

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: P438427

Luminaire Tested: **ISW-SA1C-827-U-SL2**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438427
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-14)
Test Lab: INNOVATION CENTER
Issue Date: 12/10/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISW-SA1C-827-U-SL2
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 80 CRI, 2700K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE II SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3313 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G1

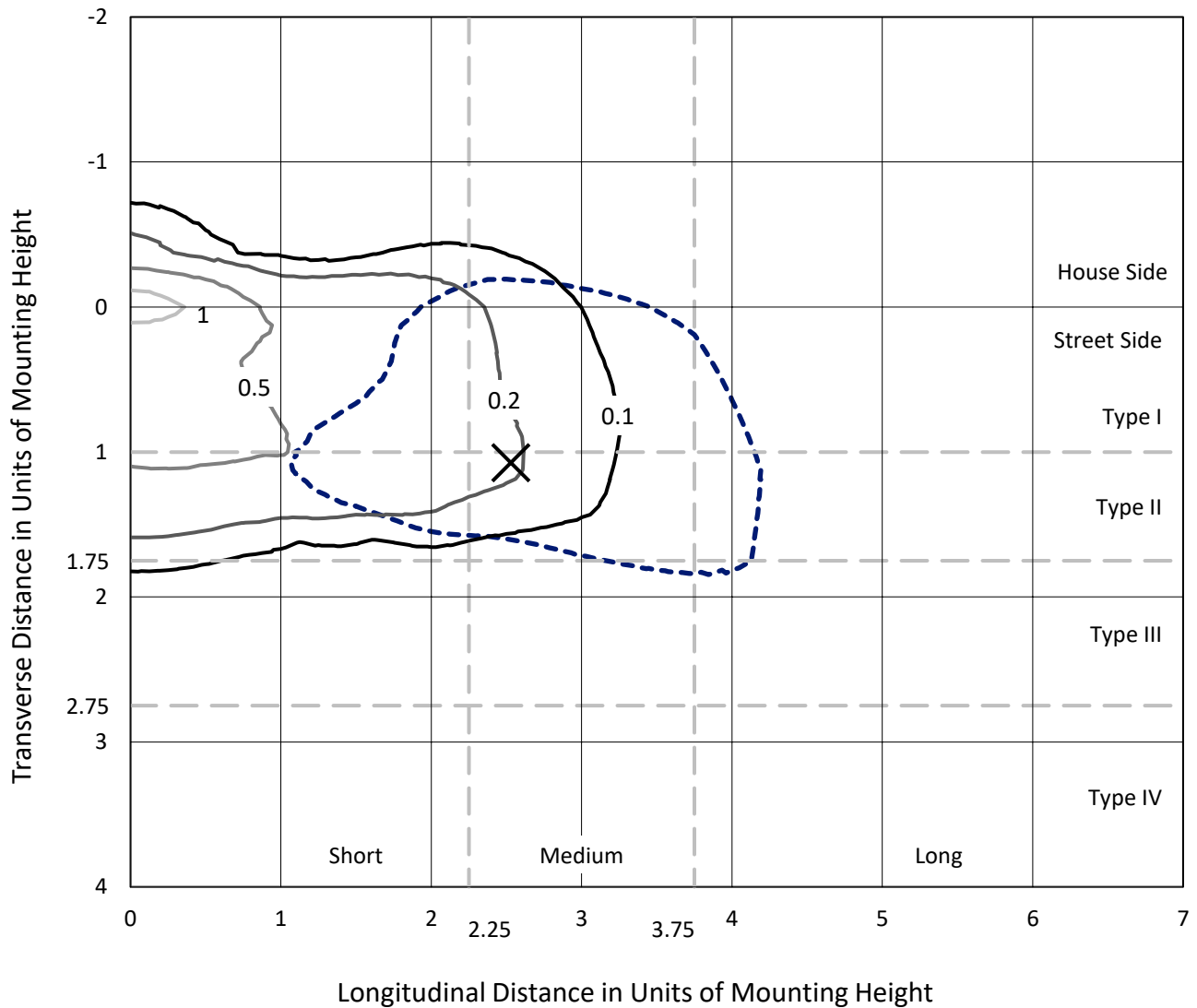
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

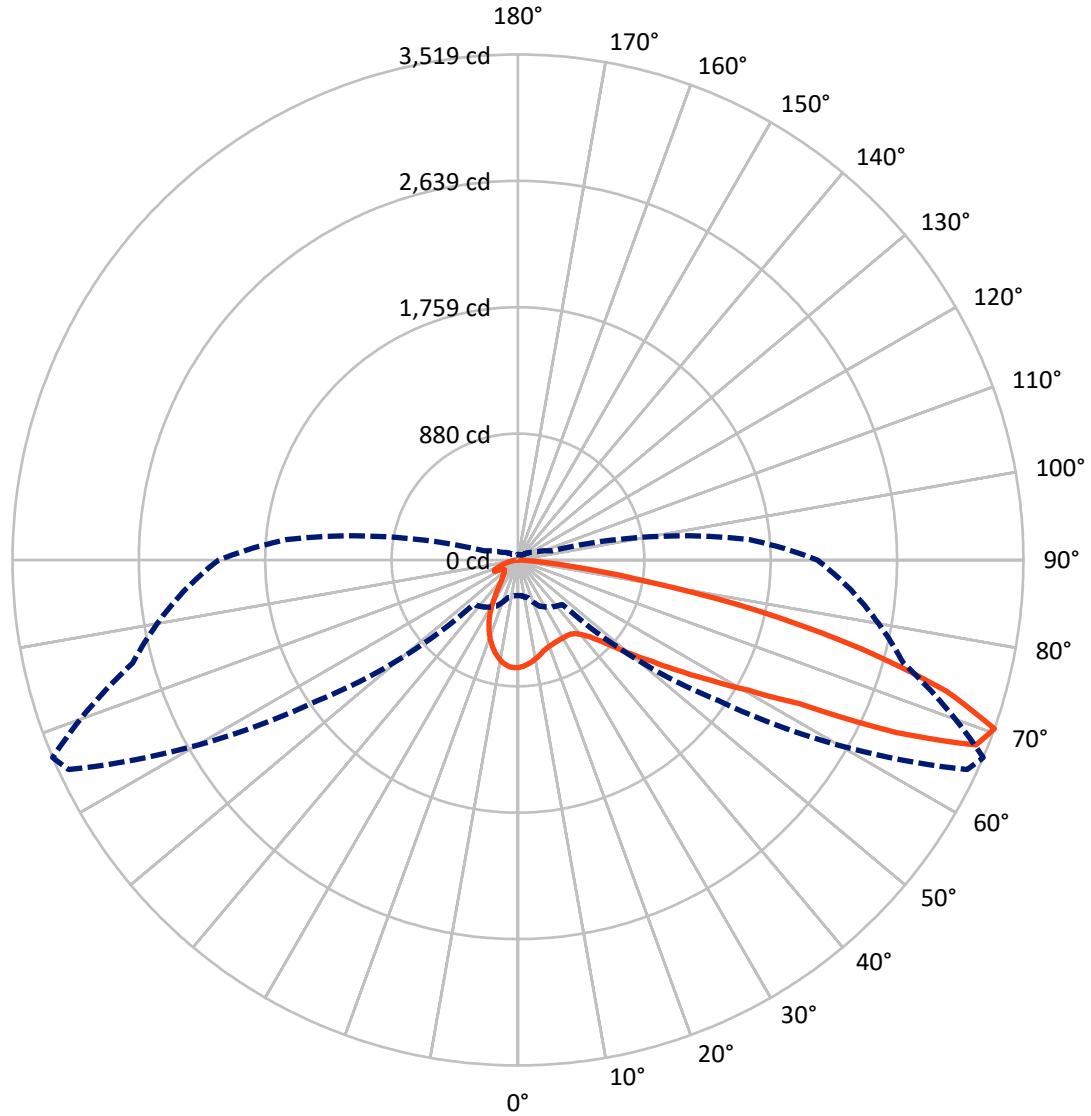
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.2 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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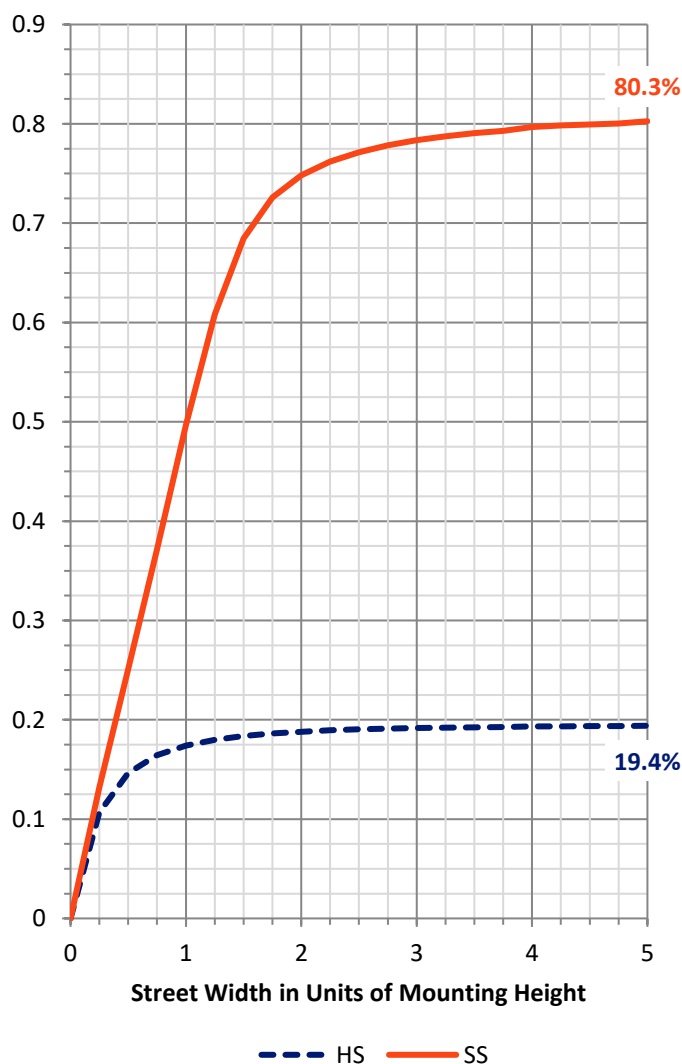
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 648.8 | 0.0 | 648.8 |
| | % Fixture | 19.6 | 0.0 | 19.6 |
| Street Side | Lumens | 2664.2 | 0.0 | 2664.2 |
| | % Fixture | 80.4 | 0.0 | 80.4 |
| Total | Lumens | 3313.0 | 0.0 | 3313.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 65.7 | 2.0 |
| 10°-20° | 159.0 | 4.8 |
| 20°-30° | 219.2 | 6.6 |
| 30°-40° | 296.0 | 8.9 |
| 40°-50° | 439.2 | 13.3 |
| 50°-60° | 676.0 | 20.4 |
| 60°-70° | 835.8 | 25.2 |
| 70°-80° | 559.9 | 16.9 |
| 80°-90° | 62.4 | 1.9 |
| 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° | 3313.0 | 100.0 |
| 0°-180° | 3313.0 | 100.0 |

Coefficient of Utilization



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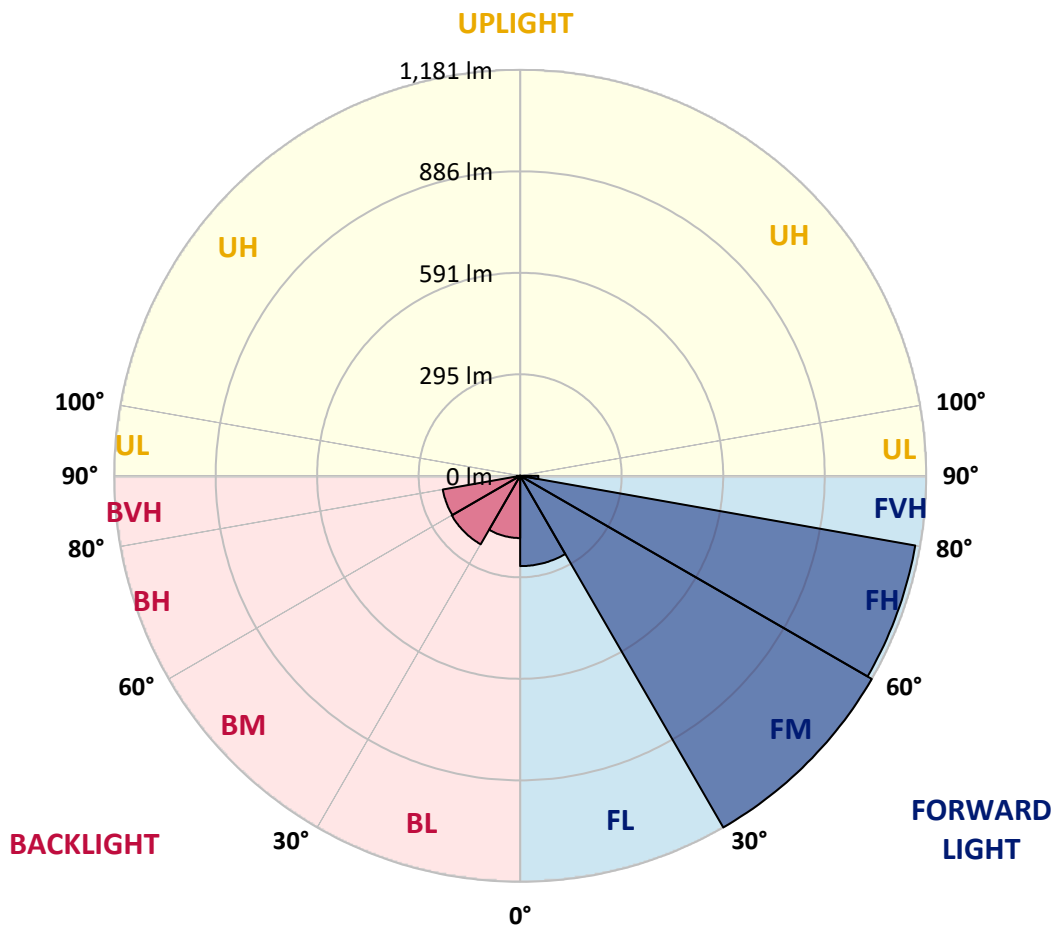
CATALOG NUMBER: ISW-SA1C-827-U-SL2

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 262.8 | 7.9 | | | |
| FM (30°-60°) | 1181.1 | 35.7 | | | |
| FH (60°-80°) | 1167.1 | 35.2 | | | G1/1800 |
| FVH (80°-90°) | 53.1 | 1.6 | | | G1/100 |
| BL (0°-30°) | 181.0 | 5.5 | B1/500 | | |
| BM (30°-60°) | 230.0 | 6.9 | B1/1000 | | |
| BH (60°-80°) | 228.5 | 6.9 | B1/500 | | G1/500 |
| BVH (80°-90°) | 9.3 | 0.3 | | | 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 III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 |
| 2.5° | 707.3 | 712.1 | 713.3 | 716.9 | 721.7 | 726.5 | 732.5 | 739.7 | 740.9 | 744.5 | 751.7 |
| 5° | 659.4 | 661.8 | 664.2 | 671.4 | 679.8 | 695.4 | 710.9 | 725.3 | 727.7 | 739.7 | 752.9 |
| 7.5° | 615.0 | 621.0 | 622.2 | 628.2 | 641.4 | 660.6 | 682.2 | 707.3 | 714.5 | 731.3 | 751.7 |
| 10° | 582.7 | 586.3 | 588.7 | 599.4 | 610.2 | 631.8 | 658.2 | 689.4 | 696.6 | 721.7 | 750.5 |
| 12.5° | 556.3 | 562.3 | 565.9 | 573.1 | 589.8 | 609.0 | 635.4 | 669.0 | 678.6 | 709.7 | 745.7 |
| 15° | 541.9 | 546.7 | 547.9 | 556.3 | 569.5 | 588.7 | 613.8 | 652.2 | 659.4 | 697.7 | 745.7 |
| 17.5° | 538.3 | 539.5 | 540.7 | 545.5 | 556.3 | 571.9 | 598.2 | 637.8 | 646.2 | 693.0 | 745.7 |
| 20° | 545.5 | 545.5 | 545.5 | 543.1 | 551.5 | 563.5 | 589.8 | 625.8 | 637.8 | 688.2 | 749.3 |
| 22.5° | 562.3 | 563.5 | 559.9 | 553.9 | 550.3 | 558.7 | 581.5 | 622.2 | 633.0 | 687.0 | 756.5 |
| 25° | 586.3 | 587.5 | 585.1 | 576.7 | 559.9 | 558.7 | 577.9 | 618.6 | 628.2 | 685.8 | 755.3 |
| 27.5° | 618.6 | 625.8 | 618.6 | 609.0 | 587.5 | 568.3 | 581.5 | 616.2 | 627.0 | 685.8 | 757.7 |
| 30° | 664.2 | 669.0 | 665.4 | 649.8 | 622.2 | 588.7 | 586.3 | 618.6 | 627.0 | 684.6 | 756.5 |
| 32.5° | 709.7 | 710.9 | 714.5 | 703.7 | 670.2 | 618.6 | 599.4 | 621.0 | 628.2 | 683.4 | 752.9 |
| 35° | 744.5 | 751.7 | 767.3 | 768.5 | 728.9 | 661.8 | 627.0 | 630.6 | 633.0 | 687.0 | 749.3 |
| 37.5° | 788.9 | 791.3 | 816.4 | 835.6 | 800.9 | 721.7 | 665.4 | 648.6 | 649.8 | 698.9 | 755.3 |
| 40° | 829.6 | 839.2 | 874.0 | 898.0 | 886.0 | 802.1 | 718.1 | 681.0 | 683.4 | 720.5 | 769.7 |
| 42.5° | 890.8 | 898.0 | 933.9 | 967.5 | 971.1 | 893.2 | 791.3 | 736.1 | 730.1 | 762.5 | 800.9 |
| 45° | 944.7 | 953.1 | 998.7 | 1047.8 | 1064.6 | 996.3 | 882.4 | 811.6 | 802.1 | 833.2 | 858.4 |
| 47.5° | 1020.2 | 1034.6 | 1070.6 | 1126.9 | 1183.3 | 1122.2 | 998.7 | 914.7 | 906.4 | 927.9 | 935.1 |
| 50° | 1092.2 | 1100.6 | 1130.5 | 1198.9 | 1298.4 | 1280.4 | 1141.3 | 1049.0 | 1035.8 | 1039.4 | 1056.2 |
| 52.5° | 1103.0 | 1106.6 | 1137.7 | 1209.7 | 1396.7 | 1473.4 | 1316.4 | 1200.1 | 1176.1 | 1179.7 | 1200.1 |
| 55° | 1021.4 | 1035.8 | 1058.6 | 1159.3 | 1403.9 | 1688.0 | 1562.1 | 1399.1 | 1361.9 | 1348.7 | 1365.5 |
| 57.5° | 852.4 | 869.2 | 901.6 | 1005.9 | 1321.2 | 1804.3 | 1965.0 | 1636.5 | 1578.9 | 1517.8 | 1538.2 |
| 60° | 628.2 | 646.2 | 666.6 | 768.5 | 1111.4 | 1822.3 | 2365.4 | 1924.2 | 1839.1 | 1686.8 | 1697.6 |
| 62.5° | 482.0 | 482.0 | 499.9 | 541.9 | 743.3 | 1691.6 | 2600.4 | 2411.0 | 2202.3 | 1893.0 | 1879.8 |
| 65° | 389.6 | 394.4 | 412.4 | 452.0 | 470.0 | 1201.3 | 2693.9 | 3118.3 | 2896.5 | 2140.0 | 2071.7 |
| 67.5° | 322.5 | 323.7 | 344.1 | 406.4 | 411.2 | 660.6 | 2443.3 | 3489.9 | 3437.2 | 2449.3 | 2275.5 |
| 70° | 247.0 | 248.2 | 272.1 | 353.7 | 400.4 | 437.6 | 1709.6 | 3451.6 | 3518.7 | 2777.8 | 2319.8 |
| 72.5° | 164.2 | 171.4 | 200.2 | 280.5 | 399.2 | 412.4 | 927.9 | 3018.8 | 3115.9 | 2906.1 | 2171.2 |
| 75° | 101.9 | 103.1 | 133.1 | 194.2 | 366.9 | 411.2 | 545.5 | 2352.2 | 2472.1 | 2411.0 | 1883.4 |
| 77.5° | 62.3 | 64.7 | 79.1 | 127.1 | 284.1 | 412.4 | 388.4 | 1618.5 | 1718.0 | 1582.5 | 1110.2 |
| 80° | 38.4 | 38.4 | 45.6 | 76.7 | 184.6 | 369.3 | 334.5 | 941.1 | 931.5 | 585.1 | 315.3 |
| 82.5° | 14.4 | 15.6 | 24.0 | 42.0 | 93.5 | 286.5 | 293.7 | 425.6 | 392.0 | 172.6 | 112.7 |
| 85° | 2.4 | 2.4 | 4.8 | 13.2 | 25.2 | 118.7 | 163.0 | 149.9 | 125.9 | 52.8 | 46.8 |
| 87.5° | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 2.4 | 3.6 | 3.6 | 3.6 | 3.6 | 4.8 |
| 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° | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 | 748.1 |
| 2.5° | 751.7 | 754.1 | 752.9 | 749.3 | 745.7 | 743.3 | 737.3 | 733.7 | 734.9 | 734.9 | 736.1 |
| 5° | 754.1 | 757.7 | 751.7 | 744.5 | 731.3 | 716.9 | 703.7 | 696.6 | 687.0 | 690.6 | 688.2 |
| 7.5° | 757.7 | 760.1 | 749.3 | 727.7 | 704.9 | 681.0 | 658.2 | 637.8 | 622.2 | 615.0 | 619.8 |
| 10° | 755.3 | 758.9 | 738.5 | 706.1 | 671.4 | 633.0 | 598.2 | 564.7 | 543.1 | 528.7 | 532.3 |
| 12.5° | 754.1 | 750.5 | 722.9 | 675.0 | 627.0 | 574.3 | 521.5 | 480.8 | 444.8 | 430.4 | 432.8 |
| 15° | 749.3 | 746.9 | 703.7 | 642.6 | 576.7 | 502.3 | 432.8 | 380.0 | 336.9 | 322.5 | 327.3 |
| 17.5° | 751.7 | 744.5 | 681.0 | 603.0 | 513.1 | 422.0 | 336.9 | 285.3 | 263.8 | 259.0 | 257.8 |
| 20° | 749.3 | 736.1 | 658.2 | 559.9 | 446.0 | 327.3 | 250.6 | 223.0 | 223.0 | 230.2 | 231.4 |
| 22.5° | 751.7 | 728.9 | 633.0 | 510.7 | 369.3 | 245.8 | 195.4 | 188.2 | 199.0 | 214.6 | 214.6 |
| 25° | 751.7 | 720.5 | 605.4 | 455.6 | 288.9 | 187.0 | 166.6 | 166.6 | 181.0 | 195.4 | 194.2 |
| 27.5° | 746.9 | 703.7 | 574.3 | 396.8 | 214.6 | 154.7 | 146.3 | 149.9 | 159.5 | 171.4 | 170.2 |
| 30° | 734.9 | 687.0 | 535.9 | 328.5 | 163.0 | 136.7 | 135.5 | 136.7 | 141.5 | 148.7 | 147.5 |
| 32.5° | 724.1 | 667.8 | 498.7 | 255.4 | 137.9 | 127.1 | 125.9 | 127.1 | 128.3 | 130.7 | 130.7 |
| 35° | 716.9 | 651.0 | 454.4 | 196.6 | 124.7 | 121.1 | 118.7 | 118.7 | 116.3 | 117.5 | 117.5 |
| 37.5° | 708.5 | 635.4 | 408.8 | 153.5 | 117.5 | 115.1 | 112.7 | 109.1 | 109.1 | 106.7 | 106.7 |
| 40° | 708.5 | 623.4 | 362.1 | 129.5 | 112.7 | 111.5 | 106.7 | 101.9 | 99.5 | 99.5 | 99.5 |
| 42.5° | 727.7 | 623.4 | 318.9 | 118.7 | 107.9 | 106.7 | 100.7 | 95.9 | 93.5 | 93.5 | 93.5 |
| 45° | 760.1 | 630.6 | 274.5 | 111.5 | 104.3 | 101.9 | 94.7 | 89.9 | 87.5 | 87.5 | 86.3 |
| 47.5° | 816.4 | 660.6 | 235.0 | 107.9 | 100.7 | 97.1 | 88.7 | 83.9 | 81.5 | 81.5 | 81.5 |
| 50° | 911.1 | 720.5 | 202.6 | 104.3 | 97.1 | 91.1 | 83.9 | 79.1 | 76.7 | 76.7 | 75.5 |
| 52.5° | 1041.8 | 810.4 | 187.0 | 101.9 | 92.3 | 85.1 | 79.1 | 74.3 | 71.9 | 70.7 | 70.7 |
| 55° | 1198.9 | 945.9 | 184.6 | 100.7 | 87.5 | 80.3 | 74.3 | 69.5 | 67.1 | 65.9 | 65.9 |
| 57.5° | 1370.3 | 1094.6 | 201.4 | 98.3 | 82.7 | 74.3 | 69.5 | 64.7 | 62.3 | 61.1 | 61.1 |
| 60° | 1535.8 | 1257.6 | 255.4 | 95.9 | 79.1 | 69.5 | 63.5 | 59.9 | 57.5 | 56.3 | 56.3 |
| 62.5° | 1727.6 | 1429.1 | 374.1 | 97.1 | 76.7 | 64.7 | 58.7 | 55.1 | 53.9 | 52.8 | 52.8 |
| 65° | 1938.6 | 1625.7 | 478.4 | 106.7 | 77.9 | 59.9 | 53.9 | 51.6 | 49.2 | 48.0 | 48.0 |
| 67.5° | 2125.6 | 1752.8 | 399.2 | 123.5 | 85.1 | 56.3 | 48.0 | 46.8 | 44.4 | 43.2 | 44.4 |
| 70° | 2083.7 | 1618.5 | 245.8 | 124.7 | 86.3 | 53.9 | 43.2 | 40.8 | 38.4 | 38.4 | 38.4 |
| 72.5° | 1900.2 | 1427.9 | 171.4 | 107.9 | 76.7 | 48.0 | 37.2 | 34.8 | 33.6 | 33.6 | 33.6 |
| 75° | 1599.3 | 1177.3 | 136.7 | 87.5 | 59.9 | 39.6 | 31.2 | 30.0 | 28.8 | 27.6 | 27.6 |
| 77.5° | 875.2 | 640.2 | 101.9 | 67.1 | 44.4 | 30.0 | 26.4 | 24.0 | 22.8 | 22.8 | 22.8 |
| 80° | 256.6 | 219.4 | 63.5 | 48.0 | 28.8 | 21.6 | 20.4 | 18.0 | 16.8 | 16.8 | 16.8 |
| 82.5° | 107.9 | 91.1 | 38.4 | 26.4 | 19.2 | 14.4 | 13.2 | 12.0 | 10.8 | 9.6 | 10.8 |
| 85° | 42.0 | 44.4 | 24.0 | 15.6 | 10.8 | 7.2 | 6.0 | 4.8 | 4.8 | 3.6 | 4.8 |
| 87.5° | 4.8 | 6.0 | 4.8 | 3.6 | 2.4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| 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-79-2019
 Report Number: SP1-2407-157-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/03/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Invue
 Catalog Number: **EMM2-HTN-SA1A-827-U-5WQ**
 Description: Epic Modern Light Square 40W 5WQ Optic

Spectral Parameters

CCT (K): 2764
 CIE u': 0.2591
 CIE v': 0.5290
 Duv: 0.0020
 CIE x: 0.4581
 CIE y: 0.4156
 CIE z: 0.1263
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 583
 Purity: 62.2537
 Rf: 84.7
 Rg: 94.6

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 80.9 | | |
| R1: | 78.8 | R9: | -1.5 |
| R2: | 89.9 | R10: | 77.9 |
| R3: | 96.2 | R11: | 78.9 |
| R4: | 79.1 | R12: | 71.6 |
| R5: | 79.1 | R13: | 81.2 |
| R6: | 88.8 | R14: | 98.5 |
| R7: | 81.3 | R15: | 69.9 |
| R8: | 54.3 | | |



Test Conditions

Stabilization Time: 81M
 Operation Time: 2H 21M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-157-9

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

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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 2700K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: 4337.9

| 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 | 0 | 0.0 | 490 | 18018 | 2.6 | 620 | 87426 | 22.8 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 3.9 | 625 | 83013 | 18.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 5.8 | 630 | 78077 | 14.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 8.5 | 635 | 72080 | 10.7 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 11.5 | 640 | 66249 | 7.9 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 15.2 | 645 | 59973 | 5.7 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 18.7 | 650 | 53972 | 3.9 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 21.9 | 655 | 48369 | 2.7 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 24.9 | 660 | 42641 | 1.8 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 27.6 | 665 | 37602 | 1.1 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 30.0 | 670 | 32798 | 0.7 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.0 | 545 | 48553 | 32.5 | 675 | 28558 | 0.5 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.0 | 550 | 51408 | 34.9 | 680 | 24782 | 0.3 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.0 | 555 | 54711 | 37.4 | 685 | 21386 | 0.2 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 0.0 | 560 | 58847 | 40.0 | 690 | 18413 | 0.1 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 0.1 | 565 | 63386 | 42.4 | 695 | 15721 | 0.1 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 0.2 | 570 | 68196 | 44.3 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 0.6 | 575 | 73613 | 46.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 0.9 | 580 | 79207 | 47.1 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 0.9 | 585 | 84248 | 47.0 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 0.9 | 590 | 88397 | 45.7 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 1.0 | 595 | 91428 | 43.4 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 0.9 | 600 | 93452 | 40.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 1.0 | 605 | 93959 | 36.4 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 1.3 | 610 | 93079 | 32.0 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 1.8 | 615 | 90707 | 27.3 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: 5286.7

S/P: 1.22

| 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 | 0 | 0.0 | 490 | 18018 | 75.9 | 620 | 87426 | 0.4 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 93.2 | 625 | 83013 | 0.2 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 107.8 | 630 | 78077 | 0.1 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 118.7 | 635 | 72080 | 0.1 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 122.2 | 640 | 66249 | 0.1 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 120.8 | 645 | 59973 | 0.0 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 113.9 | 650 | 53972 | 0.0 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 104.1 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 92.4 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 80.5 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.1 | 540 | 46032 | 68.2 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.3 | 545 | 48553 | 57.1 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 1.1 | 550 | 51408 | 46.7 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 2.5 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 5.9 | 560 | 58847 | 29.4 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 12.5 | 565 | 63386 | 22.5 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 26.3 | 570 | 68196 | 16.9 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 55.2 | 575 | 73613 | 12.4 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 85.4 | 580 | 79207 | 9.0 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 75.1 | 585 | 84248 | 6.3 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 63.2 | 590 | 88397 | 4.4 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 63.2 | 595 | 91428 | 3.0 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 54.2 | 600 | 93452 | 2.0 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 48.8 | 605 | 93959 | 1.3 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 54.2 | 610 | 93079 | 0.9 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 63.3 | 615 | 90707 | 0.5 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

REPORT NUMBER: SP1-2407-157-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: 9797

M/P: 2.26

| 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 | 0 | 0.0 | 490 | 18018 | 27.7 | 620 | 87426 | 1.1 | 750 | 2680 | 0.0 | 880 | 58 | 0.0 |
| 365 | 0 | 0.0 | 495 | 22295 | 36.0 | 625 | 83013 | 0.7 | 755 | 2287 | 0.0 | 885 | 46 | 0.0 |
| 370 | 0 | 0.0 | 500 | 26478 | 44.2 | 630 | 78077 | 0.4 | 760 | 1944 | 0.0 | 890 | 45 | 0.0 |
| 375 | 0 | 0.0 | 505 | 30524 | 51.8 | 635 | 72080 | 0.3 | 765 | 1653 | 0.0 | 895 | 41 | 0.0 |
| 380 | 0 | 0.0 | 510 | 33611 | 57.0 | 640 | 66249 | 0.2 | 770 | 1413 | 0.0 | 900 | 38 | 0.0 |
| 385 | 0 | 0.0 | 515 | 36490 | 60.5 | 645 | 59973 | 0.1 | 775 | 1198 | 0.0 | 905 | 33 | 0.0 |
| 390 | 0 | 0.0 | 520 | 38610 | 61.4 | 650 | 53972 | 0.1 | 780 | 1025 | 0.0 | 910 | 30 | 0.0 |
| 395 | 0 | 0.0 | 525 | 40511 | 60.6 | 655 | 48369 | 0.0 | 785 | 874 | 0.0 | 915 | 23 | 0.0 |
| 400 | 48 | 0.0 | 530 | 42223 | 58.2 | 660 | 42641 | 0.0 | 790 | 747 | 0.0 | 920 | 24 | 0.0 |
| 405 | 201 | 0.0 | 535 | 44137 | 55.0 | 665 | 37602 | 0.0 | 795 | 639 | 0.0 | 925 | 22 | 0.0 |
| 410 | 457 | 0.0 | 540 | 46032 | 50.9 | 670 | 32798 | 0.0 | 800 | 547 | 0.0 | 930 | 22 | 0.0 |
| 415 | 925 | 0.1 | 545 | 48553 | 46.6 | 675 | 28558 | 0.0 | 805 | 473 | 0.0 | 935 | 17 | 0.0 |
| 420 | 1816 | 0.3 | 550 | 51408 | 42.0 | 680 | 24782 | 0.0 | 810 | 401 | 0.0 | 940 | 13 | 0.0 |
| 425 | 3217 | 0.8 | 555 | 54711 | 37.4 | 685 | 21386 | 0.0 | 815 | 351 | 0.0 | 945 | 6 | 0.0 |
| 430 | 5520 | 1.9 | 560 | 58847 | 32.9 | 690 | 18413 | 0.0 | 820 | 307 | 0.0 | 950 | 10 | 0.0 |
| 435 | 9225 | 4.1 | 565 | 63386 | 28.4 | 695 | 15721 | 0.0 | 825 | 261 | 0.0 | 955 | 11 | 0.0 |
| 440 | 15522 | 8.7 | 570 | 68196 | 24.1 | 700 | 13432 | 0.0 | 830 | 228 | 0.0 | 960 | 8 | 0.0 |
| 445 | 27642 | 18.5 | 575 | 73613 | 20.0 | 705 | 11513 | 0.0 | 835 | 193 | 0.0 | 965 | 12 | 0.0 |
| 450 | 36602 | 28.3 | 580 | 79207 | 16.3 | 710 | 9780 | 0.0 | 840 | 174 | 0.0 | 970 | 3 | 0.0 |
| 455 | 28292 | 24.7 | 585 | 84248 | 12.9 | 715 | 8356 | 0.0 | 845 | 151 | 0.0 | 975 | 8 | 0.0 |
| 460 | 21166 | 20.4 | 590 | 88397 | 9.8 | 720 | 7161 | 0.0 | 850 | 123 | 0.0 | 980 | 2 | 0.0 |
| 465 | 19092 | 20.1 | 595 | 91428 | 7.3 | 725 | 6067 | 0.0 | 855 | 106 | 0.0 | 985 | 13 | 0.0 |
| 470 | 14951 | 17.2 | 600 | 93452 | 5.3 | 730 | 5164 | 0.0 | 860 | 95 | 0.0 | 990 | 16 | 0.0 |
| 475 | 12606 | 15.7 | 605 | 93959 | 3.7 | 735 | 4393 | 0.0 | 865 | 82 | 0.0 | 995 | 20 | 0.0 |
| 480 | 13323 | 18.0 | 610 | 93079 | 2.5 | 740 | 3694 | 0.0 | 870 | 77 | 0.0 | 1000 | 0 | 0.0 |
| 485 | 15164 | 21.9 | 615 | 90707 | 1.7 | 745 | 3157 | 0.0 | 875 | 65 | 0.0 | | | |

Summary

$R_f = 84.7$
 $R_g = 94.6$
 $CIE R_a = 80.9$
 $R_g = -1.5$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 84 | CES51 = 95 | CES76 = 81 |
| CES02 = 63 | CES27 = 95 | CES52 = 94 | CES77 = 84 |
| CES03 = 31 | CES28 = 94 | CES53 = 89 | CES78 = 81 |
| CES04 = 71 | CES29 = 87 | CES54 = 91 | CES79 = 89 |
| CES05 = 50 | CES30 = 94 | CES55 = 90 | CES80 = 89 |
| CES06 = 52 | CES31 = 89 | CES56 = 86 | CES81 = 69 |
| CES07 = 43 | CES32 = 82 | CES57 = 85 | CES82 = 96 |
| CES08 = 41 | CES33 = 91 | CES58 = 86 | CES83 = 93 |
| CES09 = 29 | CES34 = 92 | CES59 = 91 | CES84 = 92 |
| CES10 = 77 | CES35 = 96 | CES60 = 94 | CES85 = 76 |
| CES11 = 60 | CES36 = 90 | CES61 = 89 | CES86 = 65 |
| CES12 = 66 | CES37 = 96 | CES62 = 94 | CES87 = 84 |
| CES13 = 44 | CES38 = 98 | CES63 = 87 | CES88 = 86 |
| CES14 = 74 | CES39 = 98 | CES64 = 82 | CES89 = 73 |
| CES15 = 72 | CES40 = 95 | CES65 = 78 | CES90 = 88 |
| CES16 = 48 | CES41 = 96 | CES66 = 81 | CES91 = 82 |
| CES17 = 50 | CES42 = 97 | CES67 = 80 | CES92 = 64 |
| CES18 = 57 | CES43 = 91 | CES68 = 83 | CES93 = 78 |
| CES19 = 73 | CES44 = 99 | CES69 = 88 | CES94 = 59 |
| CES20 = 67 | CES45 = 93 | CES70 = 80 | CES95 = 74 |
| CES21 = 87 | CES46 = 89 | CES71 = 79 | CES96 = 83 |
| CES22 = 79 | CES47 = 92 | CES72 = 92 | CES97 = 88 |
| CES23 = 92 | CES48 = 83 | CES73 = 75 | CES98 = 83 |
| CES24 = 91 | CES49 = 90 | CES74 = 91 | CES99 = 74 |
| CES25 = 72 | CES50 = 94 | CES75 = 81 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)