

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: P318612

Luminaire Tested: **GLEON-SA8C-722-U-T3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P318612
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-14)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA8C-722-U-T3
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(8) 70 CRI, 2200K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 41680 lumens
Efficiency: N/A
Efficacy: 93.7 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G5

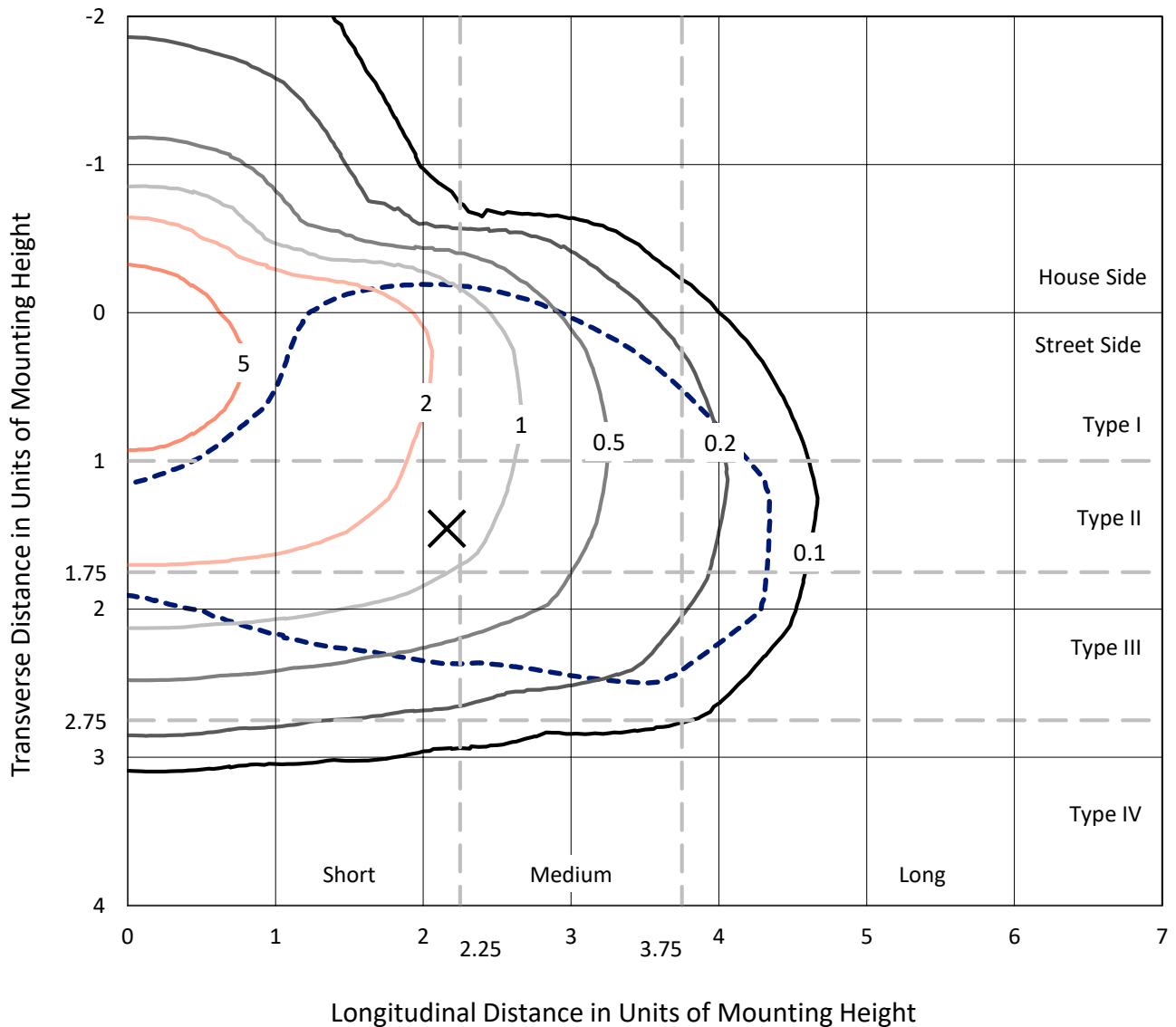
Input Watts (W): 445
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P318612
 CATALOG NUMBER: GLEON-SA8C-722-U-T3

Iso-Footcandle Lines of Horizontal Illumination

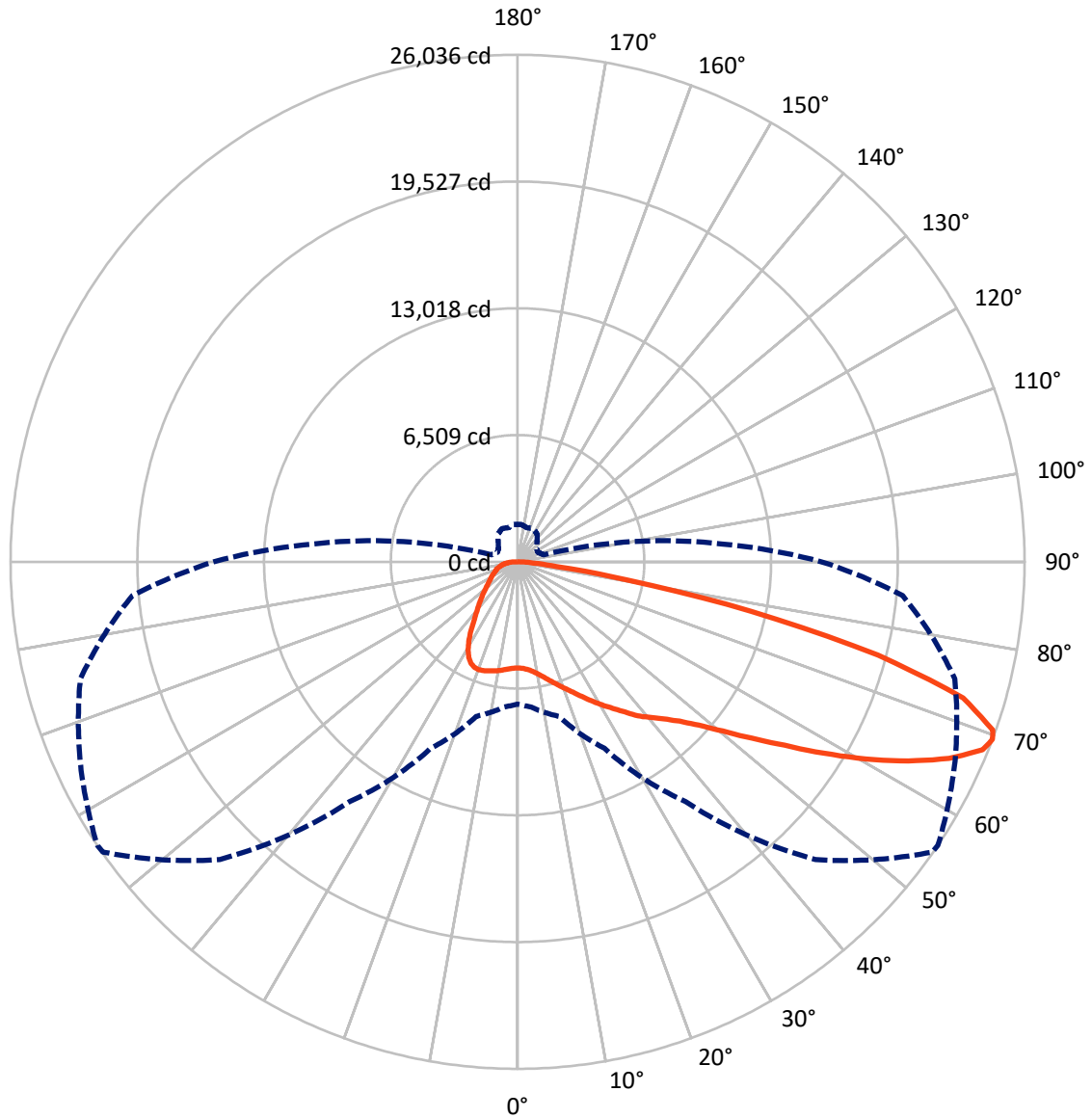
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 6.6 fc
 Type III - Short - N/A

REPORT NUMBER: P318612
CATALOG NUMBER: GLEON-SA8C-722-U-T3

Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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 CATALOG NUMBER: GLEON-SA8C-722-U-T3

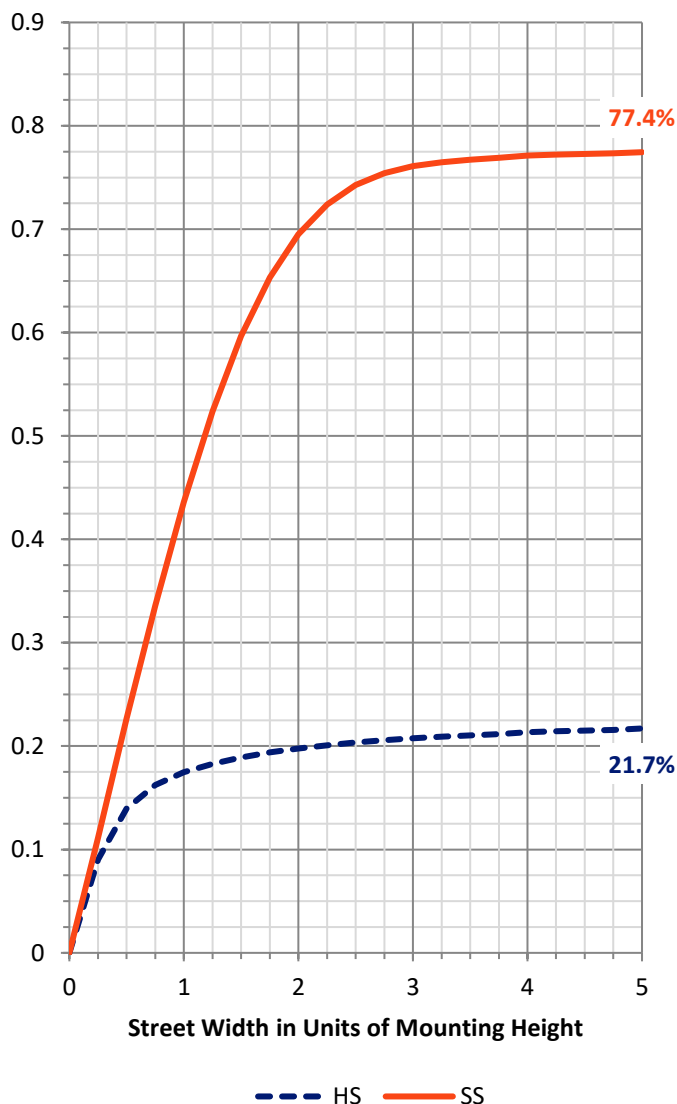
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9282.1 | 0.0 | 9282.1 |
| | % Fixture | 22.3 | 0.0 | 22.3 |
| Street Side | Lumens | 32397.9 | 0.0 | 32397.9 |
| | % Fixture | 77.7 | 0.0 | 77.7 |
| Total | Lumens | 41680.0 | 0.0 | 41680.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 535.2 | 1.3 |
| 10°-20° | 1720.9 | 4.1 |
| 20°-30° | 3004.1 | 7.2 |
| 30°-40° | 4315.3 | 10.4 |
| 40°-50° | 5972.1 | 14.3 |
| 50°-60° | 8749.9 | 21.0 |
| 60°-70° | 10667.8 | 25.6 |
| 70°-80° | 5897.9 | 14.2 |
| 80°-90° | 816.9 | 2.0 |
| 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° | 41680.0 | 100.0 |
| 0°-180° | 41680.0 | 100.0 |

Coefficient of Utilization

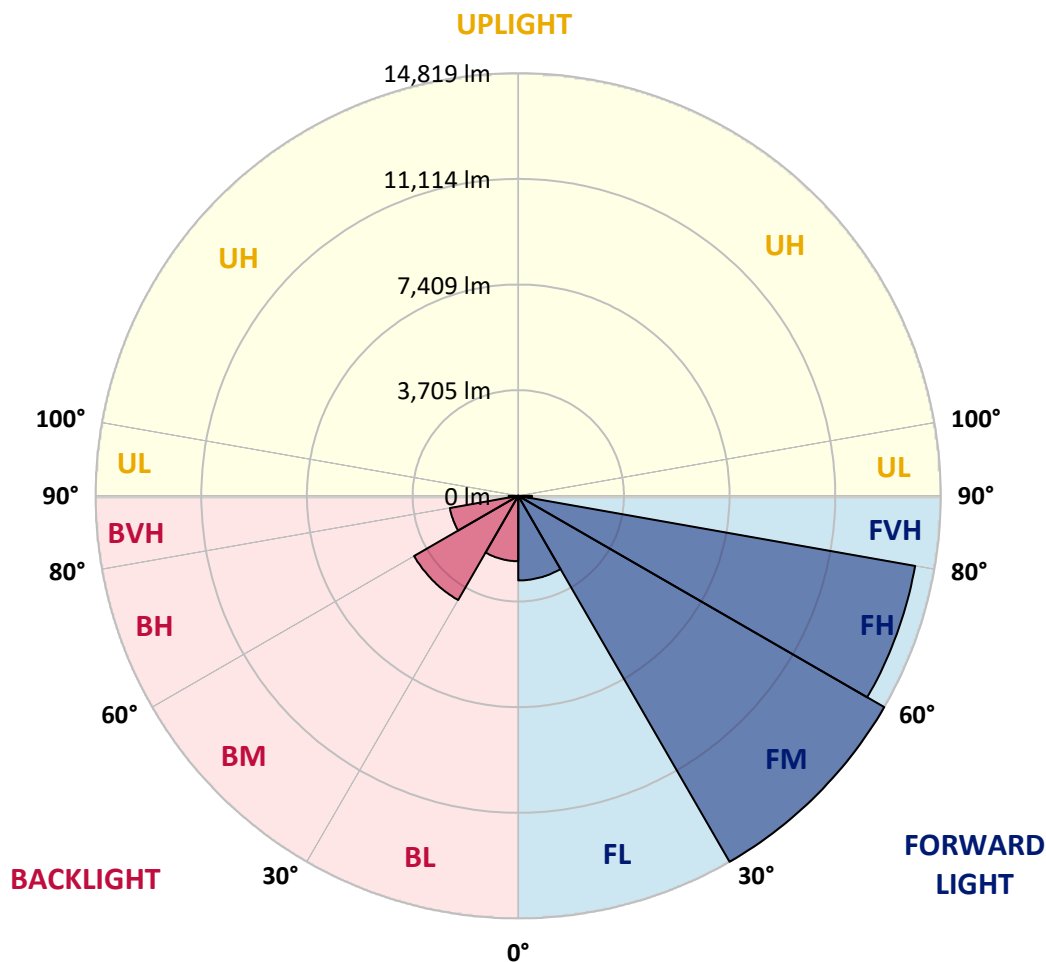


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 CATALOG NUMBER: GLEON-SA8C-722-U-T3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2966.4 | 7.1 | | | |
| FM (30°-60°) | 14818.8 | 35.6 | | | |
| FH (60°-80°) | 14131.6 | 33.9 | | | G5 |
| FVH (80°-90°) | 481.2 | 1.2 | | | G3/500 |
| BL (0°-30°) | 2293.8 | 5.5 | B3/2500 | | |
| BM (30°-60°) | 4218.5 | 10.1 | B3/5000 | | |
| BH (60°-80°) | 2434.1 | 5.8 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 335.7 | 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 III Short





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 CATALOG NUMBER: GLEON-SA8C-722-U-T3

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 |
| 2.5° | 5483.5 | 5489.2 | 5484.9 | 5496.4 | 5483.5 | 5492.1 | 5484.9 | 5484.9 | 5480.6 | 5467.7 | 5453.3 |
| 5° | 5569.6 | 5581.1 | 5574.0 | 5585.4 | 5569.6 | 5572.5 | 5559.6 | 5559.6 | 5546.7 | 5519.4 | 5490.7 |
| 7.5° | 5704.6 | 5717.5 | 5711.8 | 5723.3 | 5701.7 | 5701.7 | 5684.5 | 5683.1 | 5657.2 | 5612.7 | 5579.7 |
| 10° | 5865.4 | 5882.7 | 5876.9 | 5894.1 | 5876.9 | 5882.7 | 5865.4 | 5865.4 | 5831.0 | 5767.8 | 5726.2 |
| 12.5° | 6099.5 | 6121.0 | 6105.2 | 6103.8 | 6096.6 | 6108.1 | 6093.7 | 6090.9 | 6059.3 | 5973.1 | 5915.7 |
| 15° | 6412.5 | 6435.5 | 6402.4 | 6399.6 | 6359.4 | 6355.1 | 6355.1 | 6350.7 | 6330.6 | 6227.3 | 6132.5 |
| 17.5° | 6772.9 | 6780.1 | 6751.3 | 6705.4 | 6653.7 | 6620.7 | 6616.4 | 6627.9 | 6627.9 | 6507.3 | 6356.5 |
| 20° | 7126.1 | 7139.0 | 7116.0 | 7064.4 | 6998.3 | 6949.5 | 6915.0 | 6938.0 | 6936.6 | 6793.0 | 6579.0 |
| 22.5° | 7510.9 | 7541.1 | 7506.6 | 7440.5 | 7363.0 | 7308.5 | 7248.1 | 7268.2 | 7269.7 | 7093.1 | 6797.3 |
| 25° | 8009.1 | 7981.9 | 7960.3 | 7867.0 | 7756.4 | 7700.4 | 7644.4 | 7664.5 | 7658.8 | 7416.1 | 7022.7 |
| 27.5° | 8449.9 | 8455.7 | 8427.0 | 8327.9 | 8200.1 | 8076.6 | 8073.8 | 8086.7 | 8065.1 | 7752.1 | 7235.2 |
| 30° | 8962.5 | 8965.4 | 8925.2 | 8836.2 | 8696.9 | 8537.5 | 8500.2 | 8521.7 | 8475.8 | 8070.9 | 7459.2 |
| 32.5° | 9472.3 | 9486.6 | 9442.1 | 9334.4 | 9222.4 | 9028.6 | 8953.9 | 8968.3 | 8853.4 | 8396.8 | 7690.4 |
| 35° | 9918.8 | 9938.9 | 9924.6 | 9852.8 | 9730.7 | 9564.2 | 9475.1 | 9466.5 | 9324.4 | 8796.0 | 7996.2 |
| 37.5° | 10374.0 | 10392.6 | 10376.9 | 10316.5 | 10267.7 | 10091.1 | 10043.7 | 10043.7 | 9796.8 | 9203.8 | 8385.3 |
| 40° | 10842.1 | 10870.8 | 10852.1 | 10768.8 | 10727.2 | 10646.8 | 10533.4 | 10506.1 | 10239.0 | 9693.4 | 9020.0 |
| 42.5° | 11277.1 | 11314.5 | 11389.1 | 11340.3 | 11255.6 | 11267.1 | 11038.8 | 11024.4 | 10829.1 | 10417.1 | 9816.9 |
| 45° | 11894.5 | 11949.1 | 12075.5 | 12038.1 | 12020.9 | 11957.7 | 11686.3 | 11673.4 | 11598.8 | 11390.6 | 10806.2 |
| 47.5° | 12568.0 | 12642.6 | 12870.9 | 12878.1 | 13063.3 | 12944.1 | 12575.1 | 12530.6 | 12547.9 | 12556.5 | 12013.7 |
| 50° | 13188.2 | 13270.1 | 13644.8 | 13821.4 | 14257.9 | 14283.8 | 13693.7 | 13653.5 | 13720.9 | 13919.1 | 13420.8 |
| 52.5° | 13683.6 | 13787.0 | 14255.1 | 14800.7 | 15548.8 | 15761.3 | 15070.6 | 15040.5 | 15090.7 | 15432.5 | 15011.8 |
| 55° | 14046.9 | 14158.9 | 14668.6 | 15662.2 | 16856.8 | 17231.6 | 16655.8 | 16627.1 | 16658.7 | 17093.7 | 16742.0 |
| 57.5° | 14131.6 | 14158.9 | 14898.3 | 16242.3 | 17961.0 | 18861.3 | 18595.6 | 18538.2 | 18383.1 | 18762.2 | 18651.6 |
| 60° | 13733.9 | 13843.0 | 14708.8 | 16446.2 | 18815.3 | 20468.0 | 20623.0 | 20551.3 | 20116.2 | 20426.3 | 20337.3 |
| 62.5° | 12926.9 | 13122.2 | 14000.9 | 16136.0 | 19149.9 | 21780.3 | 22611.7 | 22525.5 | 21776.0 | 21977.0 | 21549.2 |
| 65° | 11608.8 | 11692.1 | 12615.3 | 15066.3 | 18724.9 | 22620.3 | 24385.0 | 24341.9 | 23398.5 | 23084.1 | 21773.2 |
| 67.5° | 9251.2 | 9407.7 | 10191.6 | 12830.7 | 16986.0 | 22521.2 | 25756.2 | 25751.9 | 24458.2 | 23494.7 | 20979.1 |
| 69° | 7308.5 | 7470.7 | 8217.3 | 10569.3 | 15030.4 | 21615.2 | 25985.9 | 26036.2 | 24756.8 | 23244.9 | 19844.8 |
| 70° | 5826.7 | 6014.8 | 6527.4 | 8902.2 | 13294.5 | 20420.6 | 25795.0 | 25885.4 | 24699.4 | 22832.8 | 18798.1 |
| 72.5° | 2479.7 | 2631.9 | 2996.6 | 4589.0 | 8102.5 | 15248.7 | 23585.2 | 23926.9 | 23368.4 | 20897.3 | 15535.8 |
| 75° | 1082.6 | 1130.0 | 1295.1 | 1870.9 | 3596.8 | 8299.2 | 18476.5 | 19108.2 | 19981.2 | 17663.8 | 11572.9 |
| 77.5° | 792.6 | 812.7 | 903.1 | 1098.4 | 1613.9 | 3134.5 | 11881.6 | 12249.2 | 14410.1 | 12853.7 | 7098.8 |
| 80° | 613.1 | 627.5 | 697.8 | 806.9 | 1053.9 | 1267.9 | 5418.9 | 5734.8 | 8102.5 | 6602.0 | 2956.4 |
| 82.5° | 488.2 | 498.2 | 547.1 | 594.4 | 728.0 | 768.2 | 1799.1 | 1995.8 | 2990.9 | 1823.5 | 782.5 |
| 85° | 453.7 | 465.2 | 482.4 | 433.6 | 466.6 | 450.9 | 778.2 | 814.1 | 903.1 | 716.5 | 327.4 |
| 87.5° | 205.3 | 242.7 | 478.1 | 337.4 | 248.4 | 198.1 | 318.8 | 333.1 | 374.8 | 376.2 | 145.0 |
| 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: P318612
 CATALOG NUMBER: GLEON-SA8C-722-U-T3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 | 5449.0 |
| 2.5° | 5462.0 | 5457.6 | 5464.8 | 5447.6 | 5469.1 | 5467.7 | 5460.5 | 5463.4 | 5477.7 | 5476.3 | 5477.7 |
| 5° | 5495.0 | 5492.1 | 5500.7 | 5487.8 | 5513.6 | 5522.3 | 5523.7 | 5536.6 | 5552.4 | 5556.7 | 5556.7 |
| 7.5° | 5578.3 | 5578.3 | 5582.6 | 5565.3 | 5582.6 | 5581.1 | 5574.0 | 5586.9 | 5602.7 | 5604.1 | 5602.7 |
| 10° | 5721.8 | 5723.3 | 5716.1 | 5671.6 | 5657.2 | 5618.5 | 5582.6 | 5584.0 | 5604.1 | 5619.9 | 5624.2 |
| 12.5° | 5902.8 | 5897.0 | 5865.4 | 5783.6 | 5723.3 | 5644.3 | 5607.0 | 5605.5 | 5625.6 | 5638.6 | 5642.9 |
| 15° | 6109.5 | 6093.7 | 6011.9 | 5878.4 | 5772.1 | 5694.6 | 5634.3 | 5619.9 | 5608.4 | 5594.1 | 5595.5 |
| 17.5° | 6304.8 | 6268.9 | 6132.5 | 5947.3 | 5835.3 | 5731.9 | 5615.6 | 5522.3 | 5457.6 | 5420.3 | 5408.8 |
| 20° | 6502.9 | 6432.6 | 6235.9 | 6011.9 | 5869.7 | 5681.6 | 5457.6 | 5268.1 | 5150.4 | 5095.8 | 5085.8 |
| 22.5° | 6683.9 | 6570.4 | 6332.1 | 6079.4 | 5842.5 | 5512.2 | 5160.4 | 4884.7 | 4721.1 | 4647.8 | 4653.6 |
| 25° | 6860.5 | 6702.5 | 6432.6 | 6126.8 | 5704.6 | 5213.6 | 4746.9 | 4408.0 | 4218.5 | 4136.7 | 4133.8 |
| 27.5° | 7015.5 | 6836.1 | 6541.7 | 6088.0 | 5447.6 | 4788.5 | 4257.3 | 3927.0 | 3769.1 | 3698.7 | 3687.3 |
| 30° | 7193.6 | 7004.1 | 6686.7 | 5940.1 | 5071.4 | 4297.5 | 3779.1 | 3546.5 | 3434.5 | 3364.2 | 3351.3 |
| 32.5° | 7410.4 | 7232.4 | 6805.9 | 5671.6 | 4590.4 | 3784.9 | 3405.8 | 3243.6 | 3141.6 | 3062.7 | 3048.3 |
| 35° | 7726.3 | 7533.9 | 6836.1 | 5286.8 | 4062.0 | 3380.0 | 3131.6 | 2965.0 | 2827.2 | 2725.2 | 2715.2 |
| 37.5° | 8122.6 | 7911.5 | 6767.1 | 4788.5 | 3549.4 | 3117.2 | 2903.3 | 2698.0 | 2518.5 | 2374.9 | 2351.9 |
| 40° | 8694.0 | 8375.3 | 6576.2 | 4214.2 | 3171.8 | 2914.8 | 2680.7 | 2446.7 | 2224.1 | 2056.1 | 2023.1 |
| 42.5° | 9380.4 | 8919.5 | 6283.3 | 3642.7 | 2894.7 | 2709.4 | 2459.6 | 2169.6 | 1957.1 | 1837.9 | 1820.7 |
| 45° | 10253.4 | 9485.2 | 5876.9 | 3143.1 | 2621.9 | 2504.1 | 2221.3 | 1954.2 | 1822.1 | 1734.5 | 1720.1 |
| 47.5° | 11249.8 | 10119.8 | 5450.5 | 2736.7 | 2390.7 | 2311.7 | 2030.3 | 1858.0 | 1753.2 | 1684.2 | 1671.3 |
| 50° | 12474.6 | 10836.3 | 4998.2 | 2403.6 | 2158.1 | 2080.5 | 1939.8 | 1804.9 | 1721.6 | 1668.5 | 1655.5 |
| 52.5° | 13855.9 | 11644.7 | 4672.2 | 2140.8 | 1965.7 | 1909.7 | 1892.4 | 1776.1 | 1708.7 | 1668.5 | 1655.5 |
| 55° | 15343.4 | 12467.4 | 4320.5 | 1919.7 | 1799.1 | 1814.9 | 1860.9 | 1779.0 | 1733.1 | 1684.2 | 1665.6 |
| 57.5° | 16832.4 | 13317.5 | 3928.5 | 1733.1 | 1667.0 | 1744.6 | 1839.3 | 1784.8 | 1746.0 | 1698.6 | 1681.4 |
| 60° | 18009.8 | 13855.9 | 3321.1 | 1576.6 | 1562.2 | 1667.0 | 1787.6 | 1741.7 | 1691.4 | 1692.9 | 1690.0 |
| 62.5° | 18559.7 | 13827.2 | 2650.6 | 1437.3 | 1457.4 | 1562.2 | 1704.3 | 1674.2 | 1632.6 | 1688.6 | 1692.9 |
| 65° | 18251.0 | 13138.0 | 2063.3 | 1310.9 | 1345.4 | 1453.1 | 1618.2 | 1641.2 | 1655.5 | 1763.2 | 1777.6 |
| 67.5° | 16955.9 | 11796.9 | 1598.1 | 1200.4 | 1243.4 | 1378.4 | 1626.8 | 1787.6 | 1806.3 | 1919.7 | 1918.3 |
| 69° | 15616.3 | 10539.1 | 1388.5 | 1142.9 | 1193.2 | 1397.1 | 1738.8 | 1881.0 | 1810.6 | 1931.2 | 1914.0 |
| 70° | 14493.4 | 9544.1 | 1276.5 | 1104.2 | 1170.2 | 1430.1 | 1813.5 | 1879.5 | 1789.1 | 1892.4 | 1863.7 |
| 72.5° | 11162.3 | 6866.2 | 1082.6 | 1032.4 | 1092.7 | 1368.4 | 1835.0 | 1837.9 | 1738.8 | 1758.9 | 1710.1 |
| 75° | 7655.9 | 4339.1 | 944.8 | 934.7 | 974.9 | 1233.4 | 1766.1 | 1756.0 | 1608.1 | 1579.4 | 1539.2 |
| 77.5° | 4221.4 | 2204.0 | 802.6 | 841.4 | 868.7 | 1092.7 | 1605.3 | 1590.9 | 1468.9 | 1408.6 | 1394.2 |
| 80° | 1628.2 | 964.9 | 677.7 | 748.1 | 765.3 | 946.2 | 1407.1 | 1394.2 | 1292.3 | 1214.7 | 1193.2 |
| 82.5° | 614.5 | 505.4 | 560.0 | 647.6 | 641.8 | 781.1 | 1191.8 | 1184.6 | 1085.5 | 972.1 | 937.6 |
| 85° | 284.3 | 303.0 | 443.7 | 534.1 | 492.5 | 578.6 | 953.4 | 966.3 | 845.7 | 710.7 | 710.7 |
| 87.5° | 120.6 | 169.4 | 314.5 | 403.5 | 331.7 | 390.5 | 699.3 | 667.7 | 613.1 | 425.0 | 399.2 |
| 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: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-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-722-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): 2237
 CIE u': 0.2876
 CIE v': 0.5346
 Duv: -0.0006
 CIE x: 0.5005
 CIE y: 0.4134
 CIE z: 0.0860
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 74.5
 Rf: 69.8
 Rg: 99.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.9 | R9: | -17.4 |
| R2: | 83.0 | R10: | 61.3 |
| R3: | 95.2 | R11: | 59.8 |
| R4: | 66.2 | R12: | 50.5 |
| R5: | 65.9 | R13: | 71.1 |
| R6: | 76.3 | R14: | 96.9 |
| R7: | 76.7 | | |
| R8: | 43.8 | | |



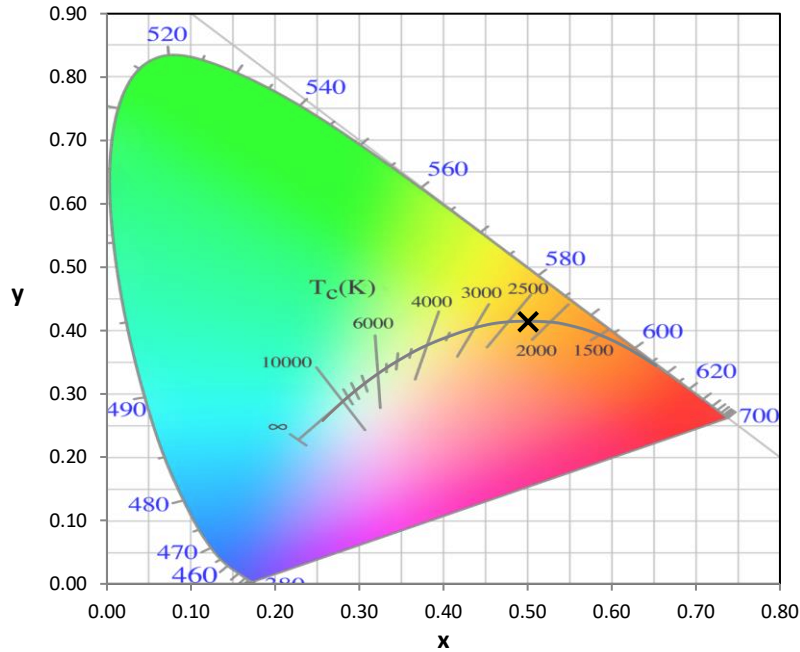
Test Conditions
 Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-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: SP1-1908-441-10-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-10-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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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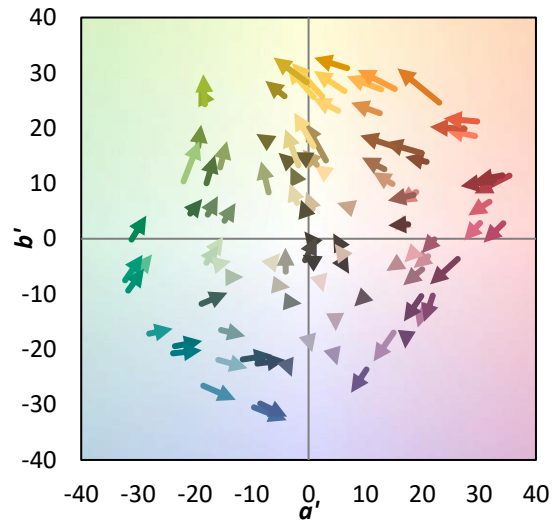
TM-30-18

Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_g = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)