

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: P436980

Luminaire Tested: **ISS-SA1A-730-U-T4W**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P436980
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-12)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISS-SA1A-730-U-T4W
Description: IMPACT ELITE LED QUARTER SPHERE LUMINAIRE
(1) 70 CRI, 3000K, 350mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2532 lumens
Efficiency: N/A
Efficacy: 126.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

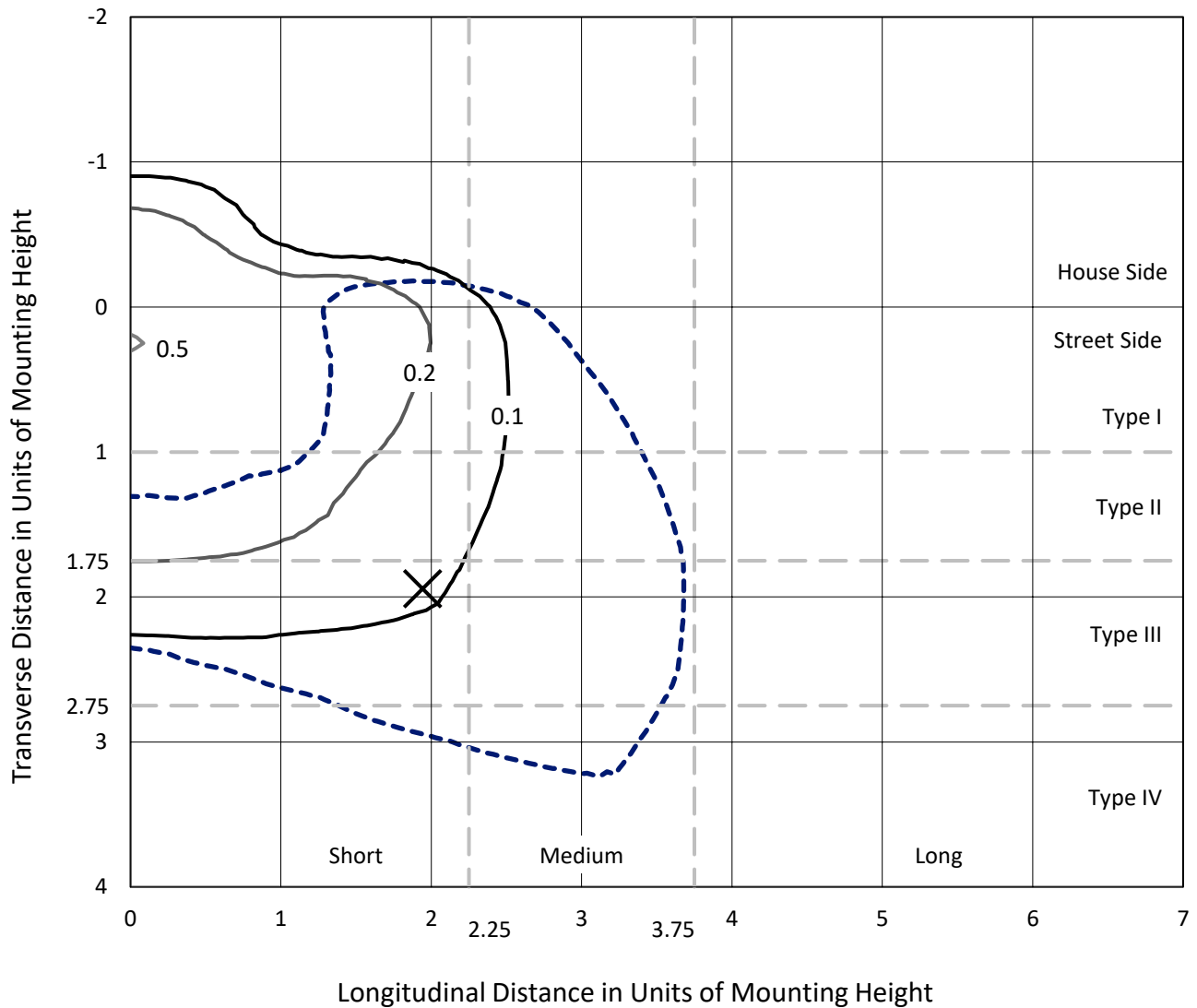
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

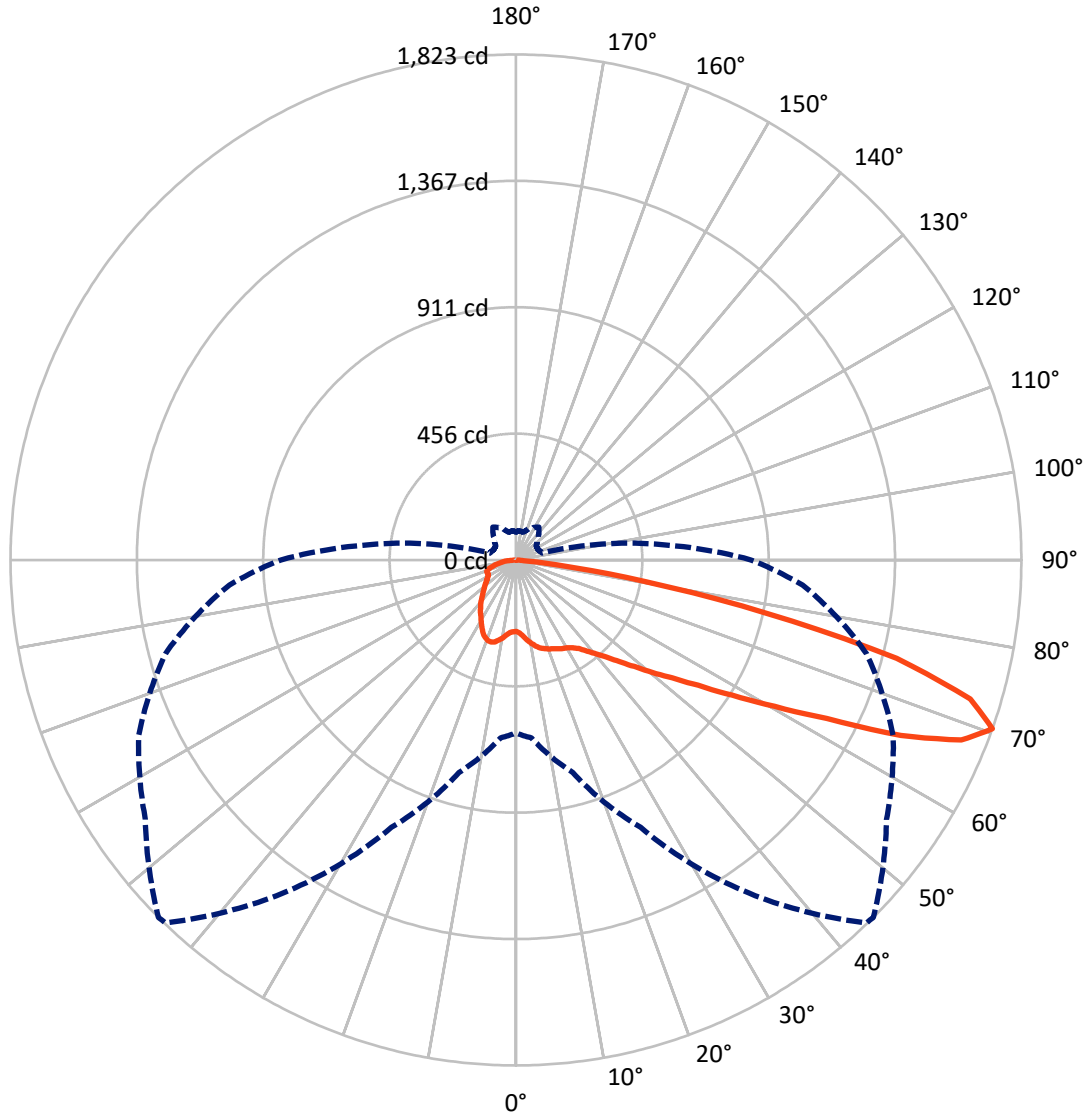
× Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P436980
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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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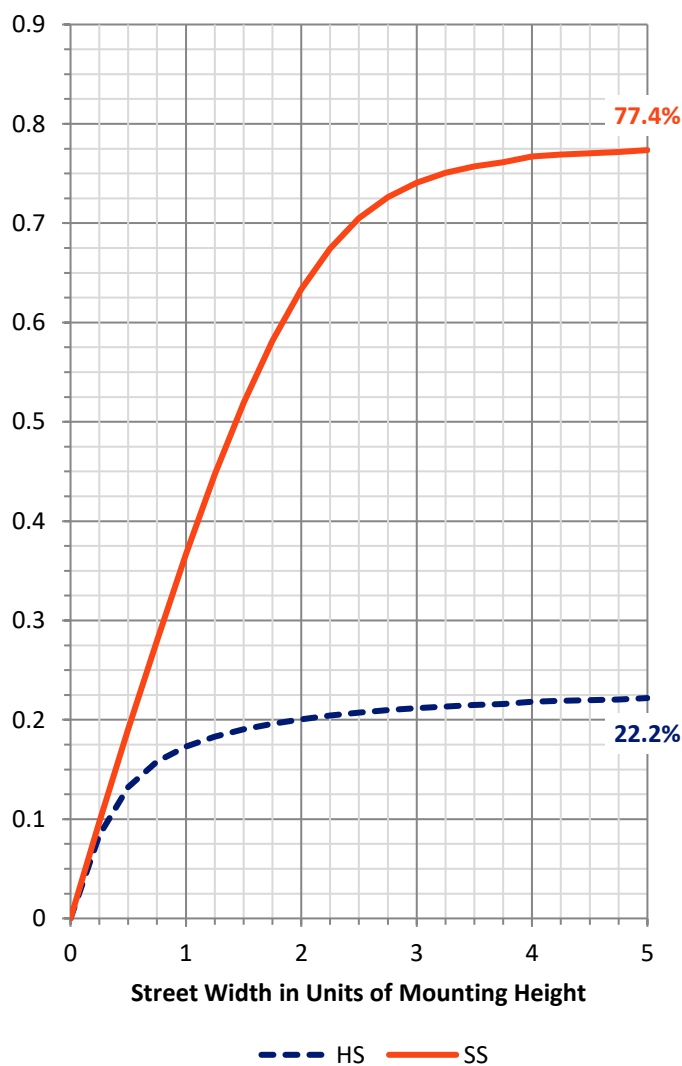
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 571.7 | 0.0 | 571.7 |
| | % Fixture | 22.6 | 0.0 | 22.6 |
| Street Side | Lumens | 1960.3 | 0.0 | 1960.3 |
| | % Fixture | 77.4 | 0.0 | 77.4 |
| Total | Lumens | 2532.0 | 0.0 | 2532.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 26.6 | 1.0 |
| 10°-20° | 88.9 | 3.5 |
| 20°-30° | 150.6 | 5.9 |
| 30°-40° | 217.7 | 8.6 |
| 40°-50° | 314.0 | 12.4 |
| 50°-60° | 515.0 | 20.3 |
| 60°-70° | 737.8 | 29.1 |
| 70°-80° | 438.5 | 17.3 |
| 80°-90° | 42.9 | 1.7 |
| 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° | 2532.0 | 100.0 |
| 0°-180° | 2532.0 | 100.0 |

Coefficient of Utilization



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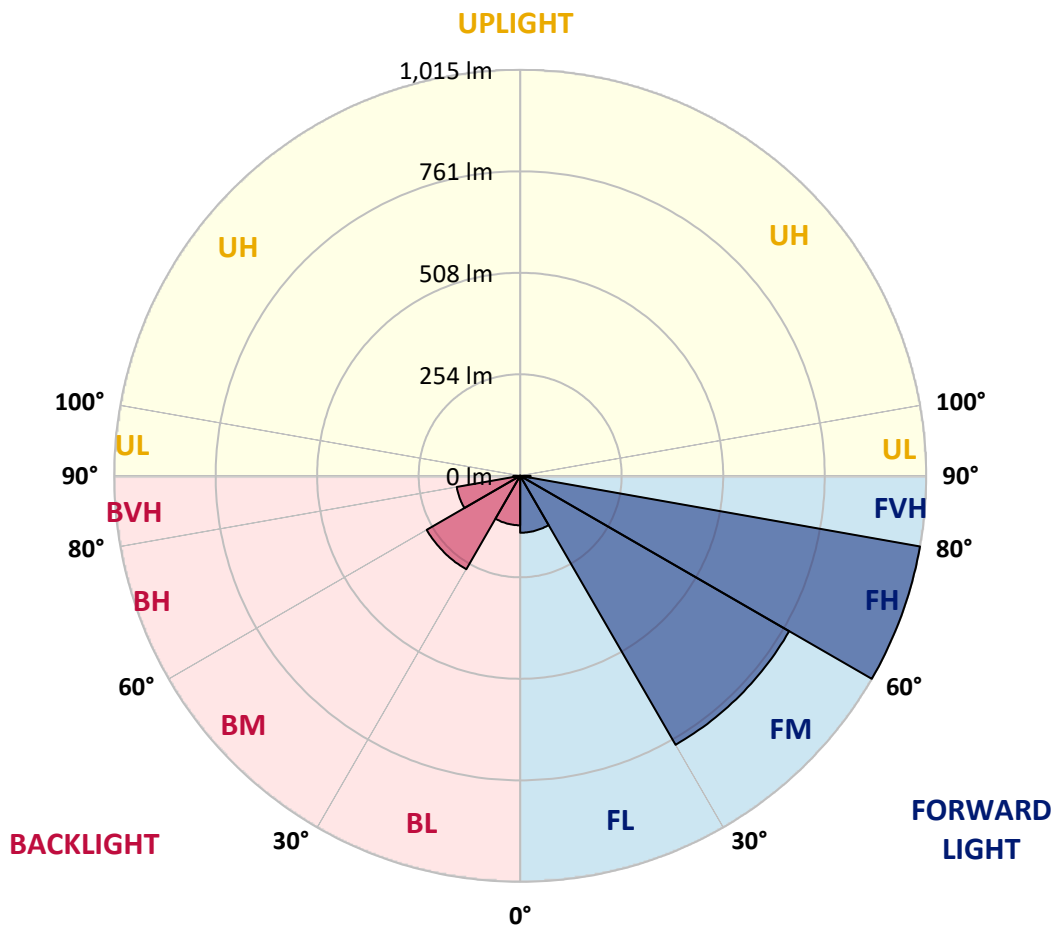
CATALOG NUMBER: ISS-SA1A-730-U-T4W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 142.4 | 5.6 | | | |
| FM (30°-60°) | 776.8 | 30.7 | | | |
| FH (60°-80°) | 1015.3 | 40.1 | | | G1/1800 |
| FVH (80°-90°) | 25.8 | 1.0 | | | G1/100 |
| BL (0°-30°) | 123.7 | 4.9 | B1/500 | | |
| BM (30°-60°) | 269.9 | 10.7 | B1/1000 | | |
| BH (60°-80°) | 161.0 | 6.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 17.1 | 0.7 | | | 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 IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 |
| 2.5° | 270.5 | 270.5 | 269.6 | 268.7 | 266.9 | 265.0 | 264.1 | 261.4 | 261.4 | 260.5 | 258.7 |
| 5° | 290.5 | 288.7 | 287.8 | 284.2 | 281.4 | 276.9 | 276.0 | 269.6 | 265.9 | 263.2 | 261.4 |
| 7.5° | 311.5 | 312.4 | 308.8 | 304.2 | 297.8 | 291.5 | 291.5 | 284.2 | 277.8 | 271.4 | 265.9 |
| 10° | 331.5 | 331.5 | 327.0 | 321.5 | 315.1 | 306.9 | 305.1 | 296.9 | 289.6 | 281.4 | 275.1 |
| 12.5° | 347.0 | 346.1 | 340.6 | 335.2 | 327.0 | 320.6 | 318.8 | 308.8 | 302.4 | 292.4 | 283.3 |
| 15° | 357.9 | 357.9 | 352.5 | 344.3 | 336.1 | 329.7 | 329.7 | 322.4 | 313.3 | 303.3 | 292.4 |
| 17.5° | 364.3 | 363.4 | 358.8 | 349.7 | 342.5 | 337.0 | 336.1 | 330.6 | 325.1 | 315.1 | 301.5 |
| 20° | 364.3 | 362.5 | 358.8 | 351.6 | 345.2 | 341.5 | 342.5 | 337.9 | 334.3 | 322.4 | 311.5 |
| 22.5° | 363.4 | 362.5 | 356.1 | 350.7 | 348.8 | 347.9 | 347.0 | 345.2 | 338.8 | 329.7 | 320.6 |
| 25° | 371.6 | 370.7 | 363.4 | 356.1 | 352.5 | 352.5 | 354.3 | 350.7 | 347.0 | 337.9 | 329.7 |
| 27.5° | 394.4 | 390.7 | 380.7 | 367.0 | 361.6 | 360.7 | 361.6 | 357.0 | 354.3 | 347.9 | 340.6 |
| 30° | 432.6 | 430.8 | 415.3 | 389.8 | 375.2 | 368.0 | 367.0 | 366.1 | 362.5 | 357.9 | 351.6 |
| 32.5° | 482.7 | 480.9 | 457.2 | 424.4 | 393.5 | 377.1 | 378.0 | 373.4 | 373.4 | 367.0 | 361.6 |
| 35° | 544.6 | 541.0 | 517.3 | 470.9 | 420.8 | 393.5 | 391.6 | 385.3 | 386.2 | 375.2 | 369.8 |
| 37.5° | 599.3 | 595.7 | 572.9 | 518.2 | 455.4 | 419.9 | 417.1 | 401.7 | 391.6 | 378.0 | 378.9 |
| 40° | 645.7 | 646.7 | 630.3 | 575.6 | 500.0 | 449.0 | 444.5 | 414.4 | 402.6 | 390.7 | 396.2 |
| 42.5° | 693.1 | 695.8 | 684.9 | 626.6 | 545.6 | 480.9 | 479.1 | 436.3 | 426.2 | 417.1 | 429.9 |
| 45° | 739.6 | 745.0 | 735.9 | 681.3 | 596.6 | 529.2 | 521.9 | 471.8 | 465.4 | 459.9 | 498.2 |
| 47.5° | 780.5 | 782.4 | 781.5 | 738.6 | 653.0 | 583.8 | 573.8 | 518.2 | 526.4 | 541.0 | 604.8 |
| 50° | 831.5 | 834.3 | 819.7 | 796.0 | 729.5 | 645.7 | 636.6 | 576.5 | 610.2 | 657.6 | 754.1 |
| 52.5° | 907.1 | 910.8 | 869.8 | 855.2 | 824.3 | 720.4 | 706.8 | 662.1 | 735.0 | 806.0 | 920.8 |
| 55° | 950.9 | 945.4 | 927.2 | 929.0 | 911.7 | 809.7 | 797.8 | 766.9 | 870.7 | 955.4 | 1109.3 |
| 57.5° | 979.1 | 976.4 | 987.3 | 1011.9 | 1011.9 | 924.4 | 919.9 | 906.2 | 1016.4 | 1118.4 | 1258.7 |
| 60° | 1024.6 | 1030.1 | 1055.6 | 1104.8 | 1131.2 | 1074.7 | 1072.0 | 1074.7 | 1180.4 | 1232.3 | 1365.3 |
| 62.5° | 1052.9 | 1064.7 | 1129.4 | 1214.1 | 1269.6 | 1276.0 | 1258.7 | 1256.9 | 1307.9 | 1327.0 | 1435.4 |
| 65° | 1002.8 | 1021.9 | 1127.5 | 1265.1 | 1435.4 | 1538.3 | 1525.6 | 1415.4 | 1413.5 | 1412.6 | 1421.7 |
| 67.5° | 870.7 | 885.3 | 1038.3 | 1242.3 | 1524.6 | 1739.6 | 1732.3 | 1556.5 | 1513.7 | 1419.9 | 1294.2 |
| 70° | 623.9 | 643.9 | 793.3 | 1063.8 | 1467.3 | 1819.7 | 1822.5 | 1631.2 | 1501.0 | 1308.8 | 1037.4 |
| 72.5° | 386.2 | 387.1 | 483.6 | 757.8 | 1242.3 | 1702.3 | 1713.2 | 1557.4 | 1350.7 | 1090.2 | 733.2 |
| 75° | 119.3 | 129.3 | 204.9 | 397.1 | 840.7 | 1384.4 | 1418.1 | 1294.2 | 1081.1 | 754.1 | 401.7 |
| 77.5° | 59.2 | 61.0 | 73.8 | 145.7 | 404.4 | 896.2 | 921.7 | 864.3 | 683.1 | 365.2 | 168.5 |
| 80° | 33.7 | 35.5 | 45.5 | 64.7 | 154.8 | 445.4 | 466.3 | 455.4 | 276.9 | 132.1 | 72.0 |
| 82.5° | 16.4 | 17.3 | 22.8 | 32.8 | 65.6 | 133.0 | 149.4 | 163.9 | 105.7 | 70.1 | 39.2 |
| 85° | 4.6 | 4.6 | 6.4 | 10.9 | 17.3 | 27.3 | 27.3 | 30.1 | 37.3 | 35.5 | 19.1 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 0.9 | 1.8 | 0.9 | 1.8 | 2.7 | 2.7 |
| 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° | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 | 257.8 |
| 2.5° | 258.7 | 258.7 | 256.8 | 257.8 | 257.8 | 258.7 | 258.7 | 259.6 | 260.5 | 261.4 | 261.4 |
| 5° | 260.5 | 259.6 | 258.7 | 259.6 | 260.5 | 262.3 | 265.0 | 267.8 | 269.6 | 272.3 | 271.4 |
| 7.5° | 265.9 | 263.2 | 264.1 | 264.1 | 267.8 | 271.4 | 276.9 | 280.5 | 284.2 | 286.0 | 286.0 |
| 10° | 272.3 | 270.5 | 269.6 | 273.2 | 276.9 | 284.2 | 288.7 | 294.2 | 296.9 | 301.5 | 299.6 |
| 12.5° | 281.4 | 276.9 | 277.8 | 282.3 | 289.6 | 295.1 | 298.7 | 303.3 | 306.0 | 309.7 | 308.8 |
| 15° | 288.7 | 286.0 | 286.9 | 294.2 | 301.5 | 305.1 | 306.9 | 308.8 | 309.7 | 312.4 | 313.3 |
| 17.5° | 297.8 | 296.9 | 297.8 | 304.2 | 308.8 | 309.7 | 308.8 | 306.9 | 306.0 | 308.8 | 307.8 |
| 20° | 307.8 | 306.9 | 307.8 | 312.4 | 310.6 | 306.9 | 303.3 | 300.6 | 297.8 | 299.6 | 300.6 |
| 22.5° | 316.0 | 317.0 | 317.9 | 316.0 | 308.8 | 299.6 | 293.3 | 288.7 | 286.9 | 288.7 | 290.5 |
| 25° | 326.1 | 327.0 | 327.9 | 318.8 | 301.5 | 286.9 | 277.8 | 275.1 | 276.0 | 278.7 | 279.6 |
| 27.5° | 338.8 | 341.5 | 338.8 | 317.9 | 291.5 | 270.5 | 263.2 | 262.3 | 263.2 | 265.9 | 268.7 |
| 30° | 352.5 | 356.1 | 347.0 | 313.3 | 277.8 | 254.1 | 247.7 | 247.7 | 250.5 | 252.3 | 255.0 |
| 32.5° | 364.3 | 371.6 | 354.3 | 305.1 | 258.7 | 238.6 | 234.1 | 232.2 | 232.2 | 234.1 | 235.0 |
| 35° | 378.9 | 388.0 | 358.8 | 290.5 | 240.4 | 225.9 | 222.2 | 216.8 | 212.2 | 213.1 | 212.2 |
| 37.5° | 393.5 | 407.1 | 357.0 | 267.8 | 220.4 | 211.3 | 207.7 | 199.5 | 192.2 | 187.6 | 189.4 |
| 40° | 420.8 | 437.2 | 353.4 | 238.6 | 202.2 | 198.6 | 192.2 | 183.1 | 174.0 | 165.8 | 164.9 |
| 42.5° | 469.1 | 470.0 | 345.2 | 212.2 | 184.9 | 183.1 | 177.6 | 169.4 | 158.5 | 147.5 | 147.5 |
| 45° | 533.7 | 517.3 | 334.3 | 187.6 | 168.5 | 170.3 | 165.8 | 157.6 | 144.8 | 134.8 | 134.8 |
| 47.5° | 631.2 | 573.8 | 313.3 | 165.8 | 154.8 | 158.5 | 155.7 | 147.5 | 133.9 | 124.8 | 124.8 |
| 50° | 767.8 | 665.8 | 292.4 | 150.3 | 144.8 | 148.5 | 147.5 | 137.5 | 124.8 | 117.5 | 117.5 |
| 52.5° | 926.3 | 786.0 | 277.8 | 138.4 | 133.0 | 139.3 | 139.3 | 130.2 | 118.4 | 112.9 | 112.0 |
| 55° | 1089.3 | 898.9 | 263.2 | 128.4 | 124.8 | 130.2 | 133.0 | 124.8 | 113.8 | 109.3 | 108.4 |
| 57.5° | 1205.0 | 955.4 | 243.2 | 120.2 | 115.7 | 123.0 | 126.6 | 121.1 | 111.1 | 106.6 | 105.7 |
| 60° | 1263.3 | 960.9 | 204.0 | 112.0 | 107.5 | 116.6 | 123.0 | 118.4 | 111.1 | 109.3 | 109.3 |
| 62.5° | 1276.9 | 938.1 | 163.0 | 104.7 | 102.0 | 112.9 | 123.9 | 122.0 | 116.6 | 118.4 | 119.3 |
| 65° | 1218.6 | 862.5 | 133.0 | 99.3 | 98.4 | 112.0 | 129.3 | 128.4 | 117.5 | 122.0 | 123.0 |
| 67.5° | 1079.3 | 731.4 | 112.9 | 93.8 | 92.9 | 113.8 | 139.3 | 128.4 | 111.1 | 115.7 | 113.8 |
| 70° | 847.9 | 579.3 | 97.5 | 88.3 | 88.3 | 112.9 | 144.8 | 126.6 | 103.8 | 105.7 | 100.2 |
| 72.5° | 557.4 | 379.8 | 86.5 | 82.9 | 80.1 | 102.9 | 141.2 | 123.0 | 100.2 | 94.7 | 88.3 |
| 75° | 282.3 | 188.5 | 77.4 | 78.3 | 70.1 | 87.4 | 136.6 | 122.0 | 99.3 | 90.2 | 87.4 |
| 77.5° | 116.6 | 88.3 | 69.2 | 71.0 | 59.2 | 74.7 | 128.4 | 112.9 | 89.3 | 80.1 | 77.4 |
| 80° | 61.0 | 54.6 | 58.3 | 59.2 | 48.3 | 59.2 | 102.0 | 97.5 | 80.1 | 73.8 | 70.1 |
| 82.5° | 35.5 | 34.6 | 44.6 | 45.5 | 33.7 | 48.3 | 90.2 | 84.7 | 67.4 | 60.1 | 58.3 |
| 85° | 16.4 | 19.1 | 30.1 | 27.3 | 20.9 | 31.9 | 54.6 | 41.9 | 30.1 | 26.4 | 25.5 |
| 87.5° | 1.8 | 2.7 | 6.4 | 6.4 | 4.6 | 2.7 | 0.9 | 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 |

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



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

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| 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 |

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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 3000K 4-step quadrangle

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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 | | | |

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Summary

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



Color Vector Graphics



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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 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)