

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: P437509

Luminaire Tested: **ISS-SA1D-735-U-T4FT-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437509
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-11)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISS-SA1D-735-U-T4FT-HSS
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 70 CRI, 3500K, 800mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD
THROW OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3826 lumens
Efficiency: N/A
Efficacy: 84.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

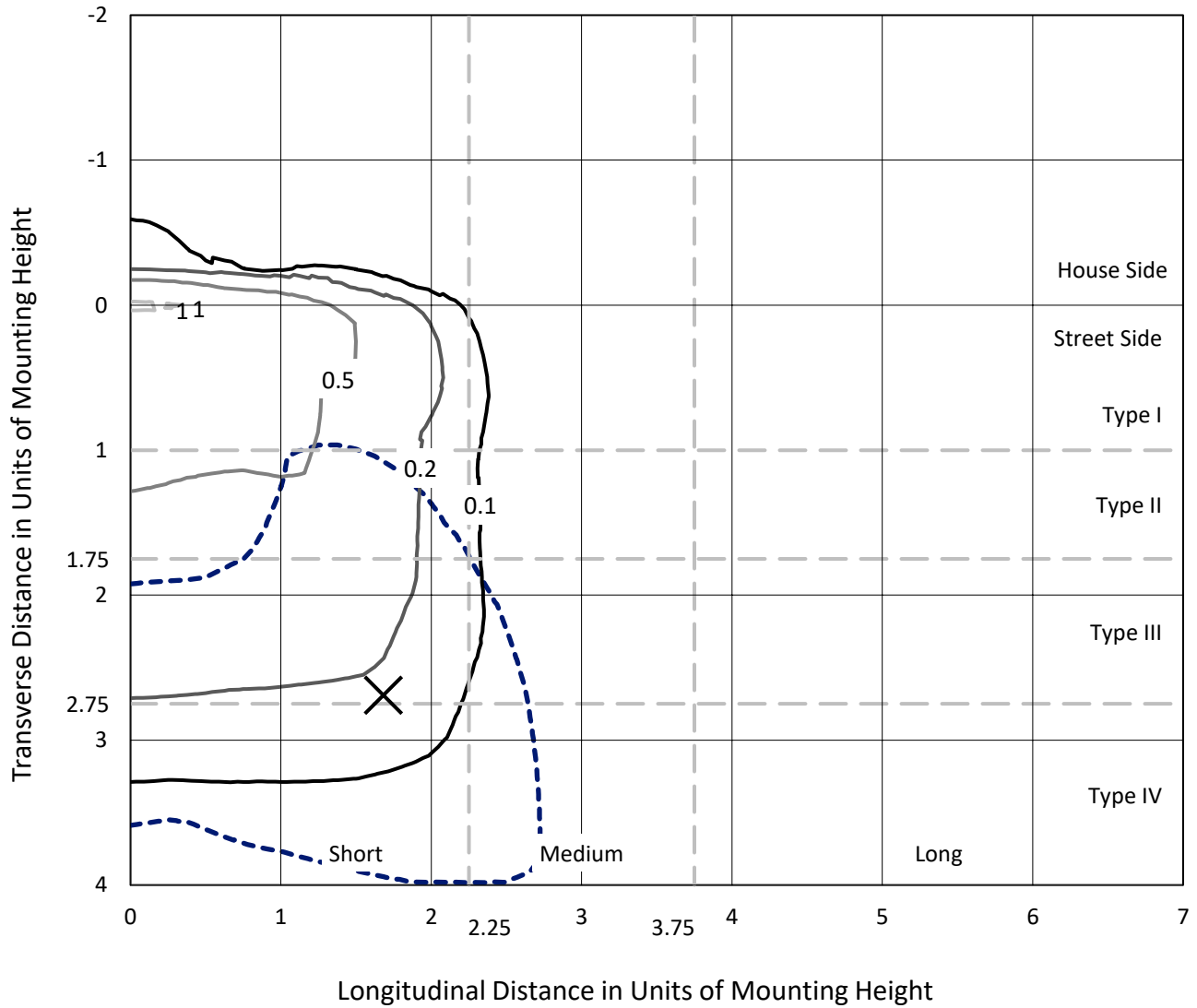
Input Watts (W): 45.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

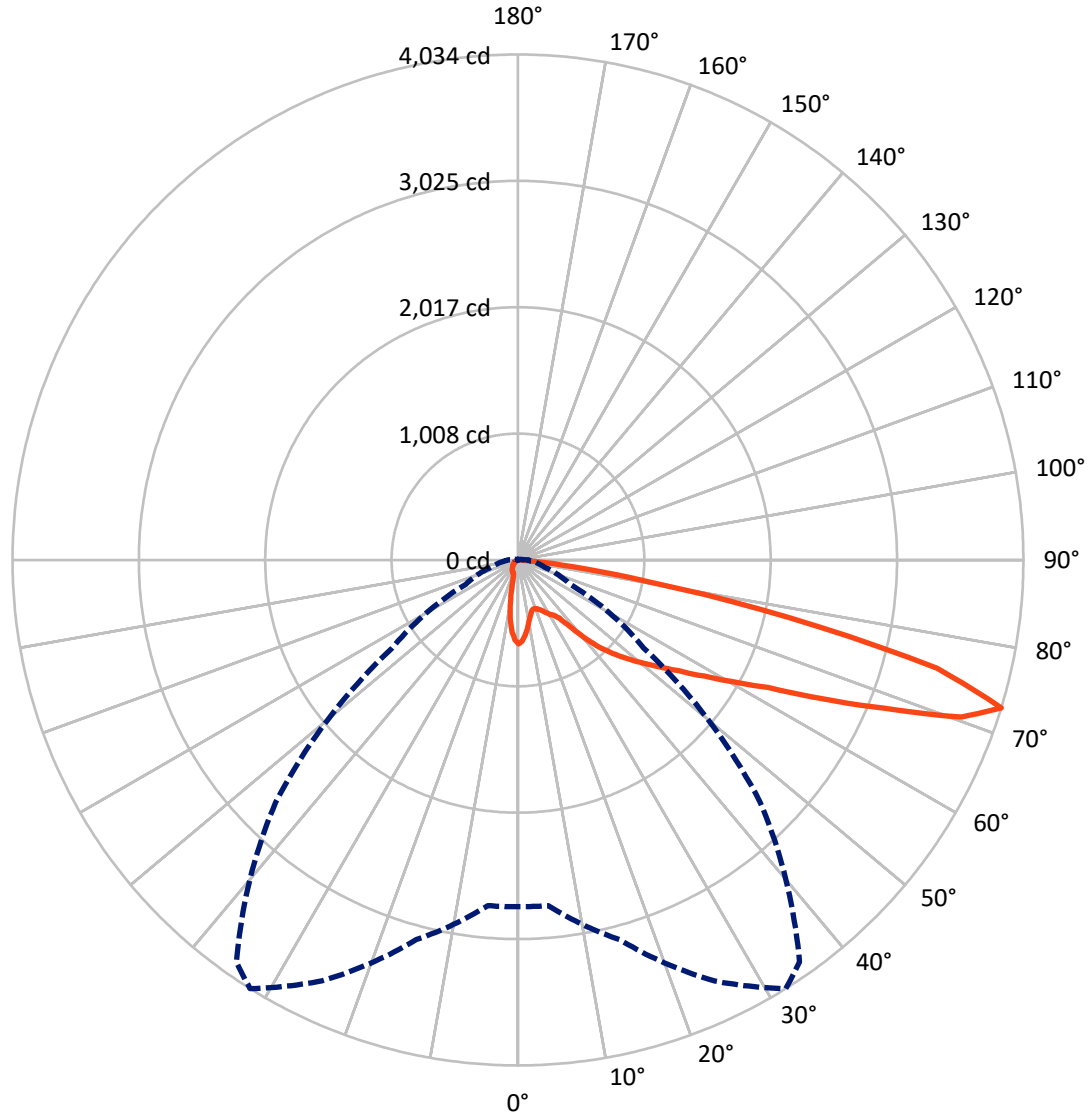
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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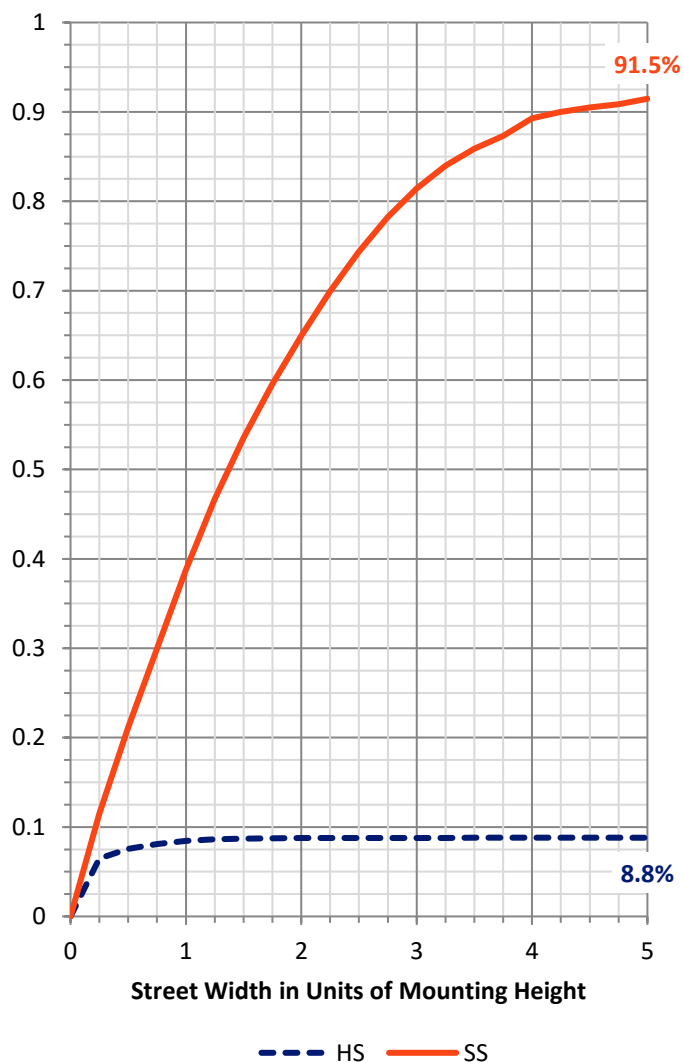
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 338.6 | 0.0 | 338.6 |
| | % Fixture | 8.9 | 0.0 | 8.9 |
| Street Side | Lumens | 3487.4 | 0.0 | 3487.4 |
| | % Fixture | 91.1 | 0.0 | 91.1 |
| Total | Lumens | 3826.0 | 0.0 | 3826.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 55.7 | 1.5 |
| 10°-20° | 120.9 | 3.2 |
| 20°-30° | 182.9 | 4.8 |
| 30°-40° | 294.9 | 7.7 |
| 40°-50° | 522.3 | 13.7 |
| 50°-60° | 800.0 | 20.9 |
| 60°-70° | 1070.3 | 28.0 |
| 70°-80° | 738.9 | 19.3 |
| 80°-90° | 40.0 | 1.0 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 3826.0 | 100.0 |
| 0°-180° | 3826.0 | 100.0 |

Coefficient of Utilization



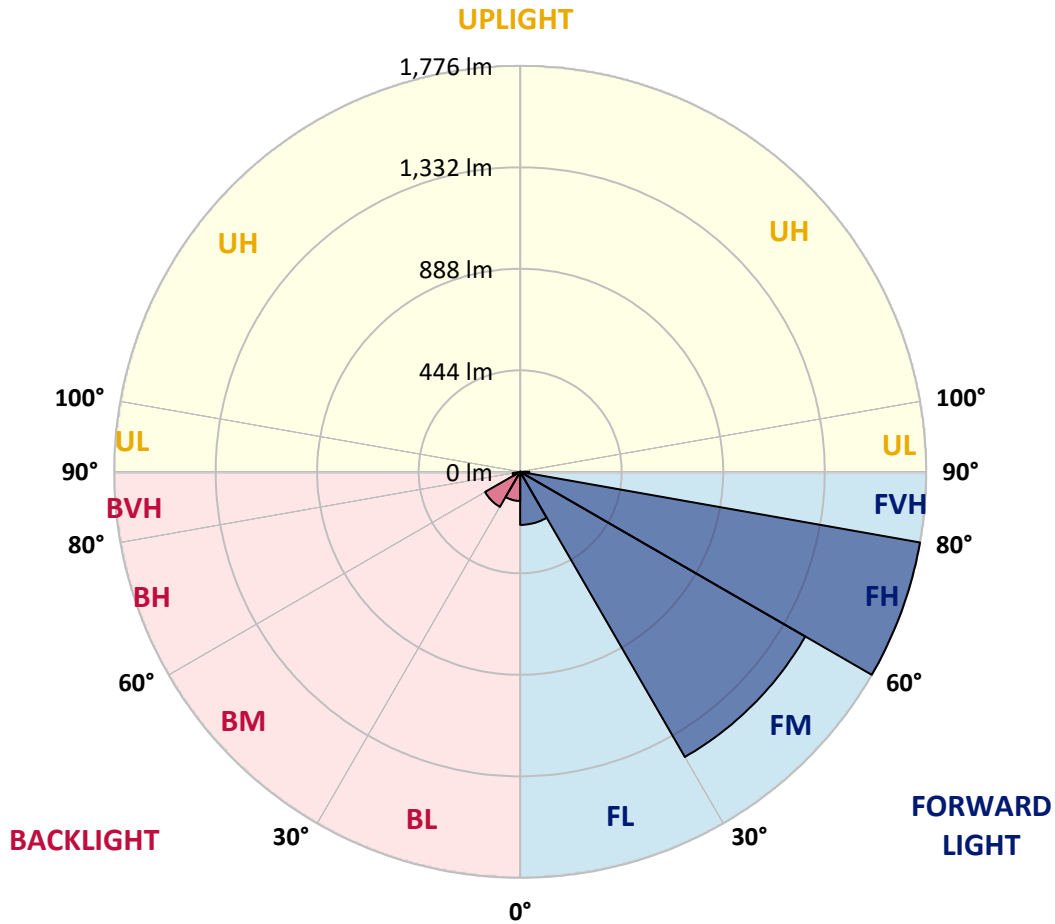
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 232.0 | 6.1 | | | |
| FM (30°-60°) | 1440.3 | 37.6 | | | |
| FH (60°-80°) | 1775.6 | 46.4 | | | G1/1800 |
| FVH (80°-90°) | 39.5 | 1.0 | | | G1/100 |
| BL (0°-30°) | 127.5 | 3.3 | B1/500 | | |
| BM (30°-60°) | 177.0 | 4.6 | B0/220 | | |
| BH (60°-80°) | 33.6 | 0.9 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.5 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 32° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 |
| 2.5° | 645.1 | 645.1 | 647.1 | 649.0 | 649.0 | 654.8 | 662.6 | 664.5 | 670.3 | 674.2 | 676.1 |
| 5° | 577.3 | 585.1 | 585.1 | 594.8 | 602.5 | 610.3 | 629.6 | 641.3 | 660.6 | 674.2 | 678.1 |
| 7.5° | 515.3 | 517.3 | 523.1 | 534.7 | 550.2 | 556.0 | 581.2 | 614.1 | 650.9 | 674.2 | 683.9 |
| 10° | 453.3 | 455.3 | 459.1 | 476.6 | 492.1 | 505.6 | 540.5 | 581.2 | 633.5 | 674.2 | 691.6 |
| 12.5° | 408.8 | 408.8 | 412.7 | 432.0 | 449.5 | 463.0 | 501.8 | 554.1 | 616.1 | 676.1 | 703.3 |
| 15° | 393.3 | 393.3 | 391.3 | 401.0 | 416.5 | 428.2 | 472.7 | 530.8 | 600.6 | 680.0 | 714.9 |
| 17.5° | 401.0 | 401.0 | 393.3 | 395.2 | 408.8 | 416.5 | 455.3 | 513.4 | 592.8 | 687.8 | 734.3 |
| 20° | 416.5 | 416.5 | 401.0 | 401.0 | 414.6 | 420.4 | 453.3 | 503.7 | 589.0 | 701.3 | 761.4 |
| 22.5° | 434.0 | 435.9 | 414.6 | 414.6 | 428.2 | 434.0 | 465.0 | 509.5 | 594.8 | 718.8 | 788.5 |
| 25° | 463.0 | 463.0 | 435.9 | 435.9 | 447.5 | 457.2 | 486.3 | 527.0 | 602.5 | 740.1 | 831.1 |
| 27.5° | 503.7 | 501.8 | 466.9 | 457.2 | 474.6 | 482.4 | 515.3 | 548.3 | 610.3 | 765.2 | 869.9 |
| 30° | 552.1 | 542.5 | 507.6 | 488.2 | 503.7 | 509.5 | 542.5 | 577.3 | 633.5 | 802.1 | 929.9 |
| 32.5° | 604.5 | 608.3 | 552.1 | 517.3 | 525.0 | 532.8 | 575.4 | 621.9 | 672.3 | 850.5 | 1011.3 |
| 35° | 707.1 | 707.1 | 649.0 | 583.1 | 569.6 | 573.5 | 619.9 | 680.0 | 720.7 | 931.9 | 1104.3 |
| 37.5° | 835.0 | 838.9 | 784.6 | 714.9 | 672.3 | 654.8 | 687.8 | 749.8 | 790.4 | 1034.5 | 1207.0 |
| 40° | 974.5 | 968.7 | 912.5 | 848.6 | 813.7 | 792.4 | 774.9 | 848.6 | 885.4 | 1145.0 | 1309.6 |
| 42.5° | 1090.7 | 1079.1 | 1003.5 | 970.6 | 949.3 | 922.2 | 887.3 | 972.5 | 1007.4 | 1284.5 | 1427.8 |
| 45° | 1166.3 | 1156.6 | 1081.0 | 1071.3 | 1063.6 | 1048.1 | 1055.9 | 1121.7 | 1154.7 | 1445.3 | 1551.8 |
| 47.5° | 1224.4 | 1210.8 | 1146.9 | 1160.5 | 1176.0 | 1191.5 | 1259.3 | 1307.7 | 1300.0 | 1592.5 | 1652.6 |
| 50° | 1303.8 | 1284.5 | 1224.4 | 1251.5 | 1292.2 | 1323.2 | 1478.2 | 1491.8 | 1431.7 | 1718.4 | 1743.6 |
| 52.5° | 1352.3 | 1329.0 | 1313.5 | 1358.1 | 1418.1 | 1456.9 | 1718.4 | 1666.1 | 1536.3 | 1809.5 | 1815.3 |
| 55° | 1392.9 | 1391.0 | 1418.1 | 1476.3 | 1563.4 | 1611.9 | 1916.0 | 1815.3 | 1604.1 | 1902.5 | 1854.0 |
| 57.5° | 1516.9 | 1509.2 | 1555.7 | 1602.2 | 1747.5 | 1828.8 | 2129.1 | 1923.8 | 1652.6 | 1952.8 | 1832.7 |
| 60° | 1693.2 | 1697.1 | 1699.0 | 1784.3 | 1970.3 | 2082.6 | 2297.7 | 2014.8 | 1689.4 | 1960.6 | 1770.7 |
| 62.5° | 1968.3 | 1995.5 | 1949.0 | 2014.8 | 2239.6 | 2381.0 | 2460.4 | 2080.7 | 1677.7 | 1904.4 | 1613.8 |
| 65° | 2367.4 | 2357.7 | 2291.9 | 2365.5 | 2665.8 | 2753.0 | 2629.0 | 2100.1 | 1609.9 | 1710.7 | 1319.3 |
| 67.5° | 2774.3 | 2778.1 | 2747.1 | 2863.4 | 3155.9 | 3140.4 | 2818.8 | 2034.2 | 1435.6 | 1292.2 | 827.2 |
| 70° | 3039.7 | 3045.5 | 3123.0 | 3436.8 | 3754.6 | 3648.0 | 2973.8 | 1801.7 | 1011.3 | 616.1 | 313.8 |
| 72.5° | 2766.5 | 2768.5 | 3136.6 | 3706.1 | 4033.5 | 3917.3 | 2733.6 | 1224.4 | 461.1 | 218.9 | 110.4 |
| 75° | 1751.4 | 1664.2 | 2330.6 | 3142.4 | 3454.3 | 3340.0 | 1949.0 | 571.5 | 203.4 | 110.4 | 46.5 |
| 77.5° | 610.3 | 619.9 | 949.3 | 1809.5 | 2206.6 | 2253.1 | 1001.6 | 187.9 | 112.4 | 75.6 | 25.2 |
| 80° | 122.1 | 137.6 | 280.9 | 666.4 | 1046.2 | 1086.8 | 362.3 | 91.1 | 73.6 | 58.1 | 13.6 |
| 82.5° | 7.7 | 9.7 | 83.3 | 277.0 | 428.2 | 406.8 | 71.7 | 46.5 | 50.4 | 40.7 | 7.7 |
| 85° | 0.0 | 0.0 | 5.8 | 46.5 | 77.5 | 58.1 | 7.7 | 11.6 | 21.3 | 23.2 | 3.9 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 | 670.3 |
| 2.5° | 676.1 | 676.1 | 666.4 | 662.6 | 656.8 | 649.0 | 641.3 | 637.4 | 629.6 | 631.6 | 631.6 |
| 5° | 678.1 | 674.2 | 662.6 | 645.1 | 625.8 | 606.4 | 583.1 | 567.6 | 550.2 | 554.1 | 552.1 |
| 7.5° | 681.9 | 680.0 | 652.9 | 621.9 | 587.0 | 544.4 | 503.7 | 468.8 | 437.8 | 430.1 | 424.3 |
| 10° | 689.7 | 683.9 | 645.1 | 594.8 | 525.0 | 455.3 | 385.5 | 325.5 | 300.3 | 273.2 | 267.4 |
| 12.5° | 697.4 | 687.8 | 631.6 | 556.0 | 449.5 | 346.8 | 255.7 | 201.5 | 168.5 | 158.9 | 155.0 |
| 15° | 709.1 | 693.6 | 614.1 | 501.8 | 360.3 | 234.4 | 160.8 | 131.7 | 125.9 | 124.0 | 124.0 |
| 17.5° | 724.6 | 697.4 | 596.7 | 439.8 | 265.4 | 151.1 | 118.2 | 118.2 | 120.1 | 122.1 | 122.1 |
| 20° | 747.8 | 707.1 | 571.5 | 364.2 | 178.2 | 114.3 | 112.4 | 114.3 | 116.2 | 118.2 | 118.2 |
| 22.5° | 773.0 | 722.6 | 542.5 | 284.8 | 125.9 | 106.6 | 106.6 | 108.5 | 110.4 | 112.4 | 112.4 |
| 25° | 802.1 | 734.3 | 503.7 | 203.4 | 104.6 | 100.7 | 100.7 | 102.7 | 104.6 | 106.6 | 106.6 |
| 27.5° | 833.1 | 747.8 | 451.4 | 139.5 | 94.9 | 94.9 | 96.9 | 98.8 | 100.7 | 100.7 | 102.7 |
| 30° | 879.6 | 769.1 | 397.2 | 102.7 | 87.2 | 87.2 | 91.1 | 94.9 | 96.9 | 96.9 | 98.8 |
| 32.5° | 939.6 | 786.6 | 323.5 | 87.2 | 81.4 | 79.4 | 83.3 | 89.1 | 93.0 | 94.9 | 94.9 |
| 35° | 1005.5 | 811.7 | 242.2 | 79.4 | 75.6 | 73.6 | 75.6 | 81.4 | 89.1 | 93.0 | 93.0 |
| 37.5° | 1073.3 | 835.0 | 180.2 | 75.6 | 69.7 | 67.8 | 69.7 | 73.6 | 81.4 | 89.1 | 91.1 |
| 40° | 1141.1 | 838.9 | 129.8 | 69.7 | 65.9 | 63.9 | 63.9 | 67.8 | 75.6 | 83.3 | 85.2 |
| 42.5° | 1210.8 | 854.4 | 98.8 | 65.9 | 60.1 | 60.1 | 60.1 | 62.0 | 67.8 | 73.6 | 75.6 |
| 45° | 1290.3 | 864.1 | 79.4 | 60.1 | 56.2 | 56.2 | 56.2 | 56.2 | 60.1 | 62.0 | 62.0 |
| 47.5° | 1358.1 | 850.5 | 63.9 | 54.2 | 52.3 | 52.3 | 52.3 | 50.4 | 50.4 | 48.4 | 48.4 |
| 50° | 1406.5 | 819.5 | 52.3 | 48.4 | 48.4 | 50.4 | 46.5 | 42.6 | 42.6 | 38.7 | 38.7 |
| 52.5° | 1435.6 | 773.0 | 44.6 | 42.6 | 46.5 | 46.5 | 40.7 | 38.7 | 34.9 | 31.0 | 29.1 |
| 55° | 1433.6 | 695.5 | 38.7 | 36.8 | 40.7 | 40.7 | 34.9 | 31.0 | 27.1 | 23.2 | 23.2 |
| 57.5° | 1377.4 | 610.3 | 34.9 | 31.0 | 34.9 | 32.9 | 29.1 | 23.2 | 19.4 | 15.5 | 15.5 |
| 60° | 1290.3 | 519.2 | 31.0 | 25.2 | 27.1 | 25.2 | 23.2 | 17.4 | 13.6 | 9.7 | 9.7 |
| 62.5° | 1172.1 | 434.0 | 25.2 | 21.3 | 19.4 | 19.4 | 17.4 | 13.6 | 7.7 | 5.8 | 5.8 |
| 65° | 947.4 | 321.6 | 19.4 | 15.5 | 13.6 | 15.5 | 11.6 | 7.7 | 3.9 | 1.9 | 1.9 |
| 67.5° | 585.1 | 184.0 | 15.5 | 11.6 | 9.7 | 11.6 | 7.7 | 5.8 | 1.9 | 0.0 | 0.0 |
| 70° | 230.5 | 79.4 | 11.6 | 7.7 | 7.7 | 7.7 | 5.8 | 3.9 | 0.0 | 0.0 | 0.0 |
| 72.5° | 79.4 | 34.9 | 9.7 | 5.8 | 5.8 | 3.9 | 3.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 75° | 34.9 | 21.3 | 7.7 | 5.8 | 3.9 | 3.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 77.5° | 19.4 | 13.6 | 5.8 | 3.9 | 3.9 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 80° | 11.6 | 7.7 | 3.9 | 3.9 | 3.9 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 82.5° | 7.7 | 3.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 0.0 | 0.0 | 0.0 |
| 85° | 3.9 | 1.9 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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

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| 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



CCT = 3388K
 CIE x = 0.4153
 CIE y = 0.4030
 Duv = 0.0032

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)