

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P628763

Luminaire Tested: GWS-SA1A-730-U-T3-W-GRSBK

Issue Date: 1/10/2023

Test Information

Test Method: LM-79-2019
Report Number: P628763
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-24)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: McGRAW-EDISON
Catalog Number: GWS-SA1A-730-U-T3-W-GRSBK
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS W/ FACTORY INSTALLED GLARE SHIELD, BK
Light Source: (16) 3000K CCT, 70 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1599.1 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B1 - U0 - G0

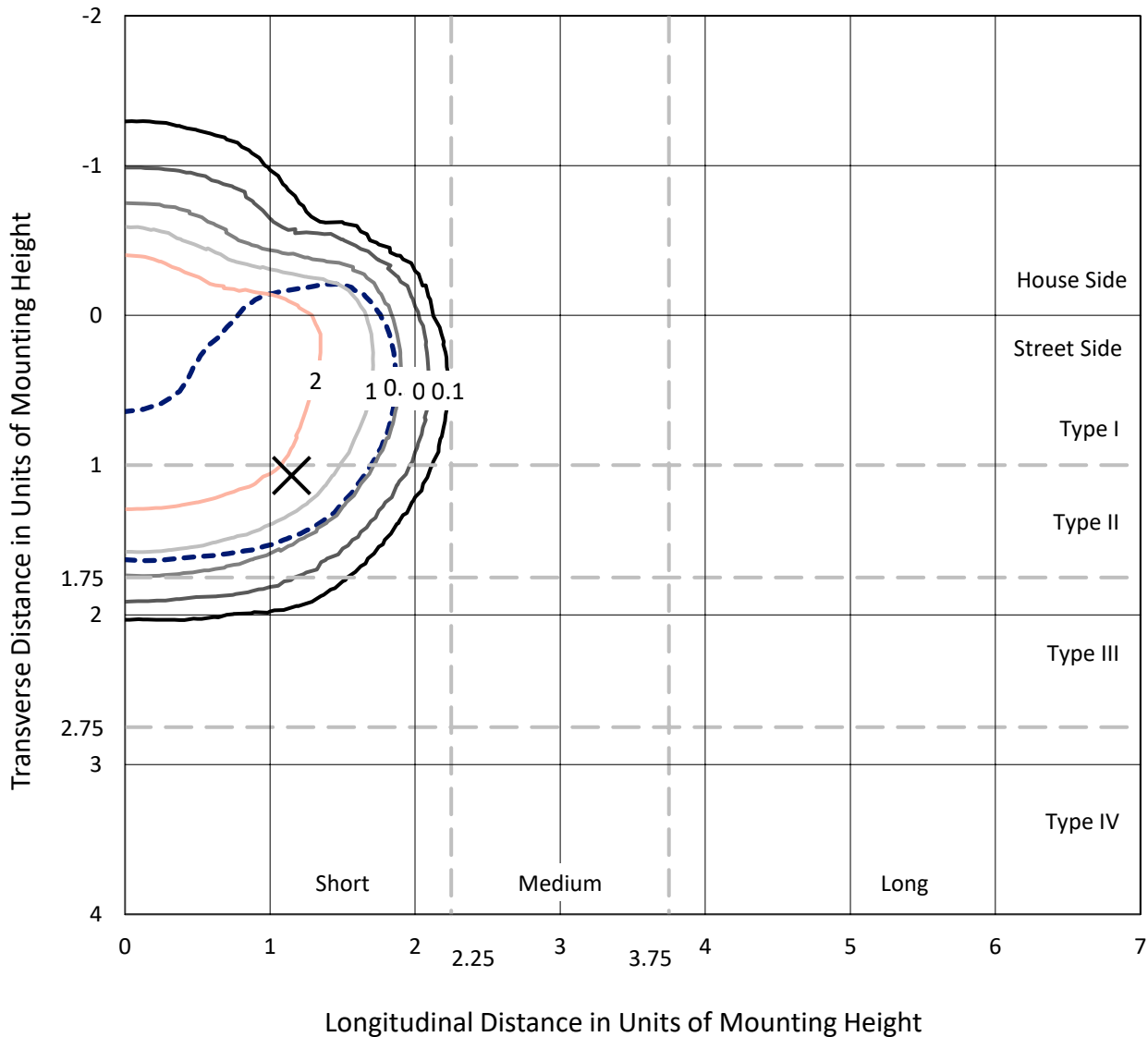
Input Watts (W): 19.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 0
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

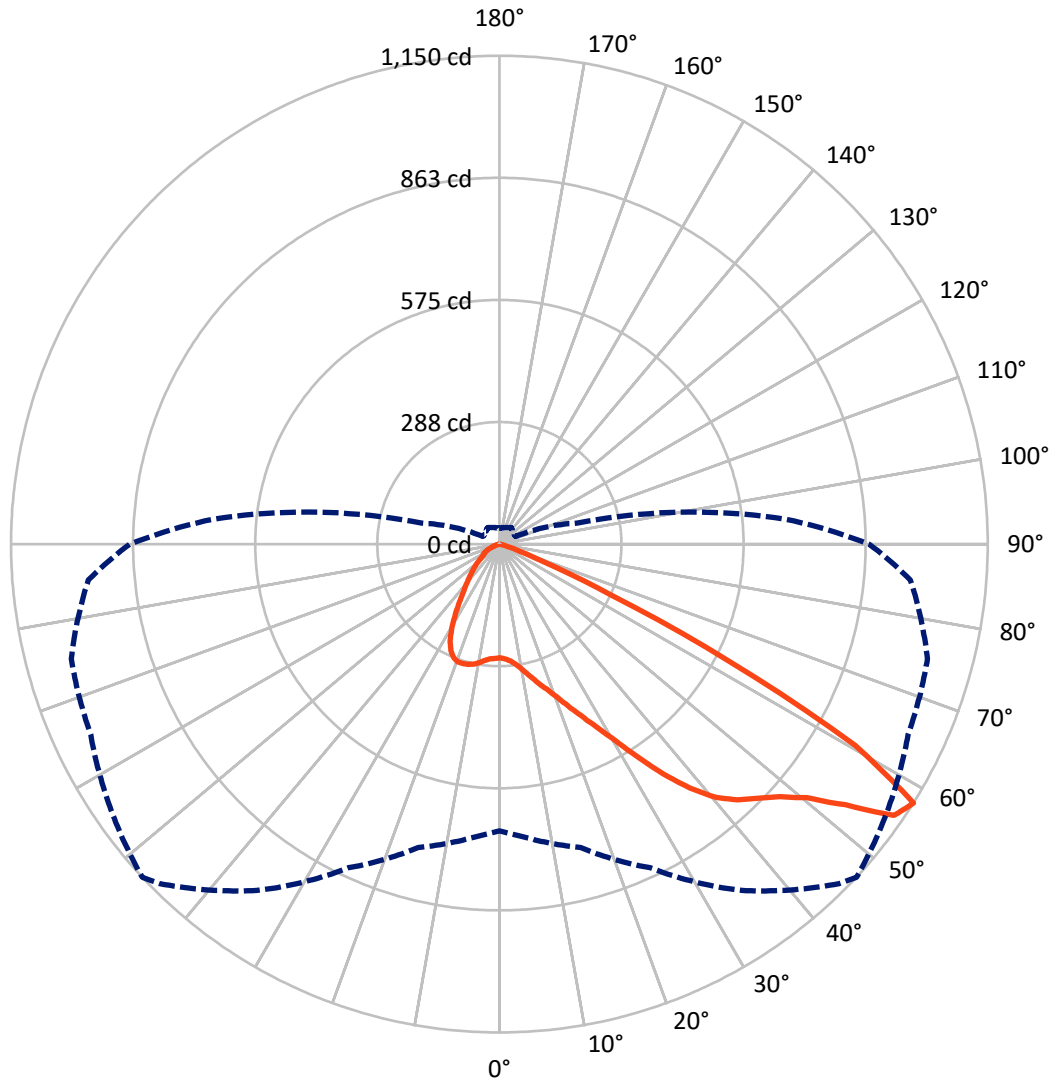
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.8 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 57.5-Deg Vertical

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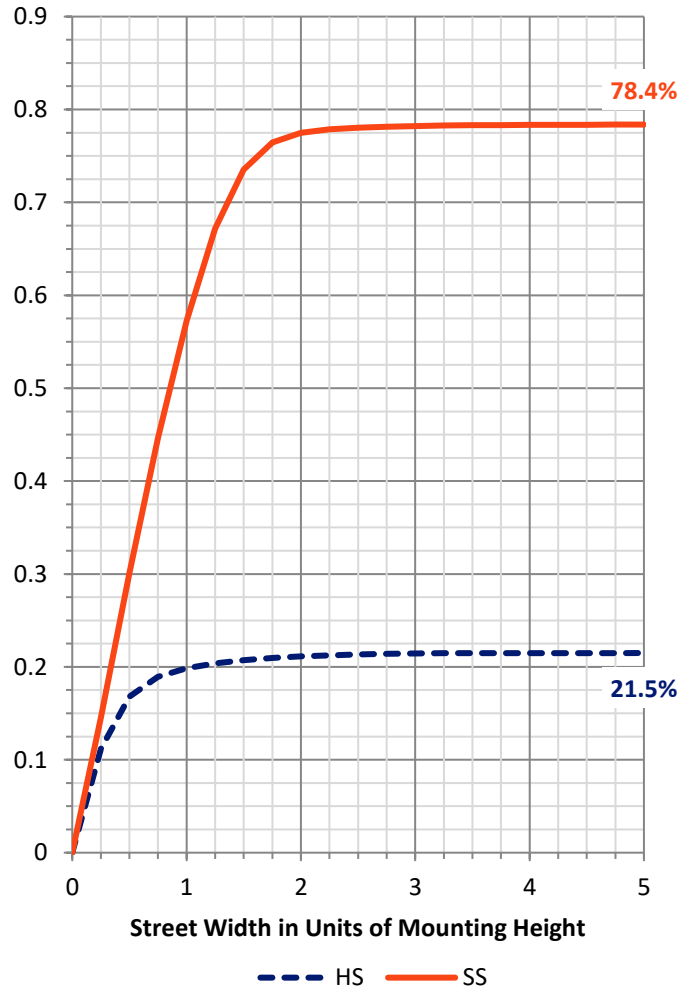
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 346.9 | 0.0 | 346.9 |
| | % Fixture | 21.7 | 0.0 | 21.7 |
| Street Side | Lumens | 1252.2 | 0.0 | 1252.2 |
| | % Fixture | 78.3 | 0.0 | 78.3 |
| Total | Lumens | 1599.1 | 0.0 | 1599.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 26.6 | 1.7 |
| 10°-20° | 89.9 | 5.6 |
| 20°-30° | 166.9 | 10.4 |
| 30°-40° | 267.1 | 16.7 |
| 40°-50° | 390.4 | 24.4 |
| 50°-60° | 481.9 | 30.1 |
| 60°-70° | 161.0 | 10.1 |
| 70°-80° | 15.0 | 0.9 |
| 80°-90° | 0.3 | 0.0 |
| 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° | 1599.1 | 100.0 |
| 0°-180° | 1599.1 | 100.0 |

Coefficient of Utilization



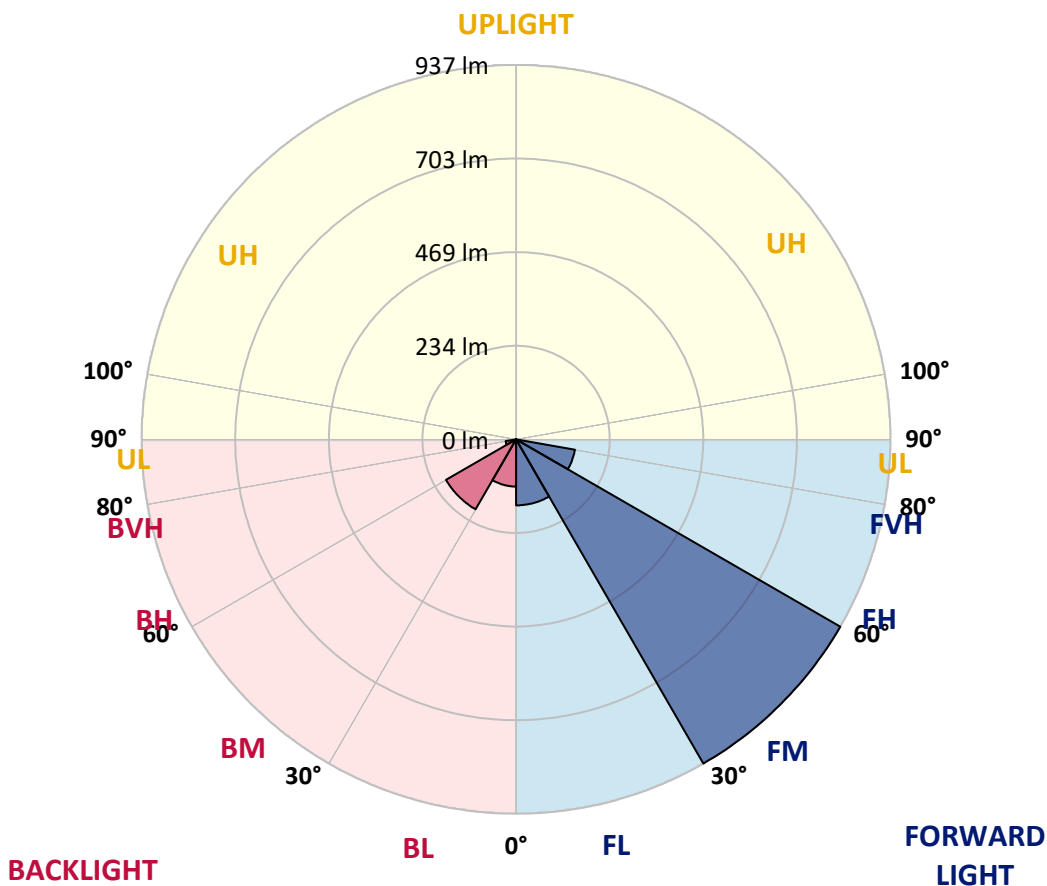
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CATALOG NUMBER: GWS-SA1A-730-U-T3-W-GRSBK

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 165.3 | 10.3 | | | |
| FM (30°-60°) | 937.1 | 58.6 | | | |
| FH (60°-80°) | 149.6 | 9.4 | | | G0/660 |
| FVH (80°-90°) | 0.2 | 0.0 | | | G0/10 |
| BL (0°-30°) | 118.1 | 7.4 | B1/500 | | |
| BM (30°-60°) | 202.4 | 12.7 | B0/220 | | |
| BH (60°-80°) | 26.4 | 1.6 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G0
 Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|
| 0° | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 |
| 2.5° | 270.5 | 270.3 | 270.1 | 271.2 | 270.8 | 270.7 | 271.0 | 271.0 | 271.0 | 269.9 | 267.7 |
| 5° | 277.0 | 277.0 | 276.8 | 277.9 | 277.0 | 276.4 | 276.6 | 276.6 | 275.9 | 273.8 | 271.0 |
| 7.5° | 287.2 | 286.8 | 286.4 | 287.6 | 286.6 | 286.4 | 286.8 | 285.7 | 284.4 | 281.1 | 277.2 |
| 10° | 301.8 | 301.8 | 301.3 | 302.4 | 301.7 | 301.3 | 301.3 | 300.5 | 298.1 | 292.9 | 287.2 |
| 12.5° | 322.1 | 321.2 | 319.9 | 318.9 | 318.6 | 318.4 | 318.6 | 317.4 | 314.8 | 308.2 | 300.2 |
| 15° | 344.2 | 343.4 | 341.4 | 339.9 | 337.9 | 337.5 | 338.6 | 337.7 | 335.1 | 326.0 | 314.7 |
| 17.5° | 372.0 | 372.9 | 367.8 | 364.6 | 358.7 | 358.3 | 358.7 | 360.1 | 358.3 | 346.6 | 330.1 |
| 20° | 395.8 | 396.5 | 392.6 | 390.4 | 385.0 | 382.6 | 383.3 | 385.8 | 383.7 | 370.0 | 347.0 |
| 22.5° | 421.2 | 422.1 | 418.1 | 413.4 | 411.0 | 411.0 | 413.8 | 417.1 | 414.3 | 396.3 | 366.3 |
| 25° | 451.7 | 452.4 | 449.1 | 442.9 | 438.7 | 444.0 | 448.1 | 457.0 | 452.4 | 427.9 | 389.1 |
| 27.5° | 486.6 | 486.7 | 481.9 | 475.6 | 473.4 | 483.4 | 487.5 | 501.2 | 499.4 | 463.4 | 413.2 |
| 30° | 523.9 | 524.1 | 522.9 | 518.7 | 516.6 | 529.8 | 535.4 | 555.2 | 553.9 | 507.4 | 446.1 |
| 32.5° | 562.7 | 562.7 | 564.7 | 564.3 | 566.8 | 588.3 | 597.2 | 619.8 | 618.5 | 561.2 | 486.9 |
| 35° | 601.7 | 601.8 | 605.4 | 614.3 | 624.3 | 652.9 | 664.6 | 692.1 | 689.1 | 625.6 | 539.1 |
| 37.5° | 646.0 | 644.2 | 649.0 | 662.4 | 684.6 | 717.7 | 728.8 | 755.0 | 751.7 | 691.5 | 607.2 |
| 40° | 699.5 | 696.1 | 696.1 | 711.7 | 737.0 | 775.0 | 784.5 | 797.5 | 786.2 | 744.8 | 674.1 |
| 42.5° | 758.5 | 755.4 | 751.3 | 765.0 | 786.2 | 815.9 | 823.7 | 820.2 | 810.9 | 795.1 | 750.2 |
| 45° | 818.3 | 813.5 | 816.3 | 824.6 | 836.9 | 851.0 | 853.9 | 837.6 | 833.3 | 837.8 | 813.1 |
| 47.5° | 863.8 | 860.4 | 867.3 | 879.0 | 889.0 | 891.1 | 889.0 | 866.4 | 866.0 | 881.8 | 856.7 |
| 50° | 879.0 | 879.4 | 898.3 | 923.9 | 940.1 | 941.7 | 939.0 | 913.0 | 909.4 | 914.1 | 880.3 |
| 52.5° | 880.5 | 882.0 | 909.6 | 958.5 | 1002.4 | 1022.5 | 1020.3 | 992.2 | 957.7 | 952.7 | 915.9 |
| 55° | 844.7 | 853.4 | 892.0 | 963.3 | 1056.8 | 1120.9 | 1128.3 | 1074.7 | 1023.4 | 1019.2 | 992.6 |
| 57.5° | 675.2 | 693.0 | 739.6 | 841.1 | 996.1 | 1131.1 | 1150.4 | 1111.8 | 1062.2 | 1044.0 | 972.0 |
| 60° | 403.6 | 425.7 | 470.4 | 595.0 | 758.1 | 929.7 | 962.9 | 968.3 | 945.5 | 892.9 | 745.7 |
| 62.5° | 173.2 | 171.3 | 226.5 | 321.9 | 450.9 | 590.9 | 605.9 | 629.3 | 649.2 | 594.2 | 452.6 |
| 65° | 59.4 | 64.6 | 89.8 | 145.2 | 225.7 | 274.4 | 287.7 | 308.7 | 336.9 | 278.1 | 165.8 |
| 67.5° | 36.8 | 39.0 | 51.8 | 85.8 | 121.8 | 119.9 | 114.0 | 110.6 | 107.7 | 73.7 | 45.5 |
| 70° | 26.7 | 28.6 | 36.4 | 59.0 | 81.9 | 57.5 | 49.9 | 40.5 | 44.9 | 41.4 | 32.3 |
| 72.5° | 18.0 | 19.5 | 25.1 | 35.8 | 42.0 | 28.0 | 26.0 | 29.5 | 35.6 | 34.0 | 26.4 |
| 75° | 10.8 | 11.7 | 14.3 | 17.5 | 17.1 | 14.5 | 14.7 | 20.8 | 27.3 | 25.4 | 18.7 |
| 77.5° | 7.4 | 7.8 | 9.5 | 11.3 | 8.4 | 4.5 | 4.1 | 5.8 | 9.3 | 9.3 | 6.3 |
| 80° | 1.9 | 2.4 | 2.4 | 1.5 | 1.3 | 1.1 | 1.1 | 1.7 | 2.6 | 1.9 | 0.9 |
| 82.5° | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 |
| 85° | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 |
| 87.5° | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 |
| 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: P628763

CATALOG NUMBER: GWS-SA1A-730-U-T3-W-GRSBK

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 | 267.7 |
| 2.5° | 269.0 | 266.8 | 268.2 | 267.9 | 269.0 | 269.4 | 267.7 | 267.3 | 267.5 | 265.3 | 264.5 |
| 5° | 271.6 | 269.0 | 269.7 | 269.0 | 270.3 | 271.4 | 270.8 | 271.6 | 272.5 | 270.8 | 270.1 |
| 7.5° | 277.2 | 274.6 | 274.4 | 273.3 | 275.1 | 275.9 | 275.7 | 277.7 | 279.6 | 278.5 | 277.3 |
| 10° | 286.8 | 283.3 | 282.9 | 282.0 | 282.5 | 283.1 | 281.1 | 281.4 | 283.1 | 281.8 | 281.2 |
| 12.5° | 298.7 | 294.4 | 293.5 | 291.3 | 291.3 | 288.5 | 284.0 | 283.1 | 284.4 | 283.5 | 282.5 |
| 15° | 311.5 | 305.7 | 304.3 | 300.4 | 296.7 | 291.5 | 286.8 | 285.7 | 286.6 | 285.5 | 284.8 |
| 17.5° | 325.8 | 319.3 | 314.5 | 307.6 | 299.4 | 293.3 | 288.1 | 285.7 | 284.2 | 282.0 | 281.8 |
| 20° | 339.9 | 331.4 | 323.2 | 312.2 | 301.5 | 292.2 | 283.7 | 277.3 | 272.0 | 268.6 | 267.3 |
| 22.5° | 356.2 | 343.6 | 330.4 | 315.0 | 299.6 | 285.5 | 270.5 | 259.7 | 250.4 | 247.3 | 245.8 |
| 25° | 373.7 | 357.4 | 337.7 | 317.6 | 293.3 | 270.7 | 250.2 | 234.3 | 222.0 | 217.9 | 216.3 |
| 27.5° | 393.0 | 370.5 | 345.1 | 317.1 | 280.3 | 249.5 | 222.4 | 202.5 | 190.5 | 186.8 | 188.1 |
| 30° | 417.5 | 387.6 | 354.4 | 311.3 | 260.8 | 219.8 | 188.1 | 171.3 | 162.2 | 158.7 | 158.9 |
| 32.5° | 450.2 | 412.1 | 367.9 | 299.1 | 235.8 | 186.0 | 158.2 | 145.9 | 139.8 | 135.1 | 134.8 |
| 35° | 497.0 | 449.4 | 380.6 | 279.4 | 205.3 | 155.9 | 135.7 | 126.0 | 117.5 | 112.1 | 113.1 |
| 37.5° | 553.0 | 496.4 | 387.4 | 252.8 | 171.2 | 132.5 | 118.8 | 109.0 | 99.3 | 91.3 | 92.3 |
| 40° | 619.5 | 557.8 | 386.9 | 217.9 | 140.0 | 116.6 | 104.7 | 93.2 | 81.1 | 73.9 | 74.6 |
| 42.5° | 693.5 | 615.9 | 374.8 | 181.0 | 116.0 | 103.6 | 91.1 | 76.7 | 65.0 | 60.5 | 60.7 |
| 45° | 757.8 | 663.1 | 353.6 | 142.8 | 97.6 | 91.0 | 77.0 | 62.2 | 57.0 | 53.8 | 53.6 |
| 47.5° | 805.3 | 697.6 | 323.4 | 112.3 | 82.8 | 79.5 | 63.3 | 55.7 | 51.6 | 49.0 | 48.6 |
| 50° | 831.8 | 709.7 | 290.0 | 88.0 | 70.0 | 67.4 | 56.6 | 50.5 | 47.7 | 46.0 | 45.7 |
| 52.5° | 867.5 | 724.2 | 266.0 | 69.4 | 58.7 | 55.1 | 52.2 | 47.0 | 45.1 | 43.8 | 43.3 |
| 55° | 923.9 | 752.2 | 245.2 | 55.1 | 48.8 | 48.1 | 49.2 | 44.9 | 43.8 | 41.8 | 41.0 |
| 57.5° | 870.8 | 675.7 | 190.5 | 42.7 | 41.2 | 44.0 | 47.5 | 42.9 | 40.1 | 38.2 | 37.5 |
| 60° | 612.8 | 449.2 | 95.8 | 34.3 | 36.8 | 41.2 | 44.7 | 38.8 | 36.0 | 36.4 | 36.0 |
| 62.5° | 337.9 | 224.8 | 43.1 | 28.8 | 31.9 | 36.4 | 38.2 | 33.6 | 31.7 | 34.9 | 35.5 |
| 65° | 110.5 | 76.5 | 24.9 | 22.3 | 25.2 | 29.7 | 33.0 | 31.9 | 31.6 | 35.3 | 36.4 |
| 67.5° | 34.0 | 25.2 | 16.9 | 16.0 | 17.5 | 21.9 | 27.8 | 34.5 | 37.1 | 38.2 | 38.8 |
| 70° | 25.4 | 19.9 | 14.5 | 13.6 | 14.3 | 16.7 | 23.6 | 28.8 | 27.1 | 27.3 | 26.9 |
| 72.5° | 20.4 | 15.8 | 12.4 | 11.9 | 11.9 | 11.5 | 12.4 | 15.6 | 17.6 | 18.6 | 18.6 |
| 75° | 14.3 | 11.1 | 9.5 | 8.7 | 6.9 | 5.6 | 5.0 | 5.0 | 4.5 | 4.3 | 4.1 |
| 77.5° | 4.8 | 4.1 | 3.7 | 3.0 | 2.0 | 1.7 | 1.5 | 1.3 | 0.9 | 0.6 | 0.4 |
| 80° | 0.7 | 0.6 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| 82.5° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.4 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 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 |

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Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2993
 CIE u': 0.2508
 CIE v': 0.5215
 Duv: 0.0000
 CIE x: 0.4374
 CIE y: 0.4043
 CIE z: 0.1583
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 53

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.8 | | |
| R1: | 67.5 | R9: | -38.3 |
| R2: | 82.9 | R10: | 62.5 |
| R3: | 94.7 | R11: | 63.7 |
| R4: | 67.7 | R12: | 57.8 |
| R5: | 67.9 | R13: | 70.4 |
| R6: | 77.6 | R14: | 97.3 |
| R7: | 76.0 | | |
| R8: | 40.5 | | |

Rf: 75.7
 Rg: 93.9



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-2-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

REPORT NUMBER: SP1-1908-441-2-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-2-R4

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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
 $CIE R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

Color Rendition by Hue-Angle Bin



REPORT NUMBER: SP1-1908-441-2-R4

TM-30-18

Measure Comparisons



(END OF REPORT)