

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: P319352

Luminaire Tested: **GLEON-SA8A-740-U-SL2**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P319352
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA8A-740-U-SL2
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(8) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 36589 lumens
Efficiency: N/A
Efficacy: 142.4 lumens/watt
Luminous Opening: Rectangular (W 2' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B3 - U0 - G5

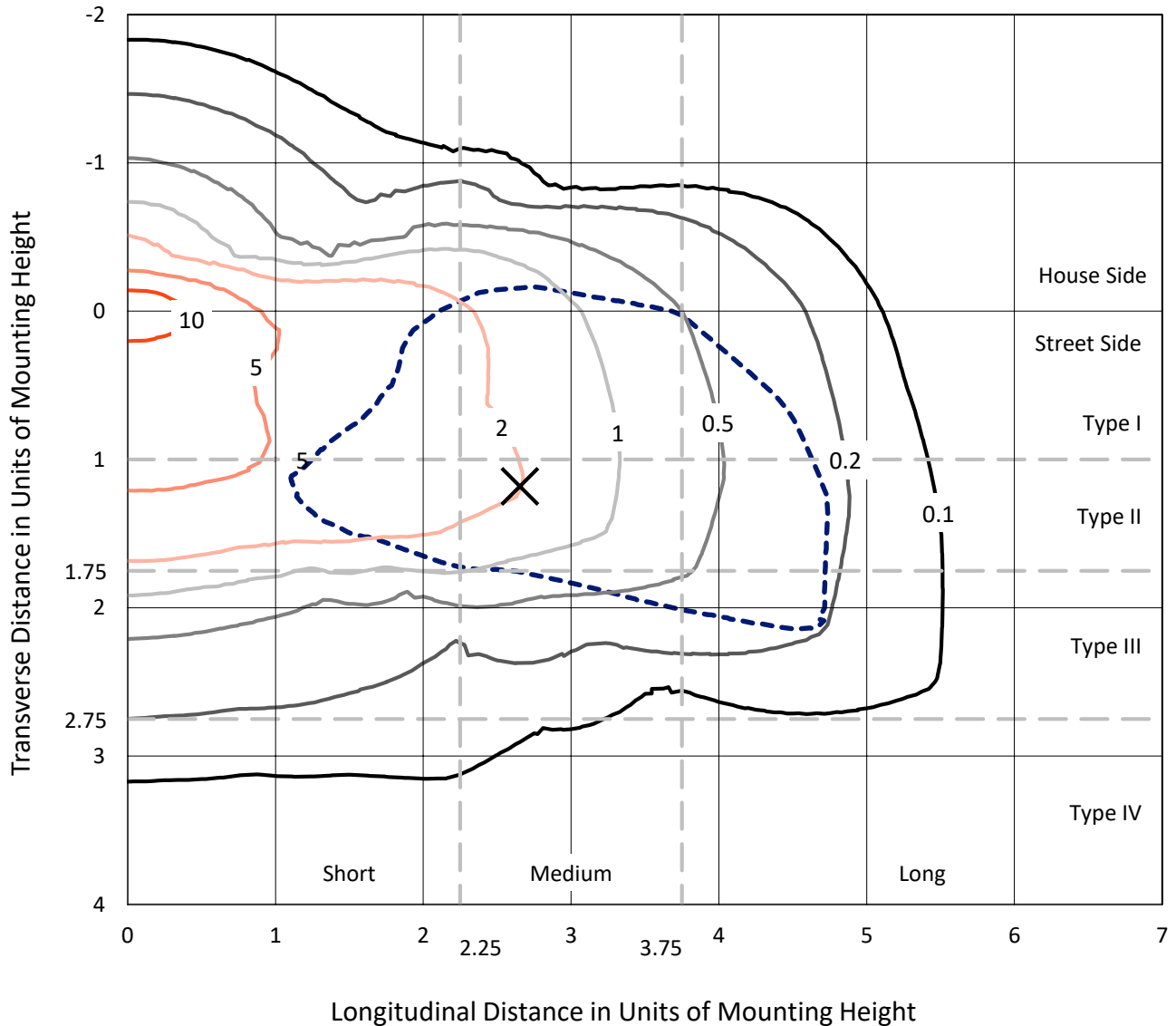
Input Watts (W): 257
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P319352
 CATALOG NUMBER: GLEON-SA8A-740-U-SL2

Iso-Footcandle Lines of Horizontal Illumination

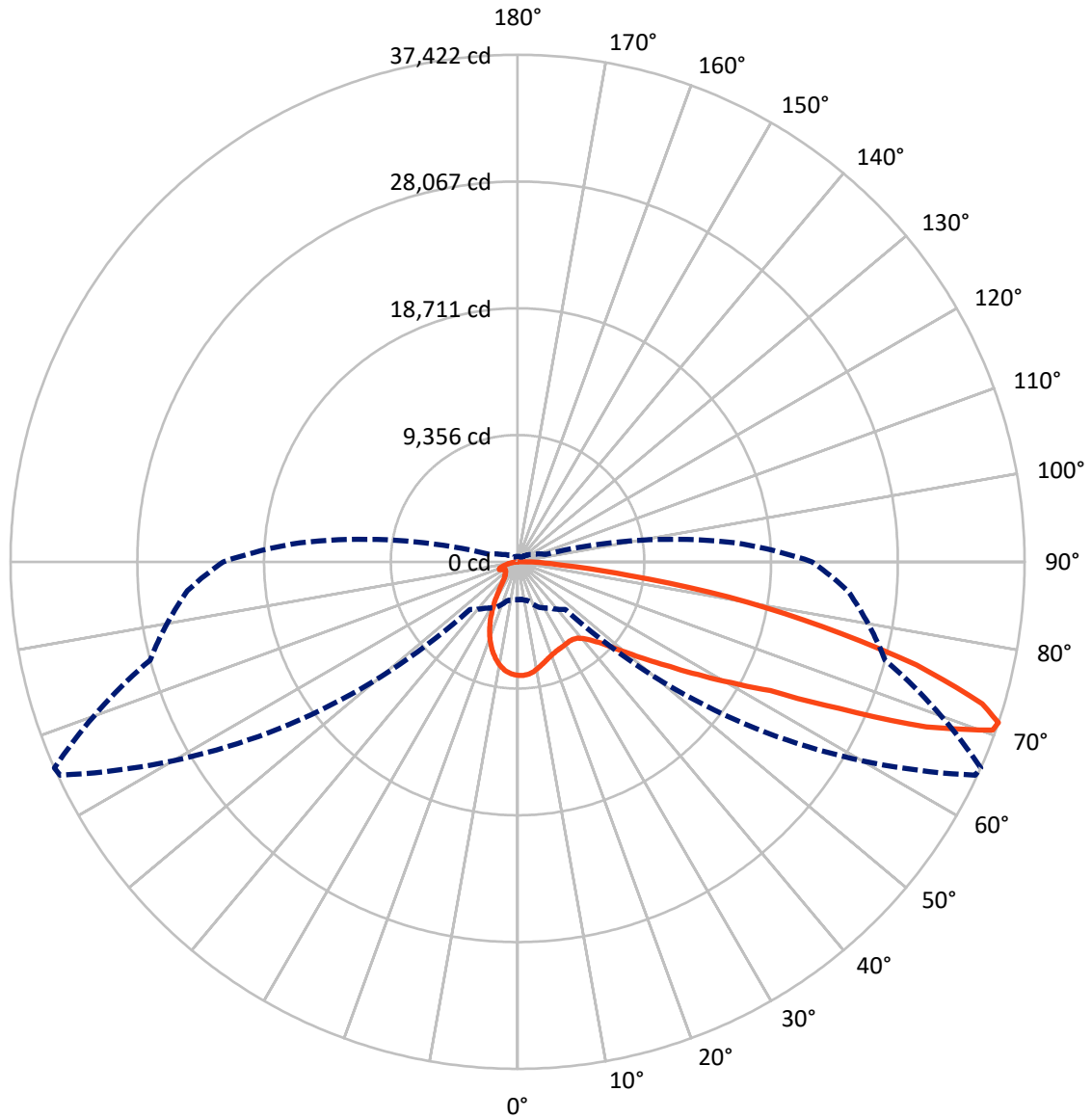
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 13.4 fc
 Type III - Medium - N/A

REPORT NUMBER: P319352
CATALOG NUMBER: GLEON-SA8A-740-U-SL2

Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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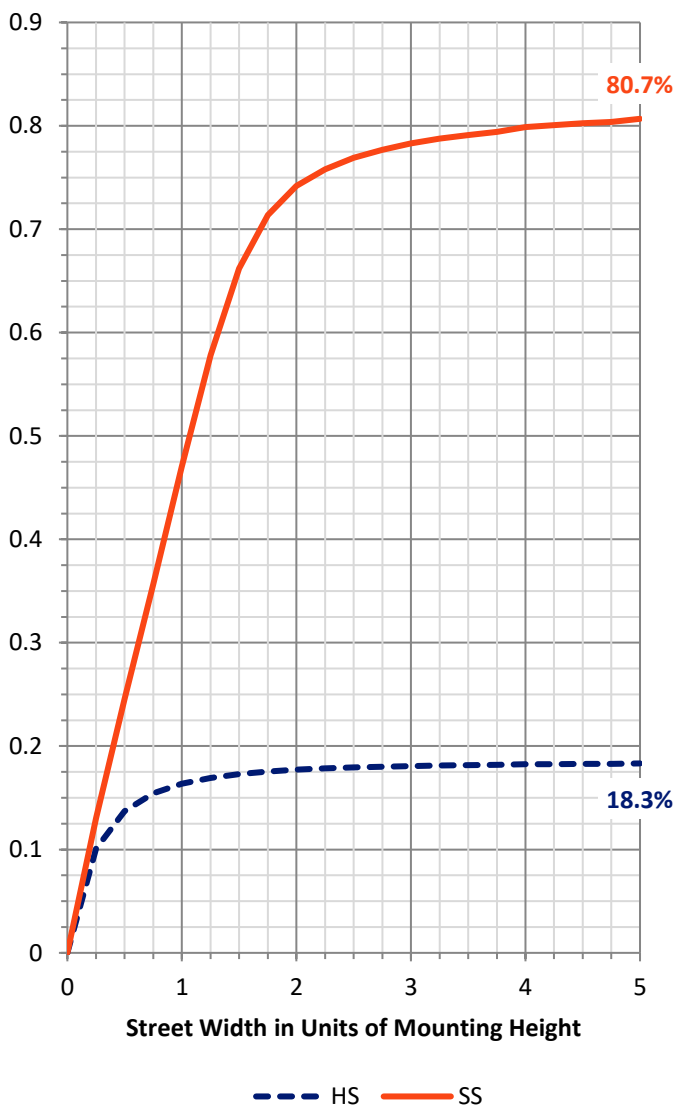
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6781.0 | 0.0 | 6781.0 |
| | % Fixture | 18.5 | 0.0 | 18.5 |
| Street Side | Lumens | 29808.0 | 0.0 | 29808.0 |
| | % Fixture | 81.5 | 0.0 | 81.5 |
| Total | Lumens | 36589.0 | 0.0 | 36589.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 737.8 | 2.0 |
| 10°-20° | 1769.6 | 4.8 |
| 20°-30° | 2377.0 | 6.5 |
| 30°-40° | 3126.9 | 8.5 |
| 40°-50° | 4548.8 | 12.4 |
| 50°-60° | 7105.7 | 19.4 |
| 60°-70° | 8901.0 | 24.3 |
| 70°-80° | 6789.5 | 18.6 |
| 80°-90° | 1232.9 | 3.4 |
| 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° | 36589.0 | 100.0 |
| 0°-180° | 36589.0 | 100.0 |

Coefficient of Utilization

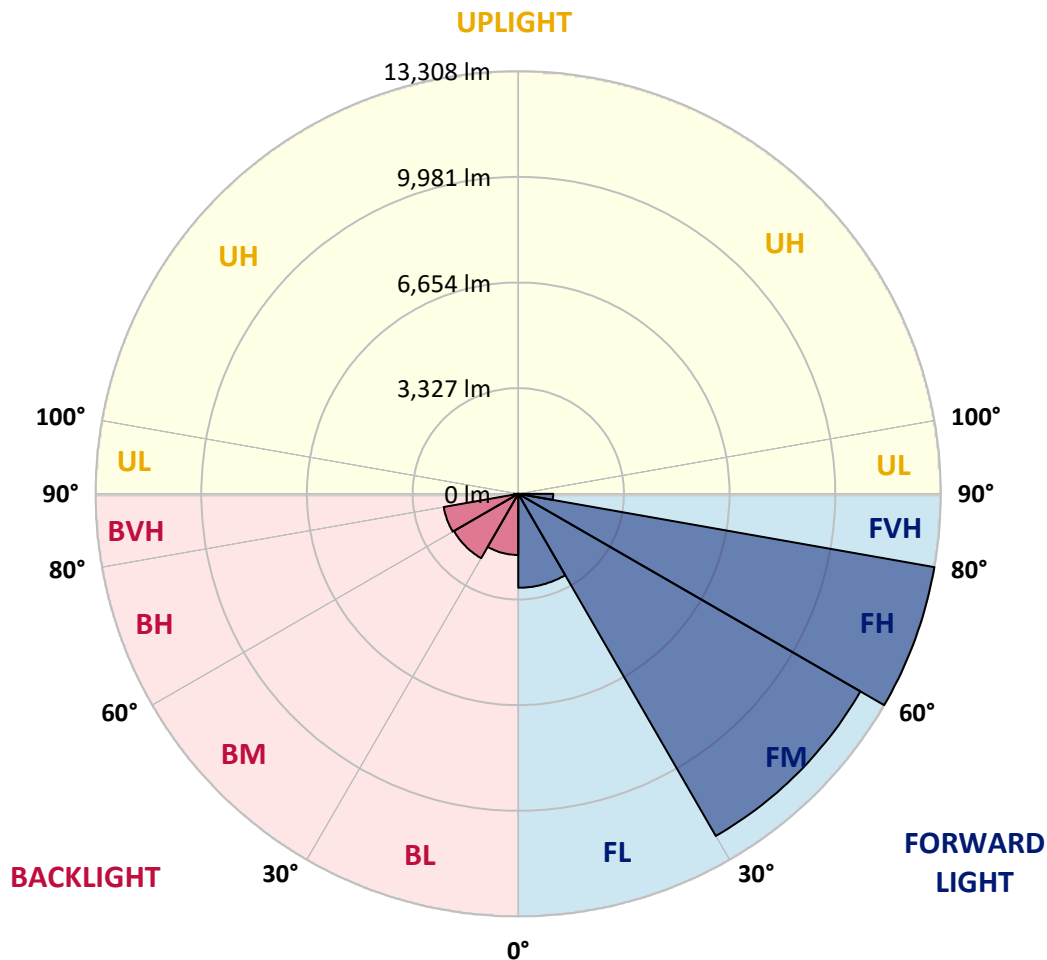


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 2958.7 | 8.1 | | | |
| FM (30°-60°) | 12442.1 | 34.0 | | | |
| FH (60°-80°) | 13307.8 | 36.4 | | | G5 |
| FVH (80°-90°) | 1099.4 | 3.0 | | | G5 |
| BL (0°-30°) | 1925.6 | 5.3 | B3/2500 | | |
| BM (30°-60°) | 2339.2 | 6.4 | B2/2500 | | |
| BH (60°-80°) | 2382.7 | 6.5 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 133.5 | 0.4 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 |
| 2.5° | 8226.4 | 8213.8 | 8251.7 | 8290.9 | 8306.0 | 8331.3 | 8369.2 | 8390.7 | 8389.4 | 8393.2 | 8380.6 |
| 5° | 7680.7 | 7664.3 | 7740.1 | 7802.0 | 7920.7 | 8054.6 | 8217.6 | 8333.8 | 8336.4 | 8402.0 | 8419.7 |
| 7.5° | 7164.0 | 7152.7 | 7239.8 | 7339.6 | 7477.3 | 7682.0 | 7946.0 | 8196.1 | 8211.3 | 8389.4 | 8451.3 |
| 10° | 6749.7 | 6747.2 | 6831.8 | 6940.4 | 7100.9 | 7329.5 | 7632.7 | 7999.1 | 8021.8 | 8328.8 | 8456.4 |
| 12.5° | 6426.3 | 6431.3 | 6504.6 | 6628.4 | 6797.7 | 7036.4 | 7364.9 | 7778.0 | 7814.6 | 8232.8 | 8427.3 |
| 15° | 6187.5 | 6207.7 | 6267.1 | 6392.2 | 6558.9 | 6801.5 | 7138.8 | 7573.3 | 7628.9 | 8125.4 | 8410.9 |
| 17.5° | 6051.1 | 6073.8 | 6115.5 | 6219.1 | 6375.8 | 6609.5 | 6929.1 | 7405.3 | 7455.9 | 8043.3 | 8412.2 |
| 20° | 6010.7 | 6029.6 | 6053.6 | 6116.8 | 6249.4 | 6461.7 | 6763.6 | 7253.7 | 7308.0 | 7977.6 | 8424.8 |
| 22.5° | 6090.3 | 6104.1 | 6106.7 | 6101.6 | 6182.5 | 6355.5 | 6643.6 | 7142.6 | 7200.7 | 7934.6 | 8433.6 |
| 25° | 6260.8 | 6279.7 | 6265.8 | 6219.1 | 6192.6 | 6298.7 | 6581.7 | 7069.3 | 7127.4 | 7903.1 | 8415.9 |
| 27.5° | 6517.2 | 6519.8 | 6508.4 | 6447.8 | 6322.7 | 6305.0 | 6562.7 | 7026.3 | 7081.9 | 7866.4 | 8379.3 |
| 30° | 6865.9 | 6882.3 | 6862.1 | 6780.0 | 6575.3 | 6406.1 | 6585.5 | 6984.6 | 7035.2 | 7819.7 | 8319.9 |
| 32.5° | 7273.9 | 7314.4 | 7313.1 | 7227.2 | 6934.1 | 6632.2 | 6678.9 | 6959.4 | 6998.5 | 7770.4 | 8247.9 |
| 35° | 7697.1 | 7752.7 | 7856.3 | 7819.7 | 7457.1 | 6989.7 | 6858.3 | 6999.8 | 7026.3 | 7764.1 | 8197.4 |
| 37.5° | 8136.8 | 8192.3 | 8405.8 | 8504.4 | 8079.9 | 7501.3 | 7141.3 | 7142.6 | 7155.2 | 7841.1 | 8193.6 |
| 40° | 8596.6 | 8656.0 | 8976.8 | 9233.3 | 8887.1 | 8149.4 | 7597.3 | 7440.7 | 7426.8 | 8030.6 | 8268.1 |
| 42.5° | 9240.9 | 9293.9 | 9679.2 | 10006.4 | 9782.8 | 8979.4 | 8227.7 | 7900.5 | 7871.5 | 8402.0 | 8506.9 |
| 45° | 10055.7 | 10101.1 | 10510.5 | 10860.4 | 10745.4 | 9926.8 | 9019.8 | 8533.4 | 8528.4 | 9021.0 | 8990.7 |
| 47.5° | 11024.6 | 11060.0 | 11427.6 | 11766.1 | 11807.8 | 11017.0 | 10015.2 | 9509.9 | 9427.8 | 9870.0 | 9739.9 |
| 50° | 12034.0 | 12073.1 | 12323.3 | 12687.1 | 12996.6 | 12476.1 | 11296.2 | 10706.3 | 10596.4 | 10990.5 | 10801.0 |
| 52.5° | 12702.2 | 12754.0 | 12971.3 | 13432.4 | 14333.1 | 14075.4 | 12810.9 | 12156.5 | 11989.7 | 12348.5 | 12203.2 |
| 55° | 12404.1 | 12520.3 | 12852.6 | 13591.6 | 15401.9 | 16518.6 | 14679.3 | 13848.0 | 13659.8 | 13957.9 | 13872.0 |
| 57.5° | 11048.6 | 11207.8 | 11661.3 | 12802.0 | 15552.2 | 18671.2 | 17503.9 | 15840.2 | 15707.6 | 15621.7 | 15660.8 |
| 60° | 8571.3 | 8724.2 | 9286.3 | 10773.2 | 14504.9 | 20242.7 | 21754.9 | 18296.0 | 18104.0 | 17291.7 | 17327.1 |
| 62.5° | 6066.2 | 5989.2 | 6374.5 | 7462.2 | 11786.4 | 20427.2 | 26591.9 | 21580.5 | 20948.9 | 19055.2 | 18899.9 |
| 65° | 4626.1 | 4608.4 | 4781.5 | 5127.6 | 7138.8 | 18220.2 | 29473.5 | 27101.0 | 26114.4 | 21129.5 | 20763.2 |
| 67.5° | 3801.2 | 3769.6 | 3940.2 | 4444.2 | 4597.1 | 11754.8 | 29536.6 | 33505.9 | 32536.9 | 23711.7 | 22918.3 |
| 70° | 3125.3 | 3090.0 | 3249.1 | 3899.7 | 4248.4 | 5961.4 | 24858.7 | 37256.5 | 37204.7 | 26981.0 | 24545.4 |
| 71° | 2801.9 | 2776.7 | 2967.4 | 3690.0 | 4173.9 | 4968.5 | 21463.0 | 37266.6 | 37422.0 | 28087.7 | 24449.4 |
| 72.5° | 2281.5 | 2290.3 | 2492.4 | 3284.5 | 4118.3 | 4387.4 | 15774.5 | 35529.6 | 35858.1 | 29142.5 | 23576.5 |
| 75° | 1515.9 | 1523.5 | 1788.8 | 2526.6 | 3993.2 | 4292.6 | 8669.9 | 29813.3 | 30417.1 | 28510.9 | 21513.6 |
| 77.5° | 1018.2 | 1015.7 | 1196.3 | 1733.2 | 3479.1 | 4292.6 | 5083.4 | 22298.1 | 22961.3 | 22685.9 | 16585.5 |
| 80° | 701.1 | 696.1 | 823.7 | 1196.3 | 2633.9 | 4344.4 | 3930.0 | 15626.7 | 15827.6 | 12251.2 | 6740.8 |
| 82.5° | 429.5 | 433.3 | 538.2 | 845.1 | 1792.6 | 3909.8 | 3710.2 | 8520.8 | 8302.2 | 3436.1 | 1683.9 |
| 85° | 246.3 | 245.1 | 343.6 | 572.3 | 1150.8 | 3299.7 | 3618.0 | 3667.3 | 3364.1 | 1034.6 | 608.9 |
| 87.5° | 88.4 | 94.7 | 184.4 | 317.1 | 659.4 | 2297.9 | 3069.8 | 1907.5 | 1719.3 | 467.4 | 275.4 |
| 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: P319352
 CATALOG NUMBER: GLEON-SA8A-740-U-SL2

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 | 8381.8 |
| 2.5° | 8371.7 | 8379.3 | 8370.5 | 8319.9 | 8277.0 | 8207.5 | 8168.3 | 8114.0 | 8097.6 | 8090.0 | 8110.2 |
| 5° | 8403.3 | 8405.8 | 8331.3 | 8198.7 | 8049.6 | 7874.0 | 7747.7 | 7592.3 | 7519.0 | 7487.4 | 7507.6 |
| 7.5° | 8432.4 | 8421.0 | 8258.0 | 8004.1 | 7728.7 | 7423.0 | 7151.4 | 6902.5 | 6757.3 | 6697.9 | 6702.9 |
| 10° | 8436.2 | 8388.1 | 8126.6 | 7733.8 | 7306.8 | 6858.3 | 6441.4 | 6057.4 | 5814.9 | 5656.9 | 5705.0 |
| 12.5° | 8397.0 | 8316.1 | 7933.4 | 7383.8 | 6791.4 | 6179.9 | 5616.5 | 5040.5 | 4694.3 | 4533.9 | 4538.9 |
| 15° | 8366.7 | 8220.1 | 7695.9 | 6972.0 | 6176.2 | 5366.4 | 4597.1 | 3919.9 | 3551.1 | 3386.8 | 3309.8 |
| 17.5° | 8341.4 | 8116.5 | 7420.5 | 6508.4 | 5449.8 | 4422.7 | 3498.0 | 2894.2 | 2692.0 | 2644.0 | 2623.8 |
| 20° | 8306.0 | 8006.6 | 7113.5 | 5971.5 | 4622.3 | 3366.6 | 2554.3 | 2256.2 | 2257.5 | 2313.1 | 2320.6 |
| 22.5° | 8256.8 | 7881.6 | 6786.3 | 5368.9 | 3734.2 | 2452.0 | 2002.3 | 1916.4 | 2003.6 | 2109.7 | 2128.6 |
| 25° | 8183.5 | 7733.8 | 6422.5 | 4703.2 | 2847.4 | 1884.8 | 1710.5 | 1706.7 | 1812.8 | 1924.0 | 1940.4 |
| 27.5° | 8079.9 | 7540.5 | 6018.2 | 3988.2 | 2098.3 | 1601.8 | 1532.4 | 1558.9 | 1637.2 | 1718.1 | 1724.4 |
| 30° | 7940.9 | 7315.6 | 5572.3 | 3234.0 | 1644.8 | 1426.2 | 1418.7 | 1442.7 | 1490.7 | 1547.5 | 1552.6 |
| 32.5° | 7788.1 | 7087.0 | 5096.1 | 2503.8 | 1408.6 | 1331.5 | 1339.1 | 1350.4 | 1373.2 | 1395.9 | 1401.0 |
| 35° | 7649.1 | 6853.3 | 4608.4 | 1902.5 | 1296.1 | 1269.6 | 1264.5 | 1262.0 | 1264.5 | 1257.0 | 1258.2 |
| 37.5° | 7559.4 | 6660.0 | 4100.6 | 1514.7 | 1231.7 | 1215.3 | 1200.1 | 1181.2 | 1159.7 | 1147.1 | 1149.6 |
| 40° | 7526.6 | 6516.0 | 3586.4 | 1308.8 | 1178.6 | 1167.3 | 1138.2 | 1097.8 | 1072.5 | 1064.9 | 1064.9 |
| 42.5° | 7615.0 | 6441.4 | 3090.0 | 1205.2 | 1134.4 | 1115.5 | 1067.5 | 1020.7 | 1001.8 | 1000.5 | 999.3 |
| 45° | 7885.4 | 6471.8 | 2617.5 | 1148.3 | 1094.0 | 1057.4 | 994.2 | 955.0 | 942.4 | 944.9 | 943.7 |
| 47.5° | 8370.5 | 6662.5 | 2213.3 | 1110.4 | 1053.6 | 1005.6 | 934.8 | 903.2 | 888.1 | 888.1 | 889.3 |
| 50° | 9195.4 | 7108.5 | 1891.1 | 1078.8 | 1019.5 | 957.6 | 891.9 | 852.7 | 832.5 | 831.2 | 831.2 |
| 52.5° | 10396.8 | 7906.8 | 1690.3 | 1052.3 | 981.6 | 914.6 | 848.9 | 799.7 | 775.7 | 770.6 | 768.1 |
| 55° | 11902.6 | 9051.4 | 1634.7 | 1034.6 | 931.0 | 867.9 | 797.1 | 747.9 | 721.3 | 710.0 | 708.7 |
| 57.5° | 13586.5 | 10443.5 | 1744.6 | 1013.1 | 879.2 | 812.3 | 740.3 | 693.5 | 665.7 | 651.9 | 650.6 |
| 60° | 15290.7 | 11963.2 | 2193.0 | 982.8 | 836.3 | 751.6 | 682.2 | 639.2 | 611.4 | 596.3 | 593.7 |
| 62.5° | 16997.4 | 13565.1 | 3108.9 | 980.3 | 806.0 | 693.5 | 622.8 | 586.2 | 559.6 | 543.2 | 539.4 |
| 65° | 18922.6 | 15318.5 | 4149.9 | 1047.3 | 795.9 | 640.5 | 562.2 | 533.1 | 510.4 | 495.2 | 493.9 |
| 67.5° | 21133.3 | 17298.0 | 4050.1 | 1185.0 | 830.0 | 592.5 | 505.3 | 482.6 | 466.1 | 453.5 | 452.3 |
| 70° | 22170.5 | 16988.5 | 2517.7 | 1282.2 | 878.0 | 545.7 | 451.0 | 434.6 | 421.9 | 413.1 | 409.3 |
| 71° | 21735.9 | 16130.8 | 2110.9 | 1270.9 | 872.9 | 525.5 | 429.5 | 416.9 | 404.2 | 396.7 | 392.9 |
| 72.5° | 20551.0 | 14710.8 | 1761.0 | 1182.4 | 816.1 | 488.9 | 401.7 | 389.1 | 377.7 | 368.9 | 366.3 |
| 75° | 18441.3 | 13138.1 | 1409.8 | 944.9 | 650.6 | 413.1 | 352.5 | 338.6 | 329.7 | 324.7 | 319.6 |
| 77.5° | 13556.2 | 9376.0 | 1090.2 | 746.6 | 478.8 | 337.3 | 300.7 | 290.6 | 281.7 | 274.1 | 270.3 |
| 80° | 5193.3 | 3631.9 | 734.0 | 557.1 | 351.2 | 266.6 | 242.5 | 237.5 | 228.7 | 223.6 | 223.6 |
| 82.5° | 1398.4 | 1085.2 | 391.6 | 337.3 | 235.0 | 194.5 | 185.7 | 183.2 | 175.6 | 165.5 | 166.8 |
| 85° | 565.9 | 478.8 | 219.8 | 185.7 | 144.0 | 115.0 | 125.1 | 126.3 | 117.5 | 104.9 | 106.1 |
| 87.5° | 248.9 | 203.4 | 122.5 | 82.1 | 63.2 | 44.2 | 56.8 | 56.8 | 51.8 | 43.0 | 39.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW, INVUE, LUMARK AND STREETWORKS

DATA VALID FOR LUMINAIRES UTILIZING SA LIGHT ENGINES

Report Number: SP1-2101-121-2

Luminaire Tested: IFLD-S-SA2A-740-U-T3R-HSS

Test Date: 03/05/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K): | 3905 | CRI (Ra): | 71.2 | R9: | -29.7 |
| CIE u': | 0.2273 | R1: | 68.9 | R10: | 46.2 |
| CIE v': | 0.5024 | R2: | 77.0 | R11: | 68.8 |
| Duv: | -0.0008 | R3: | 84.0 | R12: | 45.6 |
| CIE x: | 0.3841 | R4: | 71.6 | R13: | 69.5 |
| CIE y: | 0.3774 | R5: | 68.9 | R14: | 90.7 |
| CIE z: | 0.2385 | R6: | 68.3 | | |
| Peak Wavelength (nm): | 443 | R7: | 78.7 | | |
| Dominant Wavelength (nm): | 579 | R8: | 52.2 | | |
| Purity: | 28.7 | | | | |
| Rf: | 71.7 | | | | |
| Rg: | 96.9 | | | | |



Test Conditions

Stabilization Time: 211M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/312%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 12/1/2021 |
| AC Power Source | IN0063 | 12/1/2020 | 12/1/2021 |
| DC Power Source | IN0208 | 12/1/2020 | 12/1/2021 |
| Sphere Thermometer | IN0085 | 12/1/2020 | 12/1/2021 |
| Room Thermometer | IN0046 | 12/1/2020 | 12/1/2021 |

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CIE 1931 Chromaticity Diagram



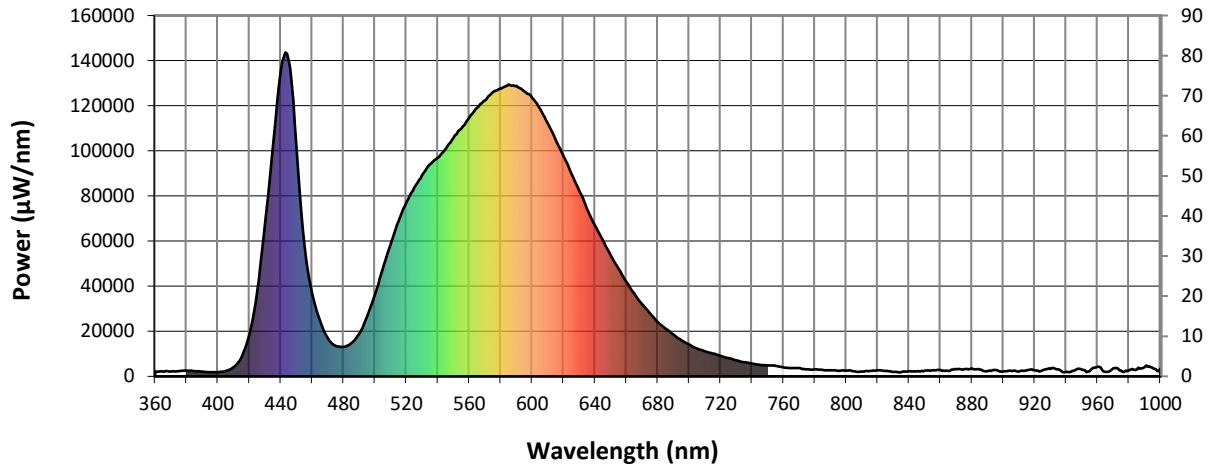
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

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 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| 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 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

| 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 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)