

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: STREETWORKS

Report Number: P359225

Luminaire Tested: NVN-SA1C-730-U-T2

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2019
Report Number: P359225
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-12)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: STREETWORKS
Catalog Number: NVN-SA1C-730-U-T2
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 3000K, 1050mA LIGHTSQUARE WITH 16 LEDS AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6471 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B1 - U0 - G2

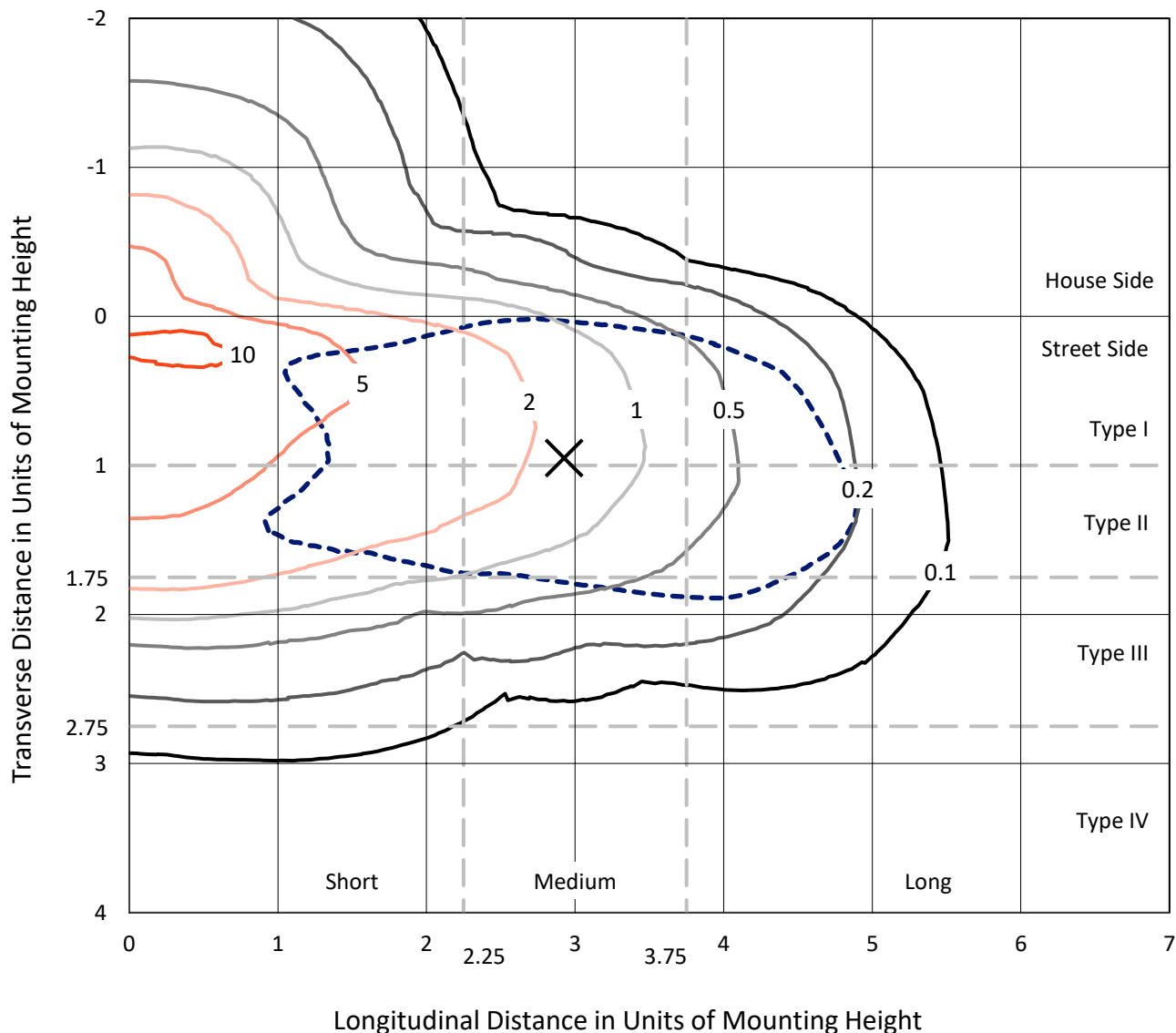
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P359225
 CATALOG NUMBER: NVN-SA1C-730-U-T2

Iso-Footcandle Lines of Horizontal Illumination

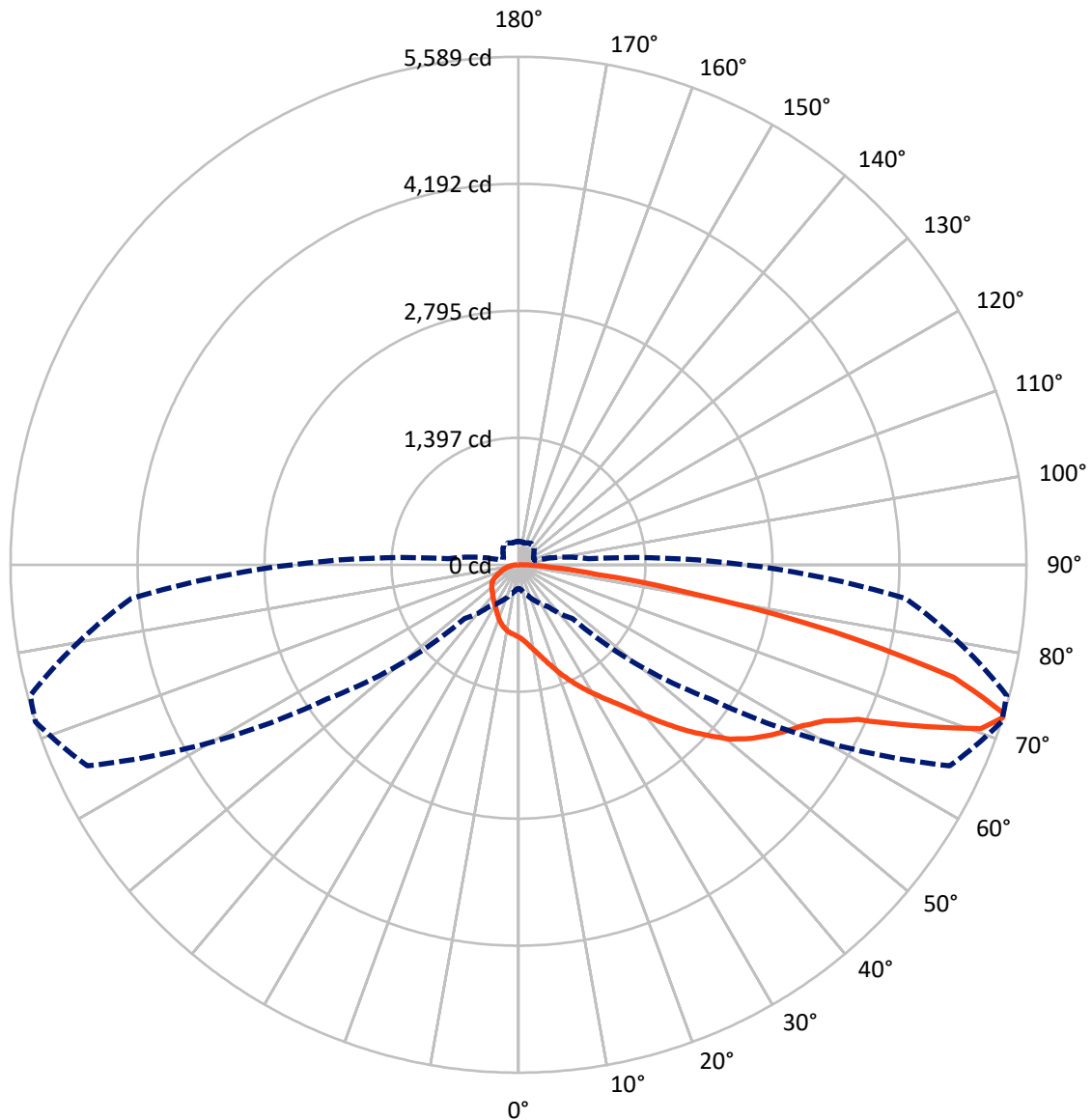
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11 fc
 Type III - Medium - N/A

REPORT NUMBER: P359225
CATALOG NUMBER: NVN-SA1C-730-U-T2

Luminous Intensity Polar Plot



— Vertical Plane Through 72-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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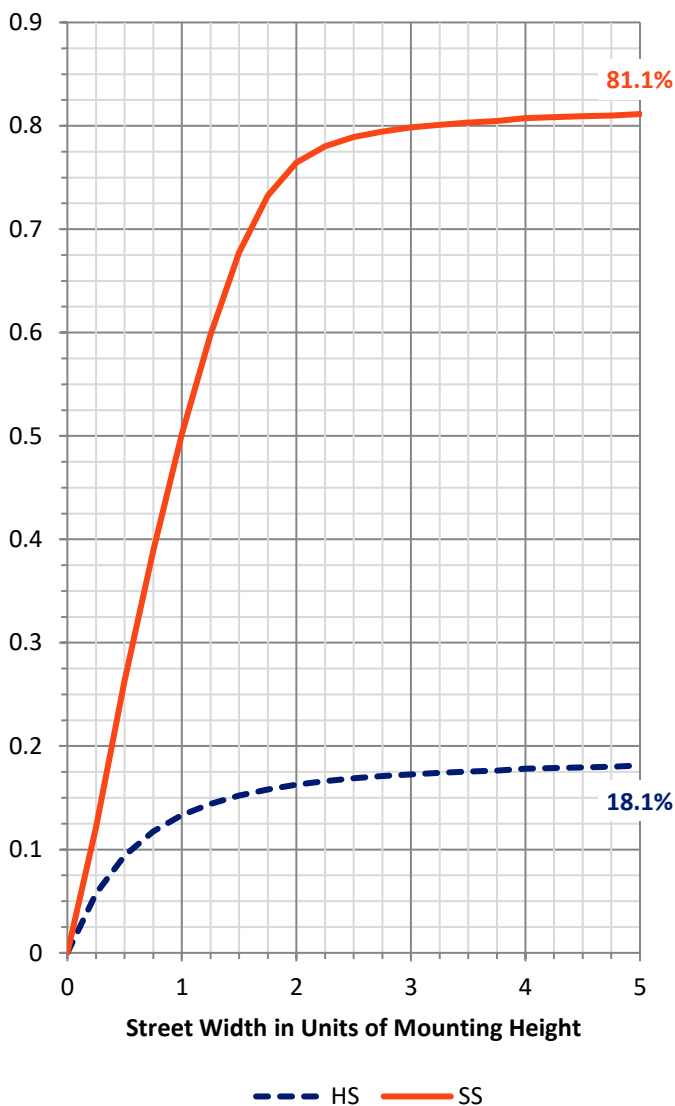
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1200.4 | 0.0 | 1200.4 |
| | % Fixture | 18.6 | 0.0 | 18.6 |
| Street Side | Lumens | 5270.6 | 0.0 | 5270.6 |
| | % Fixture | 81.4 | 0.0 | 81.4 |
| Total | Lumens | 6471.0 | 0.0 | 6471.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 79.8 | 1.2 |
| 10°-20° | 257.8 | 4.0 |
| 20°-30° | 451.7 | 7.0 |
| 30°-40° | 669.8 | 10.4 |
| 40°-50° | 979.6 | 15.1 |
| 50°-60° | 1347.9 | 20.8 |
| 60°-70° | 1500.6 | 23.2 |
| 70°-80° | 1016.8 | 15.7 |
| 80°-90° | 167.1 | 2.6 |
| 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° | 6471.0 | 100.0 |
| 0°-180° | 6471.0 | 100.0 |

Coefficient of Utilization

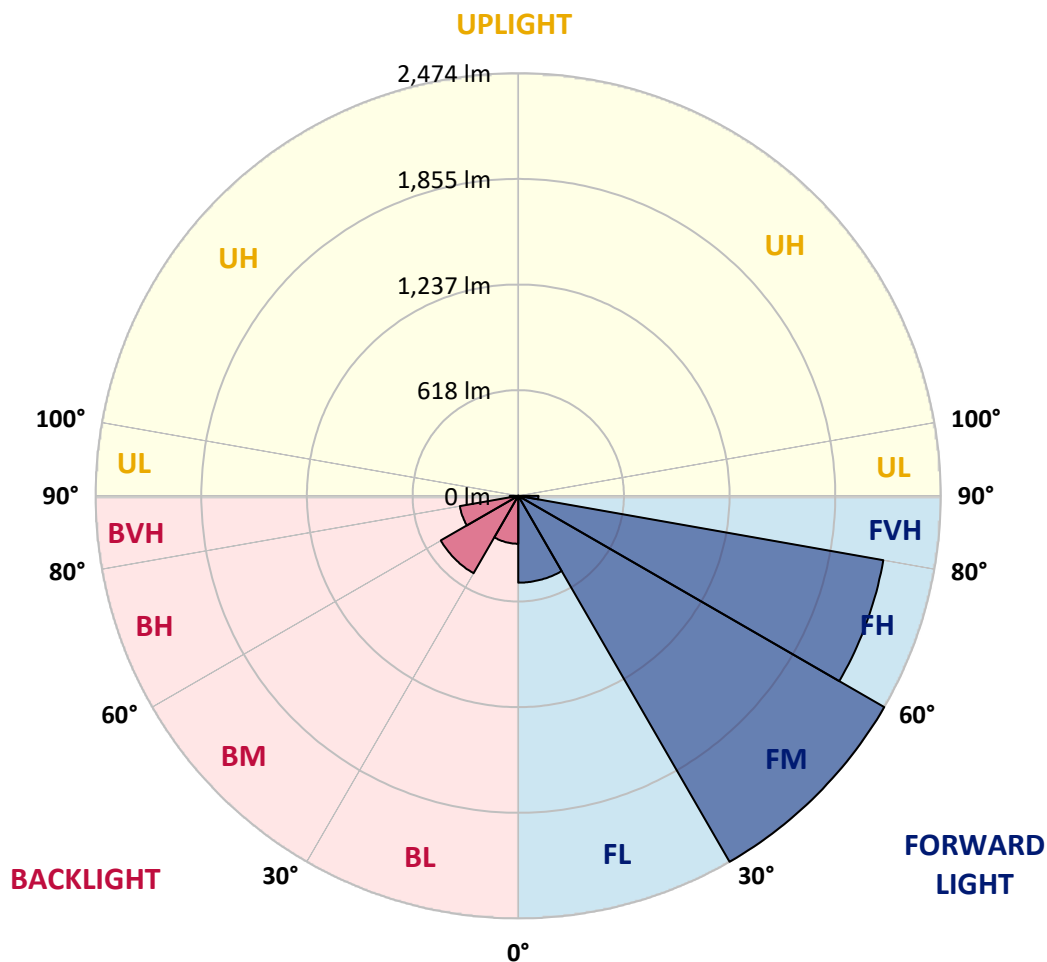


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 CATALOG NUMBER: NVN-SA1C-730-U-T2

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 508.7 | 7.9 | | | |
| FM (30°-60°) | 2473.9 | 38.2 | | | |
| FH (60°-80°) | 2170.1 | 33.5 | | | G2/5000 |
| FVH (80°-90°) | 117.9 | 1.8 | | | G2/225 |
| BL (0°-30°) | 280.6 | 4.3 | B1/500 | | |
| BM (30°-60°) | 523.3 | 8.1 | B1/1000 | | |
| BH (60°-80°) | 347.3 | 5.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 49.2 | 0.8 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 72° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 |
| 2.5° | 879.4 | 878.1 | 873.4 | 873.4 | 864.5 | 856.9 | 842.7 | 833.1 | 821.7 | 817.7 | 804.3 |
| 5° | 964.5 | 965.0 | 959.2 | 955.2 | 942.0 | 926.0 | 901.7 | 879.7 | 857.6 | 848.7 | 821.3 |
| 7.5° | 1036.1 | 1035.2 | 1033.6 | 1030.3 | 1018.0 | 1001.5 | 968.8 | 936.0 | 903.5 | 890.1 | 842.9 |
| 10° | 1082.0 | 1084.0 | 1085.3 | 1086.9 | 1081.7 | 1069.9 | 1039.0 | 999.1 | 956.5 | 938.3 | 868.7 |
| 12.5° | 1105.1 | 1108.7 | 1114.9 | 1125.6 | 1134.1 | 1132.8 | 1110.3 | 1067.9 | 1017.4 | 994.4 | 901.0 |
| 15° | 1118.7 | 1123.4 | 1133.2 | 1152.4 | 1176.2 | 1189.8 | 1183.8 | 1145.5 | 1089.1 | 1060.8 | 940.5 |
| 17.5° | 1127.2 | 1131.0 | 1146.1 | 1171.8 | 1207.2 | 1243.3 | 1259.1 | 1227.0 | 1170.2 | 1137.9 | 985.7 |
| 20° | 1133.0 | 1135.9 | 1154.8 | 1184.9 | 1230.8 | 1288.3 | 1332.4 | 1324.4 | 1259.5 | 1217.7 | 1032.9 |
| 22.5° | 1145.9 | 1148.4 | 1166.4 | 1196.7 | 1247.5 | 1321.7 | 1403.0 | 1415.1 | 1353.8 | 1306.3 | 1083.5 |
| 25° | 1182.0 | 1182.0 | 1197.2 | 1218.3 | 1266.0 | 1350.7 | 1462.8 | 1516.0 | 1450.1 | 1394.8 | 1130.3 |
| 27.5° | 1250.9 | 1250.2 | 1255.8 | 1263.1 | 1299.2 | 1380.1 | 1516.0 | 1605.1 | 1549.9 | 1489.5 | 1175.8 |
| 30° | 1332.4 | 1336.9 | 1337.5 | 1334.0 | 1350.9 | 1416.9 | 1565.2 | 1699.2 | 1650.4 | 1585.3 | 1222.3 |
| 32.5° | 1437.4 | 1440.2 | 1436.9 | 1425.1 | 1422.6 | 1469.0 | 1613.6 | 1797.6 | 1759.1 | 1685.3 | 1264.9 |
| 35° | 1570.6 | 1565.0 | 1554.5 | 1530.5 | 1507.5 | 1538.7 | 1668.9 | 1896.1 | 1881.2 | 1806.3 | 1323.5 |
| 37.5° | 1713.4 | 1713.6 | 1700.7 | 1646.1 | 1614.5 | 1627.9 | 1745.1 | 2007.7 | 2028.9 | 1950.3 | 1398.6 |
| 40° | 1827.9 | 1834.0 | 1842.0 | 1770.2 | 1729.2 | 1747.7 | 1842.0 | 2137.2 | 2203.6 | 2120.9 | 1496.4 |
| 42.5° | 1907.9 | 1914.8 | 1937.6 | 1892.6 | 1850.0 | 1884.3 | 1956.1 | 2275.3 | 2399.7 | 2317.9 | 1610.9 |
| 45° | 1992.6 | 1996.4 | 2012.4 | 1993.0 | 1965.9 | 2043.2 | 2084.6 | 2418.4 | 2607.1 | 2527.8 | 1739.0 |
| 47.5° | 2081.7 | 2085.7 | 2102.2 | 2089.3 | 2075.0 | 2191.6 | 2218.7 | 2553.2 | 2805.9 | 2758.4 | 1875.8 |
| 50° | 2191.8 | 2194.5 | 2210.1 | 2186.7 | 2191.1 | 2303.4 | 2338.6 | 2676.8 | 3014.2 | 2965.6 | 2013.1 |
| 52.5° | 2342.0 | 2342.6 | 2364.2 | 2343.1 | 2322.1 | 2385.4 | 2441.8 | 2793.4 | 3177.5 | 3154.6 | 2150.3 |
| 55° | 2459.6 | 2466.7 | 2537.6 | 2533.1 | 2521.1 | 2459.8 | 2528.0 | 2904.3 | 3323.2 | 3334.1 | 2296.1 |
| 57.5° | 2384.5 | 2412.4 | 2555.9 | 2657.0 | 2755.5 | 2645.0 | 2644.5 | 3029.3 | 3458.7 | 3510.4 | 2456.3 |
| 60° | 2088.4 | 2126.3 | 2337.7 | 2562.1 | 2870.2 | 2967.2 | 2886.5 | 3182.0 | 3595.5 | 3685.1 | 2657.0 |
| 62.5° | 1491.5 | 1553.9 | 1840.4 | 2198.7 | 2712.9 | 3180.6 | 3378.9 | 3424.2 | 3781.5 | 3887.4 | 2917.9 |
| 65° | 754.0 | 801.2 | 1041.4 | 1473.0 | 2167.5 | 3041.1 | 3914.1 | 3954.4 | 4104.8 | 4198.9 | 3319.7 |
| 67.5° | 458.1 | 475.9 | 593.1 | 819.3 | 1328.8 | 2368.9 | 4088.8 | 4838.3 | 4730.5 | 4780.4 | 3892.5 |
| 70° | 337.6 | 350.7 | 423.8 | 544.1 | 764.2 | 1390.1 | 3552.7 | 5469.1 | 5398.3 | 5392.7 | 4315.8 |
| 72° | 262.9 | 272.5 | 337.1 | 439.6 | 558.8 | 834.0 | 2575.0 | 5236.3 | 5589.4 | 5561.3 | 4277.1 |
| 72.5° | 249.3 | 257.8 | 316.6 | 413.8 | 528.1 | 756.0 | 2315.2 | 5079.2 | 5575.6 | 5562.9 | 4226.9 |
| 75° | 196.3 | 202.3 | 234.4 | 320.0 | 413.3 | 428.9 | 1268.7 | 3936.2 | 4946.2 | 5151.8 | 3801.8 |
| 77.5° | 162.4 | 163.3 | 180.3 | 232.8 | 322.2 | 303.2 | 623.2 | 2731.0 | 3541.8 | 3767.9 | 2693.1 |
| 80° | 132.3 | 133.5 | 141.5 | 163.3 | 243.8 | 224.4 | 295.9 | 1570.4 | 1983.0 | 1985.5 | 1280.7 |
| 82.5° | 105.4 | 105.6 | 114.5 | 119.4 | 175.1 | 160.4 | 169.6 | 737.3 | 866.5 | 833.5 | 460.3 |
| 85° | 74.2 | 72.6 | 111.9 | 98.0 | 114.5 | 102.9 | 93.6 | 291.9 | 358.3 | 342.7 | 144.2 |
| 87.5° | 24.7 | 25.6 | 49.7 | 63.5 | 66.8 | 58.4 | 41.7 | 111.9 | 135.2 | 134.1 | 45.7 |
| 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: P359225
 CATALOG NUMBER: NVN-SA1C-730-U-T2

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 | 796.1 |
| 2.5° | 800.1 | 793.0 | 782.5 | 770.9 | 761.8 | 752.4 | 745.5 | 742.0 | 737.9 | 734.6 | 738.6 |
| 5° | 808.6 | 795.2 | 772.9 | 751.1 | 735.1 | 720.8 | 710.5 | 705.2 | 700.3 | 697.0 | 697.4 |
| 7.5° | 822.4 | 800.8 | 763.3 | 731.5 | 709.2 | 693.8 | 683.4 | 679.8 | 676.7 | 675.8 | 676.9 |
| 10° | 837.1 | 805.2 | 750.6 | 708.3 | 682.9 | 670.2 | 665.5 | 668.0 | 670.2 | 672.2 | 674.4 |
| 12.5° | 853.8 | 809.2 | 732.2 | 681.1 | 659.5 | 654.6 | 659.3 | 670.0 | 677.8 | 682.5 | 685.4 |
| 15° | 875.6 | 812.8 | 710.8 | 653.9 | 639.5 | 645.0 | 660.9 | 679.3 | 692.9 | 701.6 | 703.0 |
| 17.5° | 895.7 | 812.6 | 683.4 | 626.5 | 623.2 | 639.5 | 663.3 | 689.4 | 707.6 | 719.9 | 722.4 |
| 20° | 916.4 | 806.6 | 651.5 | 599.8 | 606.7 | 633.5 | 664.4 | 695.8 | 717.9 | 732.2 | 735.5 |
| 22.5° | 935.8 | 796.1 | 616.5 | 575.5 | 592.9 | 625.4 | 660.2 | 692.0 | 714.1 | 725.7 | 729.3 |
| 25° | 948.9 | 777.8 | 581.1 | 555.0 | 580.6 | 615.6 | 646.4 | 672.0 | 688.5 | 694.3 | 695.2 |
| 27.5° | 955.6 | 754.0 | 547.7 | 537.2 | 567.9 | 599.6 | 620.7 | 633.5 | 638.1 | 637.7 | 636.8 |
| 30° | 956.5 | 722.6 | 518.9 | 522.7 | 553.2 | 576.0 | 586.0 | 583.5 | 577.5 | 567.3 | 568.2 |
| 32.5° | 953.6 | 687.1 | 494.9 | 508.9 | 534.5 | 547.2 | 547.7 | 535.9 | 519.8 | 503.6 | 499.1 |
| 35° | 954.5 | 652.4 | 473.7 | 493.3 | 511.8 | 517.4 | 512.2 | 494.9 | 473.0 | 452.1 | 447.6 |
| 37.5° | 964.3 | 622.1 | 455.4 | 475.3 | 486.6 | 488.0 | 480.6 | 462.3 | 446.3 | 425.8 | 424.0 |
| 40° | 987.7 | 600.5 | 438.0 | 455.0 | 461.4 | 462.1 | 451.6 | 438.7 | 440.1 | 429.1 | 428.9 |
| 42.5° | 1029.8 | 591.1 | 422.7 | 433.8 | 437.8 | 439.2 | 431.1 | 422.9 | 434.5 | 427.4 | 424.9 |
| 45° | 1084.2 | 593.3 | 409.7 | 413.1 | 420.4 | 426.7 | 421.8 | 411.8 | 416.2 | 385.2 | 375.0 |
| 47.5° | 1147.0 | 607.6 | 399.5 | 395.3 | 408.0 | 419.8 | 412.2 | 397.0 | 381.2 | 350.5 | 344.7 |
| 50° | 1220.6 | 629.7 | 390.1 | 377.7 | 394.4 | 410.4 | 402.8 | 381.2 | 357.4 | 342.5 | 340.5 |
| 52.5° | 1297.2 | 656.6 | 380.8 | 358.3 | 377.2 | 403.3 | 399.5 | 377.7 | 348.3 | 333.5 | 330.9 |
| 55° | 1384.1 | 683.8 | 369.0 | 335.8 | 358.7 | 399.9 | 397.9 | 364.7 | 341.3 | 333.1 | 331.1 |
| 57.5° | 1492.2 | 714.8 | 353.4 | 312.4 | 341.3 | 387.9 | 381.7 | 356.9 | 334.2 | 328.0 | 327.3 |
| 60° | 1633.0 | 760.5 | 330.9 | 287.4 | 320.2 | 369.4 | 368.1 | 345.6 | 322.9 | 318.4 | 317.5 |
| 62.5° | 1844.2 | 836.0 | 299.9 | 262.5 | 296.6 | 338.0 | 350.3 | 330.2 | 310.8 | 310.6 | 311.0 |
| 65° | 2171.7 | 949.6 | 266.3 | 240.6 | 272.7 | 311.5 | 329.5 | 314.4 | 298.6 | 303.0 | 303.7 |
| 67.5° | 2551.4 | 1043.9 | 233.3 | 219.2 | 248.4 | 286.3 | 310.8 | 298.6 | 282.3 | 293.9 | 294.1 |
| 70° | 2677.7 | 959.6 | 204.3 | 198.1 | 223.3 | 262.0 | 290.5 | 281.2 | 264.7 | 276.3 | 275.2 |
| 72° | 2491.9 | 774.7 | 185.6 | 182.0 | 204.3 | 242.0 | 272.5 | 264.9 | 248.7 | 256.5 | 253.6 |
| 72.5° | 2433.3 | 738.6 | 180.9 | 178.0 | 199.2 | 236.8 | 267.8 | 260.9 | 244.6 | 251.3 | 248.7 |
| 75° | 2170.6 | 641.5 | 155.5 | 156.2 | 173.8 | 211.9 | 241.5 | 239.3 | 222.6 | 223.3 | 222.4 |
| 77.5° | 1574.4 | 470.4 | 131.0 | 135.5 | 147.9 | 186.3 | 215.0 | 213.7 | 195.4 | 192.1 | 191.4 |
| 80° | 730.6 | 240.0 | 106.7 | 108.7 | 121.7 | 155.7 | 183.4 | 181.6 | 166.9 | 162.7 | 160.2 |
| 82.5° | 250.2 | 114.1 | 80.2 | 81.5 | 94.2 | 125.4 | 159.1 | 158.0 | 145.7 | 137.5 | 132.3 |
| 85° | 89.3 | 56.8 | 56.1 | 54.8 | 67.3 | 98.7 | 138.6 | 132.6 | 114.5 | 97.6 | 97.1 |
| 87.5° | 29.0 | 24.3 | 29.0 | 28.7 | 39.2 | 66.8 | 100.7 | 85.8 | 83.1 | 69.1 | 67.7 |
| 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



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 |

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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)