

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: P438439

Luminaire Tested: **ISW-SA1C-827-U-T3**

Issue Date: 12/10/2020

Test Information

Test Method: LM-79-08
Report Number: P438439
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-8)
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-T3
Description: IMPACT ELITE LED WEDGE LUMINAIRE
(1) 80 CRI, 2700K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3314 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

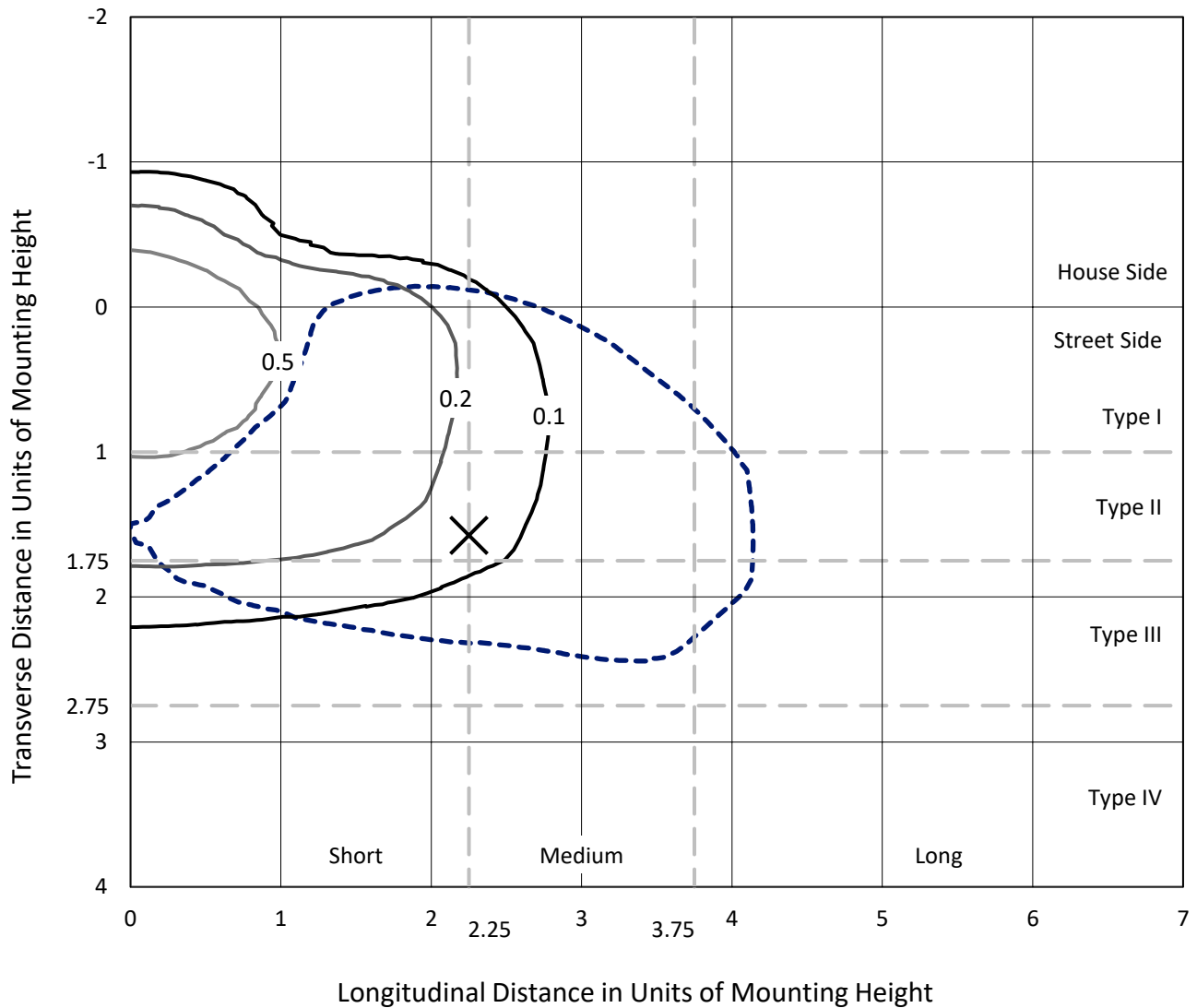
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

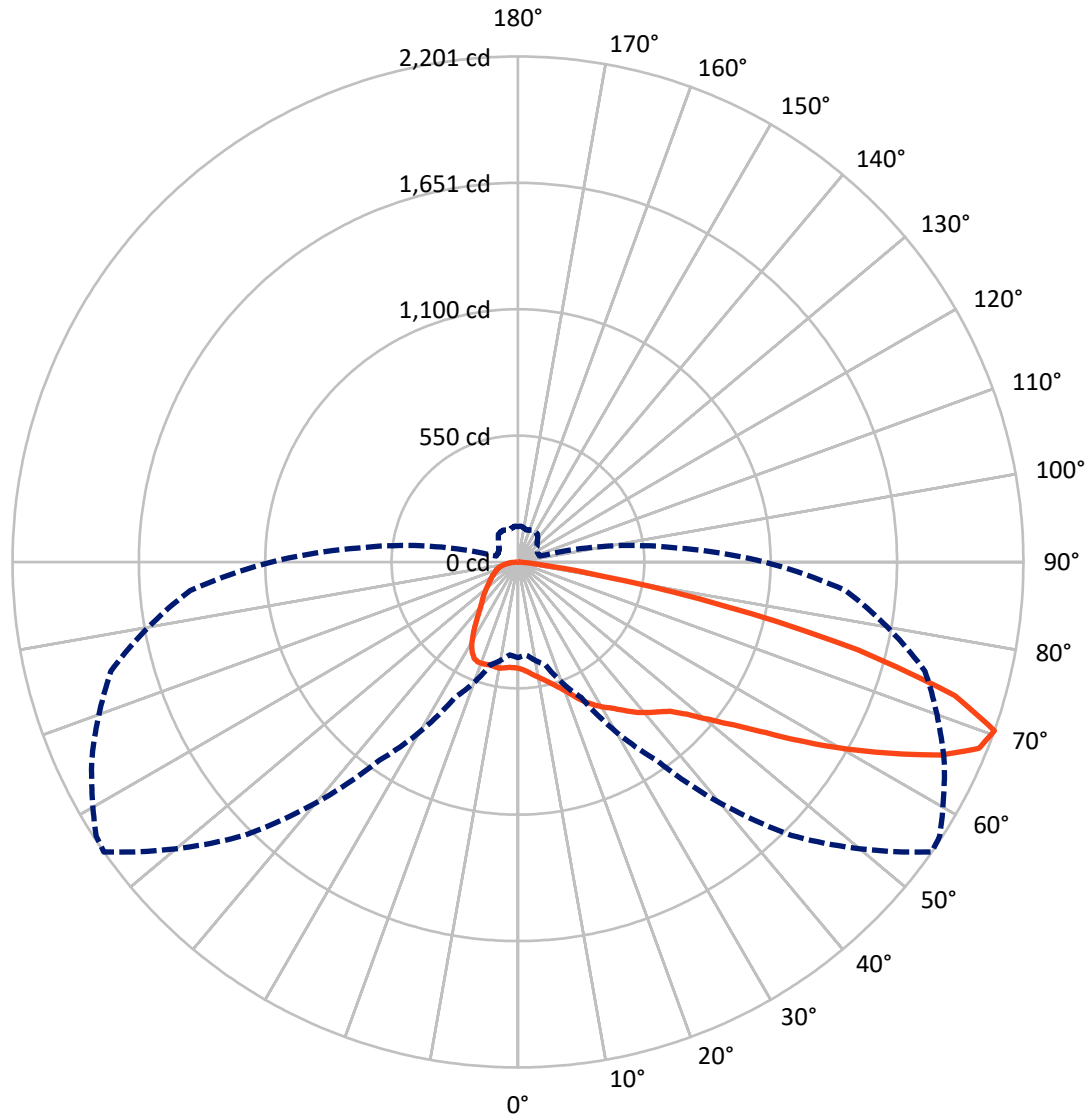
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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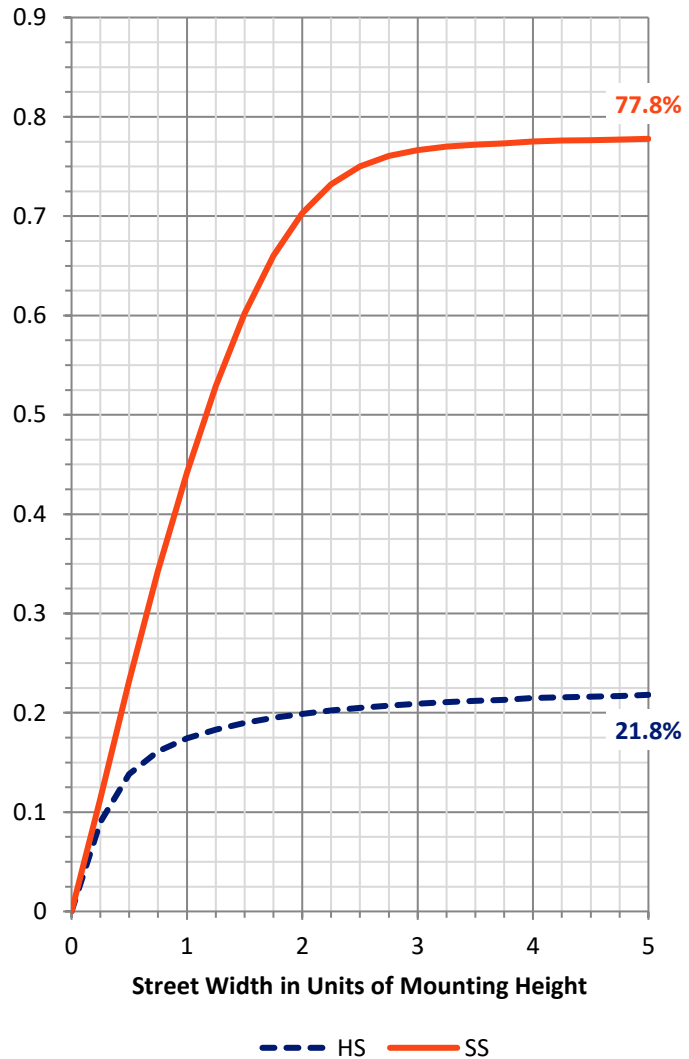
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 733.0 | 0.0 | 733.0 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 2581.0 | 0.0 | 2581.0 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 3314.0 | 0.0 | 3314.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 45.6 | 1.4 |
| 10°-20° | 145.1 | 4.4 |
| 20°-30° | 252.3 | 7.6 |
| 30°-40° | 355.7 | 10.7 |
| 40°-50° | 471.4 | 14.2 |
| 50°-60° | 686.7 | 20.7 |
| 60°-70° | 857.0 | 25.9 |
| 70°-80° | 456.4 | 13.8 |
| 80°-90° | 44.0 | 1.3 |
| 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° | 3314.0 | 100.0 |
| 0°-180° | 3314.0 | 100.0 |

Coefficient of Utilization

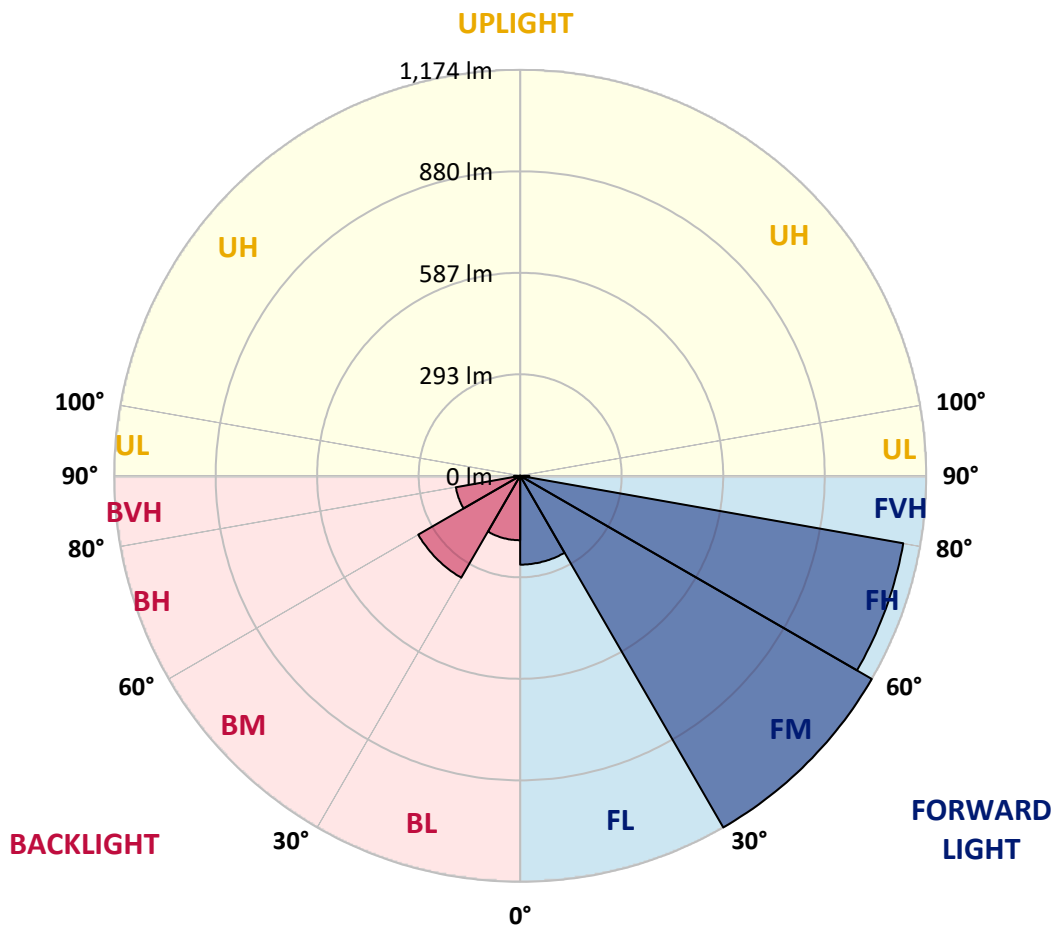


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 256.7 | 7.7 | | | |
| FM (30°-60°) | 1173.6 | 35.4 | | | |
| FH (60°-80°) | 1124.4 | 33.9 | | | G1/1800 |
| FVH (80°-90°) | 26.3 | 0.8 | | | G1/100 |
| BL (0°-30°) | 186.3 | 5.6 | B1/500 | | |
| BM (30°-60°) | 340.1 | 10.3 | B1/1000 | | |
| BH (60°-80°) | 188.9 | 5.7 | B1/500 | | G1/500 |
| BVH (80°-90°) | 17.7 | 0.5 | | | G1/100 |
| 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° | 57° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 |
| 2.5° | 478.3 | 477.1 | 477.1 | 475.9 | 474.7 | 473.5 | 471.2 | 468.8 | 468.8 | 466.4 | 466.4 |
| 5° | 490.2 | 487.9 | 489.1 | 487.9 | 487.9 | 485.5 | 481.9 | 481.9 | 480.7 | 474.7 | 470.0 |
| 7.5° | 502.2 | 501.0 | 501.0 | 502.2 | 501.0 | 498.6 | 497.4 | 496.2 | 491.4 | 484.3 | 477.1 |
| 10° | 518.9 | 518.9 | 518.9 | 517.7 | 517.7 | 515.3 | 511.7 | 511.7 | 505.8 | 497.4 | 489.1 |
| 12.5° | 543.9 | 542.7 | 541.5 | 541.5 | 538.0 | 533.2 | 529.6 | 529.6 | 526.0 | 512.9 | 502.2 |
| 15° | 572.6 | 569.0 | 566.6 | 566.6 | 561.8 | 553.5 | 549.9 | 551.1 | 547.5 | 532.0 | 516.5 |
| 17.5° | 601.2 | 601.2 | 598.8 | 592.8 | 586.9 | 580.9 | 572.6 | 574.9 | 571.4 | 555.9 | 535.6 |
| 20° | 627.4 | 625.0 | 625.0 | 621.5 | 613.1 | 606.0 | 601.2 | 600.0 | 597.6 | 580.9 | 557.0 |
| 22.5° | 656.0 | 654.9 | 651.3 | 648.9 | 642.9 | 639.4 | 637.0 | 637.0 | 627.4 | 604.8 | 573.7 |
| 25° | 690.6 | 689.4 | 689.4 | 679.9 | 675.1 | 669.2 | 672.7 | 669.2 | 664.4 | 631.0 | 591.6 |
| 27.5° | 725.2 | 725.2 | 724.0 | 719.3 | 706.1 | 702.6 | 705.0 | 702.6 | 701.4 | 656.0 | 608.3 |
| 30° | 762.2 | 761.0 | 757.4 | 756.2 | 743.1 | 733.6 | 732.4 | 727.6 | 727.6 | 678.7 | 620.3 |
| 32.5° | 793.2 | 792.0 | 794.4 | 789.6 | 781.3 | 768.2 | 759.8 | 759.8 | 751.5 | 701.4 | 634.6 |
| 35° | 821.9 | 824.2 | 824.2 | 821.9 | 814.7 | 801.6 | 793.2 | 795.6 | 783.7 | 721.7 | 652.5 |
| 37.5° | 854.1 | 851.7 | 848.1 | 845.7 | 836.2 | 830.2 | 830.2 | 832.6 | 814.7 | 743.1 | 676.3 |
| 40° | 861.2 | 867.2 | 875.5 | 866.0 | 861.2 | 860.0 | 862.4 | 856.4 | 838.6 | 776.5 | 716.9 |
| 42.5° | 875.5 | 880.3 | 895.8 | 892.2 | 888.6 | 892.2 | 892.2 | 883.9 | 875.5 | 821.9 | 771.8 |
| 45° | 911.3 | 919.7 | 931.6 | 932.8 | 931.6 | 937.6 | 926.8 | 925.6 | 924.4 | 887.5 | 845.7 |
| 47.5° | 950.7 | 960.2 | 987.7 | 984.1 | 997.2 | 1009.1 | 990.0 | 988.8 | 992.4 | 974.5 | 939.9 |
| 50° | 997.2 | 1006.7 | 1041.3 | 1054.5 | 1090.2 | 1111.7 | 1077.1 | 1061.6 | 1086.7 | 1085.5 | 1059.2 |
| 52.5° | 1050.9 | 1062.8 | 1086.7 | 1132.0 | 1192.8 | 1215.5 | 1178.5 | 1165.4 | 1195.2 | 1209.5 | 1185.7 |
| 55° | 1087.8 | 1097.4 | 1134.4 | 1204.7 | 1303.7 | 1333.6 | 1312.1 | 1300.2 | 1332.4 | 1344.3 | 1319.3 |
| 57.5° | 1101.0 | 1103.4 | 1158.2 | 1269.2 | 1406.3 | 1482.7 | 1479.1 | 1470.7 | 1457.6 | 1487.4 | 1480.3 |
| 60° | 1078.3 | 1091.4 | 1161.8 | 1297.8 | 1498.2 | 1642.5 | 1655.6 | 1636.5 | 1619.8 | 1627.0 | 1603.1 |
| 62.5° | 1048.5 | 1059.2 | 1133.2 | 1301.4 | 1560.2 | 1786.8 | 1835.7 | 1814.3 | 1772.5 | 1753.4 | 1697.4 |
| 65° | 943.5 | 943.5 | 1016.3 | 1228.6 | 1549.5 | 1904.9 | 2025.4 | 1988.4 | 1912.1 | 1844.1 | 1693.8 |
| 67.5° | 721.7 | 718.1 | 788.5 | 1009.1 | 1398.0 | 1916.9 | 2165.0 | 2145.9 | 2023.0 | 1878.7 | 1627.0 |
| 70° | 416.3 | 405.6 | 464.0 | 651.3 | 1055.6 | 1683.1 | 2200.7 | 2190.0 | 2048.1 | 1834.6 | 1432.6 |
| 72.5° | 144.3 | 153.9 | 192.0 | 276.7 | 580.9 | 1211.9 | 1988.4 | 2011.1 | 1928.8 | 1666.4 | 1151.1 |
| 75° | 75.1 | 75.1 | 88.3 | 120.5 | 245.7 | 625.0 | 1528.0 | 1598.4 | 1616.3 | 1394.4 | 821.9 |
| 77.5° | 54.9 | 56.1 | 63.2 | 77.5 | 116.9 | 239.8 | 917.3 | 984.1 | 1118.9 | 960.2 | 474.7 |
| 80° | 37.0 | 38.2 | 45.3 | 51.3 | 71.6 | 93.0 | 366.2 | 402.0 | 554.7 | 429.4 | 183.7 |
| 82.5° | 27.4 | 28.6 | 28.6 | 29.8 | 39.4 | 42.9 | 96.6 | 119.3 | 190.9 | 127.6 | 65.6 |
| 85° | 6.0 | 6.0 | 11.9 | 11.9 | 11.9 | 11.9 | 21.5 | 23.9 | 35.8 | 38.2 | 21.5 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 1.2 | 2.4 | 2.4 | 2.4 | 3.6 | 3.6 |
| 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° | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 | 462.8 |
| 2.5° | 465.2 | 464.0 | 462.8 | 461.6 | 460.4 | 459.2 | 458.0 | 459.2 | 459.2 | 461.6 | 462.8 |
| 5° | 468.8 | 465.2 | 464.0 | 461.6 | 460.4 | 460.4 | 460.4 | 461.6 | 462.8 | 464.0 | 465.2 |
| 7.5° | 474.7 | 473.5 | 470.0 | 465.2 | 464.0 | 464.0 | 461.6 | 461.6 | 461.6 | 464.0 | 464.0 |
| 10° | 485.5 | 481.9 | 477.1 | 472.4 | 468.8 | 461.6 | 455.7 | 450.9 | 453.3 | 456.8 | 456.8 |
| 12.5° | 497.4 | 491.4 | 485.5 | 477.1 | 467.6 | 455.7 | 449.7 | 450.9 | 450.9 | 454.5 | 455.7 |
| 15° | 512.9 | 508.1 | 495.0 | 480.7 | 464.0 | 454.5 | 452.1 | 449.7 | 449.7 | 452.1 | 454.5 |
| 17.5° | 529.6 | 521.3 | 504.6 | 483.1 | 466.4 | 455.7 | 450.9 | 441.3 | 436.6 | 435.4 | 437.8 |
| 20° | 545.1 | 535.6 | 512.9 | 485.5 | 468.8 | 454.5 | 437.8 | 422.3 | 410.3 | 407.9 | 405.6 |
| 22.5° | 558.2 | 546.3 | 518.9 | 490.2 | 468.8 | 442.5 | 413.9 | 391.2 | 374.5 | 369.8 | 372.2 |
| 25° | 572.6 | 554.7 | 526.0 | 495.0 | 460.4 | 418.7 | 379.3 | 351.9 | 335.2 | 328.0 | 328.0 |
| 27.5° | 584.5 | 566.6 | 533.2 | 491.4 | 439.0 | 386.5 | 341.1 | 313.7 | 300.6 | 293.4 | 292.2 |
| 30° | 595.2 | 576.1 | 547.5 | 480.7 | 407.9 | 342.3 | 303.0 | 283.9 | 275.5 | 267.2 | 268.4 |
| 32.5° | 609.5 | 592.8 | 558.2 | 458.0 | 366.2 | 301.8 | 272.0 | 262.4 | 254.1 | 248.1 | 250.5 |
| 35° | 629.8 | 620.3 | 561.8 | 429.4 | 323.3 | 273.2 | 252.9 | 242.1 | 235.0 | 226.6 | 226.6 |
| 37.5° | 658.4 | 650.1 | 549.9 | 386.5 | 285.1 | 251.7 | 237.4 | 223.1 | 211.1 | 201.6 | 199.2 |
| 40° | 693.0 | 681.1 | 529.6 | 338.8 | 255.3 | 237.4 | 224.2 | 206.4 | 189.7 | 176.5 | 174.2 |
| 42.5° | 747.9 | 713.3 | 499.8 | 289.9 | 233.8 | 225.4 | 207.6 | 184.9 | 168.2 | 158.6 | 156.3 |
| 45° | 806.3 | 750.3 | 456.8 | 248.1 | 217.1 | 211.1 | 190.9 | 168.2 | 156.3 | 149.1 | 147.9 |
| 47.5° | 880.3 | 790.8 | 416.3 | 217.1 | 198.0 | 196.8 | 173.0 | 158.6 | 149.1 | 144.3 | 143.1 |
| 50° | 978.1 | 842.1 | 375.7 | 193.2 | 181.3 | 177.7 | 164.6 | 152.7 | 145.5 | 141.9 | 140.8 |
| 52.5° | 1091.4 | 901.8 | 343.5 | 175.3 | 165.8 | 163.4 | 159.8 | 150.3 | 145.5 | 141.9 | 140.8 |
| 55° | 1198.8 | 963.8 | 308.9 | 158.6 | 152.7 | 155.1 | 157.5 | 150.3 | 146.7 | 144.3 | 141.9 |
| 57.5° | 1316.9 | 1016.3 | 269.6 | 145.5 | 141.9 | 147.9 | 155.1 | 151.5 | 149.1 | 145.5 | 144.3 |
| 60° | 1389.6 | 1053.3 | 217.1 | 133.6 | 133.6 | 141.9 | 151.5 | 149.1 | 144.3 | 144.3 | 144.3 |
| 62.5° | 1421.8 | 1047.3 | 171.8 | 121.7 | 124.1 | 134.8 | 145.5 | 143.1 | 139.6 | 145.5 | 145.5 |
| 65° | 1380.1 | 979.3 | 139.6 | 110.9 | 114.5 | 125.2 | 139.6 | 139.6 | 139.6 | 149.1 | 149.1 |
| 67.5° | 1271.5 | 876.7 | 114.5 | 101.4 | 105.0 | 118.1 | 139.6 | 147.9 | 146.7 | 157.5 | 157.5 |
| 70° | 1073.5 | 695.4 | 99.0 | 94.2 | 99.0 | 118.1 | 147.9 | 152.7 | 144.3 | 156.3 | 153.9 |
| 72.5° | 818.3 | 485.5 | 88.3 | 87.1 | 93.0 | 114.5 | 149.1 | 146.7 | 136.0 | 139.6 | 136.0 |
| 75° | 538.0 | 294.6 | 77.5 | 79.9 | 82.3 | 101.4 | 141.9 | 137.2 | 124.1 | 121.7 | 119.3 |
| 77.5° | 295.8 | 147.9 | 68.0 | 71.6 | 71.6 | 85.9 | 128.8 | 118.1 | 107.4 | 101.4 | 99.0 |
| 80° | 118.1 | 75.1 | 59.6 | 63.2 | 58.4 | 69.2 | 96.6 | 91.8 | 82.3 | 77.5 | 75.1 |
| 82.5° | 53.7 | 41.7 | 50.1 | 52.5 | 44.1 | 51.3 | 71.6 | 69.2 | 62.0 | 53.7 | 51.3 |
| 85° | 20.3 | 23.9 | 38.2 | 35.8 | 31.0 | 29.8 | 40.6 | 37.0 | 29.8 | 23.9 | 23.9 |
| 87.5° | 2.4 | 4.8 | 9.5 | 13.1 | 7.2 | 4.8 | 2.4 | 1.2 | 1.2 | 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-79-2019
 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

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| 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



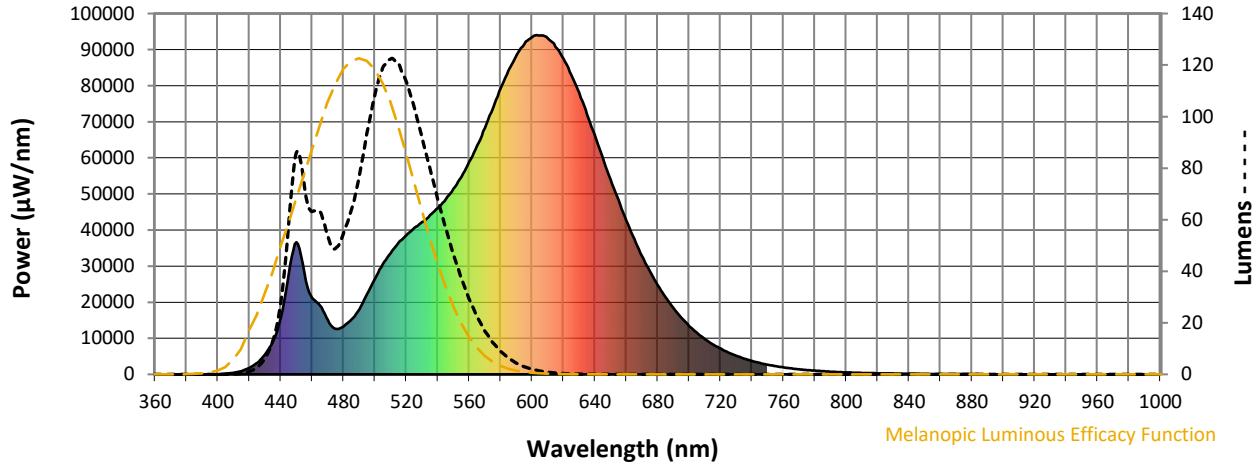
Scotopic Lumens: 5286.7

S/P: 1.22

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

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

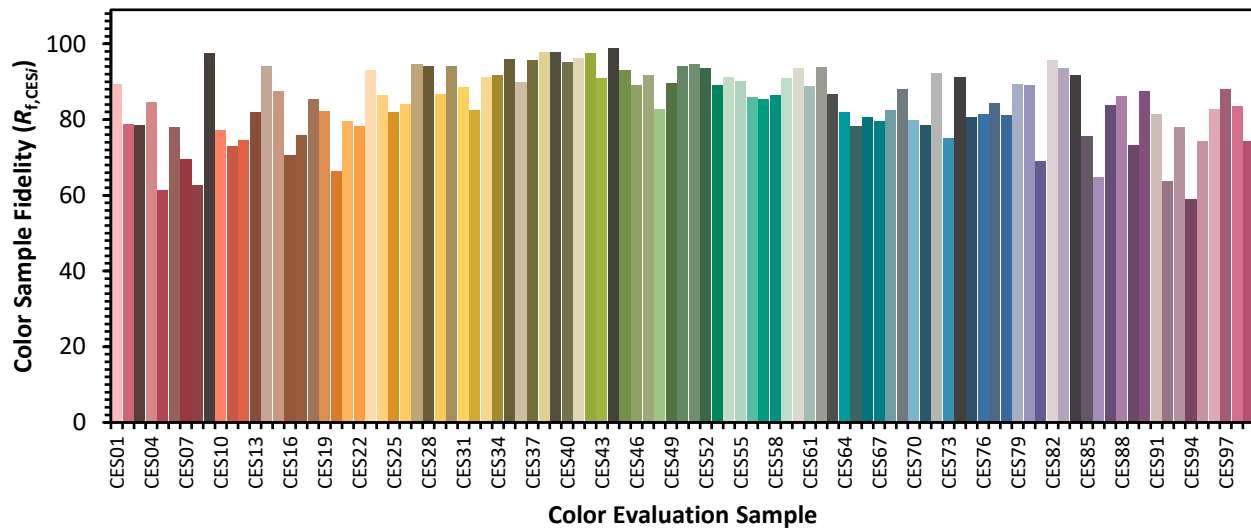


Color Vector Graphics



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)