

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: P437013

Luminaire Tested: **ISS-SA1A-740-U-T3-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437013
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-9)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISS-SA1A-740-U-T3-HSS
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 70 CRI, 4000K, 350mA LIGHTSQUARE WITH 16 LEDS AND TYPE III OPTICS
WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2051 lumens
Efficiency: N/A
Efficacy: 102.0 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

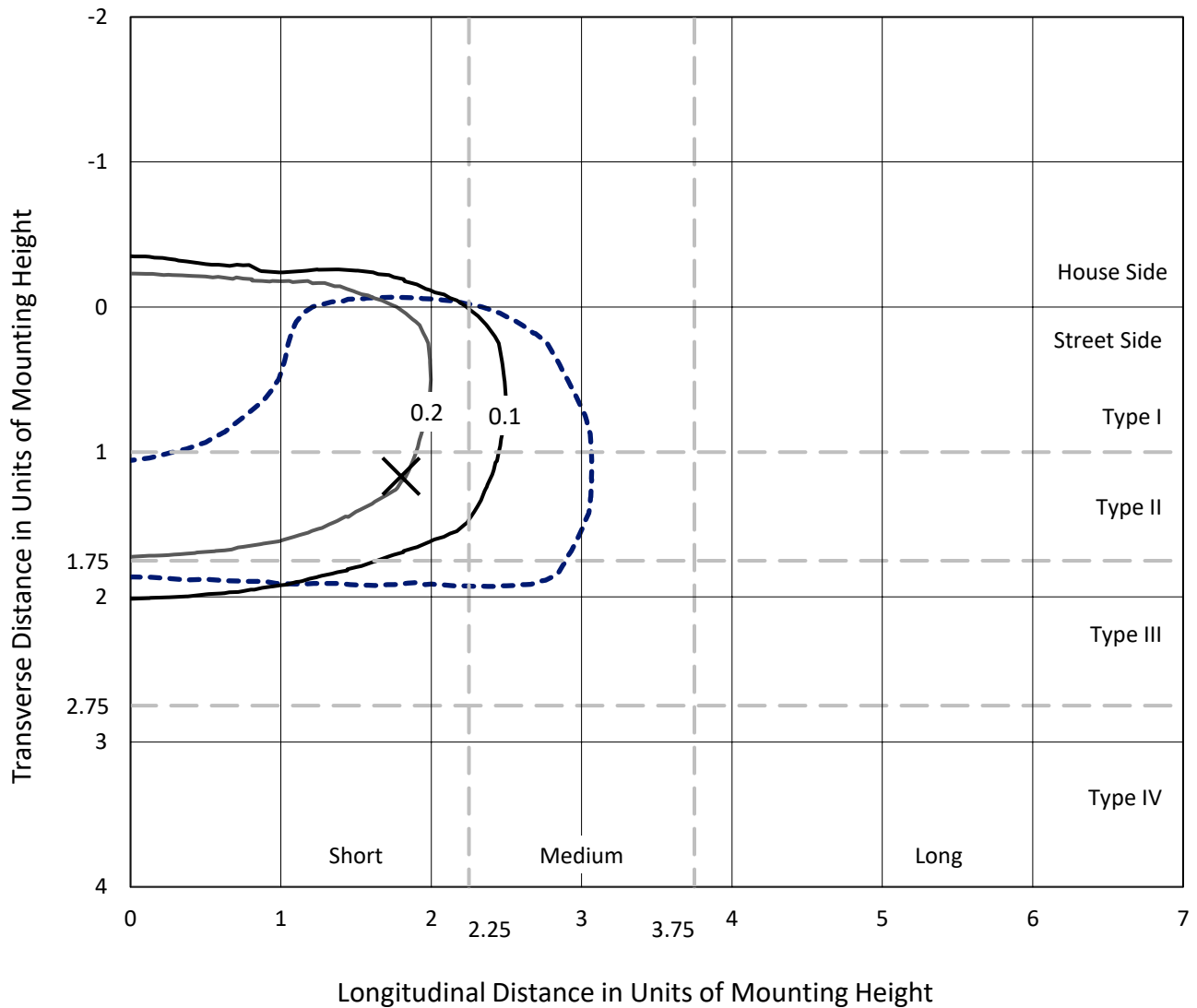
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P437013
 CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

Iso-Footcandle Lines of Horizontal Illumination

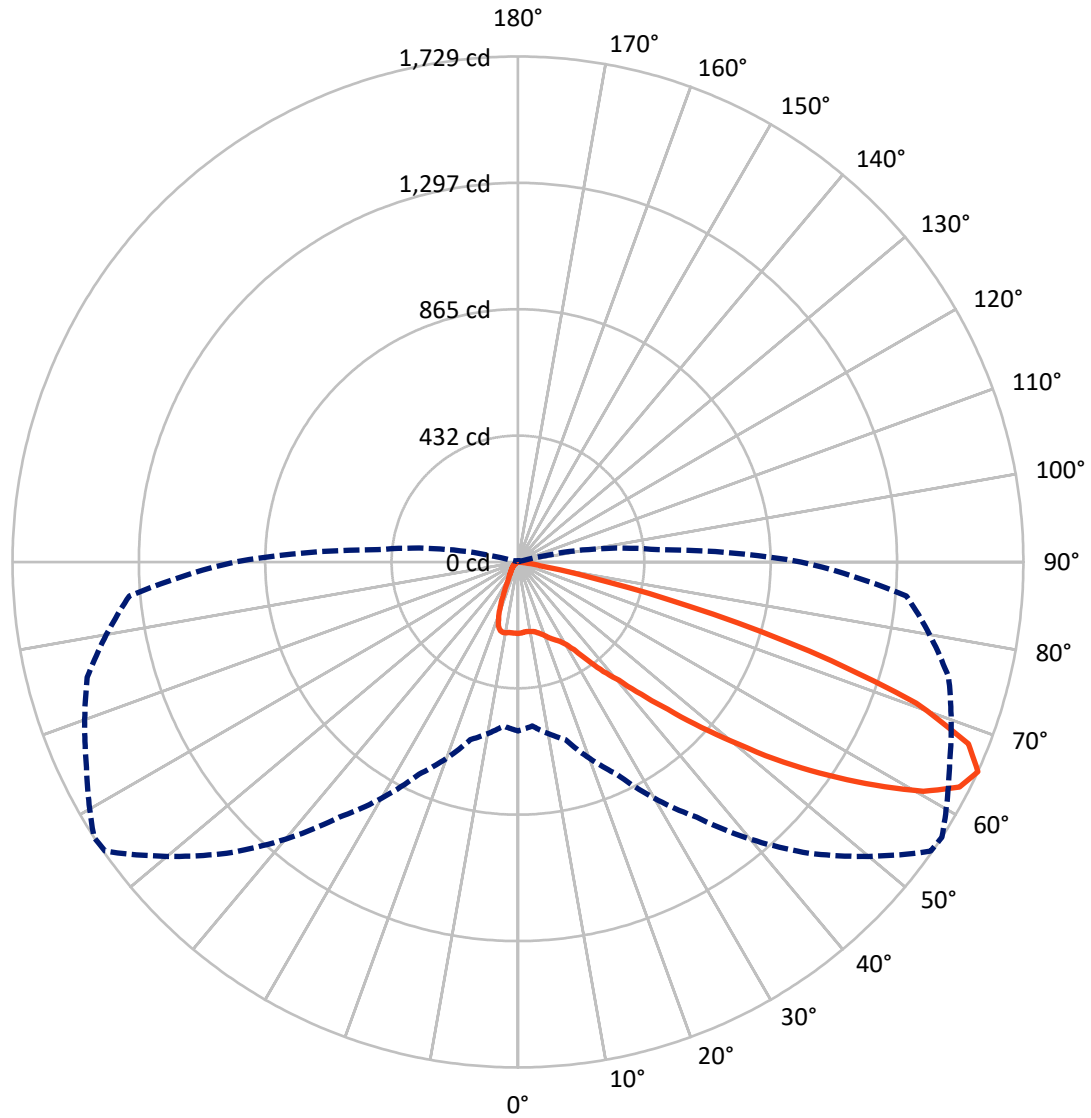
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.5 fc
 Type III - Short - N/A

REPORT NUMBER: P437013
CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P437013

CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

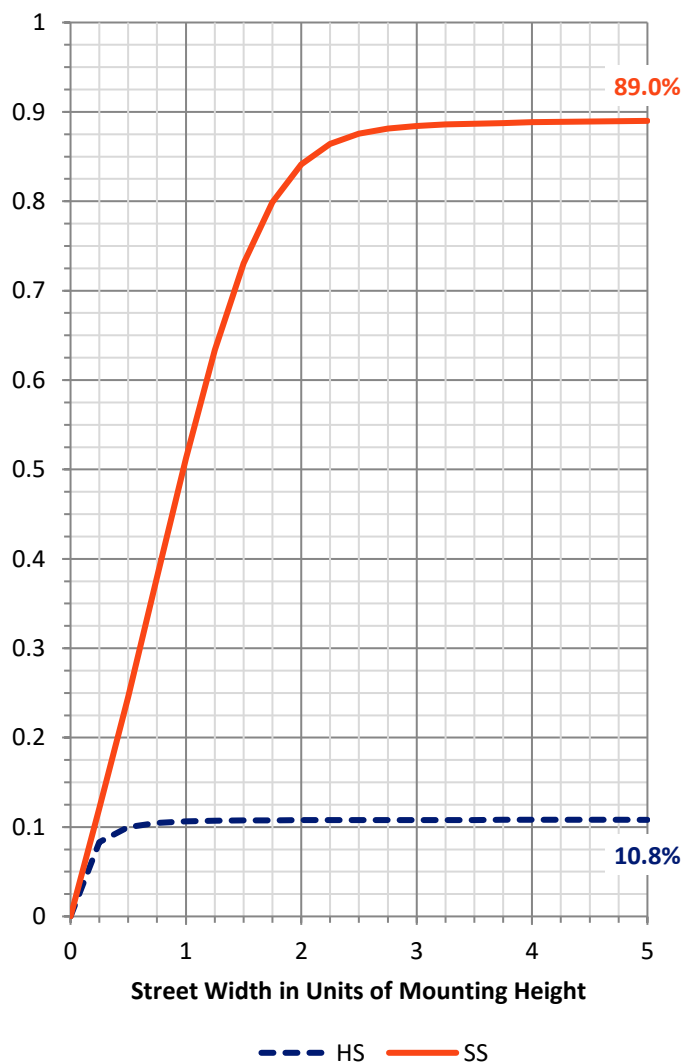
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 223.7 | 0.0 | 223.7 |
| | % Fixture | 10.9 | 0.0 | 10.9 |
| Street Side | Lumens | 1827.3 | 0.0 | 1827.3 |
| | % Fixture | 89.1 | 0.0 | 89.1 |
| Total | Lumens | 2051.0 | 0.0 | 2051.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 22.7 | 1.1 |
| 10°-20° | 61.4 | 3.0 |
| 20°-30° | 106.0 | 5.2 |
| 30°-40° | 187.8 | 9.2 |
| 40°-50° | 340.5 | 16.6 |
| 50°-60° | 573.6 | 28.0 |
| 60°-70° | 589.8 | 28.8 |
| 70°-80° | 163.4 | 8.0 |
| 80°-90° | 5.8 | 0.3 |
| 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° | 2051.0 | 100.0 |
| 0°-180° | 2051.0 | 100.0 |

Coefficient of Utilization

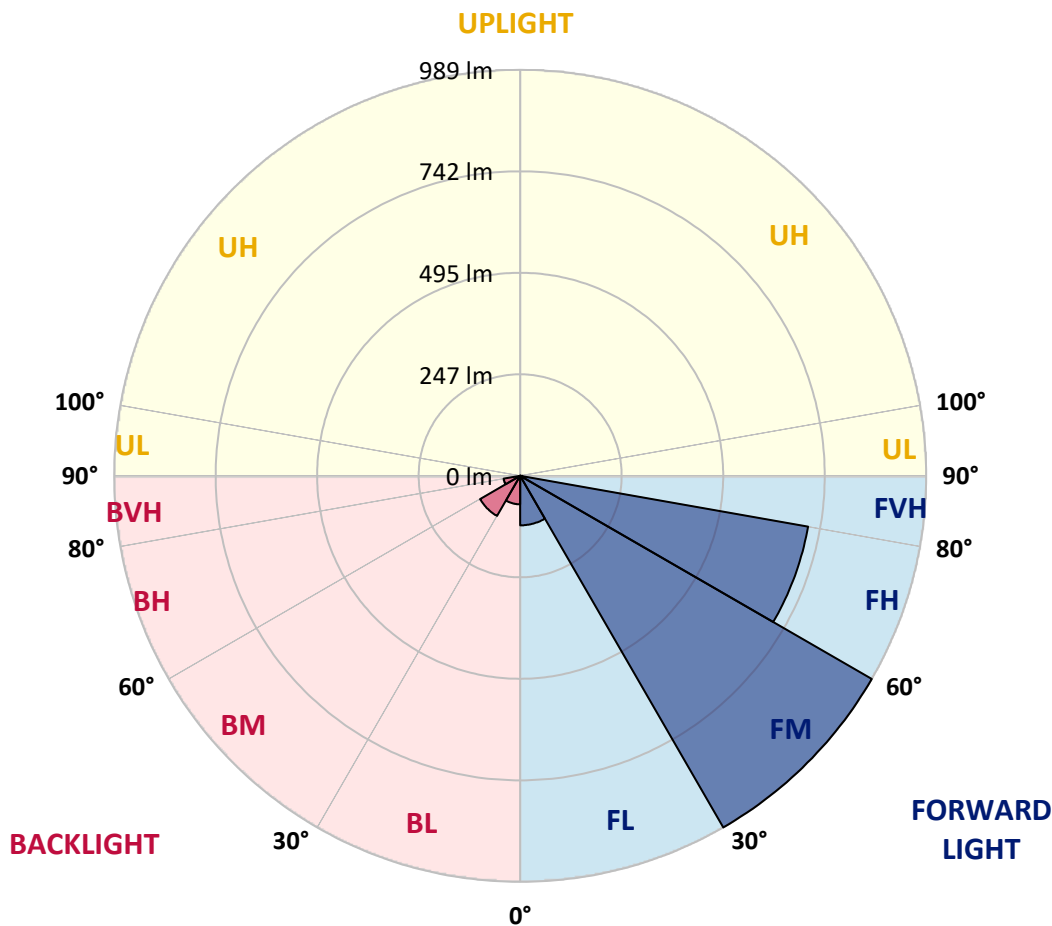


REPORT NUMBER: P437013
 CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 120.6 | 5.9 | | | |
| FM (30°-60°) | 989.1 | 48.2 | | | |
| FH (60°-80°) | 712.2 | 34.7 | | | G1/1800 |
| FVH (80°-90°) | 5.4 | 0.3 | | | G0/10 |
| BL (0°-30°) | 69.5 | 3.4 | B0/110 | | |
| BM (30°-60°) | 112.8 | 5.5 | B0/220 | | |
| BH (60°-80°) | 41.0 | 2.0 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.4 | 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: P437013
 CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 57° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 |
| 2.5° | 237.0 | 237.0 | 239.0 | 240.0 | 240.0 | 241.0 | 242.0 | 243.0 | 243.0 | 243.0 | 245.0 |
| 5° | 225.0 | 224.0 | 226.0 | 228.0 | 231.0 | 235.0 | 238.0 | 240.0 | 243.0 | 246.0 | 247.0 |
| 7.5° | 214.0 | 214.0 | 216.0 | 219.0 | 225.0 | 231.0 | 237.0 | 240.0 | 245.0 | 251.0 | 253.0 |
| 10° | 211.0 | 210.0 | 213.0 | 216.0 | 222.0 | 229.0 | 238.0 | 242.0 | 249.0 | 257.0 | 260.0 |
| 12.5° | 209.0 | 209.0 | 210.0 | 215.0 | 221.0 | 230.0 | 241.0 | 244.0 | 255.0 | 264.0 | 271.0 |
| 15° | 208.0 | 208.0 | 210.0 | 214.0 | 221.0 | 231.0 | 246.0 | 251.0 | 264.0 | 277.0 | 283.0 |
| 17.5° | 216.0 | 215.0 | 214.0 | 216.0 | 223.0 | 234.0 | 254.0 | 259.0 | 275.0 | 291.0 | 298.0 |
| 20° | 240.0 | 239.0 | 236.0 | 229.0 | 229.0 | 242.0 | 264.0 | 270.0 | 291.0 | 307.1 | 311.1 |
| 22.5° | 285.0 | 288.0 | 277.0 | 259.0 | 246.0 | 252.0 | 277.0 | 284.0 | 308.1 | 325.1 | 325.1 |
| 25° | 350.1 | 346.1 | 336.1 | 306.1 | 280.0 | 268.0 | 288.0 | 295.0 | 324.1 | 344.1 | 340.1 |
| 27.5° | 418.1 | 419.1 | 405.1 | 371.1 | 329.1 | 297.0 | 300.0 | 308.1 | 341.1 | 364.1 | 355.1 |
| 30° | 472.1 | 468.1 | 461.1 | 433.1 | 387.1 | 343.1 | 323.1 | 328.1 | 360.1 | 386.1 | 378.1 |
| 32.5° | 520.1 | 518.1 | 509.1 | 485.1 | 444.1 | 397.1 | 361.1 | 362.1 | 387.1 | 419.1 | 409.1 |
| 35° | 563.1 | 565.1 | 561.1 | 534.1 | 497.1 | 453.1 | 412.1 | 415.1 | 434.1 | 467.1 | 447.1 |
| 37.5° | 617.1 | 617.1 | 610.1 | 585.1 | 557.1 | 513.1 | 474.1 | 475.1 | 485.1 | 512.1 | 487.1 |
| 40° | 664.1 | 666.1 | 665.1 | 646.1 | 619.1 | 579.1 | 532.1 | 532.1 | 535.1 | 567.1 | 554.1 |
| 42.5° | 728.1 | 731.1 | 730.1 | 712.1 | 691.1 | 662.1 | 622.1 | 619.1 | 617.1 | 657.1 | 643.1 |
| 45° | 810.1 | 817.1 | 820.1 | 798.1 | 779.1 | 762.1 | 731.1 | 719.1 | 724.1 | 761.1 | 750.1 |
| 47.5° | 888.1 | 896.1 | 910.1 | 899.1 | 890.1 | 890.1 | 848.1 | 846.1 | 838.1 | 881.1 | 851.1 |
| 50° | 962.2 | 963.2 | 983.2 | 1000.2 | 1027.2 | 1022.2 | 994.2 | 982.2 | 970.2 | 999.2 | 945.2 |
| 52.5° | 1004.2 | 1016.2 | 1042.2 | 1091.2 | 1150.2 | 1174.2 | 1145.2 | 1138.2 | 1114.2 | 1110.2 | 1036.2 |
| 55° | 1043.2 | 1043.2 | 1084.2 | 1169.2 | 1269.2 | 1320.2 | 1296.2 | 1288.2 | 1240.2 | 1226.2 | 1130.2 |
| 57.5° | 1056.2 | 1052.2 | 1107.2 | 1215.2 | 1365.2 | 1454.2 | 1459.2 | 1441.2 | 1374.2 | 1331.2 | 1226.2 |
| 60° | 991.2 | 984.2 | 1042.2 | 1185.2 | 1391.2 | 1551.3 | 1605.3 | 1593.3 | 1490.2 | 1433.2 | 1327.2 |
| 62.5° | 804.1 | 813.1 | 887.1 | 1042.2 | 1299.2 | 1541.3 | 1702.3 | 1695.3 | 1576.3 | 1502.2 | 1367.2 |
| 65° | 578.1 | 563.1 | 629.1 | 801.1 | 1066.2 | 1409.2 | 1724.3 | 1729.3 | 1629.3 | 1525.3 | 1334.2 |
| 67.5° | 324.1 | 310.1 | 365.1 | 496.1 | 758.1 | 1156.2 | 1634.3 | 1662.3 | 1591.3 | 1468.2 | 1192.2 |
| 70° | 124.0 | 132.0 | 170.0 | 245.0 | 447.1 | 798.1 | 1406.2 | 1446.2 | 1395.2 | 1225.2 | 888.1 |
| 72.5° | 44.0 | 50.0 | 70.0 | 109.0 | 207.0 | 430.1 | 983.2 | 1043.2 | 1028.2 | 851.1 | 508.1 |
| 75° | 26.0 | 27.0 | 36.0 | 53.0 | 91.0 | 168.0 | 555.1 | 605.1 | 581.1 | 421.1 | 210.0 |
| 77.5° | 18.0 | 18.0 | 23.0 | 32.0 | 52.0 | 67.0 | 217.0 | 246.0 | 253.0 | 152.0 | 62.0 |
| 80° | 11.0 | 12.0 | 16.0 | 21.0 | 30.0 | 31.0 | 67.0 | 79.0 | 74.0 | 54.0 | 22.0 |
| 82.5° | 5.0 | 5.0 | 9.0 | 14.0 | 15.0 | 13.0 | 21.0 | 23.0 | 27.0 | 24.0 | 10.0 |
| 85° | 0.0 | 0.0 | 3.0 | 5.0 | 4.0 | 3.0 | 7.0 | 7.0 | 9.0 | 11.0 | 5.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| 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: P437013
 CATALOG NUMBER: ISS-SA1A-740-U-T3-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 | 244.0 |
| 2.5° | 245.0 | 246.0 | 245.0 | 244.0 | 244.0 | 243.0 | 243.0 | 243.0 | 243.0 | 243.0 | 243.0 |
| 5° | 247.0 | 248.0 | 247.0 | 245.0 | 243.0 | 241.0 | 239.0 | 239.0 | 239.0 | 239.0 | 241.0 |
| 7.5° | 253.0 | 253.0 | 251.0 | 247.0 | 242.0 | 240.0 | 236.0 | 235.0 | 233.0 | 232.0 | 233.0 |
| 10° | 262.0 | 262.0 | 258.0 | 252.0 | 244.0 | 236.0 | 229.0 | 219.0 | 213.0 | 209.0 | 208.0 |
| 12.5° | 271.0 | 270.0 | 265.0 | 257.0 | 244.0 | 226.0 | 203.0 | 178.0 | 163.0 | 152.0 | 150.0 |
| 15° | 283.0 | 282.0 | 274.0 | 260.0 | 238.0 | 200.0 | 155.0 | 121.0 | 103.0 | 95.0 | 94.0 |
| 17.5° | 296.0 | 294.0 | 283.0 | 262.0 | 219.0 | 151.0 | 102.0 | 79.0 | 72.0 | 70.0 | 70.0 |
| 20° | 310.1 | 307.1 | 290.0 | 259.0 | 181.0 | 103.0 | 71.0 | 66.0 | 65.0 | 64.0 | 64.0 |
| 22.5° | 321.1 | 316.1 | 295.0 | 244.0 | 135.0 | 71.0 | 63.0 | 62.0 | 61.0 | 60.0 | 60.0 |
| 25° | 333.1 | 325.1 | 299.0 | 211.0 | 89.0 | 61.0 | 59.0 | 58.0 | 56.0 | 55.0 | 55.0 |
| 27.5° | 347.1 | 335.1 | 305.1 | 166.0 | 62.0 | 55.0 | 53.0 | 52.0 | 49.0 | 47.0 | 47.0 |
| 30° | 365.1 | 350.1 | 308.1 | 121.0 | 52.0 | 48.0 | 46.0 | 44.0 | 40.0 | 38.0 | 38.0 |
| 32.5° | 394.1 | 381.1 | 302.0 | 81.0 | 47.0 | 43.0 | 40.0 | 36.0 | 32.0 | 30.0 | 29.0 |
| 35° | 431.1 | 413.1 | 281.0 | 57.0 | 42.0 | 38.0 | 33.0 | 28.0 | 25.0 | 24.0 | 24.0 |
| 37.5° | 472.1 | 448.1 | 249.0 | 46.0 | 38.0 | 33.0 | 28.0 | 23.0 | 20.0 | 19.0 | 19.0 |
| 40° | 530.1 | 493.1 | 205.0 | 40.0 | 33.0 | 28.0 | 23.0 | 19.0 | 17.0 | 16.0 | 16.0 |
| 42.5° | 606.1 | 550.1 | 155.0 | 37.0 | 30.0 | 24.0 | 19.0 | 16.0 | 14.0 | 13.0 | 13.0 |
| 45° | 691.1 | 610.1 | 113.0 | 33.0 | 26.0 | 20.0 | 15.0 | 13.0 | 11.0 | 10.0 | 10.0 |
| 47.5° | 776.1 | 653.1 | 78.0 | 30.0 | 22.0 | 17.0 | 13.0 | 10.0 | 8.0 | 8.0 | 7.0 |
| 50° | 850.1 | 676.1 | 56.0 | 26.0 | 20.0 | 14.0 | 10.0 | 8.0 | 7.0 | 6.0 | 6.0 |
| 52.5° | 915.2 | 686.1 | 43.0 | 23.0 | 17.0 | 12.0 | 8.0 | 7.0 | 6.0 | 6.0 | 6.0 |
| 55° | 970.2 | 678.1 | 34.0 | 20.0 | 15.0 | 10.0 | 7.0 | 6.0 | 5.0 | 5.0 | 5.0 |
| 57.5° | 1024.2 | 654.1 | 27.0 | 17.0 | 12.0 | 7.0 | 6.0 | 5.0 | 4.0 | 4.0 | 4.0 |
| 60° | 1052.2 | 623.1 | 22.0 | 14.0 | 10.0 | 6.0 | 5.0 | 4.0 | 4.0 | 3.0 | 3.0 |
| 62.5° | 1033.2 | 560.1 | 18.0 | 12.0 | 7.0 | 5.0 | 4.0 | 3.0 | 3.0 | 2.0 | 2.0 |
| 65° | 969.2 | 480.1 | 14.0 | 9.0 | 5.0 | 4.0 | 3.0 | 3.0 | 2.0 | 1.0 | 1.0 |
| 67.5° | 817.1 | 376.1 | 11.0 | 7.0 | 4.0 | 3.0 | 2.0 | 2.0 | 1.0 | 0.0 | 0.0 |
| 70° | 584.1 | 248.0 | 9.0 | 5.0 | 3.0 | 3.0 | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 72.5° | 337.1 | 120.0 | 7.0 | 3.0 | 2.0 | 2.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 75° | 126.0 | 42.0 | 6.0 | 3.0 | 2.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| 77.5° | 42.0 | 17.0 | 5.0 | 4.0 | 3.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 13.0 | 8.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 82.5° | 7.0 | 4.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 3.0 | 2.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 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: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

| | | | | | |
|---------------------------|---------|-----------|------|------|-------|
| CCT (K): | 3905 | CRI (Ra): | 71.2 | R9: | -29.7 |
| CIE u': | 0.2273 | R1: | 68.9 | R10: | 46.2 |
| CIE v': | 0.5024 | R2: | 77.0 | R11: | 68.8 |
| Duv: | -0.0008 | R3: | 84.0 | R12: | 45.6 |
| CIE x: | 0.3841 | R4: | 71.6 | R13: | 69.5 |
| CIE y: | 0.3774 | R5: | 68.9 | R14: | 90.7 |
| CIE z: | 0.2385 | R6: | 68.3 | | |
| Peak Wavelength (nm): | 443 | R7: | 78.7 | | |
| Dominant Wavelength (nm): | 579 | R8: | 52.2 | | |
| Purity: | 28.7 | | | | |
| Rf: | 71.7 | | | | |
| Rg: | 96.9 | | | | |



Test Conditions

Stabilization Time: 211M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.8/312%
 Sphere Temperature (°C): 24.1

REPORT NUMBER: SP1-2101-121-2

| 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 |

REPORT NUMBER: SP1-2101-121-2

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-2

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2304 | 0.0 | 490 | 19043 | 2.7 | 620 | 97577 | 25.4 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 4.8 | 625 | 90158 | 19.9 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 8.0 | 630 | 82240 | 14.9 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 13.3 | 635 | 74361 | 11.2 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 20.2 | 640 | 66994 | 8.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 28.5 | 645 | 60405 | 5.8 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 37.4 | 650 | 53806 | 3.9 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 44.9 | 655 | 47610 | 2.7 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 52.6 | 660 | 42018 | 1.8 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 58.4 | 665 | 36742 | 1.2 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.0 | 540 | 96845 | 63.1 | 670 | 32105 | 0.7 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.0 | 545 | 100829 | 67.1 | 675 | 27946 | 0.5 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 0.1 | 550 | 105648 | 71.8 | 680 | 24146 | 0.3 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 0.2 | 555 | 110017 | 75.1 | 685 | 21191 | 0.2 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 0.5 | 560 | 114586 | 77.9 | 690 | 18544 | 0.1 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 1.2 | 565 | 118987 | 79.1 | 695 | 16058 | 0.1 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 2.1 | 570 | 122326 | 79.5 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 2.9 | 575 | 125968 | 78.4 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 2.7 | 580 | 127613 | 75.8 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 2.0 | 585 | 129466 | 71.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 1.5 | 590 | 128813 | 66.6 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 1.3 | 595 | 126387 | 59.9 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 1.0 | 600 | 123477 | 53.2 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 1.1 | 605 | 118718 | 46.0 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 1.2 | 610 | 112091 | 38.5 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 1.7 | 615 | 105039 | 31.7 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

| 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 | 2304 | 0.0 | 490 | 19043 | 29.3 | 620 | 97577 | 1.2 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 43.0 | 625 | 90158 | 0.8 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 60.8 | 630 | 82240 | 0.5 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 81.1 | 635 | 74361 | 0.3 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 99.6 | 640 | 66994 | 0.2 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 113.9 | 645 | 60405 | 0.1 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 122.6 | 650 | 53806 | 0.1 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 125.0 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 123.1 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.1 | 535 | 94097 | 117.3 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 107.0 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.9 | 545 | 100829 | 96.7 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 3.0 | 550 | 105648 | 86.4 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 9.3 | 555 | 110017 | 75.2 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 23.0 | 560 | 114586 | 64.0 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 45.7 | 565 | 118987 | 53.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 75.5 | 570 | 122326 | 43.2 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 93.8 | 575 | 125968 | 34.3 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 79.3 | 580 | 127613 | 26.3 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 51.3 | 585 | 129466 | 19.8 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 35.6 | 590 | 128813 | 14.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 26.0 | 595 | 126387 | 10.1 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 19.3 | 600 | 123477 | 7.0 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 16.8 | 605 | 118718 | 4.7 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 17.7 | 610 | 112091 | 3.0 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 21.4 | 615 | 105039 | 1.9 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

| 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 | 2304 | 0.0 | 490 | 19043 | 15.8 | 620 | 97577 | 0.1 | 750 | 4830 | 0.0 | 880 | 3505 | 0.0 |
| 365 | 2150 | 0.0 | 495 | 26606 | 22.0 | 625 | 90158 | 0.0 | 755 | 4664 | 0.0 | 885 | 2991 | 0.0 |
| 370 | 2146 | 0.0 | 500 | 36376 | 29.2 | 630 | 82240 | 0.0 | 760 | 4006 | 0.0 | 890 | 2327 | 0.0 |
| 375 | 2332 | 0.0 | 505 | 47714 | 36.6 | 635 | 74361 | 0.0 | 765 | 3715 | 0.0 | 895 | 2775 | 0.0 |
| 380 | 2527 | 0.0 | 510 | 58741 | 42.2 | 640 | 66994 | 0.0 | 770 | 3696 | 0.0 | 900 | 2141 | 0.0 |
| 385 | 2304 | 0.0 | 515 | 68716 | 44.9 | 645 | 60405 | 0.0 | 775 | 3117 | 0.0 | 905 | 2421 | 0.0 |
| 390 | 2064 | 0.0 | 520 | 77136 | 44.9 | 650 | 53806 | 0.0 | 780 | 3062 | 0.0 | 910 | 2200 | 0.0 |
| 395 | 1856 | 0.0 | 525 | 83567 | 42.4 | 655 | 47610 | 0.0 | 785 | 2907 | 0.0 | 915 | 2716 | 0.0 |
| 400 | 1856 | 0.0 | 530 | 89283 | 38.6 | 660 | 42018 | 0.0 | 790 | 2655 | 0.0 | 920 | 2656 | 0.0 |
| 405 | 2374 | 0.0 | 535 | 94097 | 33.9 | 665 | 36742 | 0.0 | 795 | 2467 | 0.0 | 925 | 2671 | 0.0 |
| 410 | 4084 | 0.2 | 540 | 96845 | 28.3 | 670 | 32105 | 0.0 | 800 | 2609 | 0.0 | 930 | 3292 | 0.0 |
| 415 | 8543 | 0.6 | 545 | 100829 | 23.4 | 675 | 27946 | 0.0 | 805 | 2293 | 0.0 | 935 | 3188 | 0.0 |
| 420 | 18394 | 2.1 | 550 | 105648 | 19.0 | 680 | 24146 | 0.0 | 810 | 2188 | 0.0 | 940 | 1997 | 0.0 |
| 425 | 37987 | 5.9 | 555 | 110017 | 14.8 | 685 | 21191 | 0.0 | 815 | 2386 | 0.0 | 945 | 2623 | 0.0 |
| 430 | 67605 | 14.3 | 560 | 114586 | 11.3 | 690 | 18544 | 0.0 | 820 | 2712 | 0.0 | 950 | 2969 | 0.0 |
| 435 | 102160 | 27.3 | 565 | 118987 | 8.4 | 695 | 16058 | 0.0 | 825 | 2473 | 0.0 | 955 | 2277 | 0.0 |
| 440 | 135103 | 45.1 | 570 | 122326 | 6.0 | 700 | 14133 | 0.0 | 830 | 1969 | 0.0 | 960 | 4267 | 0.0 |
| 445 | 140126 | 55.3 | 575 | 125968 | 4.2 | 705 | 12309 | 0.0 | 835 | 1917 | 0.0 | 965 | 2034 | 0.0 |
| 450 | 102339 | 47.2 | 580 | 127613 | 2.9 | 710 | 11142 | 0.0 | 840 | 2248 | 0.0 | 970 | 3586 | 0.0 |
| 455 | 58751 | 30.8 | 585 | 129466 | 1.9 | 715 | 10143 | 0.0 | 845 | 2266 | 0.0 | 975 | 2505 | 0.0 |
| 460 | 36892 | 21.7 | 590 | 128813 | 1.3 | 720 | 9072 | 0.0 | 850 | 2558 | 0.0 | 980 | 2666 | 0.0 |
| 465 | 24637 | 16.1 | 595 | 126387 | 0.8 | 725 | 8130 | 0.0 | 855 | 2767 | 0.0 | 985 | 2934 | 0.0 |
| 470 | 16738 | 12.0 | 600 | 123477 | 0.5 | 730 | 7149 | 0.0 | 860 | 2826 | 0.0 | 990 | 4120 | 0.0 |
| 475 | 13456 | 10.3 | 605 | 118718 | 0.3 | 735 | 6311 | 0.0 | 865 | 2385 | 0.0 | 995 | 3858 | 0.0 |
| 480 | 13081 | 10.5 | 610 | 112091 | 0.2 | 740 | 5711 | 0.0 | 870 | 3194 | 0.0 | 1000 | 3405 | 0.0 |
| 485 | 14734 | 12.1 | 615 | 105039 | 0.1 | 745 | 5111 | 0.0 | 875 | 3189 | 0.0 | | | |

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 55 | CES51 = 86 | CES76 = 45 |
| CES02 = 61 | CES27 = 80 | CES52 = 87 | CES77 = 68 |
| CES03 = 30 | CES28 = 79 | CES53 = 74 | CES78 = 49 |
| CES04 = 70 | CES29 = 51 | CES54 = 81 | CES79 = 77 |
| CES05 = 47 | CES30 = 60 | CES55 = 80 | CES80 = 75 |
| CES06 = 50 | CES31 = 56 | CES56 = 69 | CES81 = 75 |
| CES07 = 40 | CES32 = 52 | CES57 = 67 | CES82 = 90 |
| CES08 = 39 | CES33 = 62 | CES58 = 69 | CES83 = 85 |
| CES09 = 29 | CES34 = 65 | CES59 = 86 | CES84 = 87 |
| CES10 = 74 | CES35 = 81 | CES60 = 91 | CES85 = 83 |
| CES11 = 57 | CES36 = 92 | CES61 = 85 | CES86 = 72 |
| CES12 = 63 | CES37 = 74 | CES62 = 81 | CES87 = 77 |
| CES13 = 42 | CES38 = 69 | CES63 = 72 | CES88 = 77 |
| CES14 = 74 | CES39 = 92 | CES64 = 69 | CES89 = 72 |
| CES15 = 71 | CES40 = 86 | CES65 = 64 | CES90 = 75 |
| CES16 = 46 | CES41 = 84 | CES66 = 63 | CES91 = 91 |
| CES17 = 49 | CES42 = 75 | CES67 = 60 | CES92 = 66 |
| CES18 = 56 | CES43 = 70 | CES68 = 67 | CES93 = 80 |
| CES19 = 72 | CES44 = 98 | CES69 = 77 | CES94 = 56 |
| CES20 = 65 | CES45 = 80 | CES70 = 57 | CES95 = 72 |
| CES21 = 86 | CES46 = 77 | CES71 = 53 | CES96 = 78 |
| CES22 = 78 | CES47 = 74 | CES72 = 84 | CES97 = 83 |
| CES23 = 92 | CES48 = 66 | CES73 = 47 | CES98 = 73 |
| CES24 = 91 | CES49 = 76 | CES74 = 96 | CES99 = 63 |
| CES25 = 72 | CES50 = 85 | CES75 = 52 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)