

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: P629292

Luminaire Tested: GWS-SA1B-735-U-SL3-W-HSS

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P629292
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-34)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1B-735-U-SL3-W-HSS
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: (16) 3500K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2863 lumens
Efficiency: N/A
Efficacy: 114.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B0 - U0 - G1

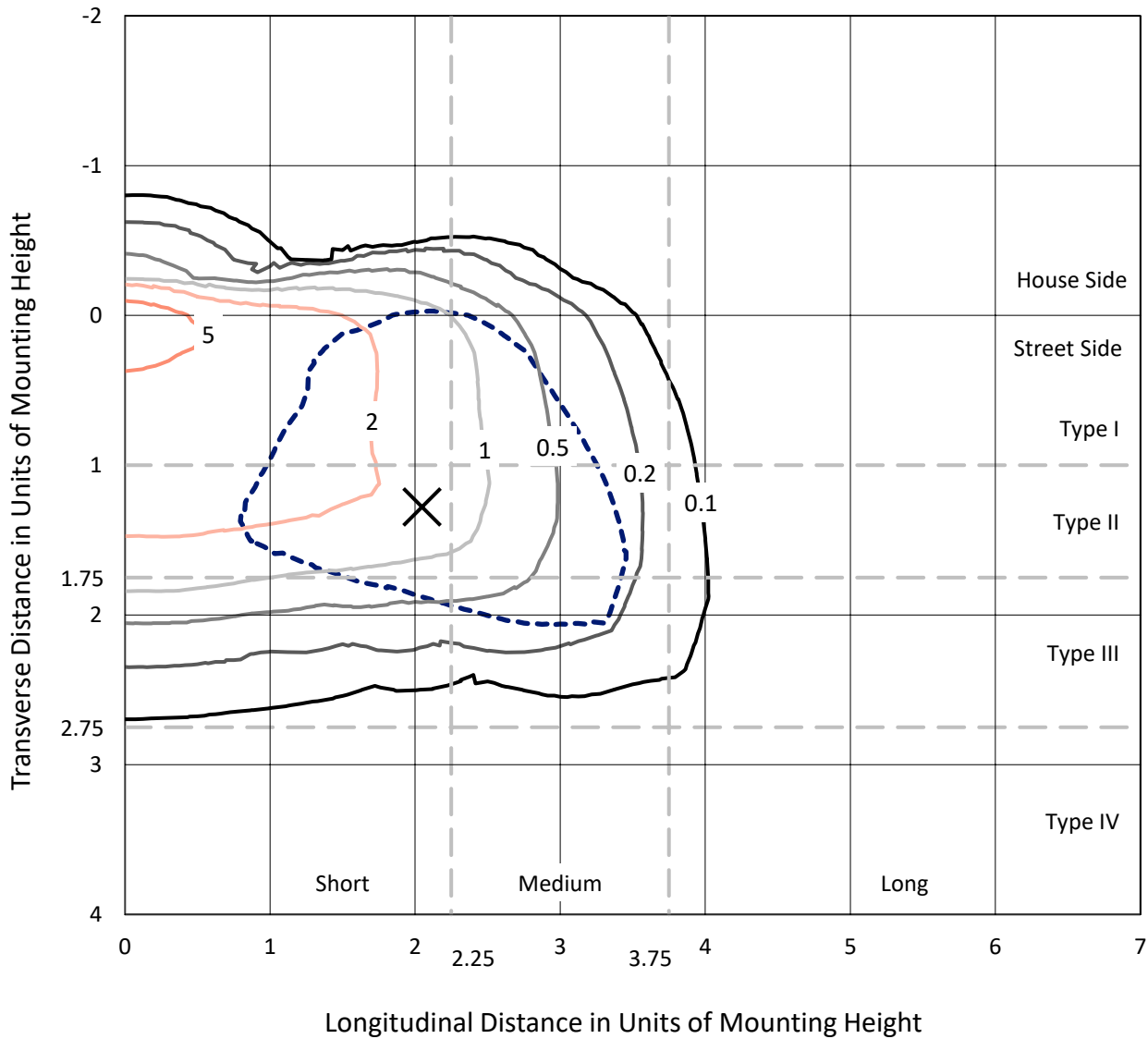
Input Watts (W): 25
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P629292
 CATALOG NUMBER: GWS-SA1B-735-U-SL3-W-HSS

Iso-Footcandle Lines of Horizontal Illumination

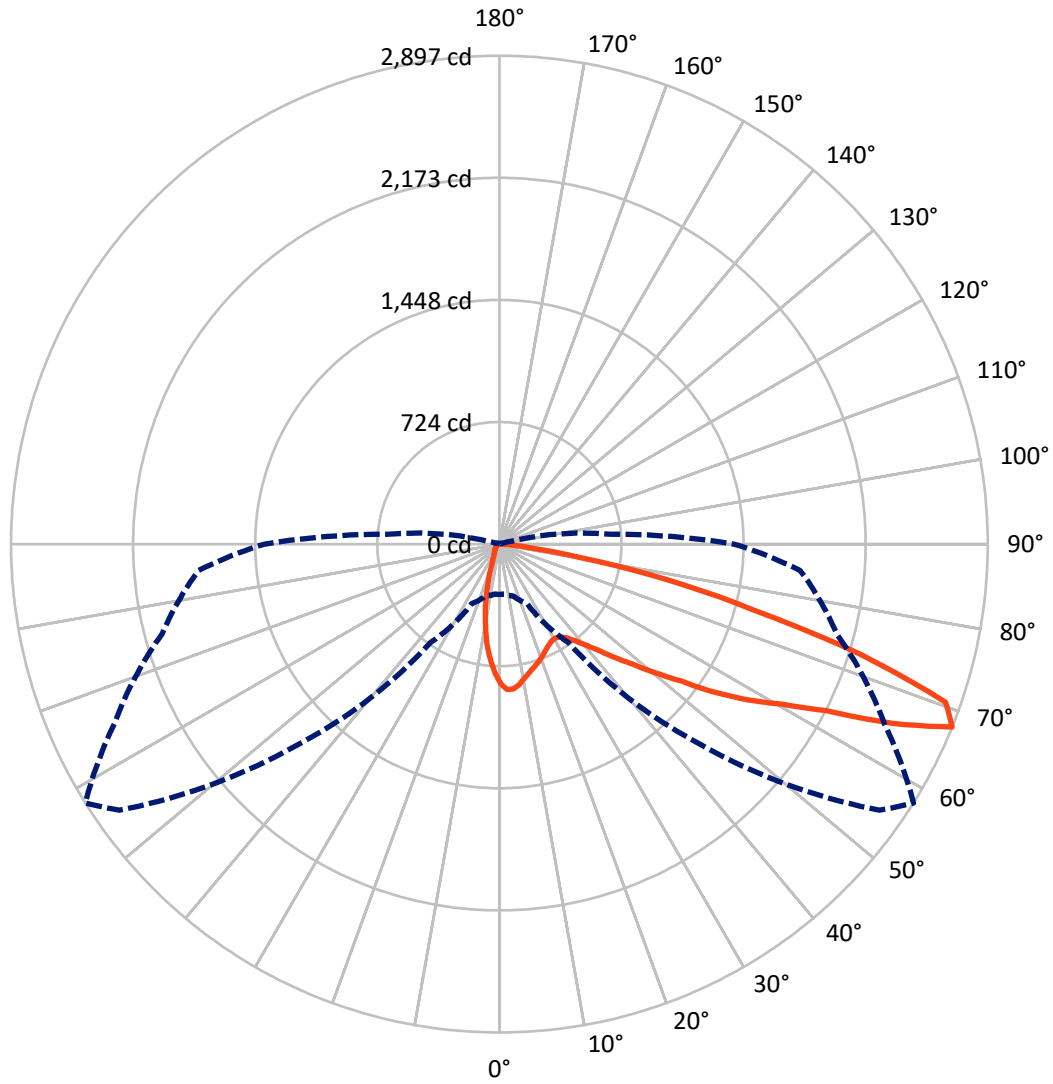
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 8.3 fc
 Type III - Short - N/A

REPORT NUMBER: P629292
CATALOG NUMBER: GWS-SA1B-735-U-SL3-W-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 279.7 | 0.0 | 279.7 |
| | % Fixture | 9.8 | 0.0 | 9.8 |
| Street Side | Lumens | 2583.3 | 0.0 | 2583.3 |
| | % Fixture | 90.2 | 0.0 | 90.2 |
| Total | Lumens | 2863.0 | 0.0 | 2863.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 67.1 | 2.3 |
| 10°-20° | 139.7 | 4.9 |
| 20°-30° | 188.4 | 6.6 |
| 30°-40° | 264.7 | 9.2 |
| 40°-50° | 408.8 | 14.3 |
| 50°-60° | 653.8 | 22.8 |
| 60°-70° | 774.1 | 27.0 |
| 70°-80° | 342.4 | 12.0 |
| 80°-90° | 23.9 | 0.8 |
| 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° | 2863.0 | 100.0 |
| 0°-180° | 2863.0 | 100.0 |

Coefficient of Utilization



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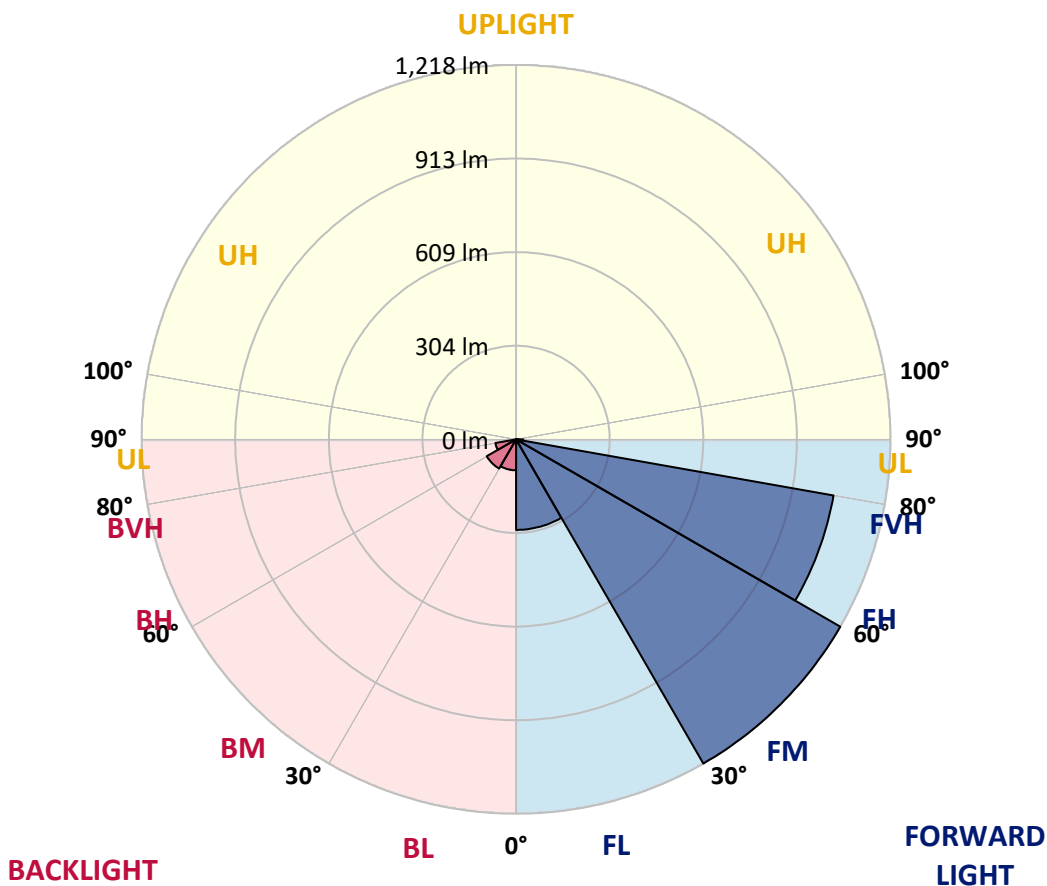
CATALOG NUMBER: GWS-SA1B-735-U-SL3-W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 294.5 | 10.3 | | | |
| FM (30°-60°) | 1217.6 | 42.5 | | | |
| FH (60°-80°) | 1048.3 | 36.6 | | | G1/1800 |
| FVH (80°-90°) | 22.9 | 0.8 | | | G1/100 |
| BL (0°-30°) | 100.7 | 3.5 | B0/110 | | |
| BM (30°-60°) | 109.7 | 3.8 | B0/220 | | |
| BH (60°-80°) | 68.3 | 2.4 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 |
| 2.5° | 868.6 | 870.2 | 872.2 | 874.7 | 874.2 | 871.9 | 869.2 | 862.8 | 858.8 | 846.1 | 830.6 |
| 5° | 840.8 | 840.5 | 845.6 | 850.4 | 859.0 | 863.6 | 869.9 | 864.1 | 862.1 | 846.9 | 821.8 |
| 7.5° | 786.3 | 789.1 | 794.9 | 802.5 | 814.9 | 828.4 | 843.6 | 841.8 | 847.9 | 837.7 | 806.6 |
| 10° | 732.8 | 731.3 | 740.4 | 751.8 | 770.8 | 788.1 | 810.1 | 809.9 | 825.8 | 824.8 | 789.3 |
| 12.5° | 685.9 | 685.7 | 692.8 | 705.7 | 728.0 | 752.1 | 782.0 | 782.7 | 802.5 | 810.6 | 774.6 |
| 15° | 646.4 | 646.9 | 653.8 | 667.2 | 690.3 | 719.6 | 754.4 | 760.7 | 783.0 | 799.5 | 760.2 |
| 17.5° | 618.3 | 618.5 | 622.6 | 634.3 | 656.8 | 688.2 | 730.0 | 738.7 | 767.3 | 791.1 | 748.5 |
| 20° | 605.4 | 604.4 | 605.1 | 610.9 | 628.4 | 657.1 | 705.2 | 716.4 | 752.8 | 785.3 | 737.9 |
| 22.5° | 607.1 | 605.6 | 602.1 | 601.3 | 609.2 | 631.0 | 678.9 | 692.5 | 737.1 | 781.7 | 728.3 |
| 25° | 622.9 | 619.6 | 614.5 | 606.9 | 603.8 | 614.7 | 655.8 | 670.0 | 722.4 | 782.0 | 720.9 |
| 27.5° | 646.9 | 643.4 | 637.0 | 626.9 | 615.0 | 610.4 | 640.1 | 653.5 | 712.0 | 787.8 | 717.4 |
| 30° | 677.6 | 674.8 | 668.7 | 656.6 | 640.6 | 621.8 | 636.8 | 647.9 | 707.0 | 799.7 | 718.9 |
| 32.5° | 713.8 | 711.8 | 706.7 | 695.6 | 677.3 | 648.7 | 647.9 | 656.6 | 711.0 | 817.0 | 724.7 |
| 35° | 748.8 | 749.6 | 749.8 | 743.7 | 724.2 | 689.5 | 678.6 | 681.6 | 727.8 | 842.8 | 737.9 |
| 37.5° | 786.5 | 784.8 | 793.9 | 798.2 | 779.5 | 742.5 | 726.0 | 726.2 | 759.7 | 881.1 | 762.7 |
| 40° | 815.2 | 815.7 | 835.5 | 853.2 | 845.3 | 809.6 | 786.0 | 785.8 | 808.8 | 933.5 | 802.8 |
| 42.5° | 842.0 | 845.3 | 874.5 | 904.9 | 915.8 | 884.1 | 867.1 | 860.8 | 877.8 | 1004.5 | 862.8 |
| 45° | 870.7 | 875.5 | 916.3 | 959.6 | 988.3 | 969.5 | 956.1 | 958.6 | 960.6 | 1087.1 | 943.7 |
| 47.5° | 904.1 | 907.2 | 957.6 | 1018.7 | 1072.1 | 1067.3 | 1068.1 | 1065.0 | 1064.0 | 1191.2 | 1050.6 |
| 50° | 944.7 | 951.8 | 1009.8 | 1082.8 | 1155.7 | 1187.7 | 1198.3 | 1199.6 | 1183.1 | 1304.7 | 1161.3 |
| 52.5° | 1030.8 | 1039.4 | 1089.1 | 1153.0 | 1247.0 | 1314.1 | 1357.5 | 1348.8 | 1323.5 | 1414.7 | 1282.7 |
| 55° | 1132.4 | 1139.0 | 1186.9 | 1253.1 | 1358.5 | 1452.7 | 1555.6 | 1552.1 | 1490.0 | 1530.5 | 1382.5 |
| 57.5° | 1142.1 | 1149.4 | 1223.7 | 1325.0 | 1501.6 | 1624.0 | 1732.2 | 1743.6 | 1652.7 | 1612.6 | 1471.7 |
| 60° | 1033.9 | 1048.8 | 1150.2 | 1286.5 | 1556.4 | 1854.4 | 1925.8 | 1928.1 | 1772.0 | 1696.0 | 1580.7 |
| 62.5° | 828.6 | 835.7 | 937.8 | 1115.7 | 1472.0 | 1988.7 | 2221.5 | 2173.4 | 1925.3 | 1825.0 | 1753.3 |
| 65° | 434.3 | 463.2 | 552.2 | 749.0 | 1193.8 | 1941.8 | 2577.3 | 2564.1 | 2201.0 | 2009.7 | 1887.6 |
| 67.5° | 298.0 | 297.7 | 318.8 | 390.5 | 711.8 | 1671.9 | 2751.9 | 2896.8 | 2519.8 | 2073.0 | 1790.3 |
| 70° | 226.8 | 227.6 | 246.3 | 292.9 | 368.7 | 1112.9 | 2560.3 | 2808.2 | 2579.1 | 1882.2 | 1447.9 |
| 72.5° | 150.5 | 152.0 | 183.2 | 236.7 | 294.4 | 545.6 | 1989.7 | 2246.9 | 2170.1 | 1511.8 | 1019.2 |
| 75° | 90.0 | 91.2 | 113.5 | 172.1 | 261.8 | 305.3 | 1264.2 | 1553.3 | 1493.8 | 1042.0 | 546.3 |
| 77.5° | 37.0 | 38.0 | 58.3 | 107.2 | 191.6 | 237.2 | 699.1 | 1016.4 | 894.7 | 414.3 | 149.3 |
| 80° | 15.5 | 16.0 | 28.1 | 75.0 | 138.1 | 148.7 | 323.8 | 477.7 | 366.7 | 89.2 | 45.6 |
| 82.5° | 5.6 | 5.8 | 10.4 | 41.3 | 85.9 | 112.0 | 163.4 | 188.8 | 103.4 | 29.1 | 24.6 |
| 85° | 0.3 | 0.3 | 2.5 | 13.9 | 32.7 | 31.7 | 93.5 | 90.5 | 34.2 | 12.2 | 14.7 |
| 87.5° | 0.0 | 0.0 | 0.3 | 0.3 | 0.5 | 1.3 | 8.9 | 15.7 | 7.3 | 3.0 | 6.3 |
| 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: P629292
 CATALOG NUMBER: GWS-SA1B-735-U-SL3-W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 | 825.8 |
| 2.5° | 820.5 | 807.1 | 792.4 | 778.7 | 756.9 | 744.0 | 728.0 | 720.9 | 710.8 | 708.2 | 709.8 |
| 5° | 803.8 | 780.7 | 745.5 | 713.6 | 672.3 | 639.1 | 605.6 | 591.4 | 573.2 | 561.0 | 556.0 |
| 7.5° | 780.2 | 750.1 | 695.1 | 637.0 | 580.3 | 519.7 | 473.6 | 443.2 | 415.6 | 400.4 | 397.3 |
| 10° | 756.4 | 717.1 | 638.3 | 555.2 | 467.3 | 394.8 | 332.5 | 286.3 | 248.8 | 231.9 | 218.7 |
| 12.5° | 731.8 | 682.9 | 580.5 | 472.1 | 370.0 | 271.1 | 194.1 | 149.3 | 122.4 | 111.7 | 113.5 |
| 15° | 709.3 | 650.0 | 523.3 | 389.0 | 260.5 | 163.7 | 107.2 | 90.5 | 84.1 | 82.1 | 81.8 |
| 17.5° | 687.7 | 618.8 | 466.3 | 308.1 | 171.8 | 100.3 | 82.1 | 78.0 | 76.3 | 75.3 | 75.3 |
| 20° | 668.2 | 588.9 | 410.5 | 232.1 | 111.0 | 79.6 | 74.2 | 72.2 | 70.7 | 69.9 | 69.9 |
| 22.5° | 650.0 | 560.0 | 356.0 | 164.2 | 81.8 | 71.5 | 68.2 | 66.1 | 64.4 | 63.3 | 63.3 |
| 25° | 633.5 | 533.9 | 304.1 | 113.0 | 70.4 | 65.4 | 61.8 | 59.5 | 56.5 | 54.7 | 54.7 |
| 27.5° | 621.6 | 510.6 | 254.2 | 82.4 | 63.6 | 58.8 | 54.7 | 51.7 | 48.4 | 46.4 | 45.9 |
| 30° | 614.5 | 490.8 | 203.7 | 67.7 | 57.3 | 52.5 | 47.9 | 44.1 | 40.3 | 38.3 | 38.0 |
| 32.5° | 610.4 | 472.6 | 157.6 | 59.0 | 51.9 | 46.4 | 41.3 | 37.2 | 33.4 | 31.2 | 30.9 |
| 35° | 612.0 | 458.4 | 118.1 | 53.2 | 46.9 | 41.1 | 35.5 | 31.4 | 28.1 | 26.1 | 25.6 |
| 37.5° | 625.1 | 452.1 | 88.7 | 48.7 | 42.6 | 36.5 | 30.7 | 26.9 | 23.8 | 22.3 | 22.0 |
| 40° | 650.7 | 453.3 | 69.7 | 45.1 | 39.0 | 31.9 | 26.4 | 22.8 | 20.5 | 19.3 | 19.0 |
| 42.5° | 690.5 | 464.0 | 57.5 | 42.1 | 35.2 | 27.9 | 22.8 | 20.0 | 17.7 | 16.5 | 16.2 |
| 45° | 749.8 | 486.0 | 50.2 | 38.5 | 31.2 | 24.1 | 19.8 | 17.2 | 15.2 | 13.7 | 13.4 |
| 47.5° | 835.7 | 524.3 | 45.4 | 35.2 | 27.6 | 20.8 | 17.0 | 14.4 | 12.7 | 11.4 | 11.1 |
| 50° | 927.2 | 570.1 | 41.3 | 31.9 | 24.6 | 18.0 | 14.4 | 11.9 | 10.4 | 9.1 | 8.9 |
| 52.5° | 1024.7 | 619.6 | 38.3 | 28.9 | 21.8 | 15.5 | 12.2 | 9.9 | 8.4 | 7.1 | 6.8 |
| 55° | 1118.5 | 669.2 | 34.7 | 26.9 | 18.5 | 13.2 | 10.1 | 8.1 | 6.6 | 5.6 | 5.6 |
| 57.5° | 1209.7 | 714.8 | 30.9 | 23.6 | 15.2 | 11.1 | 8.4 | 6.6 | 5.3 | 4.6 | 4.3 |
| 60° | 1318.7 | 777.9 | 26.6 | 20.0 | 12.7 | 9.4 | 6.8 | 5.3 | 4.3 | 3.5 | 3.5 |
| 62.5° | 1480.6 | 843.6 | 22.8 | 16.7 | 10.6 | 7.9 | 5.6 | 4.3 | 3.5 | 3.0 | 2.8 |
| 65° | 1533.6 | 808.1 | 19.3 | 13.7 | 8.6 | 6.3 | 4.6 | 3.8 | 3.0 | 2.8 | 2.5 |
| 67.5° | 1392.2 | 662.4 | 16.0 | 11.1 | 7.1 | 5.3 | 4.1 | 3.3 | 2.8 | 2.5 | 2.3 |
| 70° | 1086.3 | 470.1 | 12.4 | 8.4 | 5.8 | 4.3 | 3.5 | 3.0 | 2.5 | 2.3 | 2.3 |
| 72.5° | 738.9 | 278.0 | 9.9 | 6.3 | 4.8 | 3.8 | 3.0 | 2.8 | 2.5 | 2.3 | 2.0 |
| 75° | 363.9 | 98.8 | 7.6 | 4.8 | 3.8 | 3.3 | 2.8 | 2.5 | 2.3 | 2.0 | 2.0 |
| 77.5° | 98.1 | 27.4 | 5.8 | 3.8 | 3.0 | 2.5 | 2.5 | 2.5 | 2.3 | 1.8 | 1.8 |
| 80° | 33.2 | 11.4 | 4.3 | 2.8 | 2.5 | 2.0 | 1.8 | 2.3 | 2.0 | 1.8 | 1.5 |
| 82.5° | 18.2 | 5.6 | 3.0 | 2.3 | 1.8 | 1.5 | 1.5 | 1.5 | 1.5 | 1.3 | 1.3 |
| 85° | 11.7 | 3.0 | 2.0 | 1.8 | 1.8 | 1.3 | 1.0 | 1.0 | 0.8 | 0.8 | 0.8 |
| 87.5° | 5.3 | 1.8 | 1.8 | 1.5 | 1.5 | 1.3 | 0.8 | 0.5 | 0.3 | 0.3 | 0.3 |
| 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 |

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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 3500K 4-step quadrangle

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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)