

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: P437060

Luminaire Tested: **ISC-SA1A-827-U-SL3-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437060
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-17)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1A-827-U-SL3-HSS
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 80 CRI, 2700K, 350mA LIGHTSQUARE WITH 16 LEDS AND TYPE III SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1708 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B0 - U0 - G1

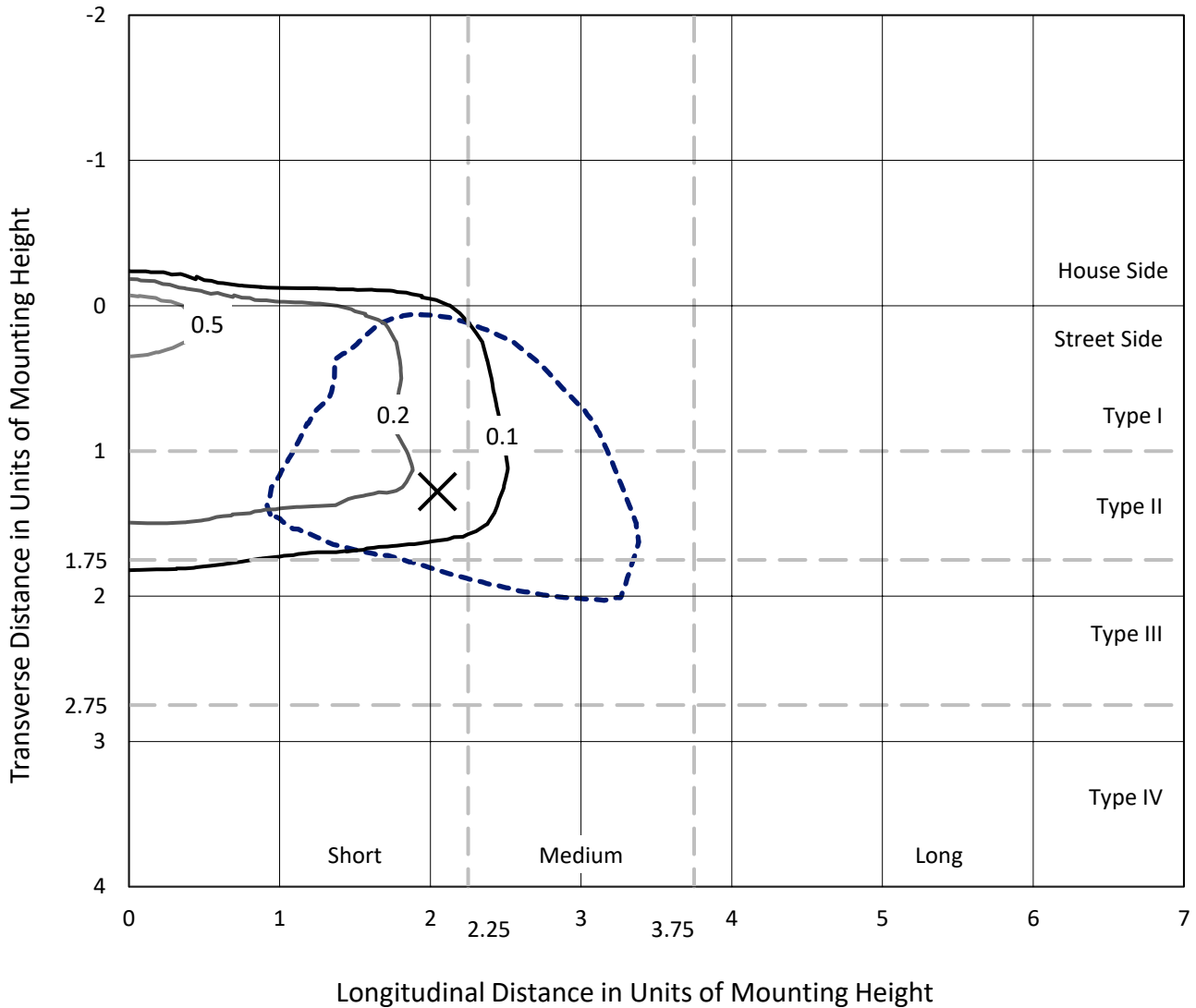
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P437060
 CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

Iso-Footcandle Lines of Horizontal Illumination

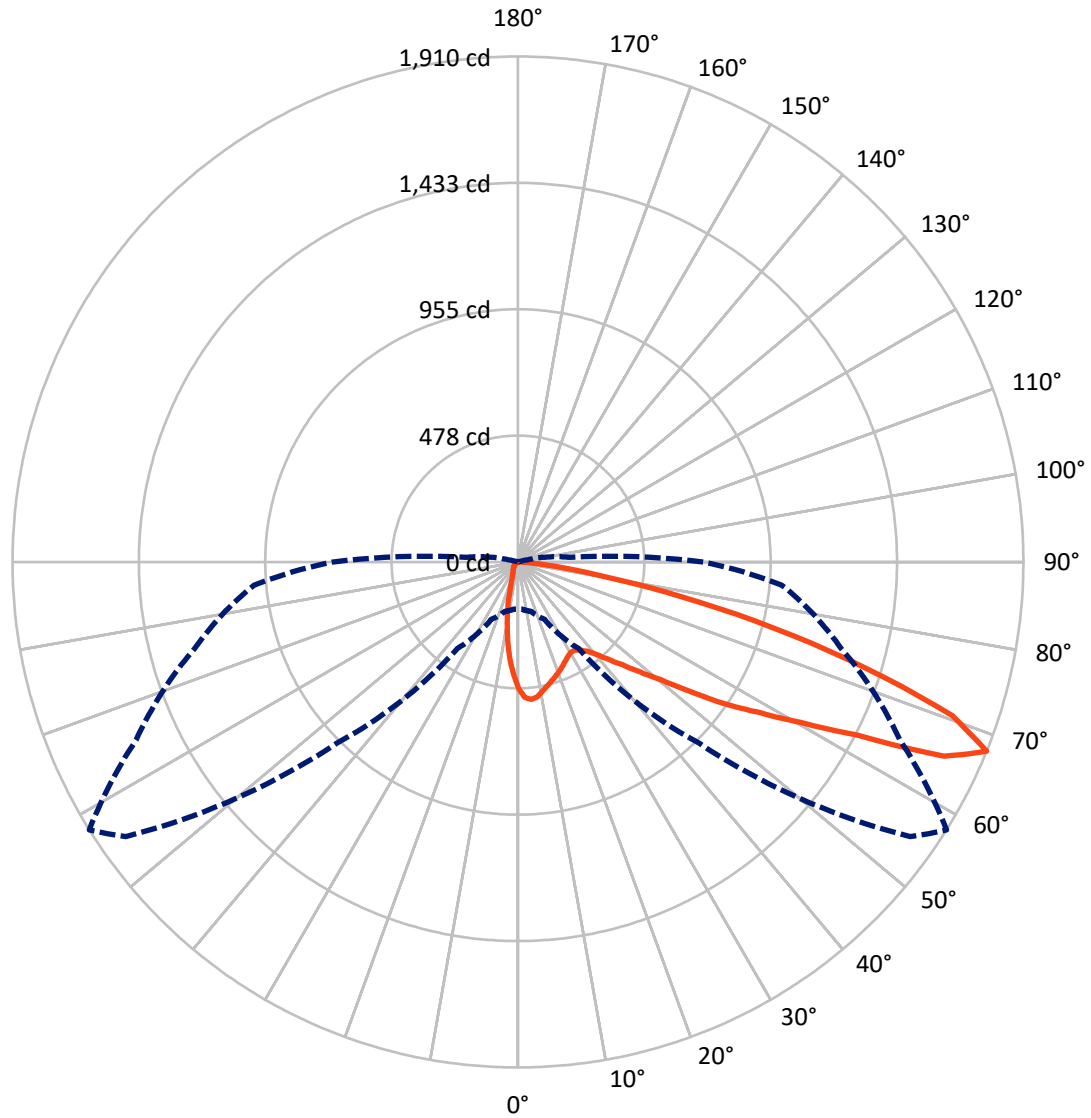
✕ Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P437060
CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

Luminous Intensity Polar Plot



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

REPORT NUMBER: P437060

CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

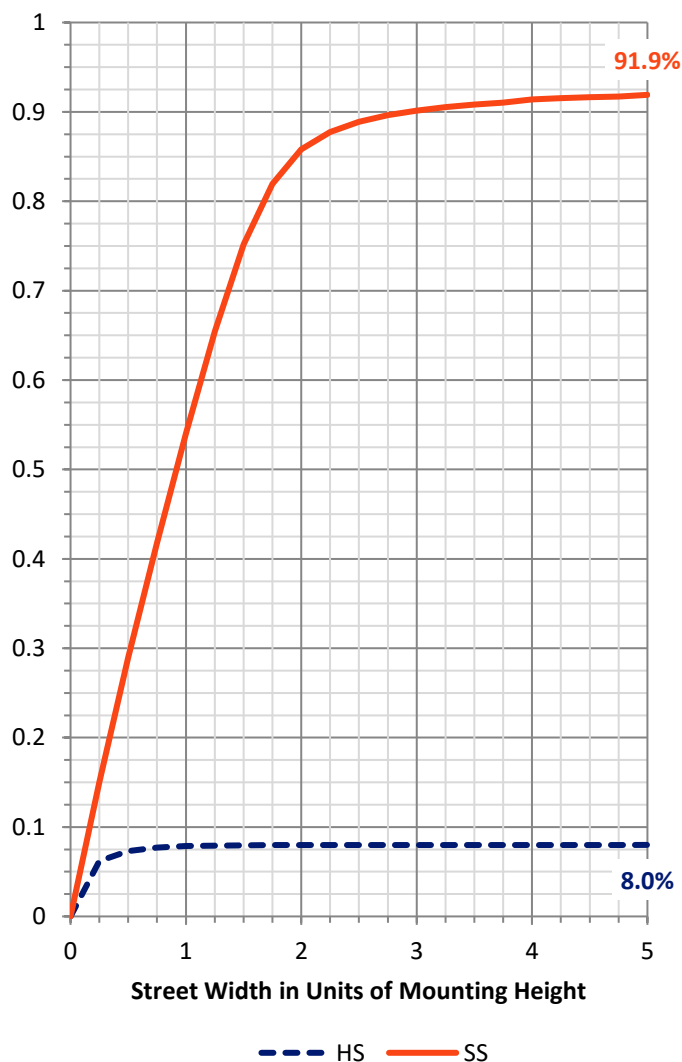
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 137.7 | 0.0 | 137.7 |
| | % Fixture | 8.1 | 0.0 | 8.1 |
| Street Side | Lumens | 1570.3 | 0.0 | 1570.3 |
| | % Fixture | 91.9 | 0.0 | 91.9 |
| Total | Lumens | 1708.0 | 0.0 | 1708.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 38.5 | 2.3 |
| 10°-20° | 81.1 | 4.8 |
| 20°-30° | 109.8 | 6.4 |
| 30°-40° | 151.0 | 8.8 |
| 40°-50° | 236.4 | 13.8 |
| 50°-60° | 398.2 | 23.3 |
| 60°-70° | 472.6 | 27.7 |
| 70°-80° | 205.2 | 12.0 |
| 80°-90° | 15.1 | 0.9 |
| 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° | 1708.0 | 100.0 |
| 0°-180° | 1708.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P437060

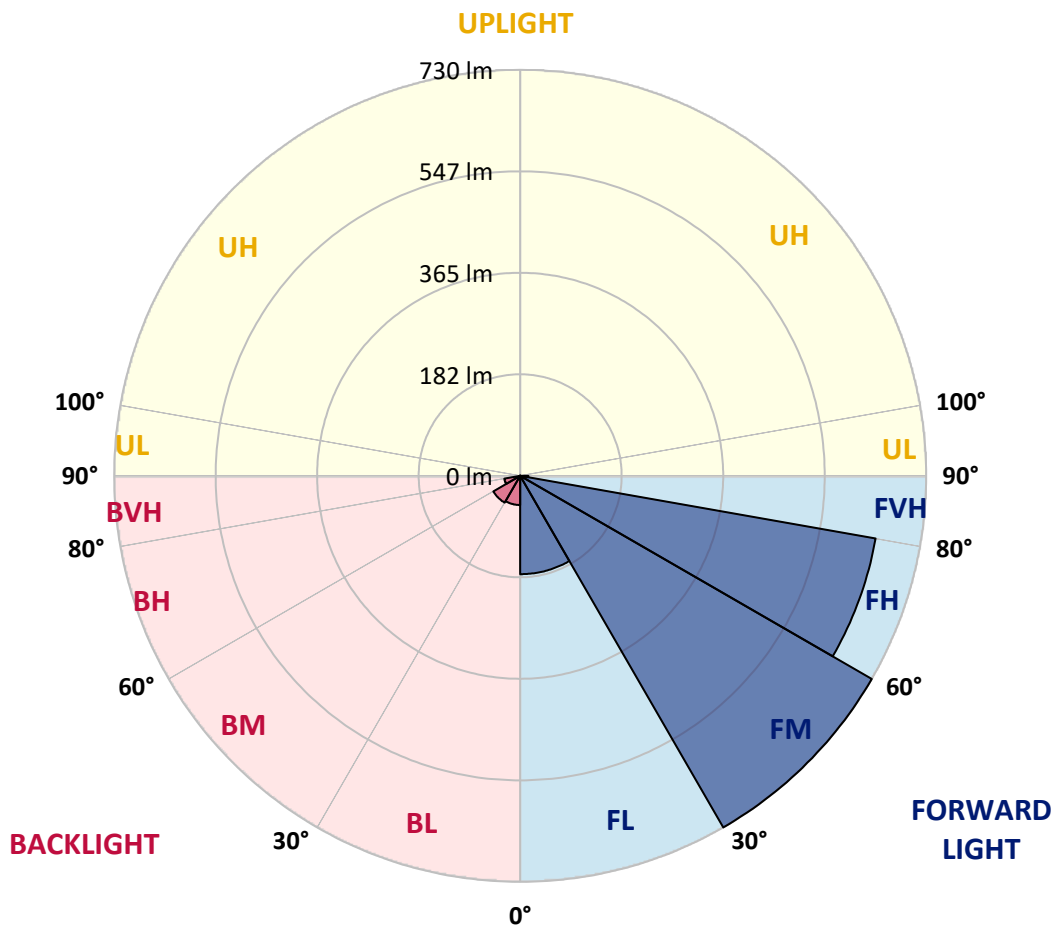
CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 176.9 | 10.4 | | | |
| FM (30°-60°) | 729.9 | 42.7 | | | |
| FH (60°-80°) | 648.9 | 38.0 | | | G0/660 |
| FVH (80°-90°) | 14.6 | 0.9 | | | G1/100 |
| BL (0°-30°) | 52.6 | 3.1 | B0/110 | | |
| BM (30°-60°) | 55.7 | 3.3 | B0/220 | | |
| BH (60°-80°) | 29.0 | 1.7 | 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: B0-U0-G1

Type III Short





REPORT NUMBER: P437060
 CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 0° | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 |
| 2.5° | 536.8 | 533.8 | 532.4 | 531.6 | 526.5 | 522.1 | 513.2 | 512.5 | 506.6 | 495.6 | 484.6 |
| 5° | 525.0 | 527.2 | 527.9 | 530.2 | 529.4 | 529.4 | 523.5 | 522.1 | 514.0 | 498.5 | 477.2 |
| 7.5° | 499.3 | 498.5 | 500.0 | 505.9 | 508.8 | 514.7 | 514.0 | 515.4 | 511.8 | 494.9 | 464.7 |
| 10° | 461.8 | 463.2 | 467.7 | 472.8 | 480.9 | 491.2 | 497.8 | 499.3 | 502.2 | 488.2 | 452.9 |
| 12.5° | 427.2 | 429.4 | 432.4 | 442.7 | 451.5 | 467.7 | 480.2 | 483.1 | 489.0 | 481.6 | 442.7 |
| 15° | 398.5 | 399.3 | 401.5 | 411.0 | 425.7 | 446.3 | 464.7 | 469.1 | 478.7 | 475.7 | 434.6 |
| 17.5° | 375.7 | 376.5 | 379.4 | 387.5 | 399.3 | 423.5 | 448.5 | 455.9 | 469.9 | 472.1 | 425.7 |
| 20° | 363.2 | 363.2 | 363.2 | 368.4 | 380.1 | 402.9 | 432.4 | 442.7 | 462.5 | 466.2 | 418.4 |
| 22.5° | 359.6 | 359.6 | 358.1 | 359.6 | 366.9 | 386.0 | 416.2 | 428.7 | 453.7 | 464.0 | 409.6 |
| 25° | 364.7 | 362.5 | 362.5 | 358.8 | 359.6 | 372.1 | 401.5 | 415.4 | 448.5 | 462.5 | 405.2 |
| 27.5° | 374.3 | 373.5 | 370.6 | 367.6 | 363.2 | 366.2 | 389.0 | 402.9 | 443.4 | 464.7 | 401.5 |
| 30° | 385.3 | 385.3 | 383.8 | 382.4 | 375.0 | 369.1 | 383.1 | 395.6 | 441.2 | 468.4 | 399.3 |
| 32.5° | 397.8 | 397.1 | 400.7 | 402.2 | 393.4 | 382.4 | 384.6 | 396.3 | 442.7 | 479.4 | 400.7 |
| 35° | 412.5 | 412.5 | 419.1 | 427.9 | 420.6 | 403.7 | 398.5 | 408.8 | 450.0 | 491.2 | 406.6 |
| 37.5° | 428.7 | 429.4 | 441.2 | 453.7 | 448.5 | 433.8 | 425.0 | 428.7 | 465.4 | 513.2 | 419.9 |
| 40° | 447.8 | 447.8 | 465.4 | 486.0 | 486.0 | 469.1 | 457.4 | 460.3 | 487.5 | 544.9 | 443.4 |
| 42.5° | 468.4 | 470.6 | 495.6 | 520.6 | 527.9 | 512.5 | 500.0 | 503.7 | 522.8 | 586.0 | 477.9 |
| 45° | 497.8 | 504.4 | 536.8 | 561.0 | 575.7 | 568.4 | 552.2 | 555.2 | 569.1 | 645.6 | 530.2 |
| 47.5° | 550.0 | 555.9 | 583.8 | 608.1 | 626.5 | 630.2 | 622.8 | 621.3 | 627.2 | 715.4 | 596.3 |
| 50° | 612.5 | 617.7 | 636.8 | 657.4 | 683.1 | 705.2 | 700.7 | 698.5 | 700.7 | 791.9 | 677.2 |
| 52.5° | 674.3 | 672.1 | 694.9 | 705.9 | 741.9 | 790.4 | 809.6 | 809.6 | 797.8 | 872.1 | 756.6 |
| 55° | 729.4 | 739.0 | 763.2 | 783.1 | 813.2 | 871.3 | 936.0 | 944.1 | 903.7 | 951.5 | 822.8 |
| 57.5° | 722.8 | 732.4 | 777.2 | 839.7 | 928.7 | 1007.4 | 1070.6 | 1072.1 | 1013.2 | 1012.5 | 904.4 |
| 60° | 645.6 | 646.3 | 706.6 | 801.5 | 979.4 | 1203.7 | 1240.5 | 1233.1 | 1108.8 | 1097.8 | 1016.9 |
| 62.5° | 454.4 | 451.5 | 529.4 | 650.0 | 903.7 | 1311.0 | 1497.8 | 1441.9 | 1267.7 | 1231.6 | 1122.1 |
| 65° | 264.7 | 263.2 | 293.4 | 388.2 | 684.6 | 1235.3 | 1761.0 | 1769.9 | 1476.5 | 1300.0 | 1100.0 |
| 67.5° | 177.9 | 179.4 | 193.4 | 239.7 | 399.3 | 969.1 | 1809.6 | 1910.3 | 1592.7 | 1264.7 | 1000.7 |
| 70° | 130.9 | 130.9 | 141.9 | 176.5 | 236.8 | 607.4 | 1580.9 | 1741.9 | 1615.5 | 1176.5 | 837.5 |
| 72.5° | 93.4 | 93.4 | 108.8 | 142.6 | 193.4 | 313.2 | 1175.0 | 1380.9 | 1364.0 | 976.5 | 579.4 |
| 75° | 59.6 | 61.0 | 77.9 | 116.9 | 176.5 | 200.7 | 797.1 | 1000.7 | 951.5 | 546.3 | 247.1 |
| 77.5° | 22.8 | 25.7 | 41.9 | 86.0 | 154.4 | 166.9 | 454.4 | 630.9 | 502.2 | 191.2 | 66.2 |
| 80° | 8.1 | 8.1 | 14.0 | 44.1 | 108.8 | 137.5 | 237.5 | 313.2 | 163.2 | 46.3 | 25.0 |
| 82.5° | 1.5 | 1.5 | 5.1 | 18.4 | 53.7 | 95.6 | 138.2 | 154.4 | 64.0 | 15.4 | 14.7 |
| 85° | 0.0 | 0.0 | 0.7 | 3.7 | 12.5 | 9.6 | 55.1 | 52.2 | 19.9 | 6.6 | 9.6 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P437060
 CATALOG NUMBER: ISC-SA1A-827-U-SL3-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 | 480.9 |
| 2.5° | 475.7 | 469.9 | 452.9 | 441.2 | 425.0 | 408.8 | 398.5 | 390.4 | 386.8 | 381.6 | 383.8 |
| 5° | 464.0 | 450.7 | 419.9 | 391.9 | 365.4 | 337.5 | 316.9 | 298.5 | 292.6 | 282.4 | 280.9 |
| 7.5° | 446.3 | 427.9 | 382.4 | 338.2 | 295.6 | 260.3 | 228.7 | 204.4 | 182.4 | 172.8 | 178.7 |
| 10° | 429.4 | 404.4 | 344.9 | 286.0 | 229.4 | 180.1 | 142.6 | 113.2 | 96.3 | 89.0 | 90.4 |
| 12.5° | 413.2 | 381.6 | 305.9 | 236.0 | 166.9 | 111.0 | 80.9 | 65.4 | 60.3 | 59.6 | 58.1 |
| 15° | 399.3 | 360.3 | 271.3 | 183.1 | 111.0 | 69.9 | 57.4 | 53.7 | 52.9 | 52.9 | 52.9 |
| 17.5° | 383.8 | 338.2 | 233.8 | 134.6 | 72.8 | 54.4 | 50.7 | 50.0 | 49.3 | 49.3 | 49.3 |
| 20° | 372.1 | 319.1 | 199.3 | 94.1 | 55.9 | 48.5 | 47.1 | 47.1 | 46.3 | 46.3 | 46.3 |
| 22.5° | 359.6 | 299.3 | 165.4 | 69.1 | 47.8 | 44.9 | 43.4 | 42.6 | 42.6 | 41.9 | 41.9 |
| 25° | 347.8 | 280.9 | 133.1 | 52.9 | 42.6 | 40.4 | 39.0 | 38.2 | 38.2 | 37.5 | 36.8 |
| 27.5° | 340.4 | 266.2 | 104.4 | 44.9 | 38.2 | 36.8 | 35.3 | 33.8 | 32.4 | 31.6 | 31.6 |
| 30° | 335.3 | 248.5 | 79.4 | 39.0 | 35.3 | 33.1 | 30.9 | 28.7 | 26.5 | 25.7 | 25.7 |
| 32.5° | 327.9 | 234.6 | 61.0 | 35.3 | 31.6 | 29.4 | 26.5 | 24.3 | 22.1 | 20.6 | 20.6 |
| 35° | 327.9 | 222.8 | 47.1 | 31.6 | 28.7 | 25.7 | 23.5 | 19.9 | 17.6 | 16.9 | 16.2 |
| 37.5° | 333.1 | 209.6 | 39.0 | 29.4 | 26.5 | 23.5 | 20.6 | 16.9 | 14.7 | 14.0 | 14.0 |
| 40° | 344.9 | 205.1 | 33.1 | 26.5 | 23.5 | 20.6 | 17.6 | 14.0 | 12.5 | 11.0 | 11.0 |
| 42.5° | 369.1 | 206.6 | 29.4 | 25.0 | 21.3 | 18.4 | 14.7 | 11.8 | 10.3 | 9.6 | 9.6 |
| 45° | 404.4 | 211.0 | 27.2 | 22.8 | 19.1 | 15.4 | 12.5 | 10.3 | 8.1 | 7.4 | 7.4 |
| 47.5° | 453.7 | 225.0 | 24.3 | 20.6 | 16.9 | 13.2 | 10.3 | 8.1 | 6.6 | 5.9 | 5.9 |
| 50° | 512.5 | 249.3 | 22.8 | 18.4 | 15.4 | 11.0 | 8.1 | 5.9 | 4.4 | 4.4 | 4.4 |
| 52.5° | 581.6 | 273.5 | 20.6 | 16.9 | 13.2 | 9.6 | 6.6 | 4.4 | 3.7 | 2.9 | 2.9 |
| 55° | 639.7 | 294.9 | 18.4 | 15.4 | 11.0 | 7.4 | 5.1 | 3.7 | 2.9 | 2.2 | 2.2 |
| 57.5° | 715.4 | 325.7 | 15.4 | 13.2 | 8.8 | 5.9 | 3.7 | 2.9 | 1.5 | 1.5 | 1.5 |
| 60° | 816.9 | 362.5 | 13.2 | 11.0 | 6.6 | 4.4 | 2.9 | 1.5 | 1.5 | 0.7 | 0.7 |
| 62.5° | 860.3 | 333.1 | 11.8 | 8.8 | 5.1 | 2.9 | 2.2 | 1.5 | 0.7 | 0.7 | 0.7 |
| 65° | 812.5 | 272.1 | 9.6 | 6.6 | 3.7 | 2.2 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 |
| 67.5° | 700.7 | 200.7 | 8.1 | 4.4 | 2.9 | 1.5 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70° | 571.3 | 148.5 | 5.9 | 2.9 | 1.5 | 1.5 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 395.6 | 89.7 | 4.4 | 2.2 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 75° | 153.7 | 35.3 | 3.7 | 2.2 | 1.5 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 43.4 | 12.5 | 2.9 | 1.5 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 17.6 | 6.6 | 2.2 | 1.5 | 1.5 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 |
| 82.5° | 11.0 | 3.7 | 1.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 7.4 | 2.2 | 1.5 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 |
| 87.5° | 1.5 | 1.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 |
| 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 |

REPORT NUMBER: SP1-2407-157-9

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

REPORT NUMBER: SP1-2407-157-9

Photopic Flux vs. Wavelength



Photopic Lumens: 4337.9

| 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 | 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)