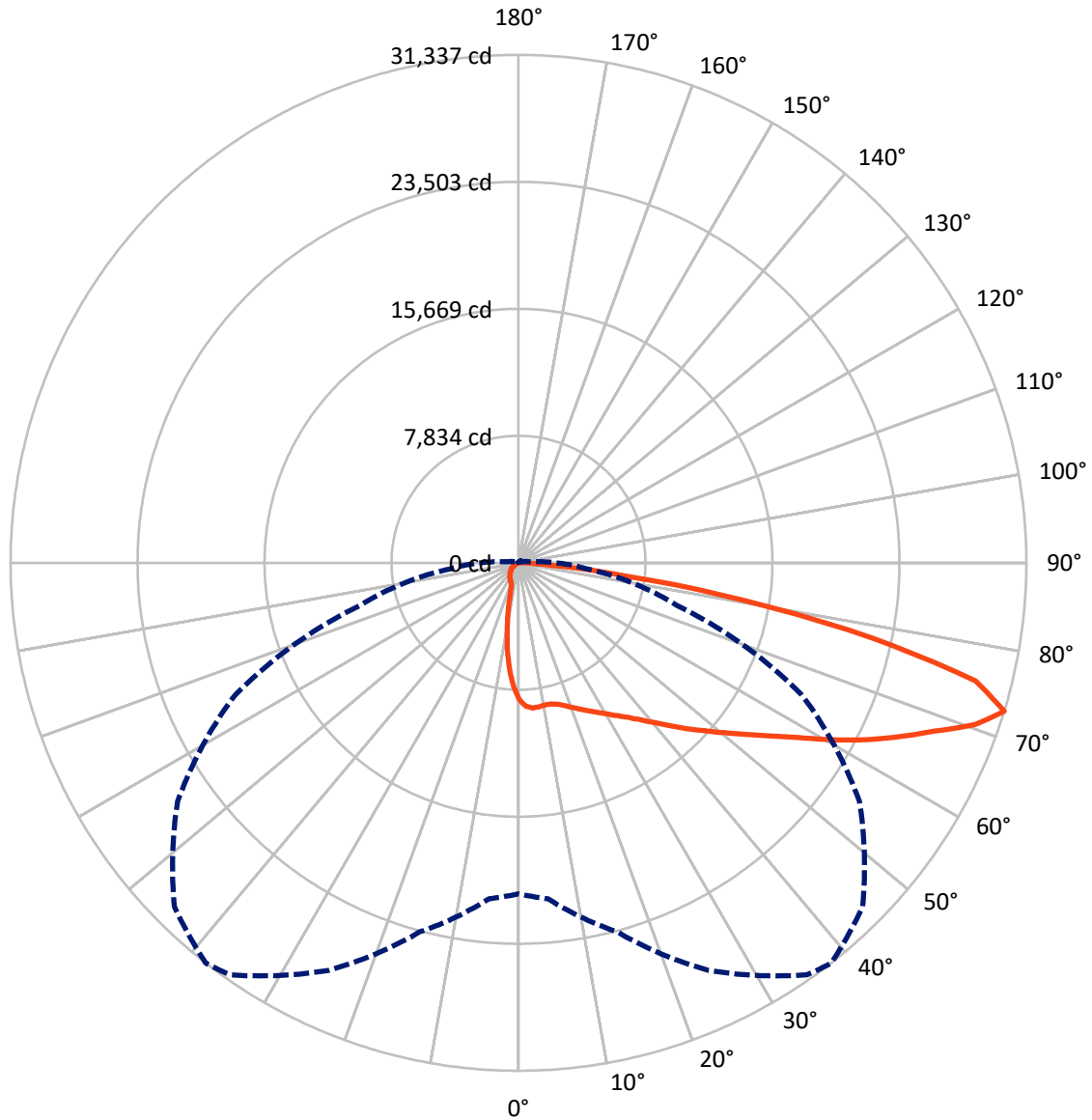
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 14.3 fc
 Type IV - Short - N/A

REPORT NUMBER: P323892
CATALOG NUMBER: GLEON-SA8C-750-U-SL4-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 38-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3871.7 | 0.0 | 3871.7 |
| | % Fixture | 8.4 | 0.0 | 8.4 |
| Street Side | Lumens | 42135.3 | 0.0 | 42135.3 |
| | % Fixture | 91.6 | 0.0 | 91.6 |
| Total | Lumens | 46007.0 | 0.0 | 46007.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 721.0 | 1.6 |
| 10°-20° | 1763.0 | 3.8 |
| 20°-30° | 2804.0 | 6.1 |
| 30°-40° | 4215.6 | 9.2 |
| 40°-50° | 6431.1 | 14.0 |
| 50°-60° | 9089.3 | 19.8 |
| 60°-70° | 11401.1 | 24.8 |
| 70°-80° | 8524.8 | 18.5 |
| 80°-90° | 1057.0 | 2.3 |
| 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° | 46007.0 | 100.0 |
| 0°-180° | 46007.0 | 100.0 |

Coefficient of Utilization



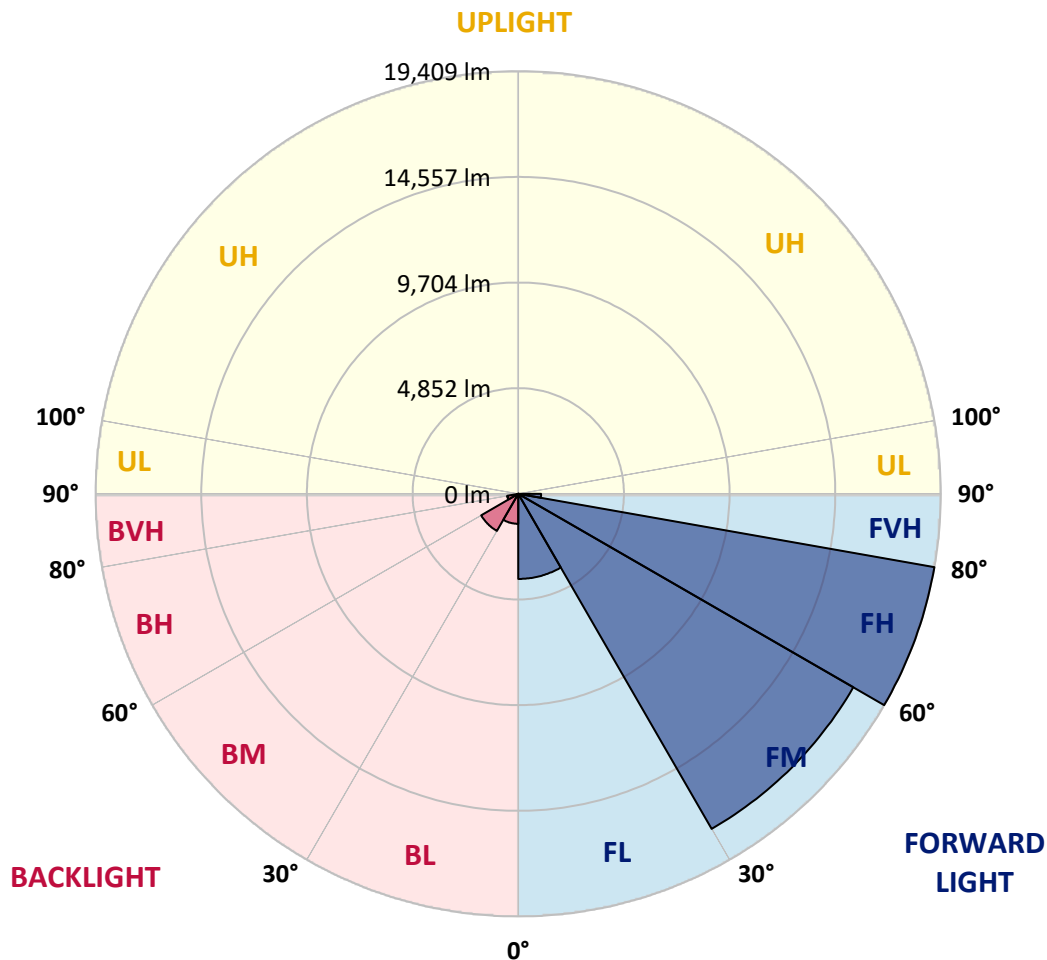
REPORT NUMBER: P323892
 CATALOG NUMBER: GLEON-SA8C-750-U-SL4-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3909.5 | 8.5 | | | |
| FM (30°-60°) | 17769.9 | 38.6 | | | |
| FH (60°-80°) | 19408.7 | 42.2 | | | G5 |
| FVH (80°-90°) | 1047.2 | 2.3 | | | G5 |
| BL (0°-30°) | 1378.6 | 3.0 | B3/2500 | | |
| BM (30°-60°) | 1966.1 | 4.3 | B2/2500 | | |
| BH (60°-80°) | 517.2 | 1.1 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 9.9 | 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-G5

Type IV Short





REPORT NUMBER: P323892

CATALOG NUMBER: GLEON-SA8C-750-U-SL4-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 38° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 |
| 2.5° | 8980.2 | 8982.2 | 8961.1 | 8926.7 | 8882.8 | 8859.9 | 8821.7 | 8760.5 | 8695.6 | 8579.0 | 8452.9 |
| 5° | 9163.7 | 9163.7 | 9136.9 | 9091.1 | 9020.4 | 8999.4 | 8926.7 | 8829.3 | 8695.6 | 8506.4 | 8294.3 |
| 7.5° | 9144.6 | 9148.4 | 9112.1 | 9064.3 | 8993.6 | 8974.5 | 8886.6 | 8777.7 | 8611.5 | 8382.2 | 8110.9 |
| 10° | 9045.2 | 9054.8 | 9026.1 | 9003.2 | 8938.2 | 8917.2 | 8835.0 | 8726.1 | 8559.9 | 8315.3 | 8003.9 |
| 12.5° | 8943.9 | 8953.5 | 8963.0 | 8984.1 | 8943.9 | 8936.3 | 8871.3 | 8779.6 | 8621.0 | 8366.9 | 8015.3 |
| 15° | 8879.0 | 8898.1 | 8966.9 | 9049.0 | 9058.6 | 9050.9 | 9008.9 | 8922.9 | 8762.4 | 8498.7 | 8097.5 |
| 17.5° | 8879.0 | 8909.5 | 9052.8 | 9209.5 | 9264.9 | 9270.7 | 9234.4 | 9114.0 | 8922.9 | 8640.1 | 8173.9 |
| 20° | 8953.5 | 8995.5 | 9219.1 | 9440.7 | 9532.4 | 9532.4 | 9461.7 | 9293.6 | 9070.0 | 8768.2 | 8225.5 |
| 22.5° | 9144.6 | 9200.0 | 9480.8 | 9736.9 | 9834.3 | 9813.3 | 9717.8 | 9473.2 | 9222.9 | 8913.4 | 8290.5 |
| 25° | 9521.0 | 9563.0 | 9855.3 | 10113.3 | 10172.5 | 10124.7 | 10004.4 | 9691.0 | 9417.8 | 9110.2 | 8408.9 |
| 27.5° | 10006.3 | 10012.0 | 10313.9 | 10531.7 | 10495.4 | 10462.9 | 10312.0 | 9964.2 | 9698.7 | 9391.0 | 8613.4 |
| 30° | 10539.4 | 10539.4 | 10805.0 | 10971.2 | 10860.4 | 10833.6 | 10682.7 | 10294.8 | 10057.9 | 9773.2 | 8903.8 |
| 32.5° | 11055.3 | 11078.2 | 11294.1 | 11399.2 | 11275.0 | 11248.2 | 11101.1 | 10713.2 | 10535.5 | 10355.9 | 9356.6 |
| 35° | 11553.9 | 11571.1 | 11775.6 | 11832.9 | 11714.4 | 11722.1 | 11617.0 | 11288.4 | 11221.5 | 11198.6 | 10038.8 |
| 37.5° | 12037.3 | 12041.2 | 12249.4 | 12285.7 | 12226.5 | 12291.5 | 12301.0 | 12010.6 | 12134.8 | 12320.1 | 10999.8 |
| 40° | 12478.7 | 12482.5 | 12688.9 | 12782.5 | 12883.8 | 12967.9 | 13042.4 | 12887.6 | 13298.4 | 13728.3 | 12144.3 |
| 42.5° | 12832.2 | 12872.3 | 13134.1 | 13311.8 | 13579.3 | 13739.8 | 13942.3 | 13934.7 | 14683.7 | 15329.5 | 13527.7 |
| 45° | 13143.6 | 13212.4 | 13577.4 | 13888.8 | 14347.4 | 14603.4 | 14920.6 | 15169.0 | 16242.8 | 17112.1 | 14928.2 |
| 47.5° | 13554.4 | 13619.4 | 14035.9 | 14546.1 | 15157.5 | 15493.8 | 16019.2 | 16556.1 | 17956.7 | 18862.3 | 16296.3 |
| 50° | 14133.4 | 14104.7 | 14515.5 | 15247.3 | 16032.6 | 16474.0 | 17223.0 | 18027.4 | 19657.2 | 20387.1 | 17100.7 |
| 52.5° | 14750.5 | 14739.1 | 15042.9 | 16009.7 | 17064.4 | 17580.3 | 18570.0 | 19548.3 | 21283.2 | 21437.9 | 17469.4 |
| 55° | 15514.8 | 15432.6 | 15688.7 | 16879.0 | 18289.1 | 18843.2 | 20008.7 | 21053.9 | 22578.6 | 22030.3 | 17654.8 |
| 57.5° | 16315.4 | 16179.7 | 16424.3 | 17847.8 | 19670.6 | 20325.9 | 21602.3 | 22521.3 | 23440.3 | 22435.3 | 17652.9 |
| 60° | 17142.7 | 16982.2 | 17272.6 | 19059.1 | 21386.4 | 22144.9 | 23329.5 | 23513.0 | 24244.7 | 22639.8 | 17522.9 |
| 62.5° | 17834.4 | 17738.8 | 18170.7 | 20354.6 | 23302.8 | 24047.9 | 24634.5 | 24414.8 | 24923.0 | 22798.4 | 17219.1 |
| 65° | 18566.2 | 18571.9 | 19269.3 | 21865.9 | 25339.6 | 25842.1 | 25891.8 | 25584.1 | 25490.5 | 22765.9 | 16191.2 |
| 67.5° | 19555.9 | 19647.6 | 20811.2 | 23918.0 | 27321.0 | 27708.8 | 27705.0 | 26850.9 | 25905.1 | 21474.2 | 13911.7 |
| 70° | 20603.0 | 20818.9 | 22588.2 | 26266.3 | 29483.9 | 29877.5 | 29674.9 | 27657.2 | 24391.9 | 17364.4 | 9845.8 |
| 72.5° | 20427.2 | 20801.7 | 23576.0 | 27747.0 | 31037.2 | 31337.2 | 30020.8 | 25675.9 | 19278.9 | 10092.3 | 4192.1 |
| 75° | 15759.4 | 16193.1 | 21617.5 | 26279.6 | 29407.4 | 29138.0 | 25794.3 | 19980.1 | 10535.5 | 2816.4 | 943.9 |
| 77.5° | 8324.9 | 8556.1 | 14280.5 | 20020.2 | 22930.2 | 22366.5 | 18170.7 | 11083.9 | 3211.9 | 697.4 | 424.2 |
| 80° | 4360.2 | 4413.7 | 6223.1 | 11359.1 | 14152.5 | 14156.3 | 10768.6 | 4868.4 | 1324.1 | 357.3 | 284.7 |
| 82.5° | 2334.9 | 2380.7 | 3288.3 | 5248.7 | 7415.4 | 6721.8 | 4123.3 | 2678.8 | 770.0 | 202.5 | 273.2 |
| 85° | 561.7 | 571.3 | 1864.8 | 2397.9 | 2915.7 | 2082.7 | 1224.8 | 2248.9 | 208.3 | 118.5 | 221.6 |
| 87.5° | 215.9 | 219.7 | 691.7 | 1037.5 | 743.3 | 481.5 | 573.2 | 838.8 | 26.7 | 45.9 | 34.4 |
| 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: P323892

CATALOG NUMBER: GLEON-SA8C-750-U-SL4-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 | 8460.5 |
| 2.5° | 8376.5 | 8326.8 | 8204.5 | 8049.7 | 7912.2 | 7812.8 | 7663.8 | 7566.3 | 7501.4 | 7499.5 | 7474.6 |
| 5° | 8164.4 | 8063.1 | 7799.4 | 7486.1 | 7201.4 | 6945.4 | 6643.5 | 6404.6 | 6226.9 | 6198.3 | 6137.1 |
| 7.5° | 7937.0 | 7770.8 | 7365.7 | 6876.6 | 6398.9 | 5913.6 | 5349.9 | 5000.3 | 4700.3 | 4557.0 | 4541.7 |
| 10° | 7797.5 | 7564.4 | 6989.3 | 6282.3 | 5533.4 | 4744.2 | 4006.7 | 3496.6 | 3127.8 | 3022.7 | 2944.4 |
| 12.5° | 7768.9 | 7461.2 | 6698.9 | 5724.4 | 4654.4 | 3611.2 | 2795.3 | 2252.7 | 1958.5 | 1864.8 | 1840.0 |
| 15° | 7797.5 | 7413.5 | 6454.3 | 5172.2 | 3764.1 | 2562.2 | 1876.3 | 1561.0 | 1450.2 | 1423.5 | 1421.6 |
| 17.5° | 7814.7 | 7356.2 | 6177.3 | 4558.9 | 2900.4 | 1830.4 | 1436.8 | 1345.1 | 1327.9 | 1326.0 | 1329.8 |
| 20° | 7812.8 | 7268.3 | 5846.7 | 3874.9 | 2157.2 | 1438.7 | 1299.3 | 1280.2 | 1276.3 | 1278.3 | 1276.3 |
| 22.5° | 7799.4 | 7165.1 | 5483.7 | 3169.8 | 1629.8 | 1285.9 | 1240.0 | 1228.6 | 1226.7 | 1226.7 | 1226.7 |
| 25° | 7824.3 | 7082.9 | 5084.3 | 2495.4 | 1343.2 | 1215.2 | 1186.5 | 1177.0 | 1175.1 | 1175.1 | 1171.3 |
| 27.5° | 7914.1 | 7037.1 | 4646.8 | 1920.2 | 1213.3 | 1152.1 | 1129.2 | 1127.3 | 1121.6 | 1119.7 | 1123.5 |
| 30° | 8059.3 | 7037.1 | 4167.2 | 1494.2 | 1134.9 | 1087.2 | 1070.0 | 1066.2 | 1064.3 | 1062.3 | 1064.3 |
| 32.5° | 8315.3 | 7090.6 | 3643.7 | 1241.9 | 1060.4 | 1014.6 | 1003.1 | 1008.8 | 1003.1 | 1003.1 | 1003.1 |
| 35° | 8777.7 | 7251.1 | 3095.3 | 1083.4 | 982.1 | 943.9 | 932.4 | 940.1 | 936.2 | 936.2 | 934.3 |
| 37.5° | 9452.2 | 7549.1 | 2543.1 | 987.8 | 913.3 | 873.2 | 857.9 | 869.4 | 865.5 | 865.5 | 863.6 |
| 40° | 10273.8 | 7982.9 | 2017.7 | 915.2 | 846.4 | 804.4 | 791.0 | 796.8 | 787.2 | 787.2 | 791.0 |
| 42.5° | 11288.4 | 8533.1 | 1559.1 | 844.5 | 779.6 | 739.4 | 731.8 | 726.1 | 708.9 | 699.3 | 701.2 |
| 45° | 12415.7 | 9106.3 | 1215.2 | 775.7 | 716.5 | 684.0 | 672.6 | 657.3 | 628.6 | 609.5 | 611.4 |
| 47.5° | 13422.6 | 9547.7 | 987.8 | 708.9 | 659.2 | 634.3 | 617.2 | 588.5 | 546.5 | 523.5 | 525.4 |
| 50° | 13951.9 | 9614.6 | 840.7 | 642.0 | 605.7 | 580.8 | 556.0 | 512.1 | 462.4 | 437.5 | 435.6 |
| 52.5° | 14087.5 | 9301.2 | 731.8 | 580.8 | 552.2 | 523.5 | 491.0 | 431.8 | 376.4 | 349.7 | 345.8 |
| 55° | 14137.2 | 8823.6 | 634.3 | 523.5 | 494.9 | 462.4 | 420.4 | 353.5 | 301.9 | 275.1 | 273.2 |
| 57.5° | 13972.9 | 8110.9 | 557.9 | 471.9 | 437.5 | 397.4 | 345.8 | 282.8 | 233.1 | 212.1 | 212.1 |
| 60° | 13607.9 | 7146.0 | 498.7 | 416.5 | 378.3 | 332.5 | 279.0 | 219.7 | 173.9 | 156.7 | 156.7 |
| 62.5° | 12880.0 | 5896.4 | 443.3 | 359.2 | 322.9 | 275.1 | 225.5 | 166.2 | 122.3 | 112.7 | 114.6 |
| 65° | 11506.2 | 4472.9 | 387.9 | 307.6 | 275.1 | 227.4 | 175.8 | 118.5 | 82.2 | 82.2 | 86.0 |
| 67.5° | 9383.4 | 3106.8 | 330.5 | 261.8 | 236.9 | 185.3 | 133.7 | 82.2 | 57.3 | 65.0 | 72.6 |
| 70° | 6211.7 | 1742.5 | 282.8 | 215.9 | 202.5 | 147.1 | 99.4 | 55.4 | 45.9 | 61.1 | 74.5 |
| 72.5° | 2344.4 | 678.3 | 236.9 | 173.9 | 175.8 | 112.7 | 70.7 | 42.0 | 42.0 | 66.9 | 87.9 |
| 75° | 653.5 | 332.5 | 170.1 | 128.0 | 137.6 | 82.2 | 51.6 | 36.3 | 40.1 | 76.4 | 103.2 |
| 77.5° | 384.0 | 244.6 | 110.8 | 74.5 | 93.6 | 57.3 | 34.4 | 28.7 | 34.4 | 65.0 | 99.4 |
| 80° | 309.5 | 129.9 | 65.0 | 38.2 | 51.6 | 32.5 | 22.9 | 17.2 | 9.6 | 24.8 | 51.6 |
| 82.5° | 309.5 | 78.3 | 30.6 | 26.7 | 26.7 | 17.2 | 11.5 | 7.6 | 1.9 | 0.0 | 13.4 |
| 85° | 208.3 | 32.5 | 19.1 | 17.2 | 13.4 | 5.7 | 3.8 | 1.9 | 0.0 | 0.0 | 0.0 |
| 87.5° | 34.4 | 13.4 | 7.6 | 3.8 | 1.9 | 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 |

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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-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-750-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 4884 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions
 Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

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| 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 |

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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 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

Photopic Flux vs. Wavelength



#####

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| 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 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

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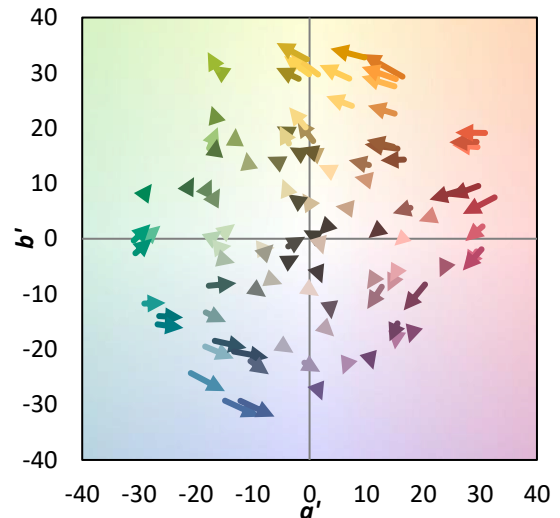
TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)