

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: P322974

Luminaire Tested: **GLEON-SA0C-760-U-T4W-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P322974
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA0C-760-U-T4W-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(10) 70 CRI, 5700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
WIDE OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 50742 lumens
Efficiency: N/A
Efficacy: 90.9 lumens/watt
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

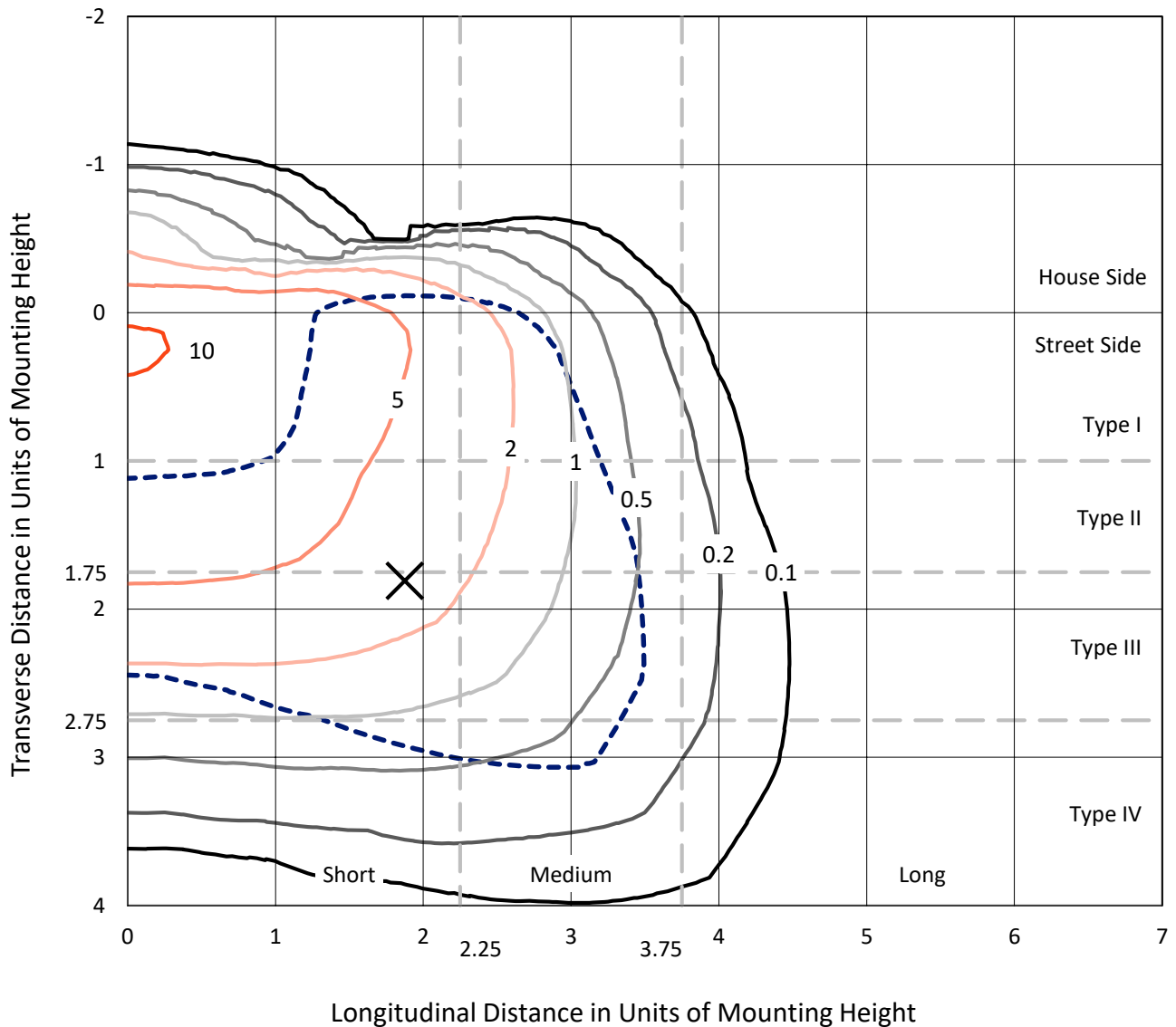
Input Watts (W): 558
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P322974
 CATALOG NUMBER: GLEON-SA0C-760-U-T4W-HSS

Iso-Footcandle Lines of Horizontal Illumination

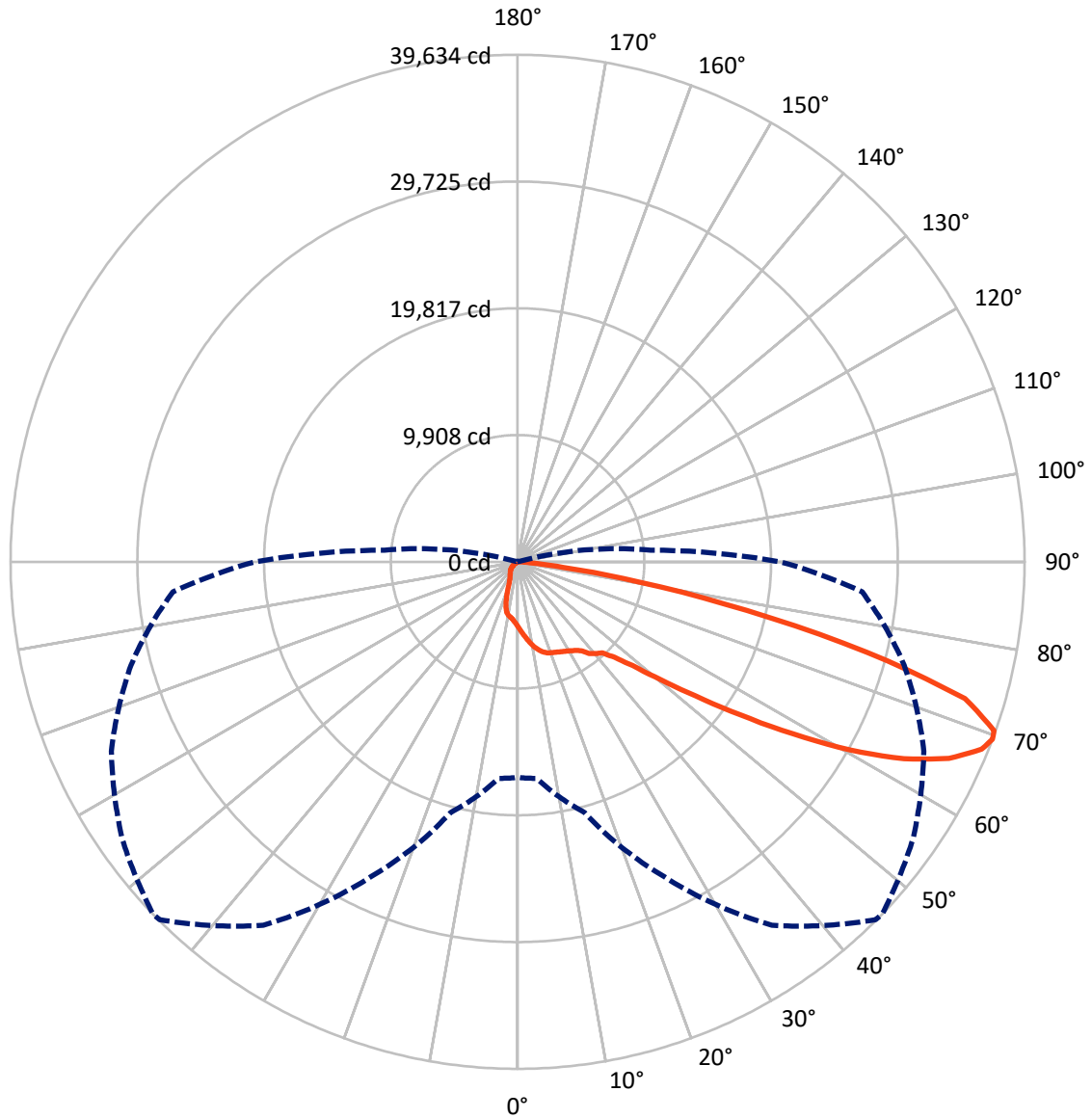
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.8 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 46-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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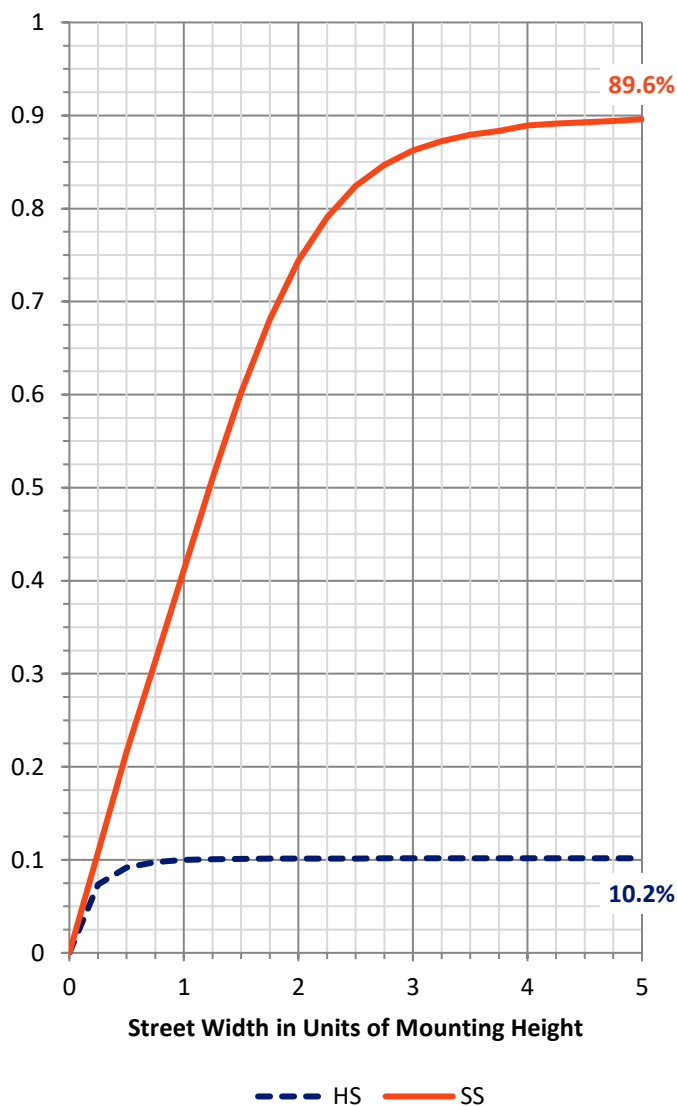
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5207.5 | 0.0 | 5207.5 |
| | % Fixture | 10.3 | 0.0 | 10.3 |
| Street Side | Lumens | 45534.5 | 0.0 | 45534.5 |
| | % Fixture | 89.7 | 0.0 | 89.7 |
| Total | Lumens | 50742.0 | 0.0 | 50742.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 506.1 | 1.0 |
| 10°-20° | 1535.2 | 3.0 |
| 20°-30° | 2414.4 | 4.8 |
| 30°-40° | 3462.3 | 6.8 |
| 40°-50° | 5984.1 | 11.8 |
| 50°-60° | 11822.2 | 23.3 |
| 60°-70° | 16522.5 | 32.6 |
| 70°-80° | 7982.2 | 15.7 |
| 80°-90° | 513.0 | 1.0 |
| 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° | 50742.0 | 100.0 |
| 0°-180° | 50742.0 | 100.0 |

Coefficient of Utilization

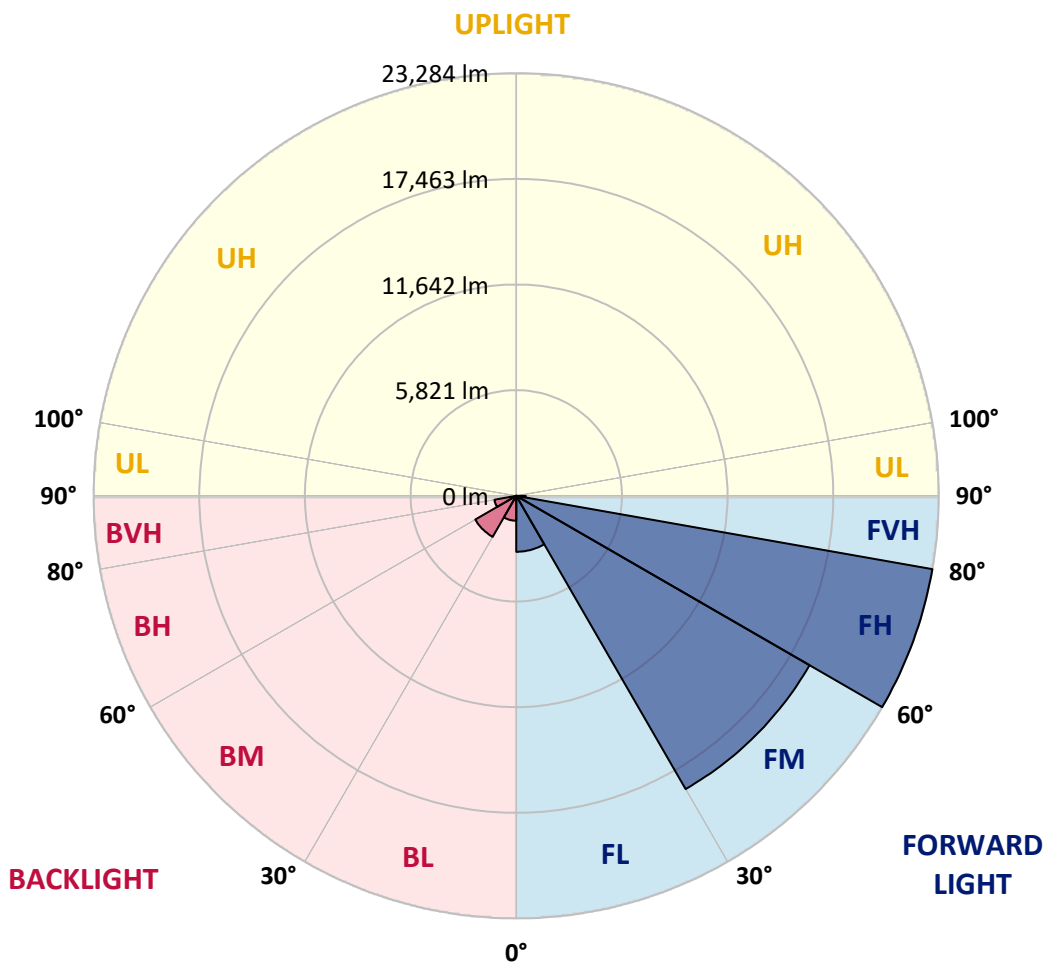


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3083.2 | 6.1 | | | |
| FM (30°-60°) | 18659.0 | 36.8 | | | |
| FH (60°-80°) | 23283.6 | 45.9 | | | G5 |
| FVH (80°-90°) | 508.7 | 1.0 | | | G4/750 |
| BL (0°-30°) | 1372.5 | 2.7 | B3/2500 | | |
| BM (30°-60°) | 2609.6 | 5.1 | B3/5000 | | |
| BH (60°-80°) | 1221.1 | 2.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 4.3 | 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





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 46° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 |
| 2.5° | 5648.0 | 5640.9 | 5607.6 | 5593.3 | 5512.4 | 5464.8 | 5445.8 | 5386.3 | 5300.7 | 5215.0 | 5119.8 |
| 5° | 6290.4 | 6288.0 | 6226.1 | 6166.7 | 6014.4 | 5871.6 | 5845.5 | 5707.5 | 5514.8 | 5334.0 | 5153.2 |
| 7.5° | 6947.0 | 6916.1 | 6854.2 | 6740.0 | 6518.8 | 6290.4 | 6269.0 | 6073.9 | 5800.3 | 5538.6 | 5279.2 |
| 10° | 7503.7 | 7484.7 | 7403.8 | 7230.1 | 6970.8 | 6711.5 | 6685.3 | 6445.0 | 6135.7 | 5814.5 | 5483.8 |
| 12.5° | 7936.7 | 7922.4 | 7815.4 | 7598.9 | 7322.9 | 7054.1 | 7018.4 | 6804.3 | 6473.6 | 6114.3 | 5724.1 |
| 15° | 8200.8 | 8193.7 | 8062.8 | 7832.0 | 7560.8 | 7327.7 | 7296.7 | 7108.8 | 6801.9 | 6426.0 | 5985.8 |
| 17.5° | 8262.7 | 8265.0 | 8129.4 | 7896.3 | 7672.6 | 7506.1 | 7482.3 | 7339.6 | 7082.6 | 6709.1 | 6247.5 |
| 20° | 8124.7 | 8153.2 | 8031.9 | 7829.7 | 7691.7 | 7603.6 | 7584.6 | 7499.0 | 7282.5 | 6930.3 | 6456.9 |
| 22.5° | 7929.6 | 7943.8 | 7860.6 | 7725.0 | 7667.9 | 7684.5 | 7675.0 | 7627.4 | 7444.2 | 7120.7 | 6663.9 |
| 25° | 7810.6 | 7810.6 | 7760.7 | 7646.5 | 7684.5 | 7786.8 | 7789.2 | 7779.7 | 7634.6 | 7353.8 | 6916.1 |
| 27.5° | 7805.9 | 7791.6 | 7734.5 | 7648.8 | 7753.5 | 7910.5 | 7920.1 | 7984.3 | 7893.9 | 7636.9 | 7230.1 |
| 30° | 7996.2 | 7979.5 | 7858.2 | 7746.4 | 7879.6 | 8048.5 | 8072.3 | 8212.7 | 8167.5 | 7943.8 | 7579.8 |
| 32.5° | 8441.1 | 8381.6 | 8112.8 | 7929.6 | 8029.5 | 8231.7 | 8262.7 | 8486.3 | 8557.7 | 8322.1 | 7917.7 |
| 35° | 9050.1 | 8862.2 | 8474.4 | 8276.9 | 8286.4 | 8498.2 | 8526.7 | 8855.0 | 9066.8 | 8669.5 | 8179.4 |
| 37.5° | 9890.0 | 9797.2 | 9166.7 | 8638.5 | 8681.4 | 9002.6 | 9085.8 | 9442.7 | 9383.2 | 8859.8 | 8476.8 |
| 40° | 11731.4 | 11586.3 | 10915.4 | 9652.1 | 9059.7 | 9411.8 | 9437.9 | 9628.3 | 9633.0 | 9290.4 | 9095.3 |
| 42.5° | 14239.0 | 14179.5 | 13472.9 | 11491.1 | 9804.3 | 9685.4 | 9732.9 | 10054.1 | 10413.4 | 10199.2 | 10189.7 |
| 45° | 17015.4 | 16984.5 | 16235.0 | 13932.1 | 11310.3 | 10582.3 | 10641.8 | 11072.4 | 11759.9 | 11807.5 | 12109.7 |
| 47.5° | 19249.4 | 19235.1 | 18804.5 | 16656.2 | 13615.6 | 12102.5 | 12121.6 | 12578.4 | 13786.9 | 14384.1 | 14867.1 |
| 50° | 21285.9 | 21354.9 | 21014.7 | 19603.9 | 16756.1 | 14484.0 | 14438.8 | 14743.3 | 16684.7 | 17662.5 | 18262.1 |
| 52.5° | 24117.0 | 24214.6 | 23260.6 | 22354.1 | 20051.1 | 17438.9 | 17403.2 | 17722.0 | 20167.7 | 20900.5 | 21007.5 |
| 55° | 26617.5 | 26450.9 | 25696.8 | 25435.1 | 24069.5 | 21088.4 | 21078.9 | 21359.7 | 23536.5 | 23848.2 | 24045.7 |
| 57.5° | 27721.4 | 27657.2 | 28021.2 | 28620.7 | 28278.1 | 25401.8 | 25380.3 | 25166.2 | 26550.9 | 26584.2 | 27190.9 |
| 60° | 28418.5 | 28497.0 | 29612.8 | 31461.4 | 32315.5 | 30043.4 | 29905.4 | 28599.3 | 29429.6 | 29355.8 | 30005.3 |
| 62.5° | 27895.1 | 28049.7 | 30057.7 | 33138.6 | 35336.9 | 34095.0 | 33899.9 | 31744.5 | 31889.6 | 31635.0 | 32239.3 |
| 65° | 25116.3 | 25356.6 | 28646.9 | 32822.2 | 36835.8 | 37261.6 | 37064.2 | 34520.9 | 33842.8 | 33424.1 | 33088.7 |
| 67.5° | 20393.7 | 20536.5 | 23971.9 | 30069.6 | 36160.1 | 39150.6 | 39110.2 | 36954.7 | 35317.9 | 33122.0 | 30519.2 |
| 69° | 16853.6 | 16994.0 | 20300.9 | 27171.8 | 34673.2 | 39555.1 | 39633.6 | 37735.1 | 35037.2 | 31285.3 | 27041.0 |
| 70° | 14274.7 | 14424.5 | 17505.5 | 24688.0 | 32948.3 | 39367.1 | 39507.5 | 37661.3 | 34233.0 | 29158.4 | 23988.6 |
| 72.5° | 7487.1 | 7615.5 | 10777.4 | 17008.3 | 26860.2 | 36148.2 | 36574.1 | 34478.1 | 29018.0 | 21176.5 | 14184.3 |
| 75° | 2352.9 | 2426.7 | 4208.6 | 8890.7 | 18390.5 | 28106.8 | 28204.4 | 27045.7 | 20605.5 | 11648.1 | 5907.3 |
| 77.5° | 896.9 | 875.5 | 1401.3 | 3276.0 | 9297.6 | 17698.2 | 18295.4 | 16901.2 | 10813.1 | 4118.2 | 1363.2 |
| 80° | 483.0 | 485.3 | 728.0 | 1356.1 | 3977.9 | 9095.3 | 9599.7 | 8191.3 | 3842.3 | 1284.7 | 314.0 |
| 82.5° | 209.4 | 218.9 | 409.2 | 718.5 | 1827.2 | 3354.5 | 3606.7 | 3002.4 | 1467.9 | 863.6 | 116.6 |
| 85° | 45.2 | 50.0 | 197.5 | 390.2 | 744.7 | 942.1 | 987.3 | 973.1 | 935.0 | 670.9 | 45.2 |
| 87.5° | 0.0 | 0.0 | 88.0 | 140.4 | 187.9 | 214.1 | 187.9 | 245.0 | 516.3 | 452.0 | 23.8 |
| 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: P322974

CATALOG NUMBER: GLEON-SA0C-760-U-T4W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 | 5084.2 |
| 2.5° | 5088.9 | 5046.1 | 4972.3 | 4891.5 | 4834.4 | 4774.9 | 4727.3 | 4705.9 | 4682.1 | 4665.4 | 4686.8 |
| 5° | 5079.4 | 4996.1 | 4853.4 | 4715.4 | 4615.5 | 4534.6 | 4468.0 | 4441.8 | 4415.6 | 4396.6 | 4394.2 |
| 7.5° | 5162.7 | 5046.1 | 4827.2 | 4625.0 | 4470.3 | 4360.9 | 4270.5 | 4232.4 | 4201.5 | 4187.2 | 4175.3 |
| 10° | 5322.1 | 5172.2 | 4879.6 | 4615.5 | 4415.6 | 4230.1 | 4035.0 | 3885.1 | 3787.5 | 3742.3 | 3725.7 |
| 12.5° | 5529.1 | 5341.1 | 4979.5 | 4665.4 | 4375.2 | 4018.3 | 3604.4 | 3247.5 | 3016.7 | 2940.6 | 2895.4 |
| 15° | 5771.7 | 5538.6 | 5110.3 | 4729.7 | 4227.7 | 3575.8 | 2874.0 | 2407.7 | 2193.5 | 2150.7 | 2103.1 |
| 17.5° | 6004.9 | 5747.9 | 5267.4 | 4741.6 | 3904.1 | 2857.3 | 2105.5 | 1789.1 | 1705.8 | 1734.4 | 1741.5 |
| 20° | 6209.5 | 5954.9 | 5422.0 | 4636.9 | 3316.5 | 2143.6 | 1629.7 | 1551.2 | 1582.1 | 1636.8 | 1646.3 |
| 22.5° | 6416.5 | 6154.8 | 5564.7 | 4360.9 | 2564.7 | 1627.3 | 1467.9 | 1486.9 | 1517.9 | 1572.6 | 1582.1 |
| 25° | 6668.6 | 6397.4 | 5698.0 | 3854.2 | 1924.7 | 1384.6 | 1394.2 | 1422.7 | 1453.6 | 1503.6 | 1508.4 |
| 27.5° | 6958.9 | 6704.3 | 5786.0 | 3195.1 | 1427.5 | 1272.8 | 1303.8 | 1346.6 | 1377.5 | 1425.1 | 1434.6 |
| 30° | 7344.3 | 7108.8 | 5814.5 | 2512.3 | 1196.7 | 1172.9 | 1187.2 | 1239.5 | 1284.7 | 1327.5 | 1334.7 |
| 32.5° | 7705.9 | 7508.5 | 5719.4 | 1896.2 | 1108.7 | 1080.1 | 1080.1 | 1111.0 | 1163.4 | 1203.8 | 1213.3 |
| 35° | 8039.0 | 7910.5 | 5414.9 | 1387.0 | 1042.1 | 994.5 | 970.7 | 970.7 | 1004.0 | 1037.3 | 1046.8 |
| 37.5° | 8479.1 | 8474.4 | 4922.4 | 1106.3 | 977.8 | 923.1 | 873.1 | 835.1 | 823.2 | 830.3 | 835.1 |
| 40° | 9233.3 | 9240.5 | 4280.0 | 992.1 | 923.1 | 849.3 | 773.2 | 704.2 | 640.0 | 618.6 | 616.2 |
| 42.5° | 10411.0 | 10303.9 | 3606.7 | 937.4 | 875.5 | 773.2 | 659.0 | 566.2 | 466.3 | 435.4 | 433.0 |
| 45° | 12281.0 | 11645.7 | 2893.0 | 887.4 | 825.6 | 687.6 | 544.8 | 418.7 | 337.8 | 314.0 | 314.0 |
| 47.5° | 15005.0 | 13408.7 | 2241.1 | 832.7 | 758.9 | 590.0 | 411.6 | 302.1 | 247.4 | 235.5 | 237.9 |
| 50° | 17821.9 | 15135.9 | 1717.7 | 763.7 | 678.0 | 487.7 | 304.5 | 218.9 | 187.9 | 187.9 | 190.3 |
| 52.5° | 20320.0 | 16401.6 | 1339.4 | 689.9 | 578.1 | 383.0 | 230.8 | 171.3 | 157.0 | 154.6 | 157.0 |
| 55° | 22658.6 | 17217.6 | 1025.4 | 604.3 | 459.2 | 285.5 | 176.1 | 140.4 | 130.9 | 126.1 | 123.7 |
| 57.5° | 24914.0 | 17622.1 | 768.5 | 487.7 | 333.1 | 207.0 | 140.4 | 119.0 | 109.4 | 102.3 | 99.9 |
| 60° | 26415.3 | 17293.8 | 528.2 | 359.2 | 230.8 | 149.9 | 116.6 | 102.3 | 90.4 | 83.3 | 80.9 |
| 62.5° | 27262.2 | 16396.8 | 340.2 | 259.3 | 164.2 | 111.8 | 92.8 | 85.6 | 69.0 | 61.9 | 61.9 |
| 65° | 26919.6 | 14917.0 | 237.9 | 185.6 | 119.0 | 83.3 | 69.0 | 69.0 | 50.0 | 40.4 | 38.1 |
| 67.5° | 23855.3 | 12602.1 | 180.8 | 138.0 | 85.6 | 61.9 | 52.3 | 59.5 | 30.9 | 19.0 | 19.0 |
| 69° | 20524.6 | 10444.3 | 154.6 | 114.2 | 71.4 | 50.0 | 45.2 | 54.7 | 21.4 | 14.3 | 11.9 |
| 70° | 17838.6 | 9009.7 | 140.4 | 99.9 | 59.5 | 42.8 | 40.4 | 52.3 | 21.4 | 11.9 | 9.5 |
| 72.5° | 10672.7 | 5024.7 | 107.1 | 71.4 | 38.1 | 33.3 | 33.3 | 59.5 | 21.4 | 11.9 | 9.5 |
| 75° | 4313.3 | 1770.1 | 78.5 | 50.0 | 28.5 | 28.5 | 40.4 | 76.1 | 19.0 | 9.5 | 7.1 |
| 77.5° | 977.8 | 387.8 | 45.2 | 30.9 | 19.0 | 28.5 | 47.6 | 59.5 | 11.9 | 4.8 | 0.0 |
| 80° | 237.9 | 95.2 | 28.5 | 19.0 | 11.9 | 21.4 | 35.7 | 33.3 | 2.4 | 0.0 | 0.0 |
| 82.5° | 78.5 | 33.3 | 11.9 | 9.5 | 2.4 | 7.1 | 16.7 | 9.5 | 0.0 | 0.0 | 0.0 |
| 85° | 33.3 | 19.0 | 4.8 | 2.4 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 21.4 | 7.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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: SP1-1908-441-9-R4

Test Date: 10/23/2019

Luminaire Tested: SA1C-760-U-5WQ

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

Test Information

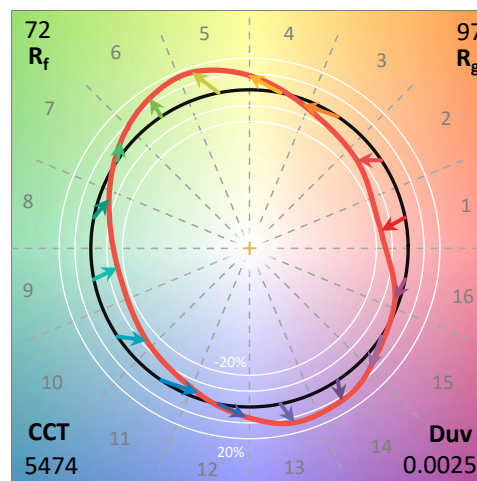
Test Method: LM-79-2008
 Report Number: SP1-1908-441-9-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW-EDISON
 Catalog Number: **SA1C-760-U-5WQ**
 Description: MCGRAW 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): 5474
 CIE u': 0.2052
 CIE v': 0.4804
 Duv: 0.0025
 CIE x: 0.3330
 CIE y: 0.3466
 CIE z: 0.3204
 Peak Wavelength (nm): 442
 Dominant Wavelength (nm): 554
 Purity: 4.1
 Rf: 72.1
 Rg: 97.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 70.6 | R9: | -27.1 |
| R2: | 74.6 | R10: | 40.8 |
| R3: | 78.3 | R11: | 74.6 |
| R4: | 73.8 | R12: | 50.4 |
| R5: | 72.4 | R13: | 70.0 |
| R6: | 67.5 | R14: | 87.8 |
| R7: | 77.5 | | |
| R8: | 58.9 | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.6/31%
 Sphere Temperature (°C): 25.9

REPORT NUMBER: SP1-1908-441-9-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 |

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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 5700K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-9-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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13759.3 S/P: 1.85

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

REPORT NUMBER: SP1-1908-441-9-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5527.6 M/P: 0.74

| 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 | 3540 | NR | 490 | 33363 | NR | 620 | 80193 | NR | 750 | 4663 | NR | 880 | 4678 | NR |
| 365 | 2862 | NR | 495 | 44177 | NR | 625 | 73091 | NR | 755 | 4147 | NR | 885 | 4128 | NR |
| 370 | 2865 | NR | 500 | 57019 | NR | 630 | 66269 | NR | 760 | 4040 | NR | 890 | 4504 | NR |
| 375 | 3254 | NR | 505 | 70030 | NR | 635 | 60012 | NR | 765 | 3474 | NR | 895 | 4371 | NR |
| 380 | 3076 | NR | 510 | 81972 | NR | 640 | 53914 | NR | 770 | 3469 | NR | 900 | 4082 | NR |
| 385 | 2904 | NR | 515 | 92590 | NR | 645 | 48385 | NR | 775 | 3181 | NR | 905 | 2982 | NR |
| 390 | 2689 | NR | 520 | 100305 | NR | 650 | 43219 | NR | 780 | 2969 | NR | 910 | 4351 | NR |
| 395 | 2619 | NR | 525 | 107452 | NR | 655 | 38562 | NR | 785 | 3132 | NR | 915 | 3365 | NR |
| 400 | 2679 | NR | 530 | 111373 | NR | 660 | 34110 | NR | 790 | 2507 | NR | 920 | 3430 | NR |
| 405 | 3515 | NR | 535 | 114505 | NR | 665 | 30085 | NR | 795 | 2968 | NR | 925 | 4264 | NR |
| 410 | 6934 | NR | 540 | 116408 | NR | 670 | 26205 | NR | 800 | 2758 | NR | 930 | 4095 | NR |
| 415 | 14943 | NR | 545 | 118700 | NR | 675 | 22906 | NR | 805 | 2872 | NR | 935 | 5048 | NR |
| 420 | 31939 | NR | 550 | 119209 | NR | 680 | 20058 | NR | 810 | 3094 | NR | 940 | 4074 | NR |
| 425 | 64701 | NR | 555 | 120742 | NR | 685 | 17413 | NR | 815 | 3222 | NR | 945 | 4949 | NR |
| 430 | 110939 | NR | 560 | 121594 | NR | 690 | 15447 | NR | 820 | 3238 | NR | 950 | 4387 | NR |
| 435 | 164597 | NR | 565 | 121913 | NR | 695 | 13398 | NR | 825 | 3524 | NR | 955 | 4978 | NR |
| 440 | 207696 | NR | 570 | 122147 | NR | 700 | 11777 | NR | 830 | 2921 | NR | 960 | 4706 | NR |
| 445 | 201830 | NR | 575 | 121605 | NR | 705 | 10412 | NR | 835 | 3595 | NR | 965 | 5083 | NR |
| 450 | 145410 | NR | 580 | 120248 | NR | 710 | 9544 | NR | 840 | 3016 | NR | 970 | 4522 | NR |
| 455 | 89594 | NR | 585 | 117717 | NR | 715 | 8940 | NR | 845 | 4032 | NR | 975 | 4740 | NR |
| 460 | 58321 | NR | 590 | 114359 | NR | 720 | 7897 | NR | 850 | 3579 | NR | 980 | 6122 | NR |
| 465 | 39318 | NR | 595 | 109974 | NR | 725 | 7045 | NR | 855 | 4571 | NR | 985 | 6450 | NR |
| 470 | 27693 | NR | 600 | 105269 | NR | 730 | 6483 | NR | 860 | 4485 | NR | 990 | 4875 | NR |
| 475 | 23081 | NR | 605 | 99453 | NR | 735 | 5838 | NR | 865 | 3978 | NR | 995 | 4764 | NR |
| 480 | 23002 | NR | 610 | 92921 | NR | 740 | 5261 | NR | 870 | 4298 | NR | 1000 | 3640 | NR |
| 485 | 26201 | NR | 615 | 86989 | NR | 745 | 4760 | NR | 875 | 4356 | NR | | | |

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Summary

$R_f = 72.1$
 $R_g = 97.2$
 CIE $R_a = 71.7$
 $R_g = -27.1$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 54 | CES51 = 88 | CES76 = 43 |
| CES02 = 59 | CES27 = 79 | CES52 = 90 | CES77 = 64 |
| CES03 = 30 | CES28 = 77 | CES53 = 77 | CES78 = 46 |
| CES04 = 69 | CES29 = 50 | CES54 = 81 | CES79 = 74 |
| CES05 = 46 | CES30 = 59 | CES55 = 80 | CES80 = 70 |
| CES06 = 50 | CES31 = 55 | CES56 = 70 | CES81 = 71 |
| CES07 = 38 | CES32 = 52 | CES57 = 68 | CES82 = 88 |
| CES08 = 38 | CES33 = 63 | CES58 = 70 | CES83 = 82 |
| CES09 = 29 | CES34 = 63 | CES59 = 88 | CES84 = 87 |
| CES10 = 72 | CES35 = 79 | CES60 = 92 | CES85 = 84 |
| CES11 = 55 | CES36 = 90 | CES61 = 88 | CES86 = 76 |
| CES12 = 61 | CES37 = 72 | CES62 = 81 | CES87 = 75 |
| CES13 = 41 | CES38 = 68 | CES63 = 75 | CES88 = 77 |
| CES14 = 74 | CES39 = 91 | CES64 = 72 | CES89 = 76 |
| CES15 = 70 | CES40 = 83 | CES65 = 65 | CES90 = 76 |
| CES16 = 46 | CES41 = 84 | CES66 = 66 | CES91 = 92 |
| CES17 = 48 | CES42 = 70 | CES67 = 64 | CES92 = 70 |
| CES18 = 55 | CES43 = 69 | CES68 = 71 | CES93 = 83 |
| CES19 = 70 | CES44 = 98 | CES69 = 80 | CES94 = 60 |
| CES20 = 64 | CES45 = 79 | CES70 = 58 | CES95 = 73 |
| CES21 = 85 | CES46 = 78 | CES71 = 55 | CES96 = 79 |
| CES22 = 77 | CES47 = 76 | CES72 = 84 | CES97 = 84 |
| CES23 = 91 | CES48 = 68 | CES73 = 47 | CES98 = 73 |
| CES24 = 90 | CES49 = 78 | CES74 = 94 | CES99 = 62 |
| CES25 = 71 | CES50 = 87 | CES75 = 51 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)