

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: P437682

Luminaire Tested: **ISS-SA1E-735-U-T4W-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437682
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-13)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISS-SA1E-735-U-T4W-HSS
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 70 CRI, 3500K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV WIDE OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5013 lumens
Efficiency: N/A
Efficacy: 86.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

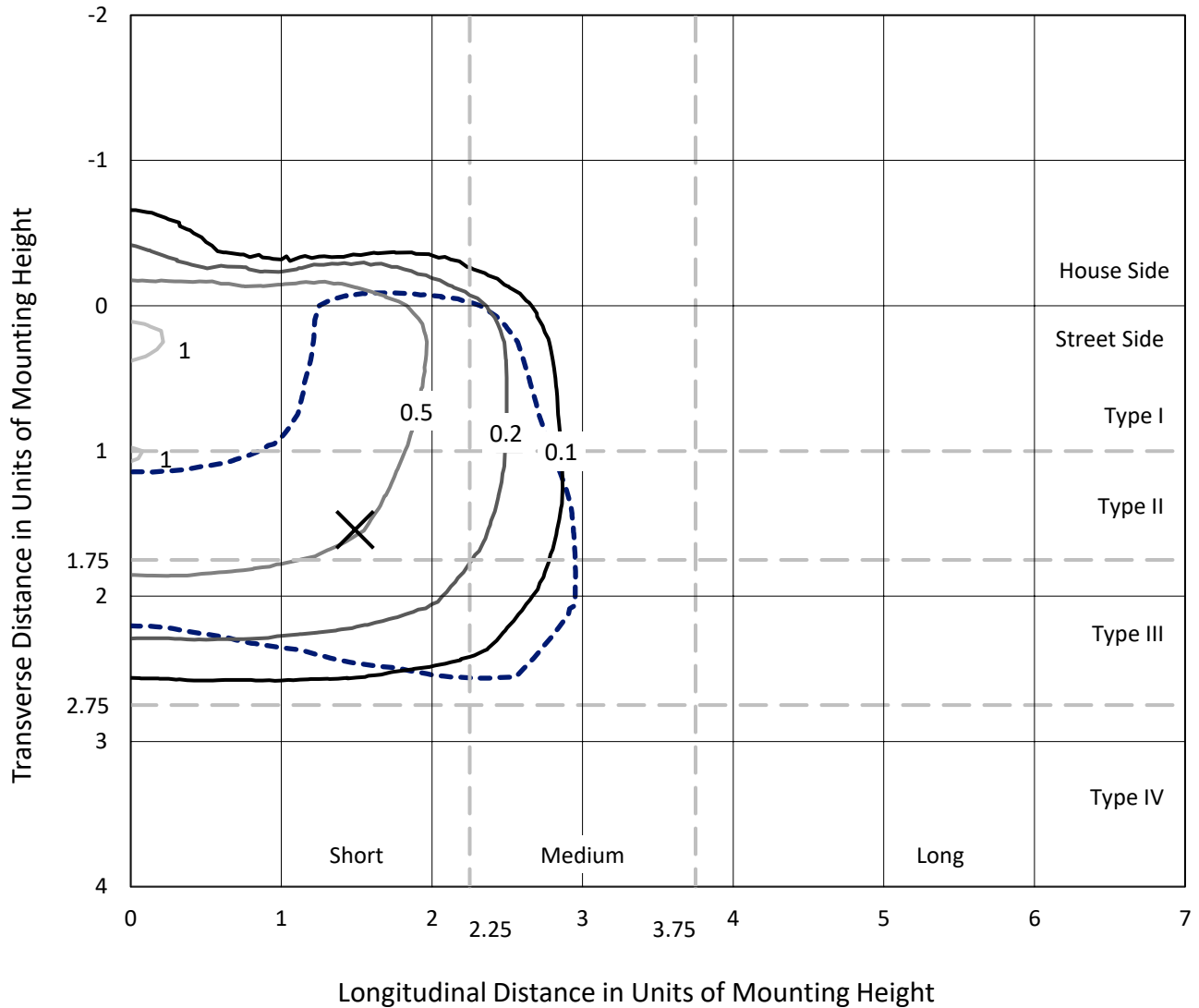
Input Watts (W): 58.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

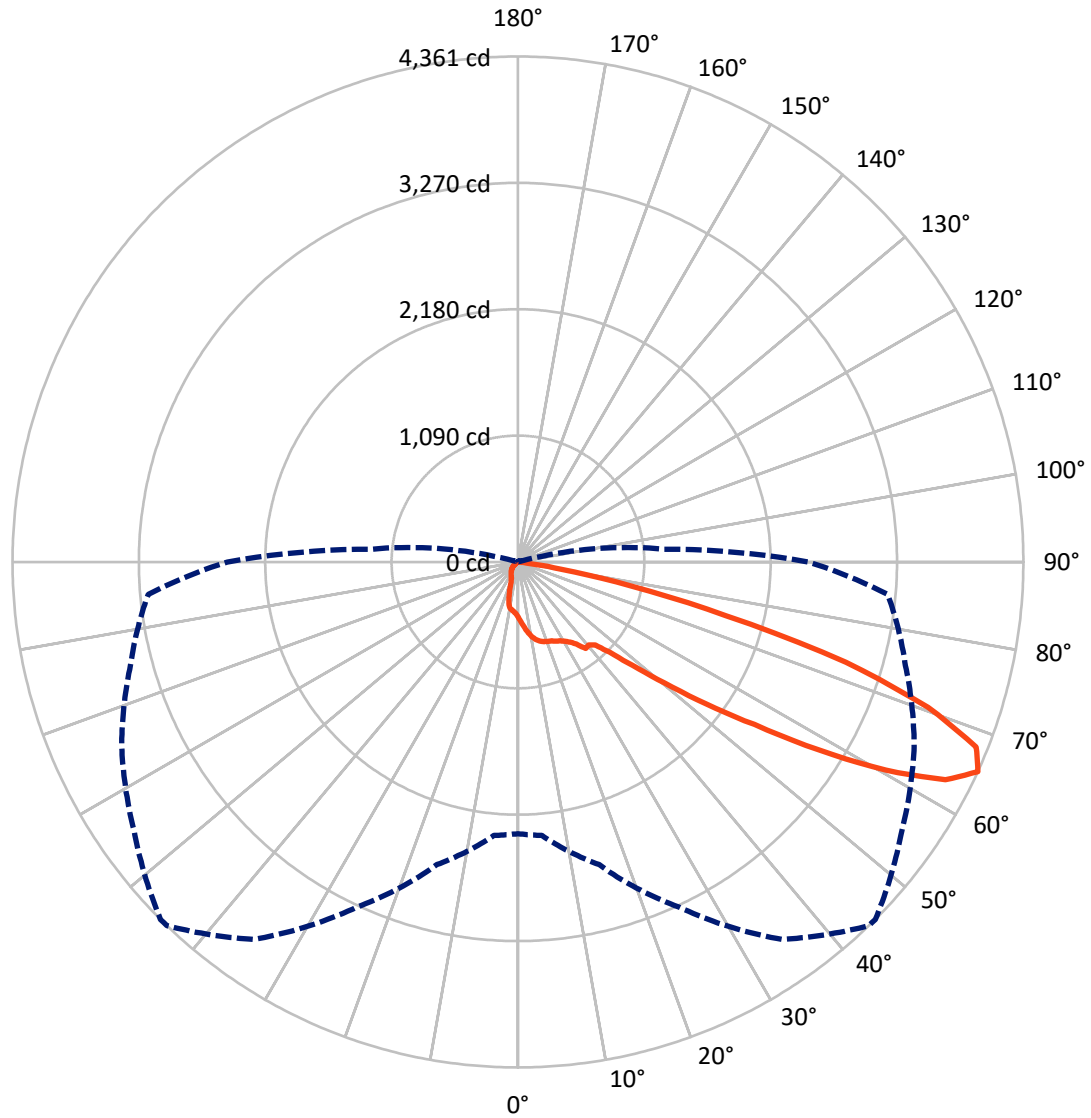
✕ Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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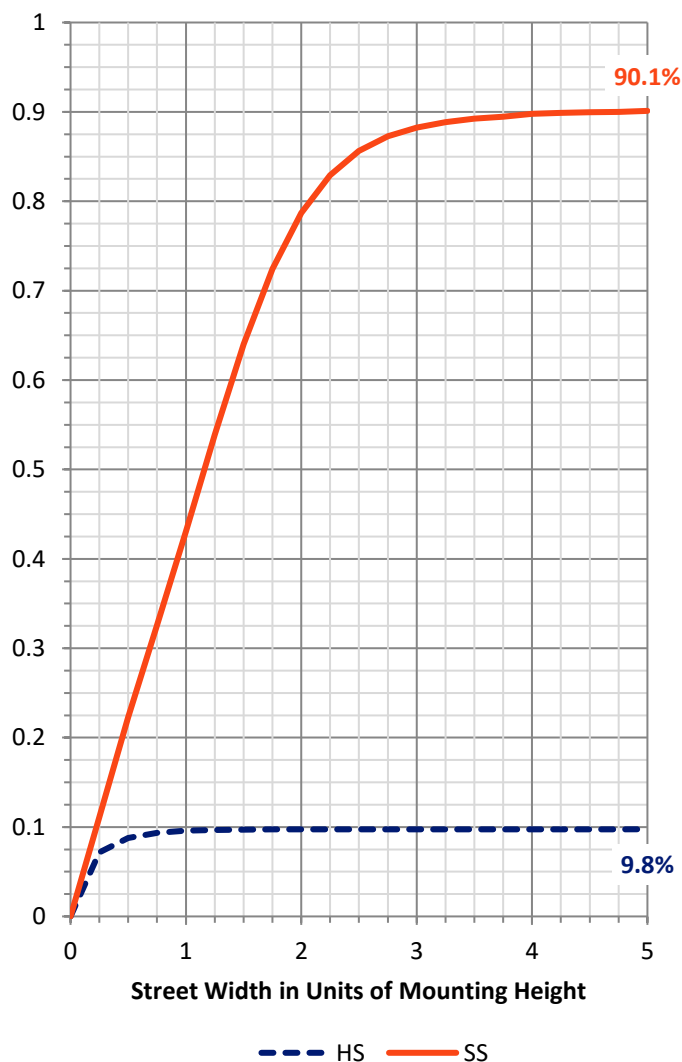
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 493.1 | 0.0 | 493.1 |
| | % Fixture | 9.8 | 0.0 | 9.8 |
| Street Side | Lumens | 4519.9 | 0.0 | 4519.9 |
| | % Fixture | 90.2 | 0.0 | 90.2 |
| Total | Lumens | 5013.0 | 0.0 | 5013.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 48.5 | 1.0 |
| 10°-20° | 146.0 | 2.9 |
| 20°-30° | 233.6 | 4.7 |
| 30°-40° | 346.9 | 6.9 |
| 40°-50° | 632.4 | 12.6 |
| 50°-60° | 1326.0 | 26.5 |
| 60°-70° | 1687.8 | 33.7 |
| 70°-80° | 566.5 | 11.3 |
| 80°-90° | 25.4 | 0.5 |
| 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° | 5013.0 | 100.0 |
| 0°-180° | 5013.0 | 100.0 |

Coefficient of Utilization



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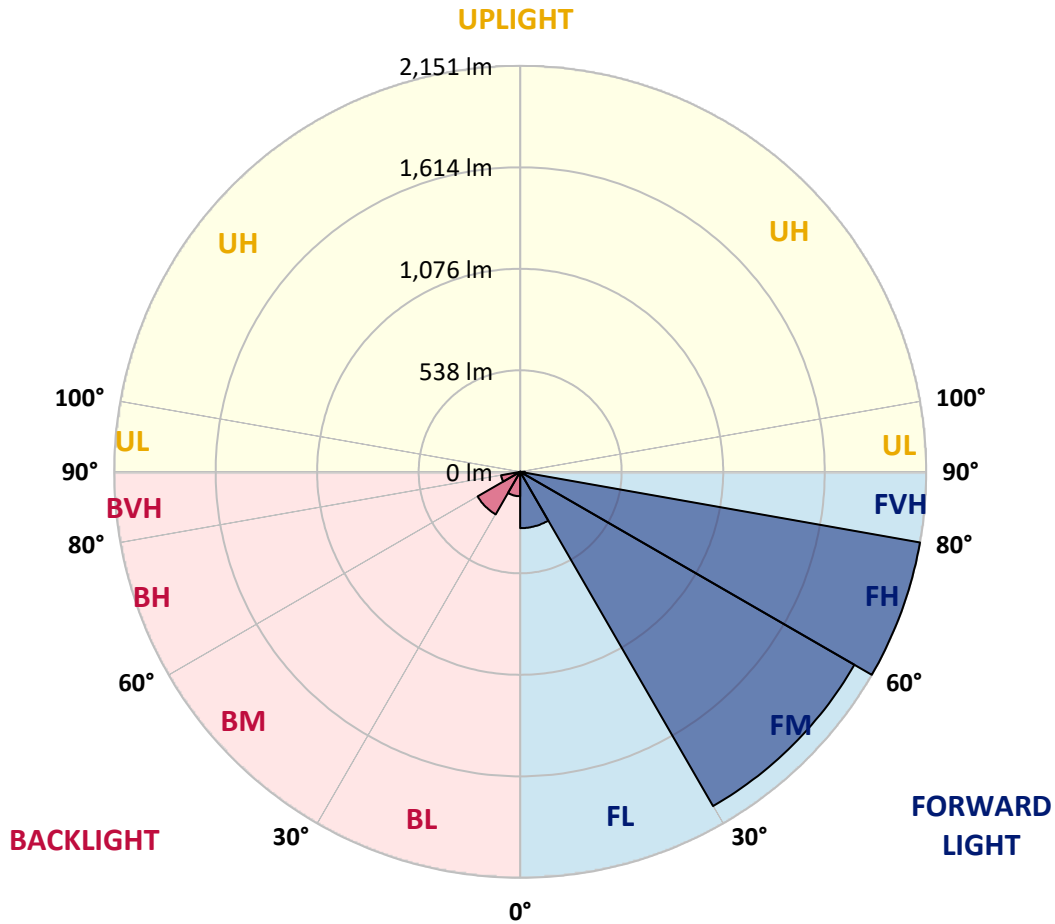
CATALOG NUMBER: ISS-SA1E-735-U-T4W-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 298.5 | 6.0 | | | |
| FM (30°-60°) | 2045.2 | 40.8 | | | |
| FH (60°-80°) | 2151.4 | 42.9 | | | G2/5000 |
| FVH (80°-90°) | 24.7 | 0.5 | | | G1/100 |
| BL (0°-30°) | 129.5 | 2.6 | B1/500 | | |
| BM (30°-60°) | 260.2 | 5.2 | B1/1000 | | |
| BH (60°-80°) | 102.8 | 2.1 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.7 | 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-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 |
| 2.5° | 538.1 | 540.5 | 530.8 | 533.3 | 528.4 | 518.7 | 516.3 | 509.0 | 499.3 | 492.1 | 484.8 |
| 5° | 608.4 | 606.0 | 601.1 | 591.4 | 579.3 | 564.8 | 559.9 | 545.4 | 528.4 | 509.0 | 494.5 |
| 7.5° | 666.6 | 666.6 | 659.3 | 649.6 | 630.2 | 610.8 | 606.0 | 586.6 | 562.3 | 535.7 | 509.0 |
| 10° | 717.5 | 715.1 | 707.8 | 695.7 | 671.4 | 654.5 | 647.2 | 622.9 | 593.9 | 564.8 | 533.3 |
| 12.5° | 756.3 | 756.3 | 746.6 | 729.6 | 702.9 | 686.0 | 681.1 | 659.3 | 630.2 | 596.3 | 552.7 |
| 15° | 778.1 | 775.7 | 768.4 | 746.6 | 727.2 | 707.8 | 705.4 | 686.0 | 661.7 | 625.4 | 579.3 |
| 17.5° | 778.1 | 780.5 | 768.4 | 756.3 | 739.3 | 722.3 | 719.9 | 705.4 | 681.1 | 649.6 | 601.1 |
| 20° | 768.4 | 768.4 | 758.7 | 749.0 | 739.3 | 732.0 | 729.6 | 719.9 | 700.5 | 673.8 | 625.4 |
| 22.5° | 756.3 | 753.8 | 751.4 | 744.1 | 741.7 | 739.3 | 741.7 | 736.9 | 724.8 | 695.7 | 649.6 |
| 25° | 753.8 | 751.4 | 746.6 | 741.7 | 744.1 | 756.3 | 756.3 | 758.7 | 746.6 | 722.3 | 678.7 |
| 27.5° | 763.5 | 763.5 | 756.3 | 749.0 | 753.8 | 770.8 | 770.8 | 778.1 | 770.8 | 753.8 | 710.2 |
| 30° | 804.7 | 795.0 | 782.9 | 768.4 | 773.2 | 792.6 | 795.0 | 809.6 | 809.6 | 797.5 | 761.1 |
| 32.5° | 860.5 | 850.8 | 819.3 | 799.9 | 799.9 | 824.1 | 824.1 | 848.4 | 870.2 | 845.9 | 790.2 |
| 35° | 904.1 | 899.3 | 862.9 | 838.7 | 845.9 | 867.8 | 875.0 | 913.8 | 933.2 | 872.6 | 804.7 |
| 37.5° | 1049.6 | 1042.3 | 972.0 | 882.3 | 887.2 | 947.8 | 952.6 | 969.6 | 952.6 | 884.7 | 833.8 |
| 40° | 1243.5 | 1248.3 | 1175.6 | 1027.7 | 913.8 | 940.5 | 940.5 | 969.6 | 979.3 | 938.1 | 904.1 |
| 42.5° | 1536.8 | 1507.7 | 1435.0 | 1233.8 | 1032.6 | 979.3 | 981.7 | 1022.9 | 1073.8 | 1049.6 | 1054.4 |
| 45° | 1791.3 | 1769.5 | 1691.9 | 1498.0 | 1224.1 | 1107.7 | 1098.0 | 1151.4 | 1250.7 | 1272.6 | 1328.3 |
| 47.5° | 2016.7 | 1994.9 | 1961.0 | 1779.2 | 1510.1 | 1333.2 | 1296.8 | 1350.1 | 1522.2 | 1636.1 | 1674.9 |
| 50° | 2288.2 | 2293.0 | 2215.5 | 2111.2 | 1822.8 | 1636.1 | 1626.4 | 1628.9 | 1900.4 | 1994.9 | 2050.6 |
| 52.5° | 2632.4 | 2625.1 | 2489.4 | 2433.6 | 2256.7 | 2033.7 | 1977.9 | 2011.9 | 2280.9 | 2348.8 | 2440.9 |
| 55° | 2877.2 | 2869.9 | 2804.5 | 2794.8 | 2736.6 | 2474.8 | 2460.3 | 2457.9 | 2700.2 | 2729.3 | 2838.4 |
| 57.5° | 3020.2 | 3032.3 | 3078.4 | 3202.0 | 3250.5 | 3061.4 | 3020.2 | 2940.2 | 3076.0 | 3068.7 | 3187.5 |
| 60° | 3044.4 | 3063.8 | 3194.7 | 3478.3 | 3749.8 | 3648.0 | 3592.2 | 3383.8 | 3420.1 | 3359.6 | 3432.3 |
| 62.5° | 2848.1 | 2903.9 | 3136.6 | 3536.5 | 4001.9 | 4137.6 | 4091.6 | 3769.2 | 3684.4 | 3558.3 | 3466.2 |
| 65° | 2343.9 | 2368.2 | 2702.7 | 3284.4 | 3975.2 | 4360.6 | 4360.6 | 4043.1 | 3771.6 | 3461.4 | 3202.0 |
| 67.5° | 1619.2 | 1631.3 | 2038.5 | 2649.3 | 3568.0 | 4263.7 | 4300.0 | 4038.2 | 3618.9 | 3080.8 | 2610.6 |
| 70° | 918.7 | 986.5 | 1233.8 | 1851.9 | 2811.7 | 3754.7 | 3793.4 | 3674.7 | 3029.9 | 2283.3 | 1711.3 |
| 72.5° | 383.0 | 426.6 | 601.1 | 1078.6 | 1912.5 | 2957.2 | 3025.1 | 2913.6 | 2263.9 | 1393.8 | 809.6 |
| 75° | 118.8 | 123.6 | 198.8 | 470.2 | 1044.7 | 1856.7 | 1970.6 | 1965.8 | 1352.5 | 652.0 | 329.7 |
| 77.5° | 65.4 | 67.9 | 94.5 | 191.5 | 458.1 | 991.4 | 1061.7 | 1003.5 | 669.0 | 281.2 | 101.8 |
| 80° | 31.5 | 33.9 | 50.9 | 92.1 | 201.2 | 370.9 | 436.3 | 404.8 | 232.7 | 133.3 | 33.9 |
| 82.5° | 9.7 | 12.1 | 24.2 | 41.2 | 80.0 | 87.3 | 87.3 | 155.1 | 118.8 | 87.3 | 17.0 |
| 85° | 0.0 | 0.0 | 7.3 | 14.5 | 14.5 | 14.5 | 14.5 | 33.9 | 55.8 | 53.3 | 7.3 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 4.8 | 2.4 |
| 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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 CATALOG NUMBER: ISS-SA1E-735-U-T4W-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 | 477.5 |
| 2.5° | 479.9 | 477.5 | 467.8 | 458.1 | 453.3 | 448.4 | 443.6 | 438.7 | 438.7 | 441.2 | 438.7 |
| 5° | 484.8 | 477.5 | 463.0 | 448.4 | 438.7 | 431.5 | 421.8 | 419.3 | 416.9 | 419.3 | 419.3 |
| 7.5° | 496.9 | 487.2 | 465.4 | 443.6 | 429.0 | 416.9 | 409.6 | 407.2 | 402.4 | 402.4 | 402.4 |
| 10° | 516.3 | 499.3 | 470.2 | 446.0 | 426.6 | 409.6 | 387.8 | 363.6 | 349.0 | 339.3 | 332.1 |
| 12.5° | 535.7 | 516.3 | 477.5 | 448.4 | 426.6 | 378.1 | 324.8 | 278.8 | 254.5 | 242.4 | 240.0 |
| 15° | 557.5 | 533.3 | 492.1 | 458.1 | 399.9 | 310.3 | 237.5 | 198.8 | 189.1 | 189.1 | 186.6 |
| 17.5° | 574.5 | 552.7 | 504.2 | 460.5 | 351.5 | 232.7 | 179.4 | 167.3 | 169.7 | 174.5 | 174.5 |
| 20° | 601.1 | 574.5 | 521.1 | 438.7 | 271.5 | 174.5 | 157.6 | 160.0 | 162.4 | 164.8 | 167.3 |
| 22.5° | 625.4 | 596.3 | 540.5 | 390.3 | 198.8 | 150.3 | 150.3 | 152.7 | 155.1 | 157.6 | 160.0 |
| 25° | 654.5 | 627.8 | 559.9 | 320.0 | 152.7 | 138.2 | 140.6 | 145.4 | 147.9 | 150.3 | 150.3 |
| 27.5° | 688.4 | 659.3 | 559.9 | 252.1 | 133.3 | 128.5 | 128.5 | 133.3 | 135.7 | 140.6 | 140.6 |
| 30° | 734.4 | 702.9 | 545.4 | 186.6 | 123.6 | 118.8 | 116.3 | 121.2 | 123.6 | 128.5 | 128.5 |
| 32.5° | 763.5 | 744.1 | 513.9 | 140.6 | 113.9 | 109.1 | 106.7 | 106.7 | 109.1 | 113.9 | 113.9 |
| 35° | 792.6 | 782.9 | 465.4 | 121.2 | 106.7 | 101.8 | 97.0 | 92.1 | 92.1 | 92.1 | 92.1 |
| 37.5° | 838.7 | 853.2 | 395.1 | 111.5 | 101.8 | 94.5 | 87.3 | 80.0 | 75.1 | 72.7 | 70.3 |
| 40° | 933.2 | 945.3 | 324.8 | 104.2 | 94.5 | 87.3 | 75.1 | 65.4 | 58.2 | 53.3 | 53.3 |
| 42.5° | 1081.1 | 1071.4 | 247.2 | 99.4 | 87.3 | 77.6 | 63.0 | 53.3 | 43.6 | 38.8 | 38.8 |
| 45° | 1338.0 | 1228.9 | 181.8 | 92.1 | 82.4 | 70.3 | 53.3 | 41.2 | 31.5 | 29.1 | 29.1 |
| 47.5° | 1653.1 | 1410.7 | 138.2 | 87.3 | 75.1 | 60.6 | 41.2 | 31.5 | 24.2 | 21.8 | 21.8 |
| 50° | 1992.5 | 1597.4 | 113.9 | 80.0 | 67.9 | 50.9 | 33.9 | 21.8 | 17.0 | 17.0 | 17.0 |
| 52.5° | 2312.4 | 1723.4 | 94.5 | 72.7 | 58.2 | 41.2 | 24.2 | 17.0 | 14.5 | 14.5 | 14.5 |
| 55° | 2610.6 | 1801.0 | 77.6 | 63.0 | 48.5 | 31.5 | 19.4 | 14.5 | 12.1 | 9.7 | 9.7 |
| 57.5° | 2814.2 | 1788.9 | 63.0 | 50.9 | 36.4 | 21.8 | 14.5 | 12.1 | 9.7 | 7.3 | 7.3 |
| 60° | 2884.5 | 1682.2 | 48.5 | 41.2 | 26.7 | 17.0 | 12.1 | 9.7 | 7.3 | 4.8 | 4.8 |
| 62.5° | 2785.1 | 1471.3 | 38.8 | 31.5 | 19.4 | 14.5 | 9.7 | 7.3 | 4.8 | 2.4 | 2.4 |
| 65° | 2506.3 | 1265.3 | 29.1 | 21.8 | 14.5 | 9.7 | 7.3 | 4.8 | 2.4 | 0.0 | 0.0 |
| 67.5° | 1994.9 | 981.7 | 24.2 | 14.5 | 9.7 | 7.3 | 4.8 | 2.4 | 0.0 | 0.0 | 0.0 |
| 70° | 1248.3 | 615.7 | 19.4 | 9.7 | 7.3 | 4.8 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 606.0 | 303.0 | 14.5 | 7.3 | 4.8 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 225.4 | 99.4 | 12.1 | 7.3 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 72.7 | 33.9 | 9.7 | 7.3 | 4.8 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 26.7 | 14.5 | 4.8 | 2.4 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 12.1 | 7.3 | 2.4 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 4.8 | 4.8 | 2.4 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 2.4 | 2.4 | 2.4 | 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.

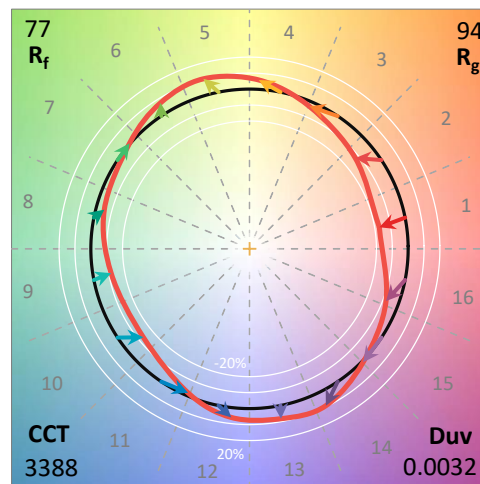
Spectral Parameters

CCT (K): 3388
 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

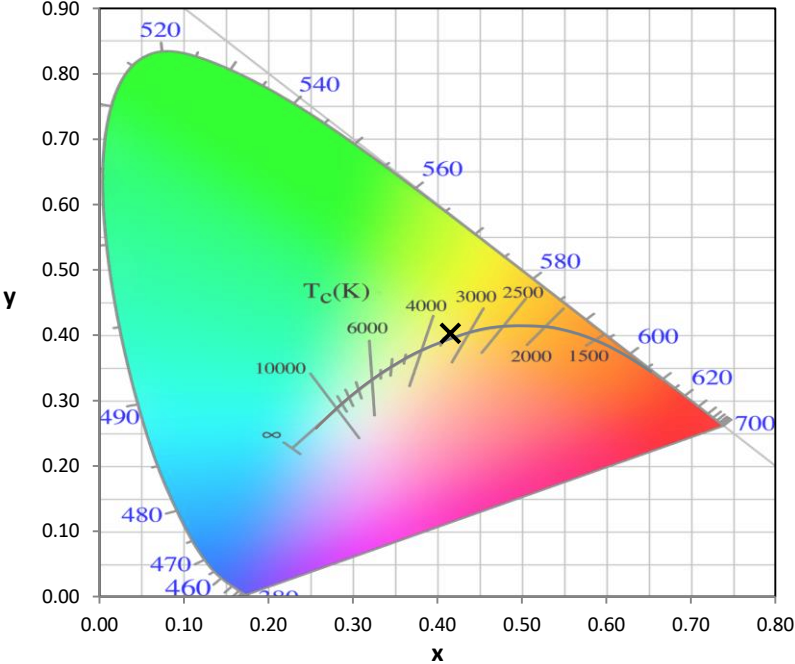


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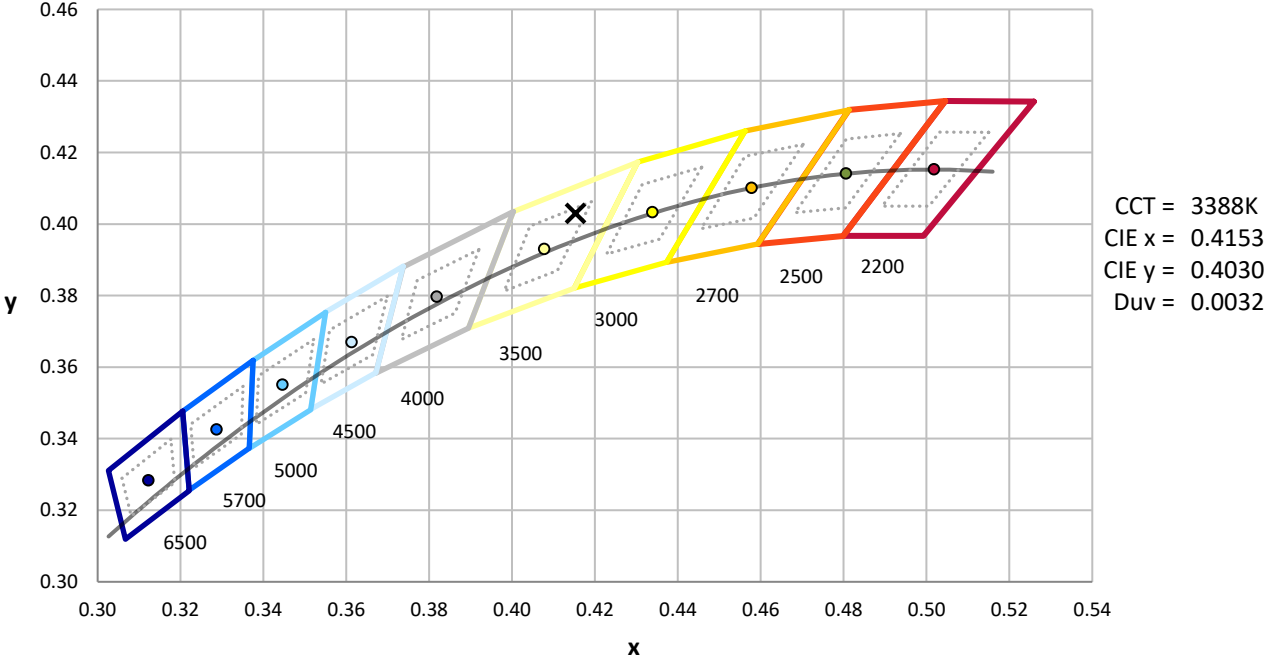
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 1/31/2021 | 7/31/2021 |
| Power Meter | IN0071 | 12/1/2020 | 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



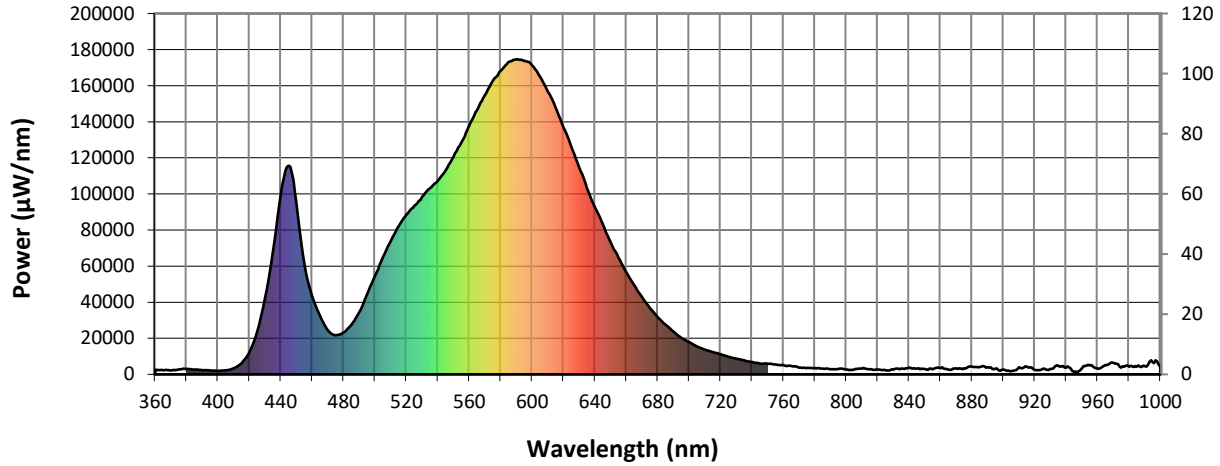
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

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Photopic Flux vs. Wavelength

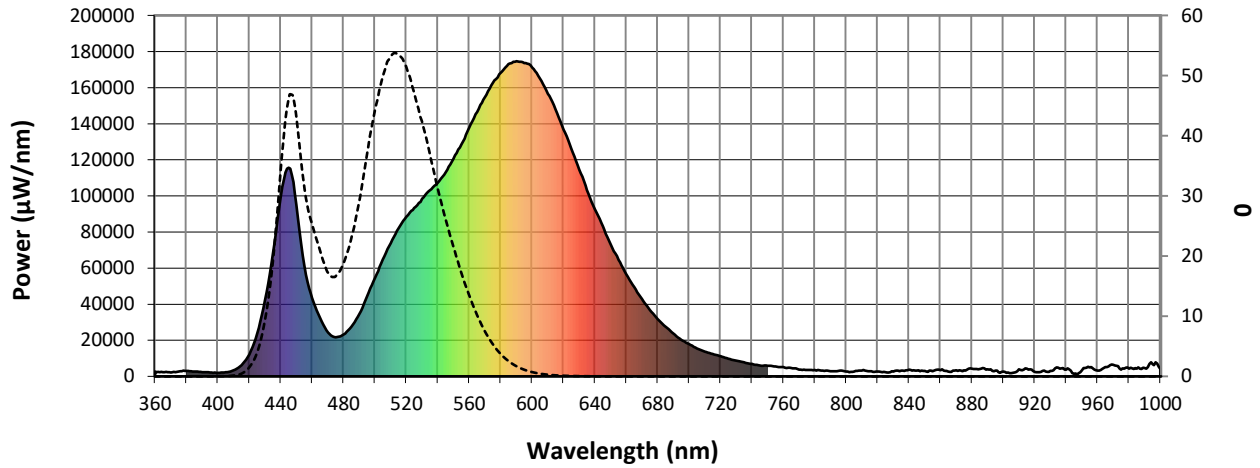


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| λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) | λ (nm) | Power (µW/nm) | Lumens (Φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 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



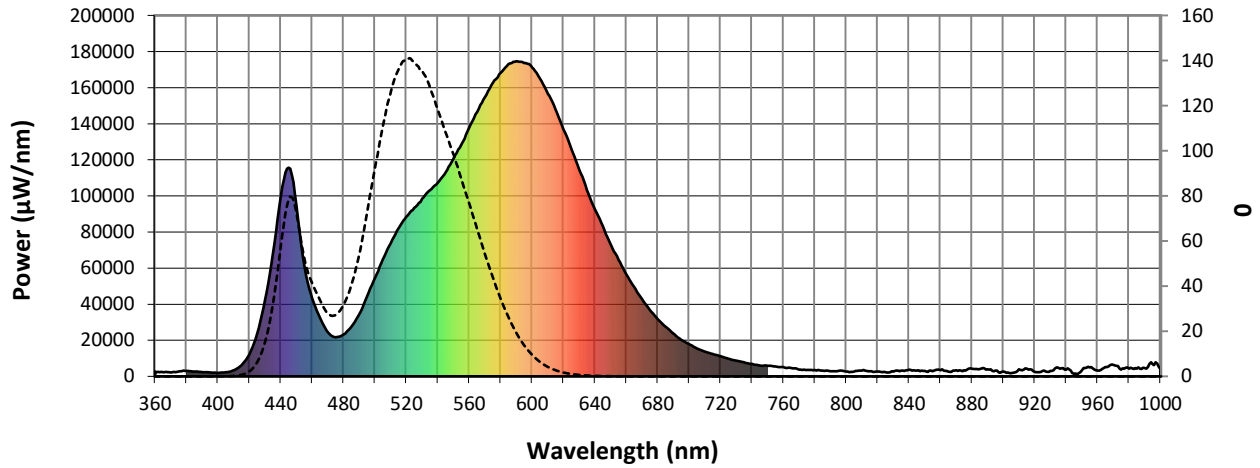
Scotopic Lumens: 12126

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

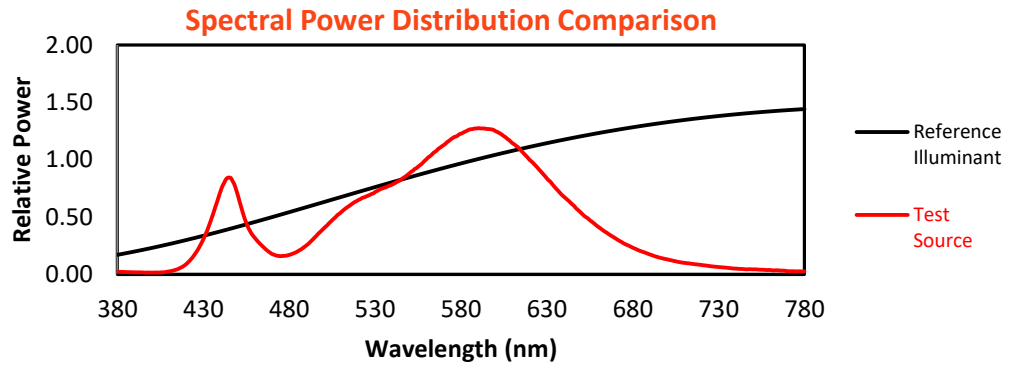


Melanopic Lumens: 4490.7 M/P: 0.5

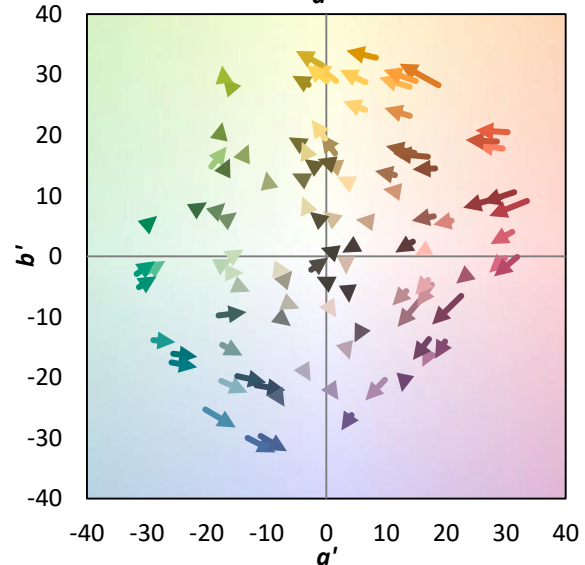
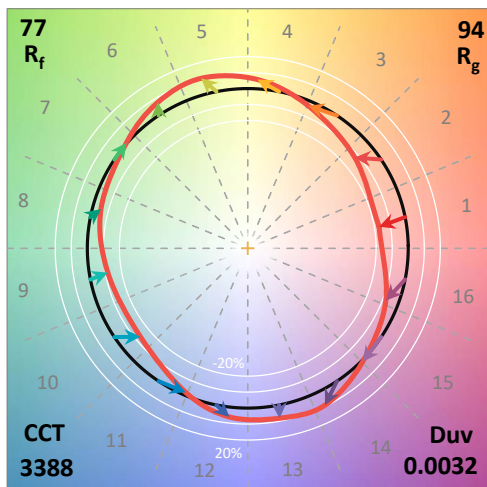
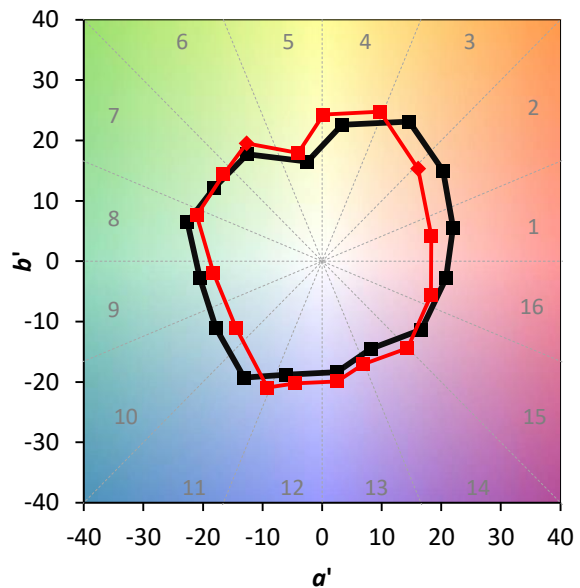
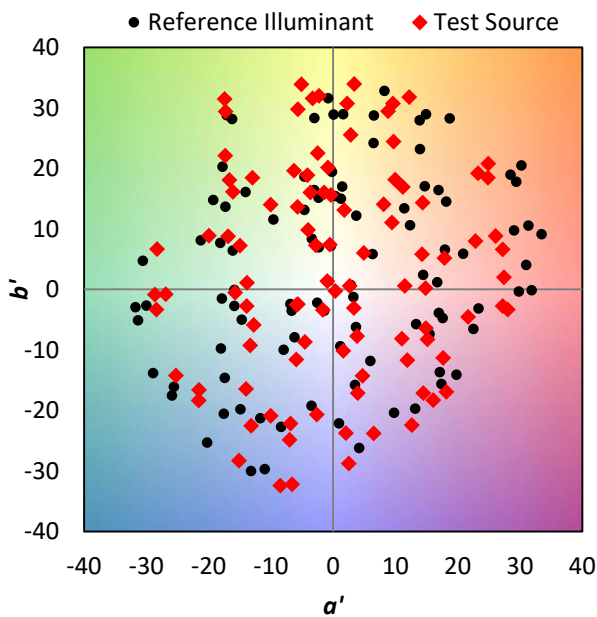
| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 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 $R_a = 73.1$
 $R_g = -34.6$

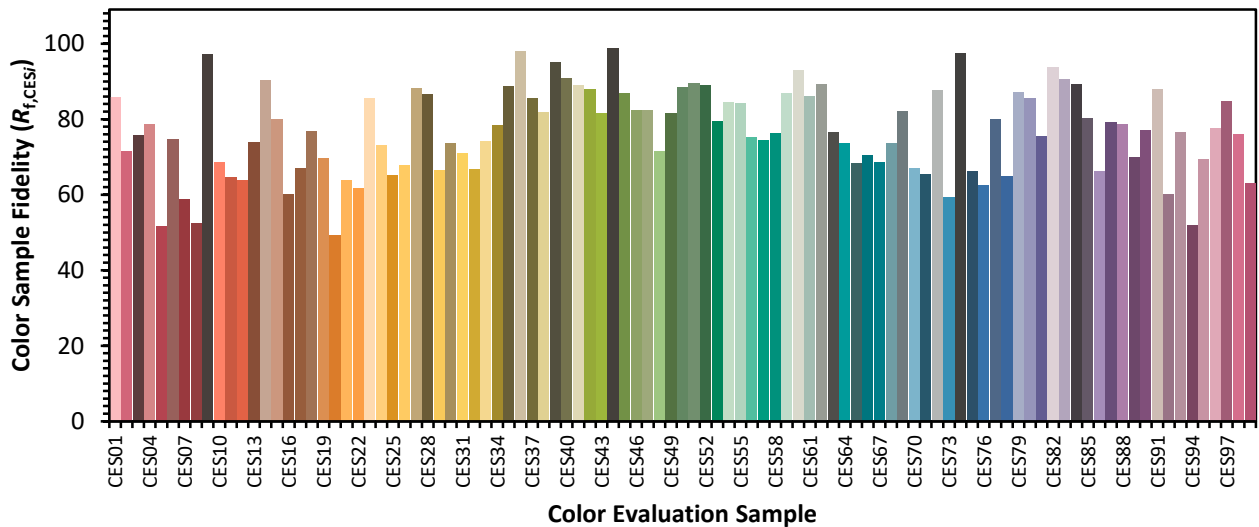


Color Vector Graphics

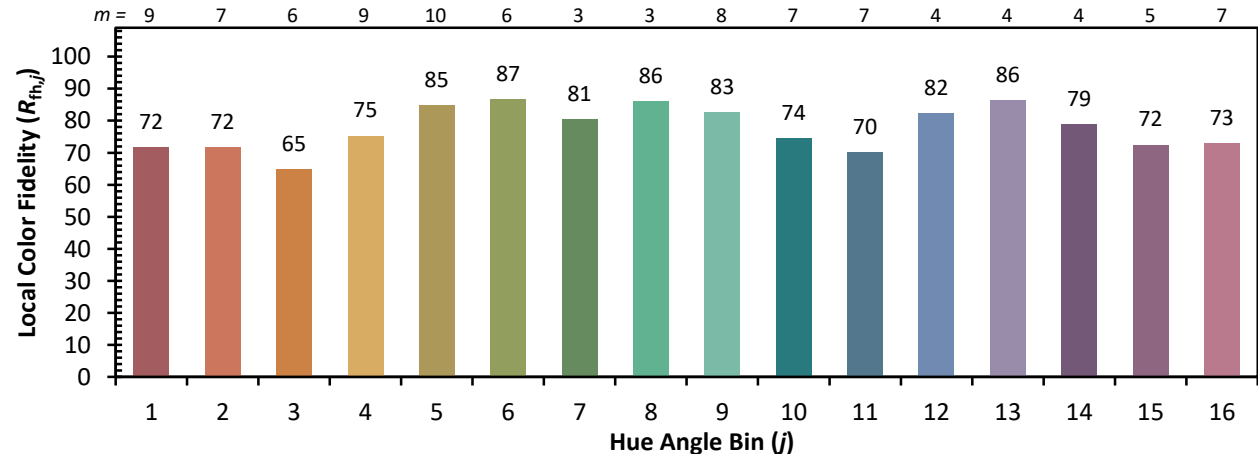
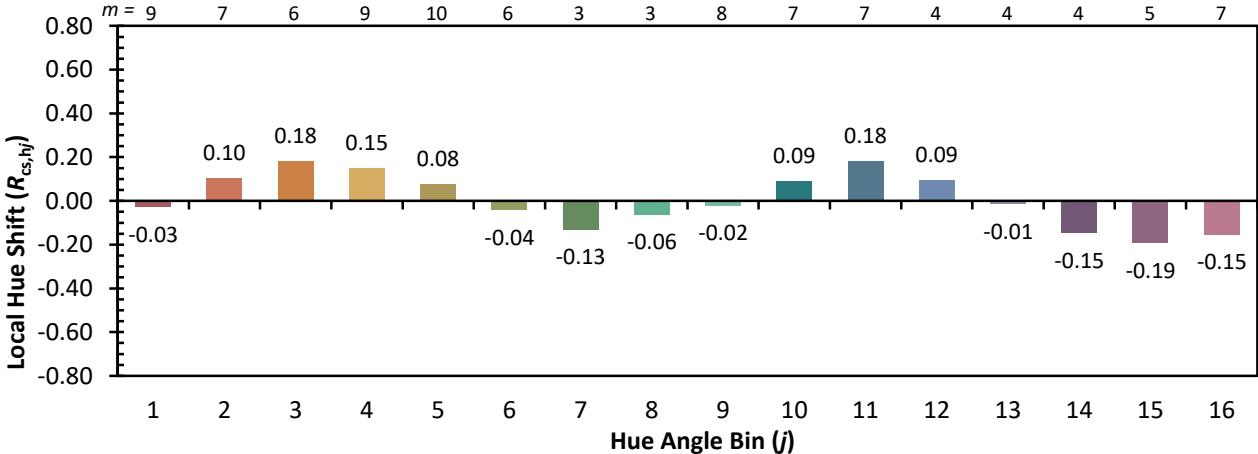
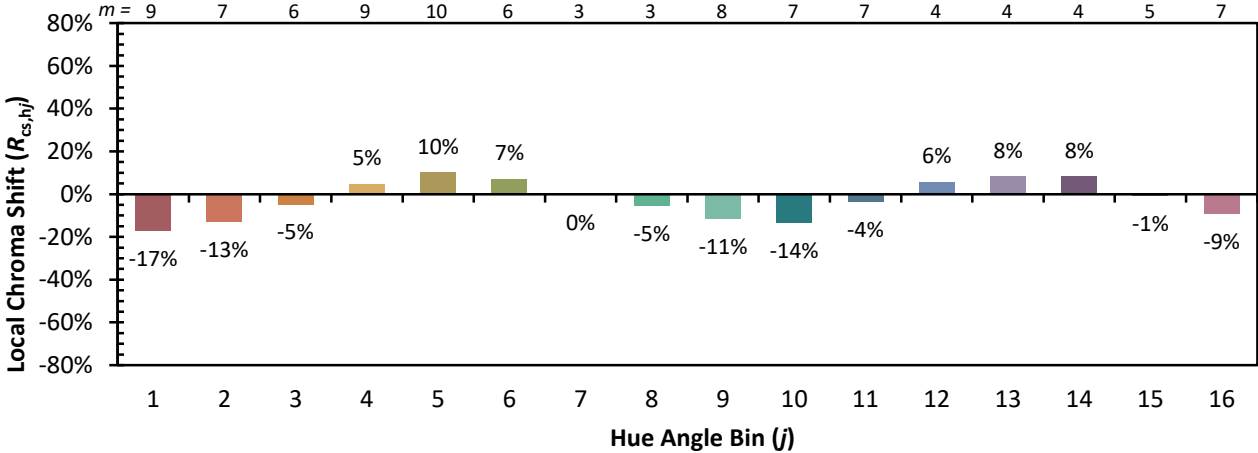


Individual Sample Fidelity Index ($R_{f,i}$)

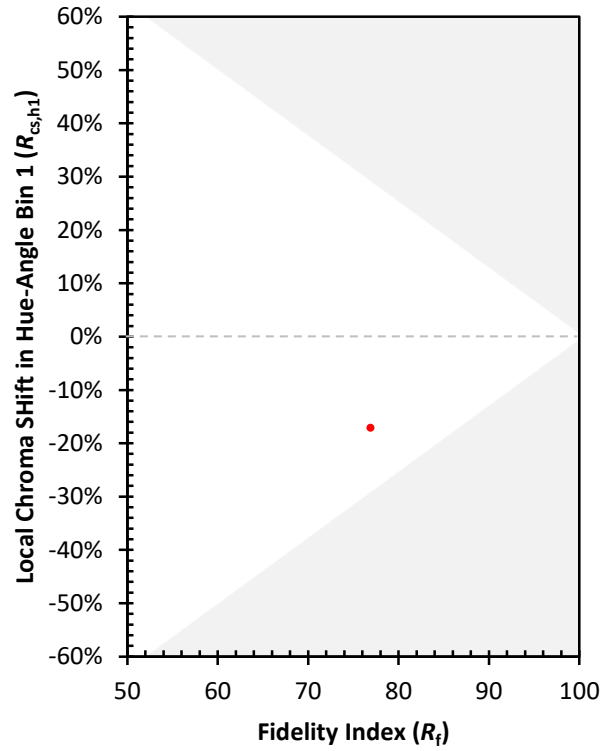
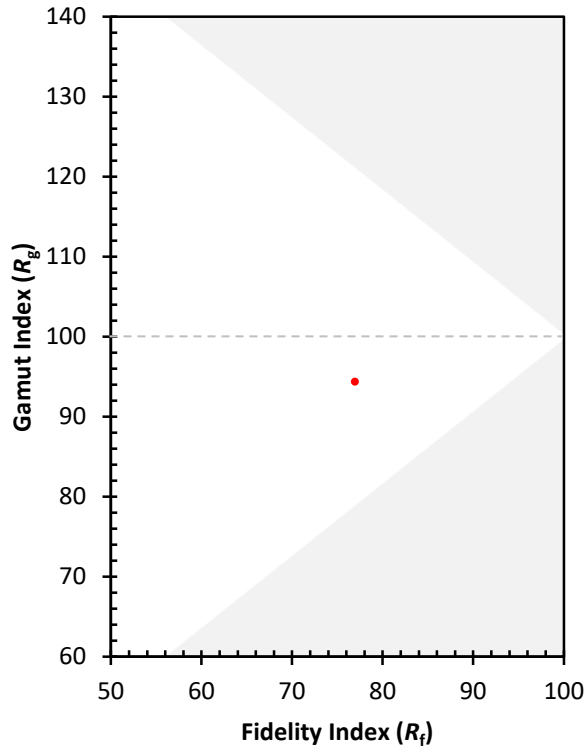
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 68 | CES51 = 90 | CES76 = 63 |
| CES02 = 62 | CES27 = 88 | CES52 = 89 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 80 | CES78 = 65 |
| CES04 = 70 | CES29 = 67 | CES54 = 84 | CES79 = 87 |
| CES05 = 48 | CES30 = 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)