

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: P323084

Luminaire Tested: **GLEON-SA0B-722-U-T4W-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P323084
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-SA0B-722-U-T4W-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(10) 70 CRI, 2200K, 800mA 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: 30138 lumens
Efficiency: N/A
Efficacy: 71.9 lumens/watt
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G5

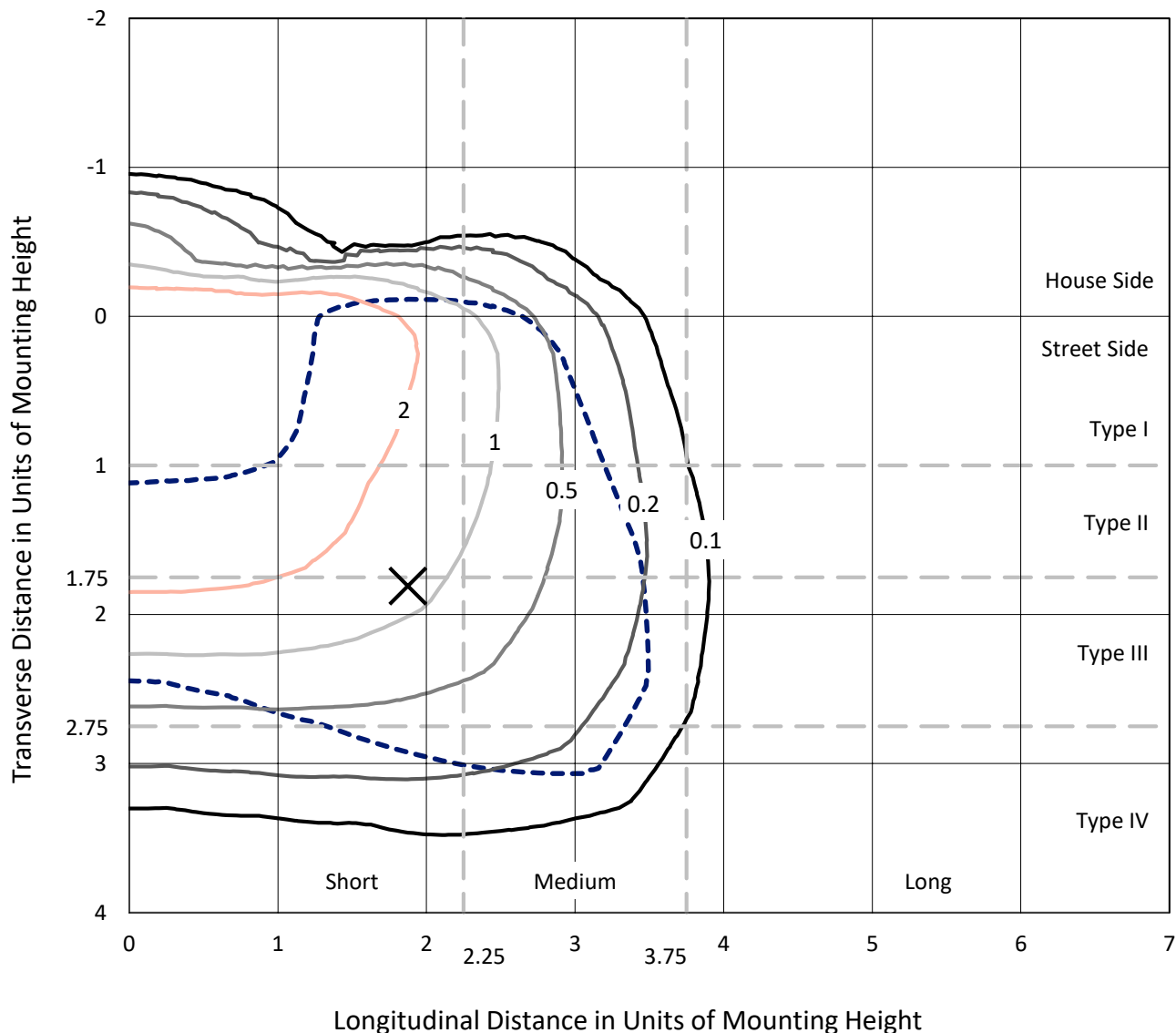
Input Watts (W): 419
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P323084
 CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

Iso-Footcandle Lines of Horizontal Illumination

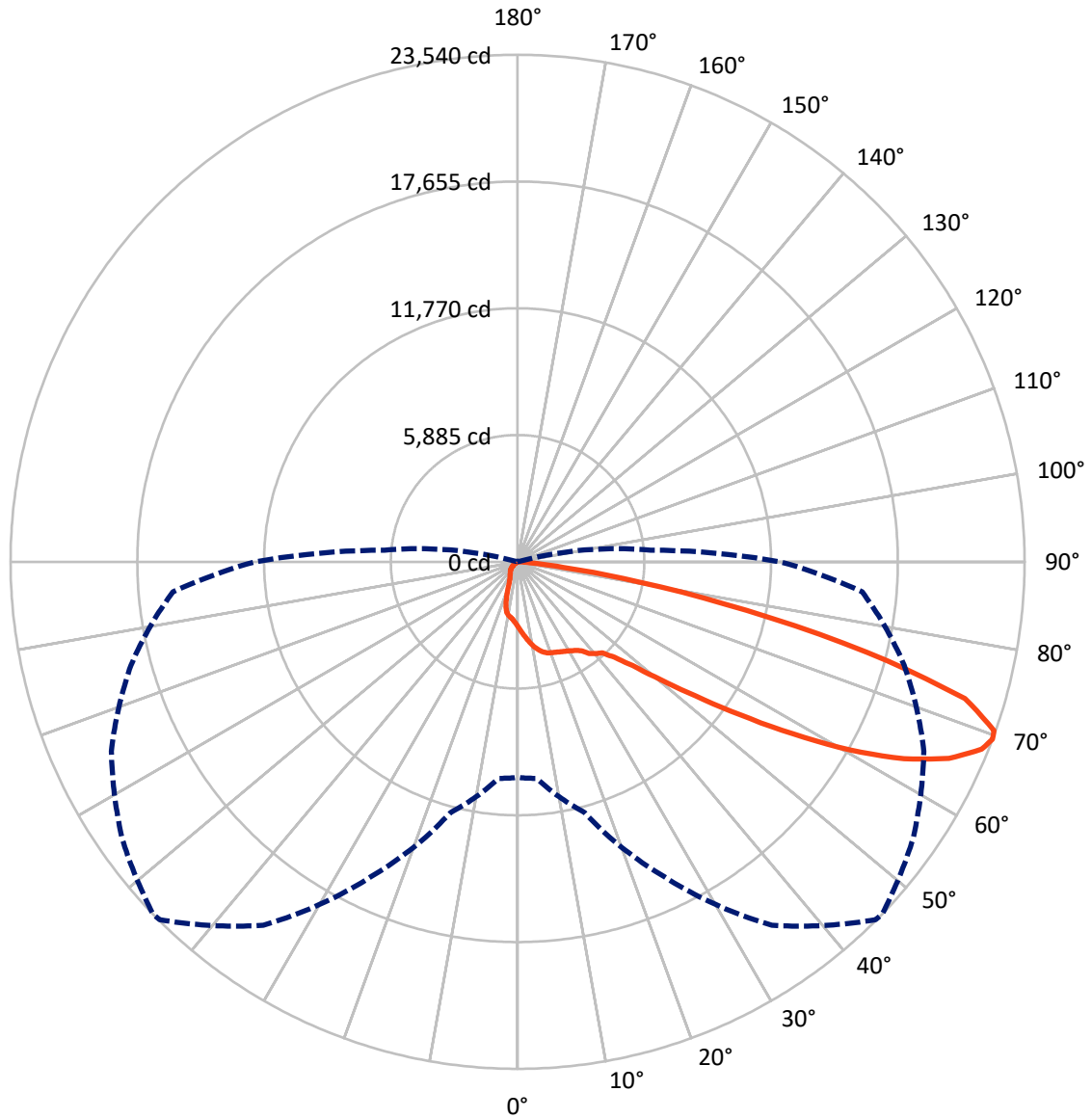
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - N/A

REPORT NUMBER: P323084
CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

Luminous Intensity Polar Plot



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

REPORT NUMBER: P323084
 CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3093.0 | 0.0 | 3093.0 |
| | % Fixture | 10.3 | 0.0 | 10.3 |
| Street Side | Lumens | 27045.0 | 0.0 | 27045.0 |
| | % Fixture | 89.7 | 0.0 | 89.7 |
| Total | Lumens | 30138.0 | 0.0 | 30138.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 300.6 | 1.0 |
| 10°-20° | 911.8 | 3.0 |
| 20°-30° | 1434.0 | 4.8 |
| 30°-40° | 2056.4 | 6.8 |
| 40°-50° | 3554.2 | 11.8 |
| 50°-60° | 7021.7 | 23.3 |
| 60°-70° | 9813.5 | 32.6 |
| 70°-80° | 4741.0 | 15.7 |
| 80°-90° | 304.7 | 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° | 30138.0 | 100.0 |
| 0°-180° | 30138.0 | 100.0 |

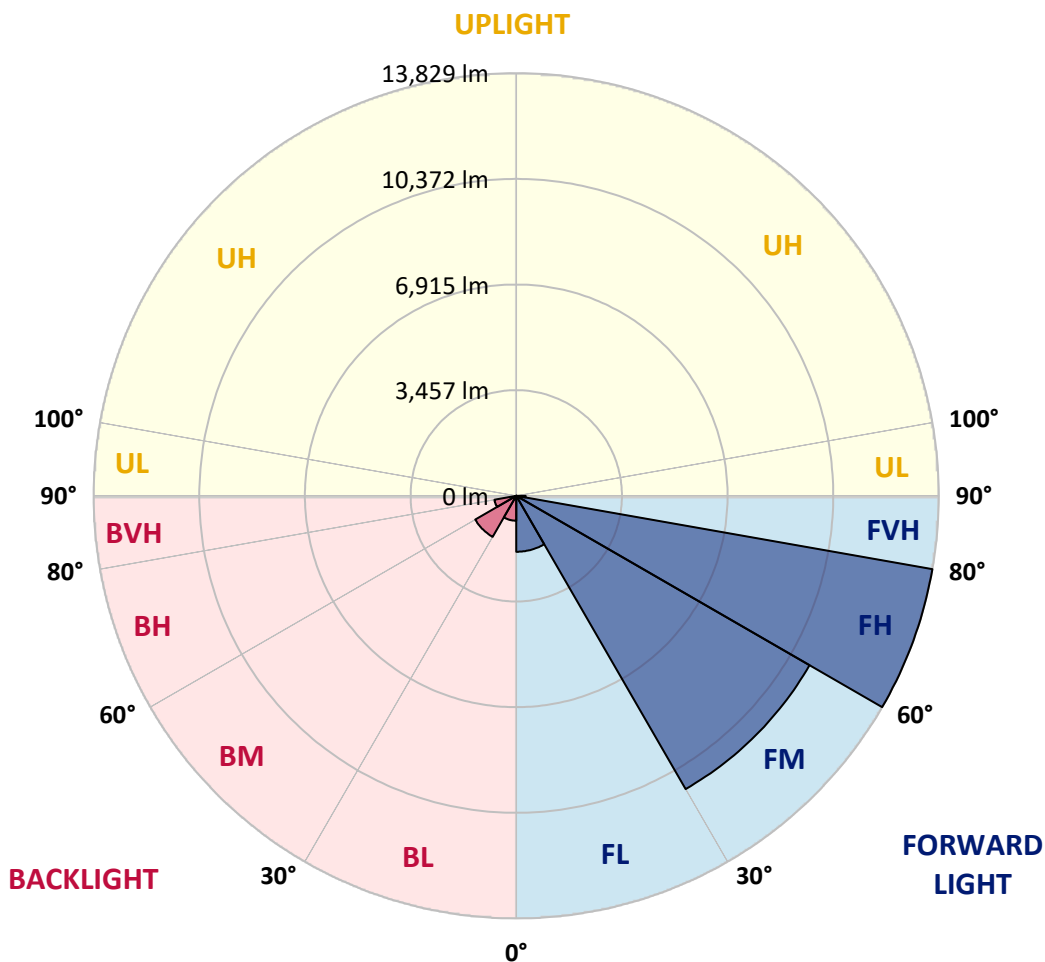


REPORT NUMBER: P323084
 CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1831.2 | 6.1 | | | |
| FM (30°-60°) | 11082.4 | 36.8 | | | |
| FH (60°-80°) | 13829.2 | 45.9 | | | G5 |
| FVH (80°-90°) | 302.2 | 1.0 | | | G3/500 |
| BL (0°-30°) | 815.2 | 2.7 | B2/1000 | | |
| BM (30°-60°) | 1550.0 | 5.1 | B2/2500 | | |
| BH (60°-80°) | 725.2 | 2.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 2.6 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G5
 Type IV Short





REPORT NUMBER: P323084

CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 46° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 |
| 2.5° | 3354.6 | 3350.4 | 3330.6 | 3322.1 | 3274.1 | 3245.8 | 3234.5 | 3199.2 | 3148.3 | 3097.4 | 3040.9 |
| 5° | 3736.1 | 3734.7 | 3698.0 | 3662.7 | 3572.2 | 3487.4 | 3471.9 | 3389.9 | 3275.5 | 3168.1 | 3060.7 |
| 7.5° | 4126.1 | 4107.8 | 4071.0 | 4003.2 | 3871.8 | 3736.1 | 3723.4 | 3607.5 | 3445.0 | 3289.6 | 3135.6 |
| 10° | 4456.8 | 4445.5 | 4397.5 | 4294.3 | 4140.3 | 3986.2 | 3970.7 | 3828.0 | 3644.3 | 3453.5 | 3257.1 |
| 12.5° | 4714.0 | 4705.5 | 4641.9 | 4513.3 | 4349.4 | 4189.7 | 4168.5 | 4041.4 | 3844.9 | 3631.6 | 3399.8 |
| 15° | 4870.8 | 4866.6 | 4788.9 | 4651.8 | 4490.7 | 4352.2 | 4333.9 | 4222.2 | 4039.9 | 3816.7 | 3555.3 |
| 17.5° | 4907.6 | 4909.0 | 4828.4 | 4690.0 | 4557.1 | 4458.2 | 4444.1 | 4359.3 | 4206.7 | 3984.8 | 3710.7 |
| 20° | 4825.6 | 4842.6 | 4770.5 | 4650.4 | 4568.4 | 4516.1 | 4504.8 | 4454.0 | 4325.4 | 4116.3 | 3835.1 |
| 22.5° | 4709.7 | 4718.2 | 4668.8 | 4588.2 | 4554.3 | 4564.2 | 4558.5 | 4530.3 | 4421.5 | 4229.3 | 3958.0 |
| 25° | 4639.1 | 4639.1 | 4609.4 | 4541.6 | 4564.2 | 4625.0 | 4626.4 | 4620.7 | 4534.5 | 4367.8 | 4107.8 |
| 27.5° | 4636.3 | 4627.8 | 4593.9 | 4543.0 | 4605.2 | 4698.4 | 4704.1 | 4742.2 | 4688.5 | 4535.9 | 4294.3 |
| 30° | 4749.3 | 4739.4 | 4667.3 | 4600.9 | 4680.1 | 4780.4 | 4794.5 | 4877.9 | 4851.0 | 4718.2 | 4502.0 |
| 32.5° | 5013.5 | 4978.2 | 4818.5 | 4709.7 | 4769.1 | 4889.2 | 4907.6 | 5040.4 | 5082.8 | 4942.9 | 4702.7 |
| 35° | 5375.3 | 5263.7 | 5033.3 | 4916.0 | 4921.7 | 5047.5 | 5064.4 | 5259.4 | 5385.2 | 5149.2 | 4858.1 |
| 37.5° | 5874.1 | 5819.0 | 5444.5 | 5130.8 | 5156.3 | 5347.0 | 5396.5 | 5608.4 | 5573.1 | 5262.2 | 5034.7 |
| 40° | 6967.8 | 6881.6 | 6483.1 | 5732.8 | 5380.9 | 5590.1 | 5605.6 | 5718.7 | 5721.5 | 5518.0 | 5402.1 |
| 42.5° | 8457.2 | 8421.9 | 8002.2 | 6825.1 | 5823.2 | 5752.6 | 5780.8 | 5971.6 | 6185.0 | 6057.8 | 6052.1 |
| 45° | 10106.2 | 10087.9 | 9642.7 | 8274.9 | 6717.7 | 6285.3 | 6320.6 | 6576.4 | 6984.8 | 7013.0 | 7192.5 |
| 47.5° | 11433.1 | 11424.6 | 11168.8 | 9892.9 | 8087.0 | 7188.2 | 7199.6 | 7470.9 | 8188.7 | 8543.4 | 8830.2 |
| 50° | 12642.7 | 12683.7 | 12481.6 | 11643.6 | 9952.2 | 8602.7 | 8575.9 | 8756.7 | 9909.8 | 10490.6 | 10846.7 |
| 52.5° | 14324.2 | 14382.2 | 13815.5 | 13277.1 | 11909.3 | 10357.7 | 10336.6 | 10525.9 | 11978.5 | 12413.8 | 12477.3 |
| 55° | 15809.3 | 15710.4 | 15262.5 | 15107.1 | 14296.0 | 12525.4 | 12519.7 | 12686.5 | 13979.4 | 14164.5 | 14281.8 |
| 57.5° | 16465.0 | 16426.9 | 16643.1 | 16999.1 | 16795.7 | 15087.3 | 15074.6 | 14947.4 | 15769.8 | 15789.6 | 16149.9 |
| 60° | 16879.0 | 16925.7 | 17588.4 | 18686.3 | 19193.6 | 17844.2 | 17762.2 | 16986.4 | 17479.6 | 17435.8 | 17821.5 |
| 62.5° | 16568.2 | 16660.0 | 17852.6 | 19682.6 | 20988.2 | 20250.6 | 20134.7 | 18854.5 | 18940.7 | 18789.5 | 19148.4 |
| 65° | 14917.7 | 15060.4 | 17014.7 | 19494.6 | 21878.4 | 22131.4 | 22014.1 | 20503.5 | 20100.8 | 19852.1 | 19652.9 |
| 67.5° | 12112.8 | 12197.6 | 14238.0 | 17859.7 | 21477.1 | 23253.4 | 23229.3 | 21949.1 | 20976.9 | 19672.7 | 18126.8 |
| 69° | 10010.1 | 10093.5 | 12057.7 | 16138.6 | 20594.0 | 23493.6 | 23540.2 | 22412.6 | 20810.2 | 18581.8 | 16060.9 |
| 70° | 8478.4 | 8567.4 | 10397.3 | 14663.4 | 19569.5 | 23381.9 | 23465.3 | 22368.8 | 20332.6 | 17318.5 | 14247.9 |
| 72.5° | 4446.9 | 4523.2 | 6401.2 | 10102.0 | 15953.5 | 21470.1 | 21723.0 | 20478.1 | 17235.1 | 12577.7 | 8424.7 |
| 75° | 1397.5 | 1441.3 | 2499.7 | 5280.6 | 10923.0 | 16693.9 | 16751.9 | 16063.7 | 12238.5 | 6918.4 | 3508.6 |
| 77.5° | 532.7 | 520.0 | 832.3 | 1945.8 | 5522.2 | 10511.8 | 10866.5 | 10038.4 | 6422.4 | 2446.0 | 809.7 |
| 80° | 286.9 | 288.3 | 432.4 | 805.4 | 2362.6 | 5402.1 | 5701.7 | 4865.2 | 2282.1 | 763.1 | 186.5 |
| 82.5° | 124.3 | 130.0 | 243.0 | 426.7 | 1085.2 | 1992.4 | 2142.2 | 1783.3 | 871.9 | 512.9 | 69.2 |
| 85° | 26.8 | 29.7 | 117.3 | 231.7 | 442.3 | 559.6 | 586.4 | 577.9 | 555.3 | 398.5 | 26.8 |
| 87.5° | 0.0 | 0.0 | 52.3 | 83.4 | 111.6 | 127.2 | 111.6 | 145.5 | 306.6 | 268.5 | 14.1 |
| 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: P323084

CATALOG NUMBER: GLEON-SA0B-722-U-T4W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 | 3019.7 |
| 2.5° | 3022.5 | 2997.1 | 2953.3 | 2905.3 | 2871.3 | 2836.0 | 2807.8 | 2795.0 | 2780.9 | 2771.0 | 2783.7 |
| 5° | 3016.9 | 2967.4 | 2882.6 | 2800.7 | 2741.3 | 2693.3 | 2653.7 | 2638.2 | 2622.6 | 2611.3 | 2609.9 |
| 7.5° | 3066.3 | 2997.1 | 2867.1 | 2747.0 | 2655.1 | 2590.1 | 2536.4 | 2513.8 | 2495.5 | 2487.0 | 2479.9 |
| 10° | 3161.0 | 3072.0 | 2898.2 | 2741.3 | 2622.6 | 2512.4 | 2396.6 | 2307.5 | 2249.6 | 2222.7 | 2212.9 |
| 12.5° | 3284.0 | 3172.3 | 2957.5 | 2771.0 | 2598.6 | 2386.7 | 2140.8 | 1928.8 | 1791.8 | 1746.5 | 1719.7 |
| 15° | 3428.1 | 3289.6 | 3035.3 | 2809.2 | 2511.0 | 2123.8 | 1707.0 | 1430.0 | 1302.8 | 1277.4 | 1249.1 |
| 17.5° | 3566.6 | 3414.0 | 3128.5 | 2816.2 | 2318.8 | 1697.1 | 1250.6 | 1062.6 | 1013.2 | 1030.1 | 1034.4 |
| 20° | 3688.1 | 3536.9 | 3220.4 | 2754.1 | 1969.8 | 1273.2 | 967.9 | 921.3 | 939.7 | 972.2 | 977.8 |
| 22.5° | 3811.0 | 3655.6 | 3305.2 | 2590.1 | 1523.3 | 966.5 | 871.9 | 883.2 | 901.5 | 934.0 | 939.7 |
| 25° | 3960.8 | 3799.7 | 3384.3 | 2289.2 | 1143.2 | 822.4 | 828.1 | 845.0 | 863.4 | 893.1 | 895.9 |
| 27.5° | 4133.2 | 3982.0 | 3436.6 | 1897.7 | 847.8 | 756.0 | 774.4 | 799.8 | 818.2 | 846.4 | 852.1 |
| 30° | 4362.1 | 4222.2 | 3453.5 | 1492.2 | 710.8 | 696.6 | 705.1 | 736.2 | 763.1 | 788.5 | 792.7 |
| 32.5° | 4576.9 | 4459.6 | 3397.0 | 1126.2 | 658.5 | 641.5 | 641.5 | 659.9 | 691.0 | 715.0 | 720.7 |
| 35° | 4774.7 | 4698.4 | 3216.1 | 823.8 | 618.9 | 590.7 | 576.5 | 576.5 | 596.3 | 616.1 | 621.7 |
| 37.5° | 5036.2 | 5033.3 | 2923.6 | 657.1 | 580.8 | 548.3 | 518.6 | 496.0 | 488.9 | 493.2 | 496.0 |
| 40° | 5484.1 | 5488.3 | 2542.1 | 589.2 | 548.3 | 504.5 | 459.2 | 418.3 | 380.1 | 367.4 | 366.0 |
| 42.5° | 6183.6 | 6120.0 | 2142.2 | 556.7 | 520.0 | 459.2 | 391.4 | 336.3 | 277.0 | 258.6 | 257.2 |
| 45° | 7294.2 | 6916.9 | 1718.3 | 527.1 | 490.3 | 408.4 | 323.6 | 248.7 | 200.7 | 186.5 | 186.5 |
| 47.5° | 8912.2 | 7964.0 | 1331.1 | 494.6 | 450.8 | 350.4 | 244.5 | 179.5 | 147.0 | 139.9 | 141.3 |
| 50° | 10585.3 | 8989.9 | 1020.2 | 453.6 | 402.7 | 289.7 | 180.9 | 130.0 | 111.6 | 111.6 | 113.0 |
| 52.5° | 12069.0 | 9741.7 | 795.6 | 409.8 | 343.4 | 227.5 | 137.1 | 101.7 | 93.3 | 91.8 | 93.3 |
| 55° | 13458.0 | 10226.3 | 609.0 | 358.9 | 272.7 | 169.6 | 104.6 | 83.4 | 77.7 | 74.9 | 73.5 |
| 57.5° | 14797.6 | 10466.6 | 456.4 | 289.7 | 197.8 | 122.9 | 83.4 | 70.7 | 65.0 | 60.8 | 59.3 |
| 60° | 15689.2 | 10271.6 | 313.7 | 213.4 | 137.1 | 89.0 | 69.2 | 60.8 | 53.7 | 49.5 | 48.0 |
| 62.5° | 16192.3 | 9738.8 | 202.1 | 154.0 | 97.5 | 66.4 | 55.1 | 50.9 | 41.0 | 36.7 | 36.7 |
| 65° | 15988.8 | 8859.9 | 141.3 | 110.2 | 70.7 | 49.5 | 41.0 | 41.0 | 29.7 | 24.0 | 22.6 |
| 67.5° | 14168.8 | 7485.0 | 107.4 | 82.0 | 50.9 | 36.7 | 31.1 | 35.3 | 18.4 | 11.3 | 11.3 |
| 69° | 12190.5 | 6203.3 | 91.8 | 67.8 | 42.4 | 29.7 | 26.8 | 32.5 | 12.7 | 8.5 | 7.1 |
| 70° | 10595.1 | 5351.3 | 83.4 | 59.3 | 35.3 | 25.4 | 24.0 | 31.1 | 12.7 | 7.1 | 5.7 |
| 72.5° | 6339.0 | 2984.4 | 63.6 | 42.4 | 22.6 | 19.8 | 19.8 | 35.3 | 12.7 | 7.1 | 5.7 |
| 75° | 2561.9 | 1051.3 | 46.6 | 29.7 | 17.0 | 17.0 | 24.0 | 45.2 | 11.3 | 5.7 | 4.2 |
| 77.5° | 580.8 | 230.3 | 26.8 | 18.4 | 11.3 | 17.0 | 28.3 | 35.3 | 7.1 | 2.8 | 0.0 |
| 80° | 141.3 | 56.5 | 17.0 | 11.3 | 7.1 | 12.7 | 21.2 | 19.8 | 1.4 | 0.0 | 0.0 |
| 82.5° | 46.6 | 19.8 | 7.1 | 5.7 | 1.4 | 4.2 | 9.9 | 5.7 | 0.0 | 0.0 | 0.0 |
| 85° | 19.8 | 11.3 | 2.8 | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 12.7 | 4.2 | 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: SP1-1908-441-10-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

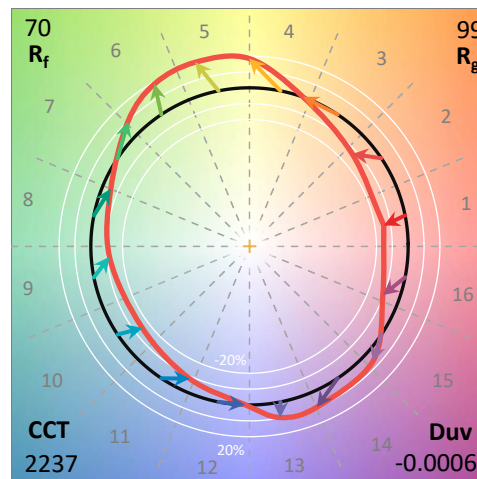
Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-722-U-5WQ**
 Description: McGRAW 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 | | | |

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

TM-30-18

Summary

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



Color Vector Graphics



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

TM-30-18

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 | |



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

TM-30-18

Color Rendition by Hue-Angle Bin



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

TM-30-18

Measure Comparisons



(END OF REPORT)