

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P641162

Luminaire Tested: GWS-SA5F-735-U-RW-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P641162
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-51)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA5F-735-U-RW-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (5) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (80) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 36289.6 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')
IES Classification: Type V - Short
BUG Rating: B5 - U0 - G2

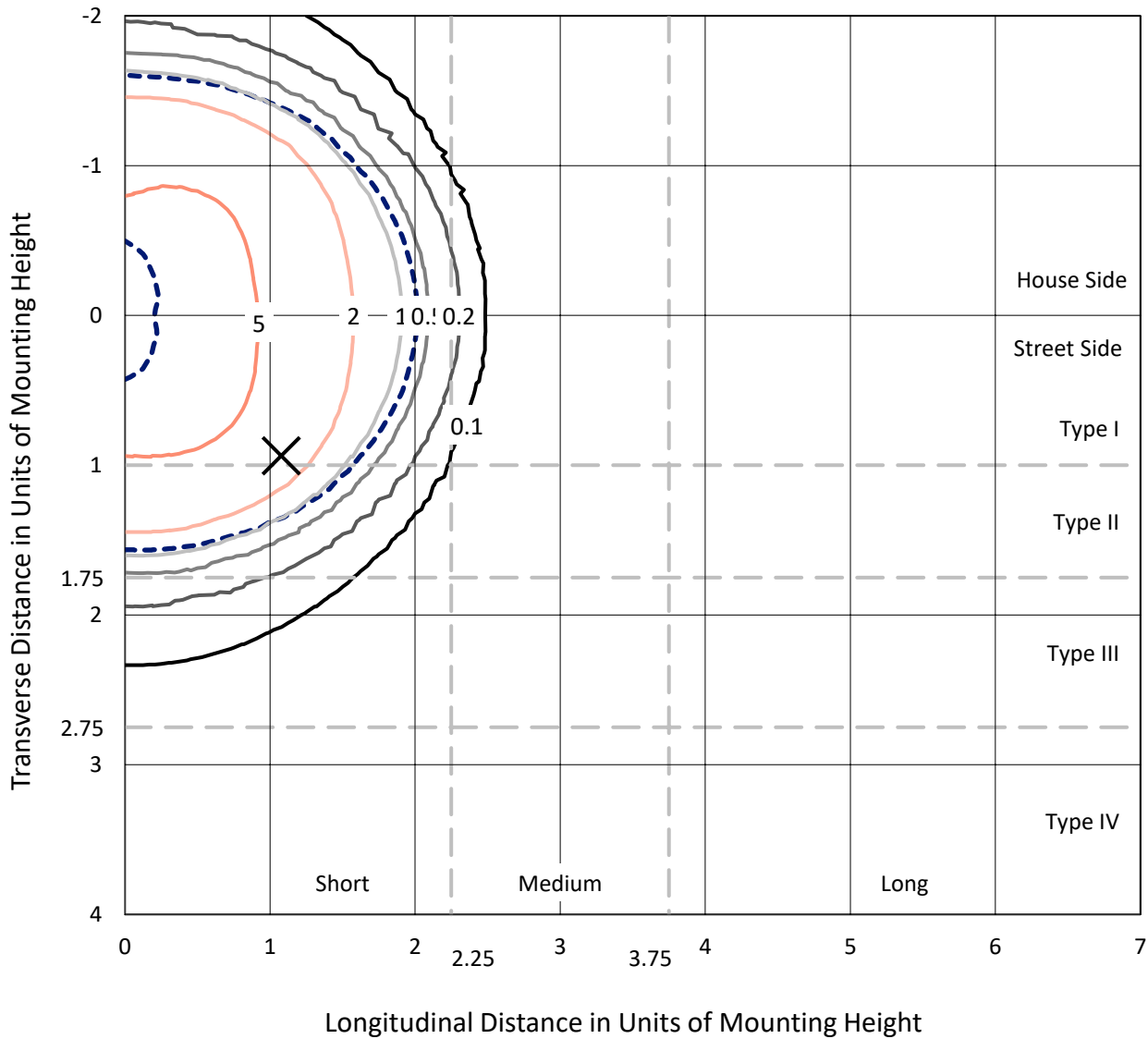
Input Watts (W): 310.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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 CATALOG NUMBER: GWS-SA5F-735-U-RW-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

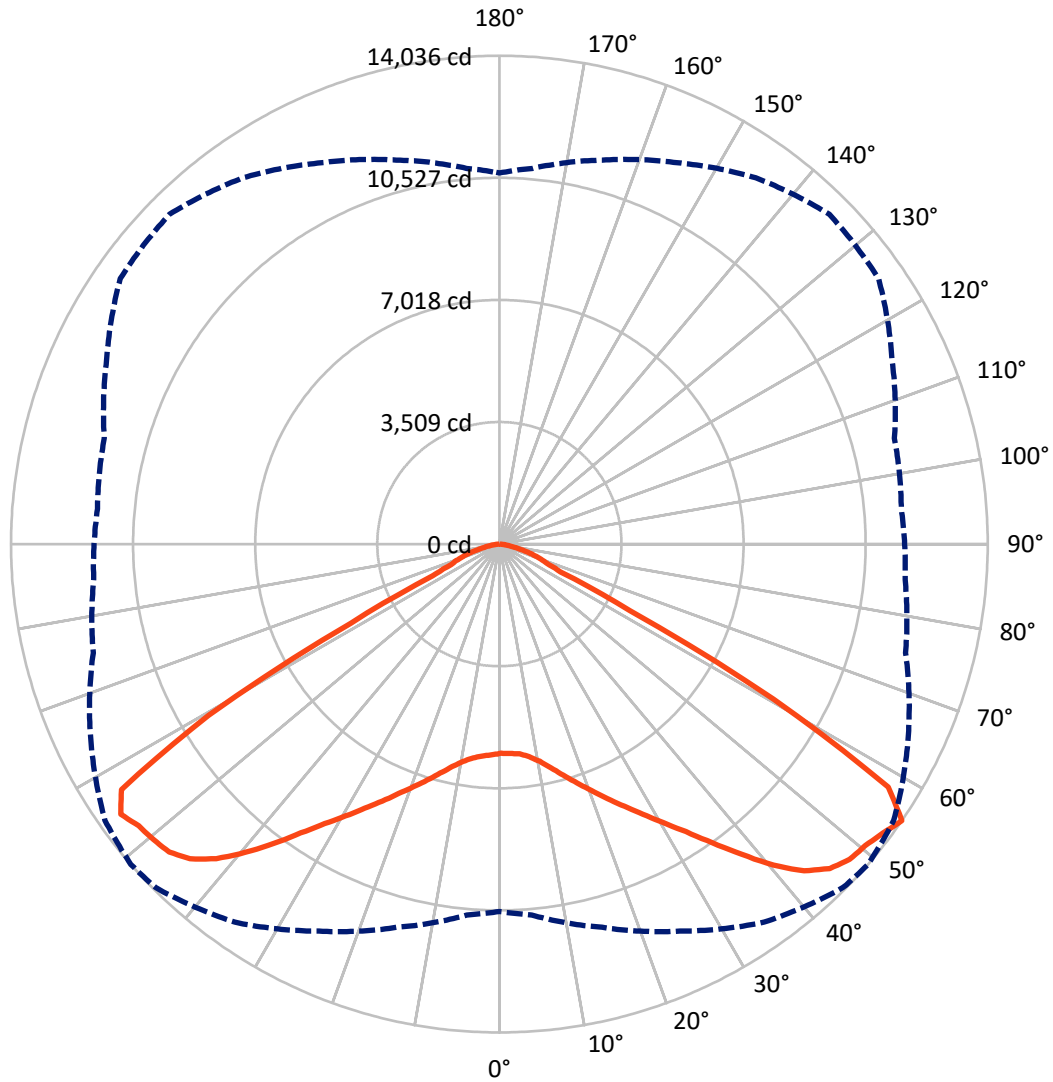
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7.4 fc
 Type V - Short - N/A

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CATALOG NUMBER: GWS-SA5F-735-U-RW-W-GRSWH

Luminous Intensity Polar Plot



— Vertical Plane Through 49-Deg Lateral - - - Horizontal Cone Through 55-Deg Vertical

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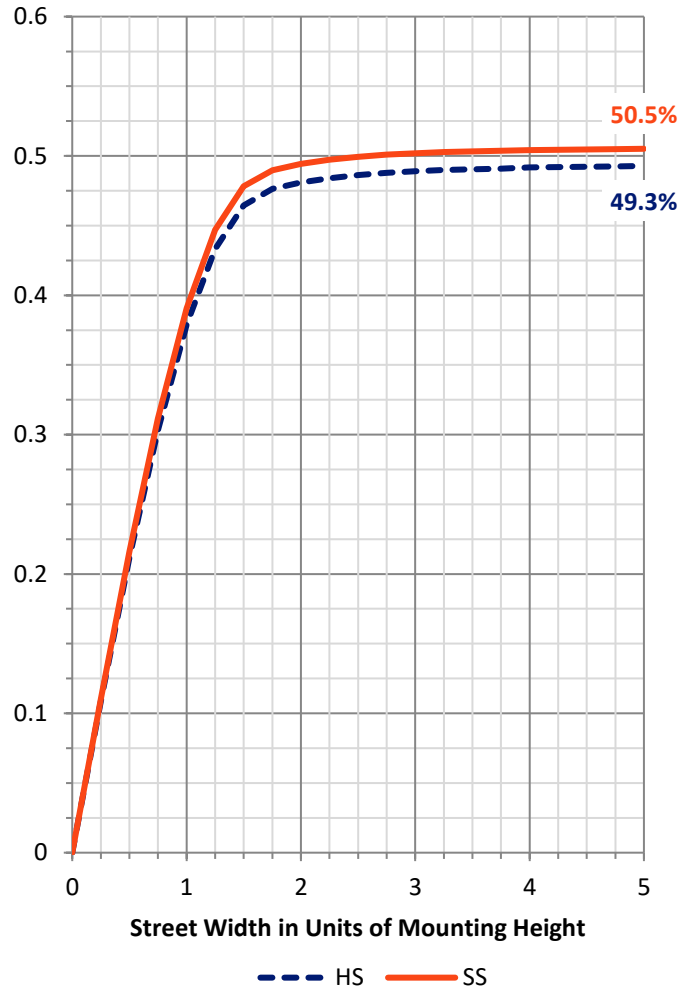
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 17966.8 | 0.0 | 17966.8 |
| | % Fixture | 49.5 | 0.0 | 49.5 |
| Street Side | Lumens | 18322.8 | 0.0 | 18322.8 |
| | % Fixture | 50.5 | 0.0 | 50.5 |
| Total | Lumens | 36289.6 | 0.0 | 36289.6 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 586.4 | 1.6 |
| 10°-20° | 1934.3 | 5.3 |
| 20°-30° | 3684.3 | 10.2 |
| 30°-40° | 6245.7 | 17.2 |
| 40°-50° | 9399.3 | 25.9 |
| 50°-60° | 10288.4 | 28.4 |
| 60°-70° | 3253.2 | 9.0 |
| 70°-80° | 780.8 | 2.2 |
| 80°-90° | 117.2 | 0.3 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 36289.6 | 100.0 |
| 0°-180° | 36289.6 | 100.0 |

Coefficient of Utilization



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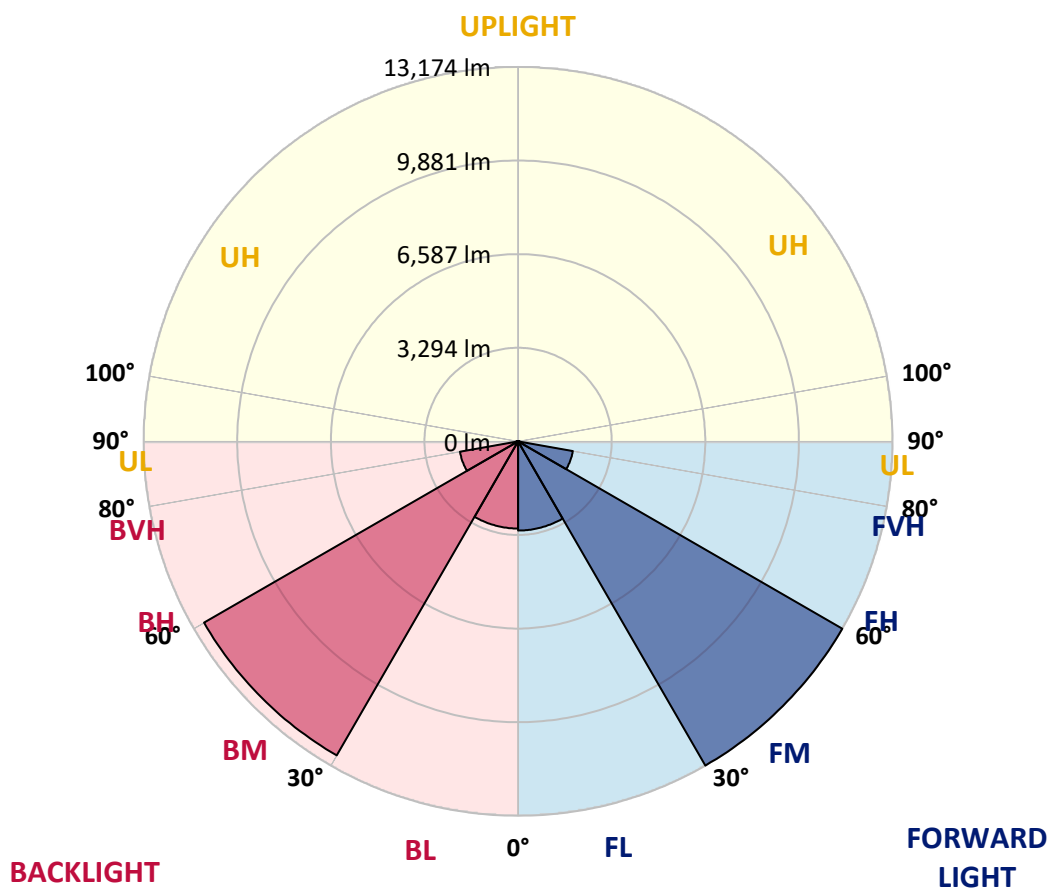
CATALOG NUMBER: GWS-SA5F-735-U-RW-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3137.6 | 8.6 | | | |
| FM (30°-60°) | 13174.1 | 36.3 | | | |
| FH (60°-80°) | 1956.9 | 5.4 | | | G2/5000 |
| FVH (80°-90°) | 54.2 | 0.1 | | | G1/100 |
| BL (0°-30°) | 3067.5 | 8.5 | B4/5000 | | |
| BM (30°-60°) | 12759.2 | 35.2 | B5 | | |
| BH (60°-80°) | 2077.2 | 5.7 | B3/2500 | | G2/5000 |
| BVH (80°-90°) | 62.9 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 49° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 |
| 2.5° | 5923.1 | 5929.0 | 5940.8 | 5961.4 | 5982.1 | 6011.6 | 6023.4 | 6038.2 | 6035.2 | 6052.9 | 6052.9 |
| 5° | 5893.5 | 5902.4 | 5920.1 | 5949.6 | 5985.0 | 6041.1 | 6055.9 | 6091.3 | 6126.7 | 6171.0 | 6185.7 |
| 7.5° | 5929.0 | 5940.8 | 5961.4 | 6008.6 | 6061.8 | 6135.5 | 6165.1 | 6224.1 | 6292.0 | 6371.6 | 6404.1 |
| 10° | 5996.8 | 6011.6 | 6047.0 | 6123.7 | 6209.3 | 6321.5 | 6348.0 | 6421.8 | 6531.0 | 6640.2 | 6705.1 |
| 12.5° | 6073.6 | 6097.2 | 6162.1 | 6283.1 | 6410.0 | 6557.6 | 6598.9 | 6690.4 | 6808.4 | 6950.1 | 7038.6 |
| 15° | 6162.1 | 6182.8 | 6283.1 | 6454.3 | 6652.0 | 6846.8 | 6894.0 | 6982.5 | 7115.3 | 7254.0 | 7378.0 |
| 17.5° | 6348.0 | 6383.4 | 6501.5 | 6699.2 | 6929.4 | 7159.6 | 7212.7 | 7313.1 | 7419.3 | 7528.5 | 7646.6 |
| 20° | 6601.8 | 6631.3 | 6781.9 | 7026.8 | 7298.3 | 7507.9 | 7561.0 | 7649.5 | 7699.7 | 7755.8 | 7856.1 |
| 22.5° | 6855.6 | 6897.0 | 7068.1 | 7357.3 | 7676.1 | 7903.3 | 7944.6 | 8027.3 | 7991.8 | 7974.1 | 8039.1 |
| 25° | 7171.4 | 7227.5 | 7395.7 | 7711.5 | 8036.1 | 8316.5 | 8348.9 | 8419.8 | 8360.7 | 8269.3 | 8266.3 |
| 27.5° | 7563.9 | 7614.1 | 7788.2 | 8112.8 | 8434.5 | 8726.7 | 8788.7 | 8883.1 | 8753.3 | 8641.1 | 8561.4 |
| 30° | 8030.2 | 8062.7 | 8254.5 | 8599.8 | 8930.3 | 9207.7 | 9287.4 | 9381.9 | 9284.5 | 9098.5 | 9018.9 |
| 32.5° | 8573.2 | 8617.5 | 8838.8 | 9201.8 | 9497.0 | 9774.4 | 9854.1 | 9972.1 | 9865.9 | 9656.3 | 9556.0 |
| 35° | 9225.4 | 9269.7 | 9502.9 | 9898.3 | 10199.3 | 10485.6 | 10541.7 | 10639.1 | 10506.3 | 10264.3 | 10184.6 |
| 37.5° | 9933.7 | 9989.8 | 10284.9 | 10659.7 | 10975.5 | 11309.0 | 11311.9 | 11341.5 | 11152.6 | 10851.6 | 10763.0 |
| 40° | 10730.6 | 10804.3 | 11099.5 | 11489.0 | 11869.7 | 12141.2 | 12138.3 | 12055.6 | 11736.9 | 11270.6 | 11134.9 |
| 42.5° | 11518.5 | 11577.6 | 11875.6 | 12277.0 | 12657.7 | 12914.4 | 12837.7 | 12637.0 | 12176.6 | 11542.1 | 11362.1 |
| 45° | 12088.1 | 12132.4 | 12445.2 | 12896.7 | 13283.3 | 13442.7 | 13304.0 | 13062.0 | 12439.3 | 11713.3 | 11447.7 |
| 47.5° | 12356.7 | 12415.7 | 12731.5 | 13180.1 | 13616.8 | 13708.3 | 13543.1 | 13315.8 | 12592.8 | 11872.7 | 11515.6 |
| 50° | 12212.1 | 12288.8 | 12645.9 | 13062.0 | 13554.9 | 13743.7 | 13625.7 | 13398.4 | 12755.1 | 12029.1 | 11636.6 |
| 52.5° | 11837.3 | 11911.0 | 12362.6 | 12867.2 | 13425.0 | 13799.8 | 13796.9 | 13610.9 | 12941.0 | 12073.4 | 11642.5 |
| 55° | 10556.4 | 10701.0 | 11403.4 | 12274.0 | 13265.6 | 13965.1 | 14035.9 | 13838.2 | 12970.5 | 12085.2 | 11704.5 |
| 57.5° | 6870.4 | 7124.2 | 7791.2 | 8924.4 | 10913.5 | 12702.0 | 13180.1 | 13227.3 | 12758.0 | 12035.0 | 11716.3 |
| 60° | 2868.6 | 3072.2 | 3600.5 | 4353.0 | 5996.8 | 8124.7 | 9051.3 | 9981.0 | 11102.4 | 11509.7 | 11607.1 |
| 62.5° | 1782.5 | 1800.2 | 1853.4 | 2024.5 | 2573.4 | 3612.3 | 4208.4 | 5079.0 | 6746.4 | 8166.0 | 8821.1 |
| 65° | 1608.4 | 1617.3 | 1629.1 | 1617.3 | 1643.8 | 1770.7 | 1930.1 | 2234.1 | 2912.8 | 3618.2 | 4456.3 |
| 67.5° | 1416.6 | 1428.4 | 1437.2 | 1428.4 | 1437.2 | 1443.1 | 1460.8 | 1487.4 | 1611.4 | 1711.7 | 1788.4 |
| 70° | 1145.1 | 1162.8 | 1177.5 | 1171.6 | 1207.0 | 1207.0 | 1224.7 | 1245.4 | 1307.4 | 1381.2 | 1434.3 |
| 72.5° | 873.6 | 858.8 | 876.5 | 882.4 | 914.9 | 932.6 | 959.1 | 982.7 | 1053.6 | 1097.8 | 1165.7 |
| 75° | 566.6 | 551.9 | 578.4 | 593.2 | 637.5 | 661.1 | 684.7 | 708.3 | 758.5 | 788.0 | 852.9 |
| 77.5° | 306.9 | 304.0 | 330.5 | 351.2 | 398.4 | 427.9 | 445.6 | 463.3 | 504.7 | 513.5 | 554.8 |
| 80° | 177.1 | 177.1 | 194.8 | 209.5 | 239.0 | 271.5 | 289.2 | 304.0 | 333.5 | 342.3 | 360.0 |
| 82.5° | 97.4 | 97.4 | 106.2 | 115.1 | 138.7 | 156.4 | 171.2 | 183.0 | 209.5 | 218.4 | 227.2 |
| 85° | 47.2 | 44.3 | 50.2 | 56.1 | 64.9 | 73.8 | 82.6 | 88.5 | 109.2 | 115.1 | 126.9 |
| 87.5° | 5.9 | 5.9 | 5.9 | 8.9 | 11.8 | 17.7 | 20.7 | 20.7 | 32.5 | 38.4 | 44.3 |
| 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: P641162

CATALOG NUMBER: GWS-SA5F-735-U-RW-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 | 6011.6 |
| 2.5° | 6070.6 | 6032.3 | 6055.9 | 6064.7 | 6064.7 | 6055.9 | 6017.5 | 6005.7 | 5988.0 | 5961.4 | 5961.4 |
| 5° | 6206.4 | 6176.9 | 6182.8 | 6168.0 | 6132.6 | 6088.3 | 6017.5 | 5982.1 | 5952.6 | 5920.1 | 5917.2 |
| 7.5° | 6439.5 | 6401.2 | 6395.2 | 6339.2 | 6244.7 | 6150.3 | 6044.1 | 5979.1 | 5934.9 | 5893.5 | 5890.6 |
| 10° | 6743.5 | 6708.1 | 6663.8 | 6551.7 | 6413.0 | 6274.2 | 6129.6 | 6041.1 | 5976.2 | 5917.2 | 5914.2 |
| 12.5° | 7082.9 | 7041.6 | 6958.9 | 6793.7 | 6619.5 | 6483.8 | 6318.5 | 6182.8 | 6085.4 | 6005.7 | 5990.9 |
| 15° | 7451.8 | 7392.8 | 7251.1 | 7056.3 | 6885.1 | 6740.5 | 6563.5 | 6368.7 | 6221.1 | 6094.2 | 6079.5 |
| 17.5° | 7735.1 | 7658.4 | 7504.9 | 7321.9 | 7180.3 | 7035.7 | 6805.5 | 6560.5 | 6348.0 | 6188.7 | 6165.1 |
| 20° | 7929.9 | 7867.9 | 7693.8 | 7558.0 | 7475.4 | 7348.5 | 7079.9 | 6802.5 | 6563.5 | 6362.8 | 6351.0 |
| 22.5° | 8109.9 | 8036.1 | 7864.9 | 7785.3 | 7785.3 | 7699.7 | 7442.9 | 7115.3 | 6835.0 | 6601.8 | 6572.3 |
| 25° | 8313.5 | 8233.8 | 8104.0 | 8095.1 | 8136.5 | 8098.1 | 7788.2 | 7437.0 | 7109.4 | 6846.8 | 6799.6 |
| 27.5° | 8596.8 | 8508.3 | 8431.6 | 8484.7 | 8543.7 | 8502.4 | 8157.1 | 7749.8 | 7404.6 | 7139.0 | 7097.6 |
| 30° | 9048.4 | 8939.2 | 8868.4 | 8933.3 | 9048.4 | 8927.4 | 8552.6 | 8121.7 | 7773.5 | 7481.3 | 7460.6 |
| 32.5° | 9573.7 | 9449.7 | 9376.0 | 9479.3 | 9582.5 | 9393.7 | 9021.8 | 8608.6 | 8242.7 | 7935.8 | 7900.4 |
| 35° | 10205.2 | 10048.8 | 9939.6 | 10078.3 | 10184.6 | 9998.7 | 9629.8 | 9237.3 | 8830.0 | 8511.3 | 8464.0 |
| 37.5° | 10766.0 | 10577.1 | 10503.3 | 10698.1 | 10839.8 | 10718.8 | 10317.4 | 9948.5 | 9502.9 | 9154.6 | 9134.0 |
| 40° | 11173.2 | 10987.3 | 10934.2 | 11255.9 | 11503.8 | 11474.3 | 11114.2 | 10692.2 | 10273.1 | 9871.8 | 9833.4 |
| 42.5° | 11350.3 | 11220.5 | 11232.3 | 11666.1 | 12049.7 | 12238.6 | 11916.9 | 11465.4 | 11061.1 | 10645.0 | 10618.4 |
| 45° | 11388.7 | 11309.0 | 11403.4 | 11946.5 | 12451.1 | 12837.7 | 12563.3 | 12185.5 | 11728.1 | 11326.7 | 11314.9 |
| 47.5° | 11430.0 | 11385.7 | 11530.3 | 12105.8 | 12704.9 | 13153.5 | 13000.0 | 12610.5 | 12147.1 | 11754.6 | 11725.1 |
| 50° | 11527.4 | 11509.7 | 11672.0 | 12218.0 | 12825.9 | 13239.1 | 13065.0 | 12678.4 | 12203.2 | 11816.6 | 11745.8 |
| 52.5° | 11556.9 | 11527.4 | 11760.5 | 12392.1 | 13026.6 | 13236.1 | 12861.3 | 12356.7 | 11878.6 | 11447.7 | 11373.9 |
| 55° | 11648.4 | 11595.3 | 11754.6 | 12457.0 | 13304.0 | 13407.3 | 12849.5 | 12094.0 | 11427.0 | 10839.8 | 10665.6 |
| 57.5° | 11672.0 | 11613.0 | 11716.3 | 12350.8 | 13003.0 | 12911.5 | 11294.2 | 9759.6 | 8502.4 | 7850.2 | 7924.0 |
| 60° | 11545.1 | 11562.8 | 11385.7 | 11314.9 | 10429.5 | 9207.7 | 6914.7 | 5527.6 | 4341.2 | 3839.5 | 3948.7 |
| 62.5° | 8788.7 | 8862.5 | 8257.5 | 7180.3 | 5521.7 | 4376.6 | 2895.1 | 2248.8 | 1903.5 | 1815.0 | 1829.7 |
| 65° | 4435.7 | 4536.0 | 3907.4 | 3231.6 | 2402.3 | 1941.9 | 1679.2 | 1626.1 | 1608.4 | 1587.7 | 1587.7 |
| 67.5° | 1756.0 | 1785.5 | 1761.9 | 1649.7 | 1534.6 | 1493.3 | 1481.5 | 1475.6 | 1454.9 | 1443.1 | 1446.1 |
| 70° | 1410.7 | 1434.3 | 1398.9 | 1328.0 | 1280.8 | 1277.9 | 1272.0 | 1260.2 | 1245.4 | 1245.4 | 1254.3 |
| 72.5° | 1151.0 | 1174.6 | 1124.4 | 1080.1 | 1044.7 | 1018.2 | 1003.4 | 994.6 | 973.9 | 973.9 | 982.7 |
| 75° | 847.0 | 861.8 | 820.4 | 814.5 | 776.2 | 749.6 | 726.0 | 714.2 | 687.6 | 675.8 | 684.7 |
| 77.5° | 563.7 | 560.7 | 540.1 | 540.1 | 525.3 | 492.9 | 466.3 | 439.7 | 404.3 | 380.7 | 386.6 |
| 80° | 365.9 | 365.9 | 357.1 | 357.1 | 342.3 | 315.8 | 283.3 | 256.8 | 236.1 | 218.4 | 218.4 |
| 82.5° | 233.1 | 230.2 | 227.2 | 224.3 | 218.4 | 191.8 | 168.2 | 150.5 | 135.8 | 124.0 | 126.9 |
| 85° | 129.9 | 129.9 | 124.0 | 124.0 | 112.1 | 97.4 | 85.6 | 73.8 | 64.9 | 62.0 | 62.0 |
| 87.5° | 44.3 | 44.3 | 41.3 | 41.3 | 35.4 | 26.6 | 20.7 | 17.7 | 14.8 | 11.8 | 14.8 |
| 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

All Brands

Data applicable to all product families using SA light engines

Report Number: SP1-2101-121-7

Luminaire Tested: IFLD-S-SA2A-735-U-T2

Test Date: 03/04/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-7
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/04/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-735-U-T2**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 615mA.

Spectral Parameters

CCT (K): 3388
 CIE u': 0.2371
 CIE v': 0.5177
 Duv: 0.0032
 CIE x: 0.4153
 CIE y: 0.4030
 CIE z: 0.1817
 Peak Wavelength (nm): 590
 Dominant Wavelength (nm): 580
 Purity: 45.7

 Rf: 76.9
 Rg: 94.4

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 73.1 | | |
| R1: | 68.9 | R9: | -34.6 |
| R2: | 81.1 | R10: | 57.8 |
| R3: | 93.1 | R11: | 68.6 |
| R4: | 71.6 | R12: | 53.9 |
| R5: | 69.4 | R13: | 70.9 |
| R6: | 75.0 | R14: | 96.2 |
| R7: | 79.5 | | |
| R8: | 46.4 | | |

Test Conditions

Stabilization Time: 81M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0/30%
 Sphere Temperature (°C): 24.1



REPORT NUMBER: SP1-2101-121-7

| 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 |

REPORT NUMBER: SP1-2101-121-7

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-7

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 | 2672 | 0.0 | 490 | 34553 | 4.9 | 620 | 136720 | 35.6 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 8.0 | 625 | 126308 | 27.9 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 12.1 | 630 | 114625 | 20.7 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 18.1 | 635 | 103216 | 15.5 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 25.4 | 640 | 92605 | 11.1 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 33.9 | 645 | 83234 | 8.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 43.0 | 650 | 73263 | 5.4 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 50.1 | 655 | 64627 | 3.7 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 57.9 | 660 | 56614 | 2.4 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 64.0 | 665 | 49537 | 1.6 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.0 | 540 | 107316 | 69.9 | 670 | 42866 | 0.9 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.0 | 545 | 113101 | 75.3 | 675 | 36708 | 0.6 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 0.0 | 550 | 120690 | 82.0 | 680 | 31814 | 0.4 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 0.1 | 555 | 128583 | 87.8 | 685 | 27485 | 0.2 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 0.3 | 560 | 137796 | 93.6 | 690 | 23698 | 0.1 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 0.8 | 565 | 146577 | 97.5 | 695 | 20309 | 0.1 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 1.6 | 570 | 154581 | 100.5 | 700 | 17890 | 0.1 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 2.4 | 575 | 162633 | 101.2 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 2.5 | 580 | 168101 | 99.9 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 2.1 | 585 | 173145 | 96.2 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 1.8 | 590 | 174675 | 90.3 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 1.7 | 595 | 173724 | 82.3 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 1.5 | 600 | 171241 | 73.8 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 1.7 | 605 | 165134 | 64.0 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 2.2 | 610 | 156652 | 53.8 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 3.3 | 615 | 147879 | 44.6 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Scotopic Flux vs. Wavelength



Scotopic Lumens: 12126

S/P: 1.36

| 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 | 2672 | 0.0 | 490 | 34553 | 53.2 | 620 | 136720 | 1.7 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 71.7 | 625 | 126308 | 1.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 91.4 | 630 | 114625 | 0.6 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 110.0 | 635 | 103216 | 0.4 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 125.1 | 640 | 92605 | 0.2 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 135.7 | 645 | 83234 | 0.1 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 140.8 | 650 | 73263 | 0.1 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 139.6 | 655 | 64627 | 0.1 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 135.7 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.1 | 535 | 103269 | 128.7 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.2 | 540 | 107316 | 118.6 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.6 | 545 | 113101 | 108.4 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 2.0 | 550 | 120690 | 98.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 5.9 | 555 | 128583 | 87.9 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 14.3 | 560 | 137796 | 77.0 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 30.5 | 565 | 146577 | 65.8 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 55.5 | 570 | 154581 | 54.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 77.4 | 575 | 162633 | 44.3 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 73.6 | 580 | 168101 | 34.6 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 53.7 | 585 | 173145 | 26.5 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 41.9 | 590 | 174675 | 19.5 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 34.3 | 595 | 173724 | 13.9 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 27.9 | 600 | 171241 | 9.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 27.1 | 605 | 165134 | 6.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 31.3 | 610 | 156652 | 4.2 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 40.0 | 615 | 147879 | 2.7 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-7

Melanopic Flux vs. Wavelength



Melanopic Lumens: 4490.7 M/P: 0.5

| 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 | 2672 | 0.0 | 490 | 34553 | 28.8 | 620 | 136720 | 0.1 | 750 | 5870 | 0.0 | 880 | 4216 | 0.0 |
| 365 | 2252 | 0.0 | 495 | 44336 | 36.6 | 625 | 126308 | 0.1 | 755 | 5421 | 0.0 | 885 | 4132 | 0.0 |
| 370 | 2217 | 0.0 | 500 | 54643 | 43.9 | 630 | 114625 | 0.0 | 760 | 5097 | 0.0 | 890 | 3992 | 0.0 |
| 375 | 2697 | 0.0 | 505 | 64676 | 49.6 | 635 | 103216 | 0.0 | 765 | 4626 | 0.0 | 895 | 3214 | 0.0 |
| 380 | 3039 | 0.0 | 510 | 73825 | 53.0 | 640 | 92605 | 0.0 | 770 | 3782 | 0.0 | 900 | 2580 | 0.0 |
| 385 | 2655 | 0.0 | 515 | 81872 | 53.5 | 645 | 83234 | 0.0 | 775 | 3506 | 0.0 | 905 | 1776 | 0.0 |
| 390 | 2357 | 0.0 | 520 | 88574 | 51.6 | 650 | 73263 | 0.0 | 780 | 3507 | 0.0 | 910 | 3995 | 0.0 |
| 395 | 2186 | 0.0 | 525 | 93289 | 47.3 | 655 | 64627 | 0.0 | 785 | 3267 | 0.0 | 915 | 4288 | 0.0 |
| 400 | 2015 | 0.0 | 530 | 98393 | 42.5 | 660 | 56614 | 0.0 | 790 | 2849 | 0.0 | 920 | 2446 | 0.0 |
| 405 | 2234 | 0.0 | 535 | 103269 | 37.2 | 665 | 49537 | 0.0 | 795 | 3037 | 0.0 | 925 | 3009 | 0.0 |
| 410 | 3412 | 0.1 | 540 | 107316 | 31.4 | 670 | 42866 | 0.0 | 800 | 2716 | 0.0 | 930 | 3026 | 0.0 |
| 415 | 6135 | 0.4 | 545 | 113101 | 26.3 | 675 | 36708 | 0.0 | 805 | 2648 | 0.0 | 935 | 4734 | 0.0 |
| 420 | 12146 | 1.4 | 550 | 120690 | 21.7 | 680 | 31814 | 0.0 | 810 | 3187 | 0.0 | 940 | 3719 | 0.0 |
| 425 | 23983 | 3.7 | 555 | 128583 | 17.3 | 685 | 27485 | 0.0 | 815 | 2931 | 0.0 | 945 | 1480 | 0.0 |
| 430 | 42142 | 8.9 | 560 | 137796 | 13.6 | 690 | 23698 | 0.0 | 820 | 2717 | 0.0 | 950 | 3450 | 0.0 |
| 435 | 68228 | 18.2 | 565 | 146577 | 10.3 | 695 | 20309 | 0.0 | 825 | 2236 | 0.0 | 955 | 5051 | 0.0 |
| 440 | 99323 | 33.2 | 570 | 154581 | 7.6 | 700 | 17890 | 0.0 | 830 | 2628 | 0.0 | 960 | 3176 | 0.0 |
| 445 | 115584 | 45.6 | 575 | 162633 | 5.4 | 705 | 15500 | 0.0 | 835 | 3140 | 0.0 | 965 | 5178 | 0.0 |
| 450 | 94997 | 43.8 | 580 | 168101 | 3.8 | 710 | 13699 | 0.0 | 840 | 3675 | 0.0 | 970 | 6385 | 0.0 |
| 455 | 61433 | 32.2 | 585 | 173145 | 2.6 | 715 | 12398 | 0.0 | 845 | 3283 | 0.0 | 975 | 3810 | 0.0 |
| 460 | 43373 | 25.6 | 590 | 174675 | 1.7 | 720 | 11147 | 0.0 | 850 | 3055 | 0.0 | 980 | 4322 | 0.0 |
| 465 | 32472 | 21.2 | 595 | 173724 | 1.1 | 725 | 9761 | 0.0 | 855 | 2932 | 0.0 | 985 | 4200 | 0.0 |
| 470 | 24257 | 17.4 | 600 | 171241 | 0.7 | 730 | 8651 | 0.0 | 860 | 3382 | 0.0 | 990 | 4661 | 0.0 |
| 475 | 21690 | 16.6 | 605 | 165134 | 0.5 | 735 | 7730 | 0.0 | 865 | 2605 | 0.0 | 995 | 6746 | 0.0 |
| 480 | 23173 | 18.6 | 610 | 156652 | 0.3 | 740 | 6847 | 0.0 | 870 | 3325 | 0.0 | 1000 | 4150 | 0.0 |
| 485 | 27564 | 22.7 | 615 | 147879 | 0.2 | 745 | 6124 | 0.0 | 875 | 3325 | 0.0 | | | |

Summary

$R_f = 76.9$
 $R_g = 94.4$
 CIE $R_a = 73.1$
 $R_g = -34.6$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 74 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 71 | CES56 = 75 | CES81 = 75 |
| CES07 = 40 | CES32 = 67 | CES57 = 74 | CES82 = 94 |
| CES08 = 39 | CES33 = 74 | CES58 = 76 | CES83 = 91 |
| CES09 = 29 | CES34 = 78 | CES59 = 87 | CES84 = 89 |
| CES10 = 75 | CES35 = 89 | CES60 = 93 | CES85 = 80 |
| CES11 = 58 | CES36 = 98 | CES61 = 86 | CES86 = 66 |
| CES12 = 64 | CES37 = 86 | CES62 = 89 | CES87 = 79 |
| CES13 = 43 | CES38 = 82 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 95 | CES64 = 74 | CES89 = 70 |
| CES15 = 71 | CES40 = 91 | CES65 = 68 | CES90 = 77 |
| CES16 = 47 | CES41 = 89 | CES66 = 71 | CES91 = 88 |
| CES17 = 50 | CES42 = 88 | CES67 = 69 | CES92 = 60 |
| CES18 = 56 | CES43 = 82 | CES68 = 74 | CES93 = 77 |
| CES19 = 72 | CES44 = 99 | CES69 = 82 | CES94 = 52 |
| CES20 = 65 | CES45 = 87 | CES70 = 67 | CES95 = 69 |
| CES21 = 86 | CES46 = 82 | CES71 = 66 | CES96 = 78 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 85 |
| CES23 = 92 | CES48 = 72 | CES73 = 59 | CES98 = 76 |
| CES24 = 91 | CES49 = 82 | CES74 = 97 | CES99 = 63 |
| CES25 = 72 | CES50 = 88 | CES75 = 66 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)