

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: P635747

Luminaire Tested: GWS-SA3E-735-U-T3-W-GRSWH

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P635747
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-25)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA3E-735-U-T3-W-GRSWH
Description: GALLEON WALL SLIM LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH
Light Source: (48) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18512.7 lumens
Efficiency: N/A
Efficacy: 116.3 lumens/watt
Luminous Opening: Rectangular (W 1.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

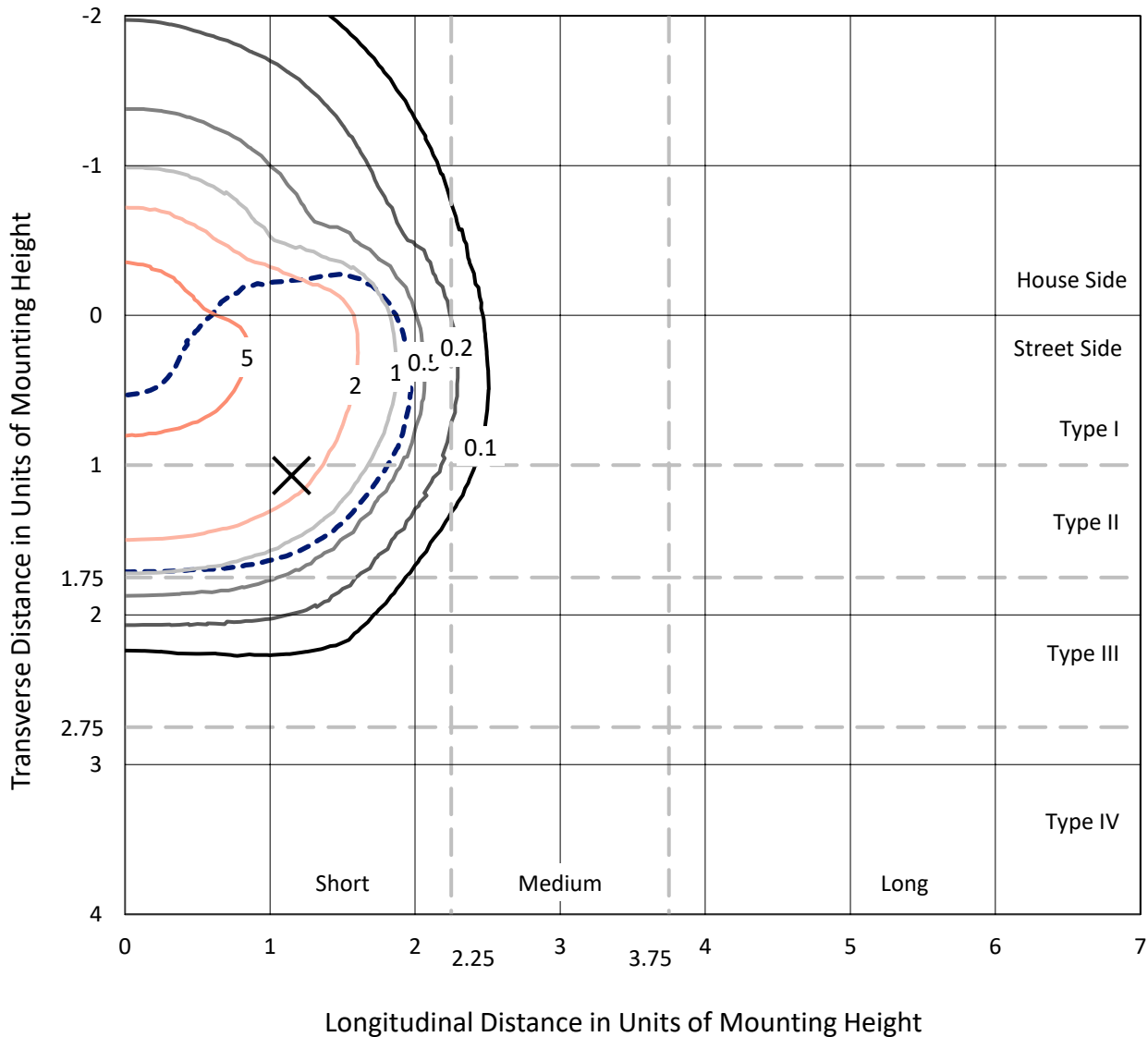
Input Watts (W): 159.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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 CATALOG NUMBER: GWS-SA3E-735-U-T3-W-GRSWH

Iso-Footcandle Lines of Horizontal Illumination

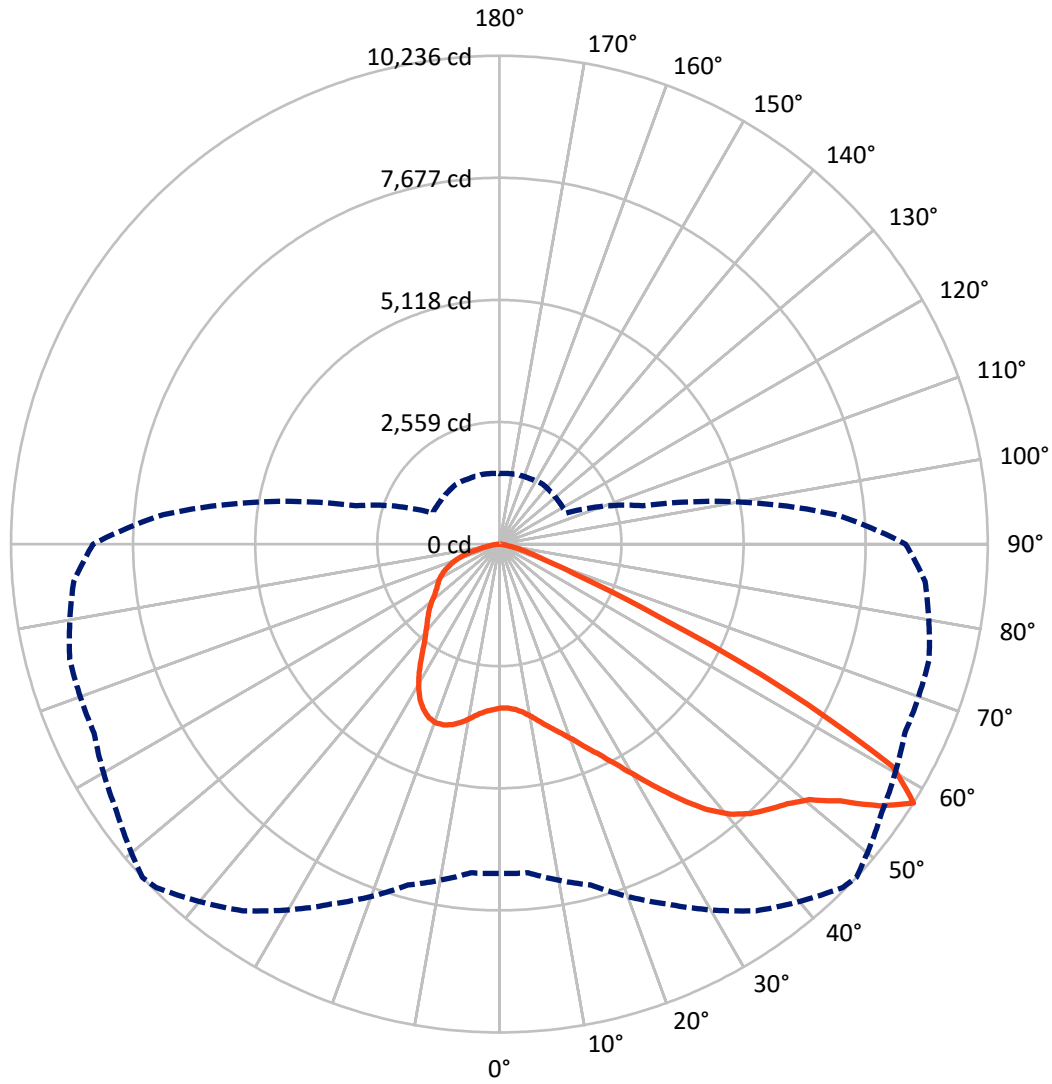
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.1 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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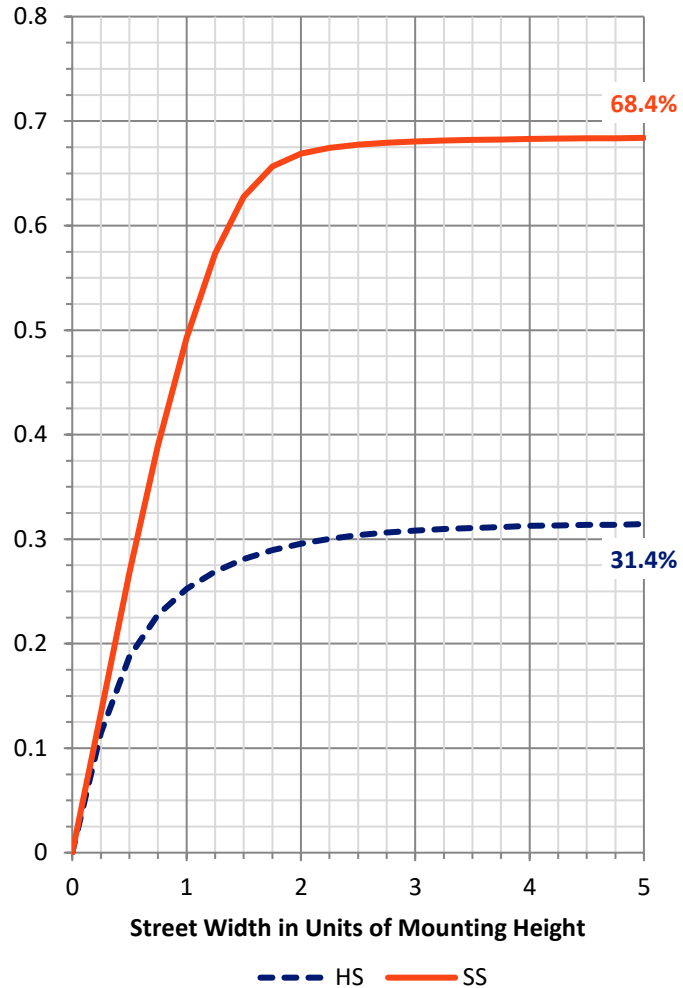
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5859.2 | 0.0 | 5859.2 |
| | % Fixture | 31.6 | 0.0 | 31.6 |
| Street Side | Lumens | 12653.5 | 0.0 | 12653.5 |
| | % Fixture | 68.4 | 0.0 | 68.4 |
| Total | Lumens | 18512.7 | 0.0 | 18512.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 338.6 | 1.8 |
| 10°-20° | 1113.7 | 6.0 |
| 20°-30° | 2005.4 | 10.8 |
| 30°-40° | 3029.0 | 16.4 |
| 40°-50° | 4078.9 | 22.0 |
| 50°-60° | 4901.3 | 26.5 |
| 60°-70° | 2387.0 | 12.9 |
| 70°-80° | 588.1 | 3.2 |
| 80°-90° | 70.7 | 0.4 |
| 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° | 18512.7 | 100.0 |
| 0°-180° | 18512.7 | 100.0 |

Coefficient of Utilization



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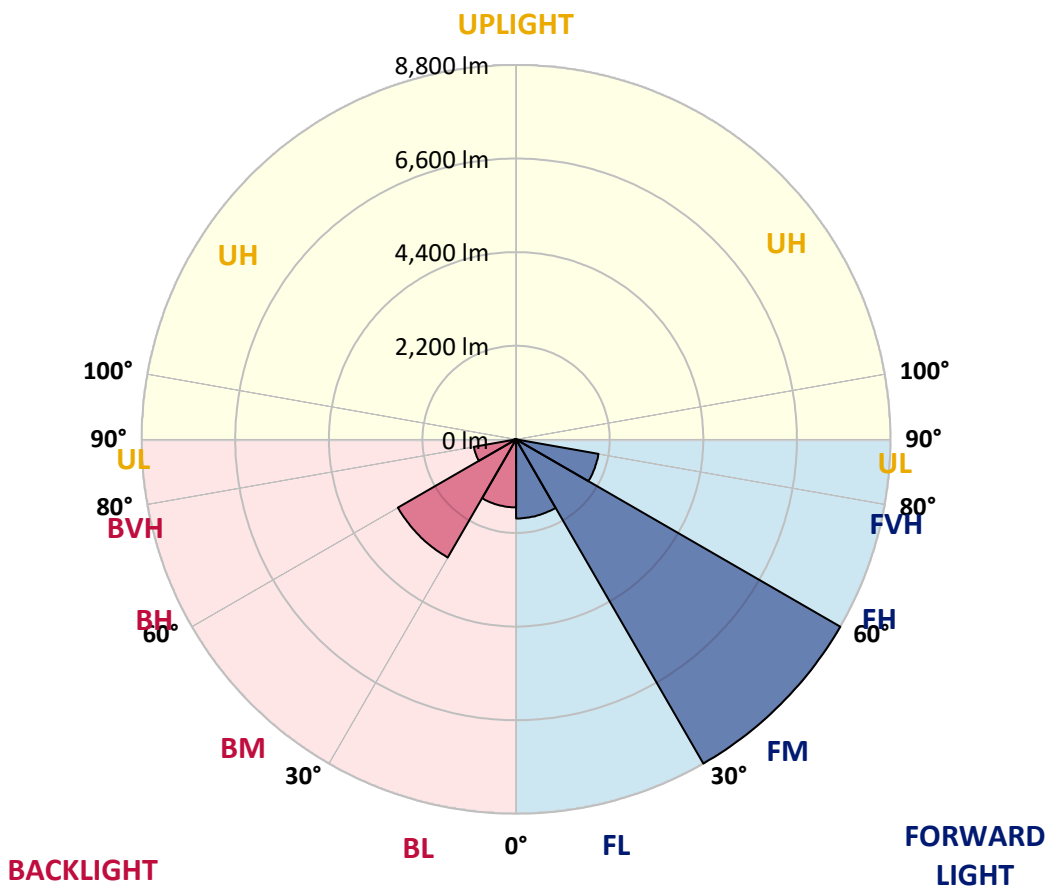
CATALOG NUMBER: GWS-SA3E-735-U-T3-W-GRSWH

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1859.5 | 10.0 | | | |
| FM (30°-60°) | 8800.1 | 47.5 | | | |
| FH (60°-80°) | 1967.3 | 10.6 | | | G2/5000 |
| FVH (80°-90°) | 26.6 | 0.1 | | | G1/100 |
| BL (0°-30°) | 1598.3 | 8.6 | B3/2500 | | |
| BM (30°-60°) | 3209.1 | 17.3 | B3/5000 | | |
| BH (60°-80°) | 1007.8 | 5.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 44.1 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|
| 0° | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 |
| 2.5° | 3427.0 | 3425.4 | 3425.4 | 3434.8 | 3434.8 | 3437.9 | 3442.5 | 3447.2 | 3448.8 | 3441.0 | 3423.9 |
| 5° | 3464.3 | 3464.3 | 3464.3 | 3472.1 | 3472.1 | 3475.2 | 3481.4 | 3483.0 | 3481.4 | 3469.0 | 3451.9 |
| 7.5° | 3523.4 | 3523.4 | 3524.9 | 3534.3 | 3542.0 | 3546.7 | 3557.6 | 3556.0 | 3551.4 | 3531.2 | 3509.4 |
| 10° | 3619.8 | 3624.5 | 3629.1 | 3640.0 | 3655.6 | 3666.4 | 3674.2 | 3674.2 | 3668.0 | 3636.9 | 3608.9 |
| 12.5° | 3756.6 | 3762.8 | 3767.5 | 3776.8 | 3789.3 | 3807.9 | 3825.0 | 3825.0 | 3817.3 | 3778.4 | 3736.4 |
| 15° | 3916.8 | 3923.0 | 3921.4 | 3924.6 | 3947.9 | 3974.3 | 3988.3 | 3997.6 | 4000.7 | 3946.3 | 3881.0 |
| 17.5° | 4100.3 | 4106.5 | 4100.3 | 4090.9 | 4094.0 | 4136.0 | 4160.9 | 4195.1 | 4215.3 | 4142.2 | 4038.1 |
| 20° | 4266.6 | 4260.4 | 4260.4 | 4266.6 | 4276.0 | 4327.3 | 4364.6 | 4420.6 | 4445.4 | 4356.8 | 4195.1 |
| 22.5° | 4442.3 | 4456.3 | 4450.1 | 4450.1 | 4487.4 | 4572.9 | 4618.0 | 4691.1 | 4717.5 | 4602.5 | 4384.8 |
| 25° | 4669.3 | 4681.8 | 4678.7 | 4681.8 | 4725.3 | 4846.6 | 4891.7 | 5027.0 | 5053.4 | 4888.6 | 4594.7 |
| 27.5° | 4918.1 | 4938.3 | 4947.7 | 4944.6 | 5014.5 | 5173.1 | 5229.1 | 5417.3 | 5465.5 | 5208.9 | 4818.6 |
| 30° | 5241.5 | 5263.3 | 5271.1 | 5268.0 | 5350.4 | 5566.5 | 5630.3 | 5844.8 | 5913.3 | 5588.3 | 5103.2 |
| 32.5° | 5616.3 | 5638.0 | 5661.4 | 5670.7 | 5776.4 | 5997.2 | 6089.0 | 6311.3 | 6409.3 | 6026.8 | 5446.8 |
| 35° | 5987.9 | 6006.6 | 6051.6 | 6124.7 | 6269.3 | 6494.8 | 6575.6 | 6794.9 | 6889.7 | 6482.4 | 5862.0 |
| 37.5° | 6398.4 | 6410.8 | 6449.7 | 6550.8 | 6759.1 | 6973.7 | 7054.6 | 7264.5 | 7275.4 | 6922.4 | 6331.5 |
| 40° | 6847.8 | 6847.8 | 6840.0 | 6939.5 | 7157.2 | 7373.3 | 7443.3 | 7564.6 | 7500.8 | 7261.4 | 6788.7 |
| 42.5° | 7228.7 | 7222.5 | 7228.7 | 7322.0 | 7483.7 | 7659.4 | 7720.1 | 7696.7 | 7615.9 | 7521.0 | 7202.3 |
| 45° | 7572.3 | 7577.0 | 7633.0 | 7704.5 | 7788.5 | 7892.6 | 7928.4 | 7796.2 | 7723.2 | 7729.4 | 7533.5 |
| 47.5° | 7805.6 | 7810.2 | 7940.8 | 8060.6 | 8111.9 | 8144.5 | 8129.0 | 7945.5 | 7908.2 | 7978.2 | 7788.5 |
| 50° | 7836.7 | 7861.5 | 8087.0 | 8332.7 | 8460.2 | 8464.8 | 8421.3 | 8197.4 | 8186.5 | 8265.8 | 7925.3 |
| 52.5° | 7842.9 | 7867.8 | 8149.2 | 8592.3 | 8923.5 | 8993.5 | 8943.8 | 8710.5 | 8597.0 | 8517.7 | 8093.2 |
| 55° | 7819.6 | 7847.6 | 8158.5 | 8766.5 | 9400.9 | 9680.8 | 9685.4 | 9355.8 | 8993.5 | 8940.6 | 8572.1 |
| 57.5° | 6903.7 | 6914.6 | 7396.6 | 8323.3 | 9382.2 | 10175.2 | 10235.9 | 9788.1 | 9374.5 | 9324.7 | 8956.2 |
| 60° | 4809.3 | 4852.8 | 5376.8 | 6600.5 | 7881.8 | 9279.6 | 9475.5 | 9344.9 | 9068.1 | 8705.9 | 7684.3 |
| 62.5° | 2408.5 | 2445.8 | 2971.4 | 4128.2 | 5435.9 | 6539.9 | 6749.8 | 6888.2 | 6953.5 | 6564.8 | 5232.2 |
| 65° | 1037.1 | 1065.1 | 1391.6 | 2156.6 | 3077.1 | 3610.5 | 3683.5 | 3849.9 | 4257.3 | 3798.6 | 2819.0 |
| 67.5° | 693.5 | 712.1 | 878.5 | 1315.4 | 1813.0 | 1847.2 | 1836.3 | 1872.1 | 1960.7 | 1618.6 | 1273.5 |
| 70° | 531.8 | 547.3 | 659.3 | 964.0 | 1303.0 | 1114.9 | 1055.8 | 957.8 | 1040.2 | 1060.4 | 1032.4 |
| 72.5° | 385.6 | 398.1 | 482.0 | 657.7 | 816.3 | 712.1 | 702.8 | 752.6 | 864.5 | 895.6 | 878.5 |
| 75° | 248.8 | 255.0 | 306.3 | 360.7 | 421.4 | 457.1 | 475.8 | 566.0 | 679.5 | 702.8 | 682.6 |
| 77.5° | 166.4 | 171.0 | 200.6 | 231.7 | 239.5 | 241.0 | 247.2 | 287.7 | 365.4 | 408.9 | 404.3 |
| 80° | 87.1 | 87.1 | 98.0 | 98.0 | 112.0 | 133.7 | 139.9 | 166.4 | 202.1 | 223.9 | 225.5 |
| 82.5° | 34.2 | 35.8 | 42.0 | 46.6 | 56.0 | 68.4 | 73.1 | 87.1 | 105.7 | 121.3 | 135.3 |
| 85° | 14.0 | 15.5 | 17.1 | 20.2 | 24.9 | 31.1 | 32.7 | 37.3 | 49.8 | 62.2 | 70.0 |
| 87.5° | 0.0 | 0.0 | 1.6 | 1.6 | 3.1 | 4.7 | 4.7 | 6.2 | 7.8 | 14.0 | 18.7 |
| 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: P635747

CATALOG NUMBER: GWS-SA3E-735-U-T3-W-GRSWH

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 | 3433.2 |
| 2.5° | 3444.1 | 3423.9 | 3444.1 | 3450.3 | 3467.4 | 3473.6 | 3462.7 | 3461.2 | 3461.2 | 3445.6 | 3441.0 |
| 5° | 3467.4 | 3448.8 | 3469.0 | 3478.3 | 3503.2 | 3518.7 | 3521.8 | 3534.3 | 3542.0 | 3535.8 | 3534.3 |
| 7.5° | 3524.9 | 3501.6 | 3523.4 | 3537.4 | 3570.0 | 3594.9 | 3605.8 | 3633.8 | 3654.0 | 3650.9 | 3649.3 |
| 10° | 3626.0 | 3594.9 | 3619.8 | 3643.1 | 3678.9 | 3708.4 | 3710.0 | 3725.5 | 3745.7 | 3739.5 | 3736.4 |
| 12.5° | 3742.6 | 3713.1 | 3741.1 | 3764.4 | 3806.4 | 3818.8 | 3798.6 | 3792.4 | 3795.5 | 3787.7 | 3781.5 |
| 15° | 3885.7 | 3843.7 | 3868.6 | 3895.0 | 3918.3 | 3904.3 | 3860.8 | 3843.7 | 3842.1 | 3831.3 | 3825.0 |
| 17.5° | 4028.7 | 3975.9 | 3994.5 | 4008.5 | 3997.6 | 3954.1 | 3899.7 | 3870.1 | 3856.1 | 3834.4 | 3828.2 |
| 20° | 4170.2 | 4103.4 | 4100.3 | 4089.4 | 4039.6 | 3960.3 | 3887.2 | 3828.2 | 3792.4 | 3762.8 | 3752.0 |
| 22.5° | 4331.9 | 4238.6 | 4192.0 | 4142.2 | 4033.4 | 3904.3 | 3793.9 | 3710.0 | 3652.4 | 3615.1 | 3602.7 |
| 25° | 4506.1 | 4373.9 | 4277.5 | 4178.0 | 3971.2 | 3784.6 | 3630.7 | 3515.6 | 3447.2 | 3406.8 | 3392.8 |
| 27.5° | 4678.7 | 4496.8 | 4352.1 | 4182.7 | 3846.8 | 3612.0 | 3405.2 | 3249.7 | 3181.3 | 3148.7 | 3137.8 |
| 30° | 4911.9 | 4660.0 | 4440.8 | 4122.0 | 3683.5 | 3372.6 | 3114.5 | 2957.4 | 2912.3 | 2889.0 | 2879.7 |
| 32.5° | 5180.9 | 4866.8 | 4559.0 | 3994.5 | 3475.2 | 3092.7 | 2820.6 | 2711.7 | 2680.6 | 2635.5 | 2634.0 |
| 35° | 5535.4 | 5162.2 | 4670.9 | 3806.4 | 3212.4 | 2792.6 | 2595.1 | 2517.4 | 2461.4 | 2389.9 | 2383.7 |
| 37.5° | 5949.0 | 5530.8 | 4731.5 | 3566.9 | 2906.1 | 2545.4 | 2427.2 | 2340.1 | 2249.9 | 2155.1 | 2142.6 |
| 40° | 6376.6 | 5961.5 | 4736.2 | 3283.9 | 2606.0 | 2382.1 | 2282.6 | 2169.1 | 2057.1 | 1951.4 | 1937.4 |
| 42.5° | 6826.0 | 6362.6 | 4653.8 | 2957.4 | 2360.3 | 2240.6 | 2139.5 | 1996.5 | 1870.5 | 1799.0 | 1791.2 |
| 45° | 7227.1 | 6686.0 | 4467.2 | 2613.8 | 2178.4 | 2122.4 | 1993.4 | 1839.4 | 1772.6 | 1721.3 | 1710.4 |
| 47.5° | 7542.8 | 6900.6 | 4215.3 | 2305.9 | 2030.7 | 2001.1 | 1833.2 | 1753.9 | 1702.6 | 1656.0 | 1645.1 |
| 50° | 7698.3 | 6948.8 | 3887.2 | 2055.6 | 1893.9 | 1858.1 | 1743.0 | 1682.4 | 1648.2 | 1610.9 | 1601.5 |
| 52.5° | 7891.1 | 7003.2 | 3604.2 | 1845.7 | 1760.1 | 1711.9 | 1668.4 | 1620.2 | 1595.3 | 1572.0 | 1564.2 |
| 55° | 8334.2 | 7208.5 | 3455.0 | 1677.7 | 1632.6 | 1610.9 | 1604.7 | 1564.2 | 1556.4 | 1540.9 | 1526.9 |
| 57.5° | 8514.6 | 7076.3 | 3102.0 | 1540.9 | 1531.6 | 1534.7 | 1550.2 | 1512.9 | 1505.1 | 1486.5 | 1477.1 |
| 60° | 6847.8 | 5348.8 | 2100.7 | 1422.7 | 1447.6 | 1467.8 | 1483.4 | 1446.1 | 1435.2 | 1432.1 | 1419.6 |
| 62.5° | 4387.9 | 3290.2 | 1466.3 | 1312.3 | 1349.6 | 1374.5 | 1383.9 | 1348.1 | 1340.3 | 1365.2 | 1366.8 |
| 65° | 2284.1 | 1792.8 | 1189.5 | 1194.2 | 1225.3 | 1262.6 | 1281.2 | 1268.8 | 1265.7 | 1292.1 | 1293.7 |
| 67.5° | 1166.2 | 1096.2 | 1037.1 | 1054.2 | 1079.1 | 1127.3 | 1170.8 | 1225.3 | 1243.9 | 1247.0 | 1248.6 |
| 70° | 993.6 | 962.5 | 932.9 | 943.8 | 970.3 | 996.7 | 1038.7 | 1065.1 | 1034.0 | 1026.2 | 1023.1 |
| 72.5° | 845.9 | 822.5 | 808.5 | 821.0 | 835.0 | 830.3 | 817.9 | 830.3 | 835.0 | 836.5 | 838.1 |
| 75° | 657.7 | 640.6 | 629.7 | 631.3 | 631.3 | 614.2 | 590.9 | 576.9 | 561.3 | 548.9 | 548.9 |
| 77.5° | 402.7 | 405.8 | 416.7 | 415.2 | 413.6 | 407.4 | 384.1 | 371.6 | 334.3 | 323.4 | 323.4 |
| 80° | 230.1 | 234.8 | 245.7 | 248.8 | 248.8 | 241.0 | 217.7 | 203.7 | 186.6 | 178.8 | 177.3 |
| 82.5° | 139.9 | 146.2 | 152.4 | 155.5 | 157.0 | 147.7 | 127.5 | 116.6 | 107.3 | 99.5 | 99.5 |
| 85° | 73.1 | 76.2 | 82.4 | 84.0 | 79.3 | 70.0 | 59.1 | 54.4 | 45.1 | 43.5 | 43.5 |
| 87.5° | 20.2 | 21.8 | 24.9 | 20.2 | 18.7 | 14.0 | 7.8 | 6.2 | 3.1 | 1.6 | 1.6 |
| 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 | CRI (Ra): | 73.1 | R9: | -34.6 |
| CIE u': | 0.2371 | R1: | 68.9 | R10: | 57.8 |
| CIE v': | 0.5177 | R2: | 81.1 | R11: | 68.6 |
| Duv: | 0.0032 | R3: | 93.1 | R12: | 53.9 |
| CIE x: | 0.4153 | R4: | 71.6 | R13: | 70.9 |
| CIE y: | 0.4030 | R5: | 69.4 | R14: | 96.2 |
| CIE z: | 0.1817 | R6: | 75.0 | | |
| Peak Wavelength (nm): | 590 | R7: | 79.5 | | |
| Dominant Wavelength (nm): | 580 | R8: | 46.4 | | |
| Purity: | 45.7 | | | | |
| Rf: | 76.9 | | | | |
| Rg: | 94.4 | | | | |



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 ($\mu\text{W}/\text{nm}$) | 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 | 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)