

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: P359464

Luminaire Tested: NVN-SA6B-730-U-SL3

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2019
Report Number: P359464
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-22)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: STREETWORKS
Catalog Number: NVN-SA6B-730-U-SL3
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 31453 lumens
Efficiency: N/A
Efficacy: 126.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B3 - U0 - G5

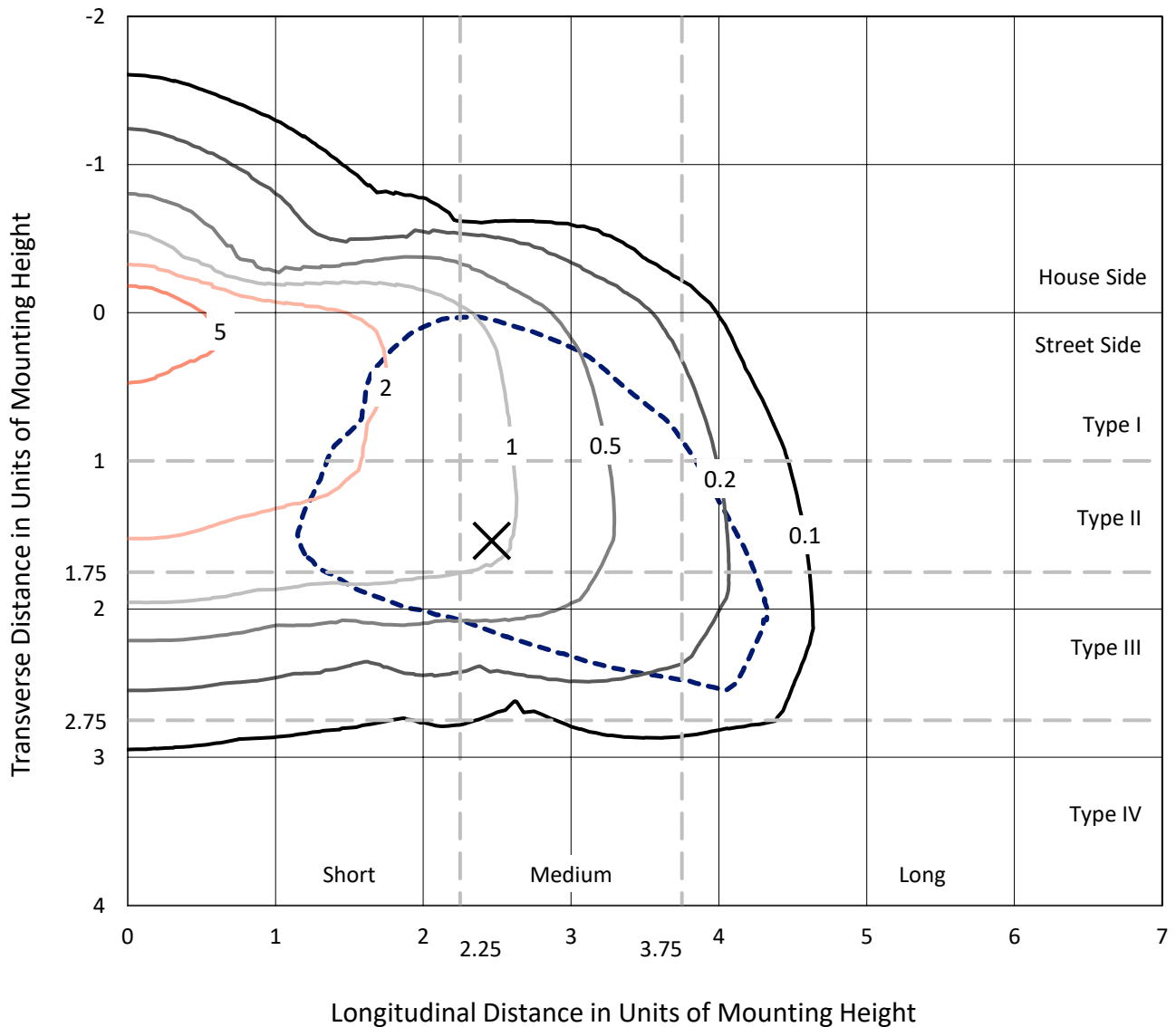
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P359464
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Iso-Footcandle Lines of Horizontal Illumination

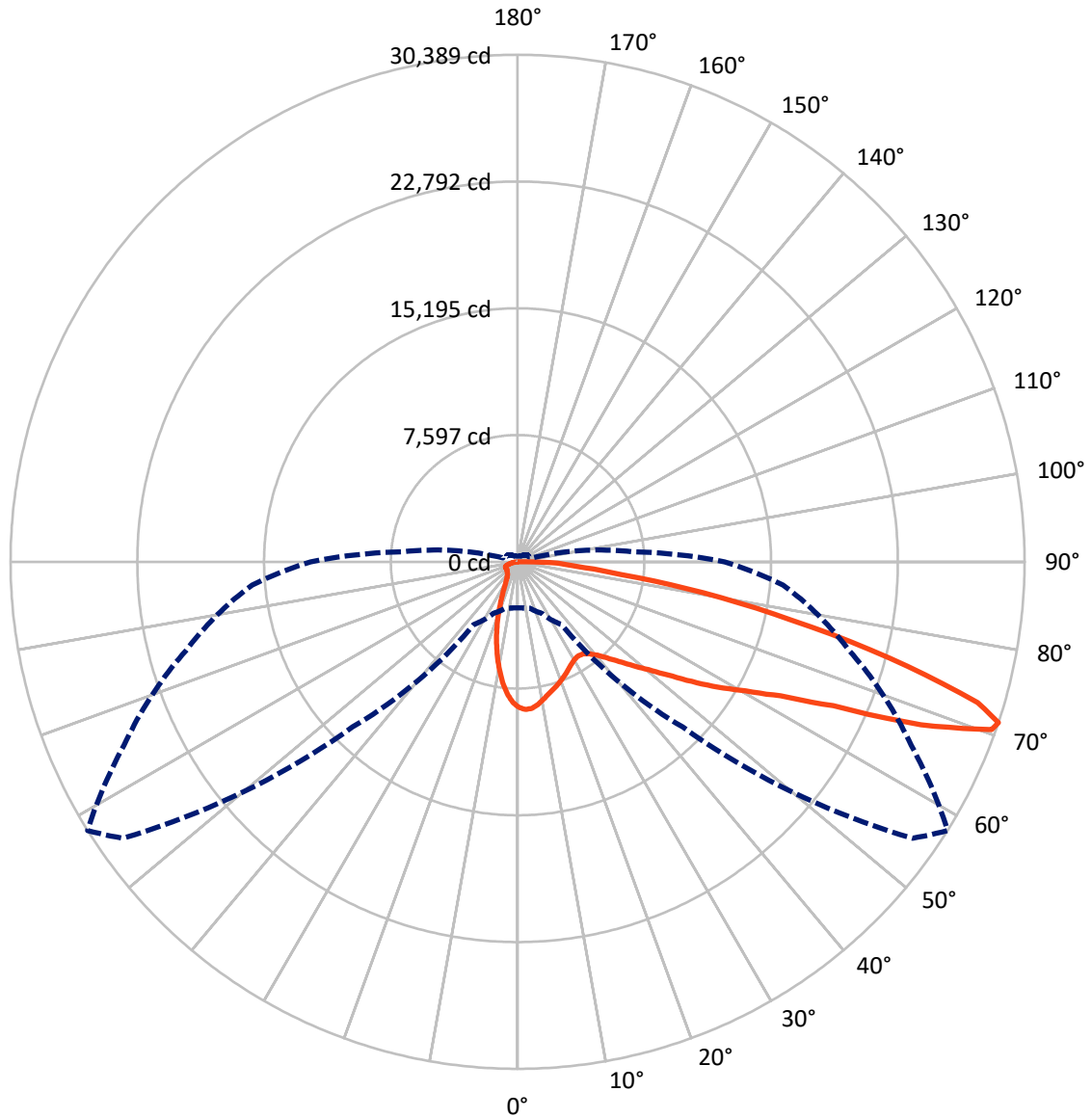
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 9.7 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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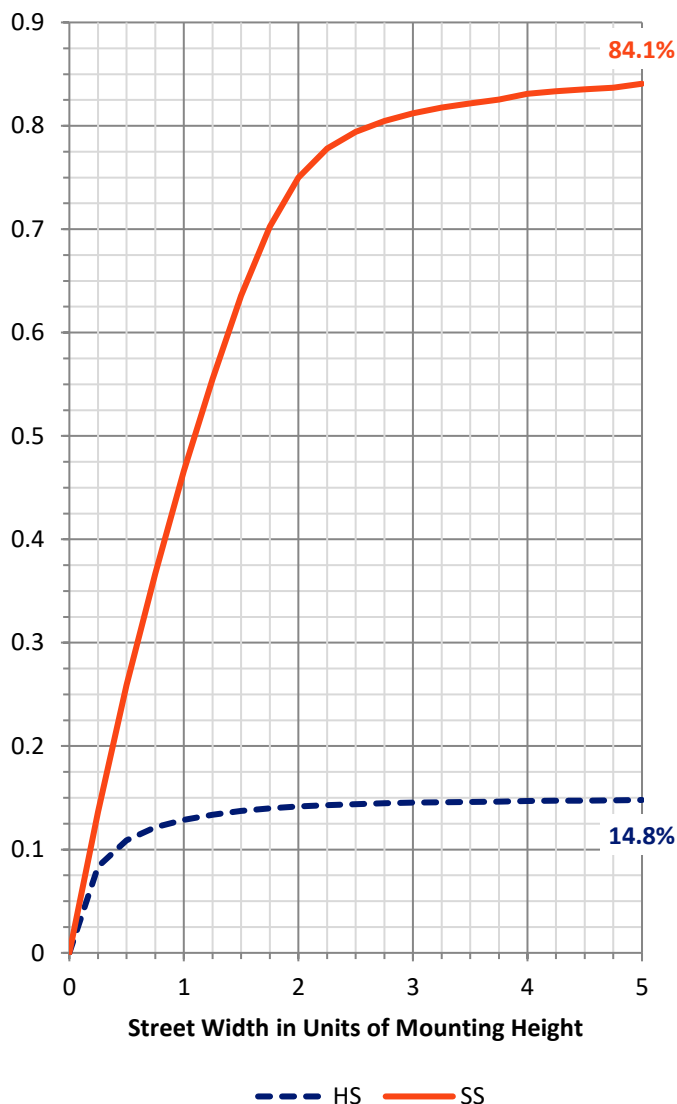
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4702.4 | 0.0 | 4702.4 |
| | % Fixture | 15.0 | 0.0 | 15.0 |
| Street Side | Lumens | 26750.6 | 0.0 | 26750.6 |
| | % Fixture | 85.0 | 0.0 | 85.0 |
| Total | Lumens | 31453.0 | 0.0 | 31453.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 751.8 | 2.4 |
| 10°-20° | 1671.7 | 5.3 |
| 20°-30° | 2124.6 | 6.8 |
| 30°-40° | 2706.3 | 8.6 |
| 40°-50° | 3837.7 | 12.2 |
| 50°-60° | 5939.0 | 18.9 |
| 60°-70° | 8085.2 | 25.7 |
| 70°-80° | 5393.7 | 17.1 |
| 80°-90° | 943.0 | 3.0 |
| 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° | 31453.0 | 100.0 |
| 0°-180° | 31453.0 | 100.0 |

Coefficient of Utilization

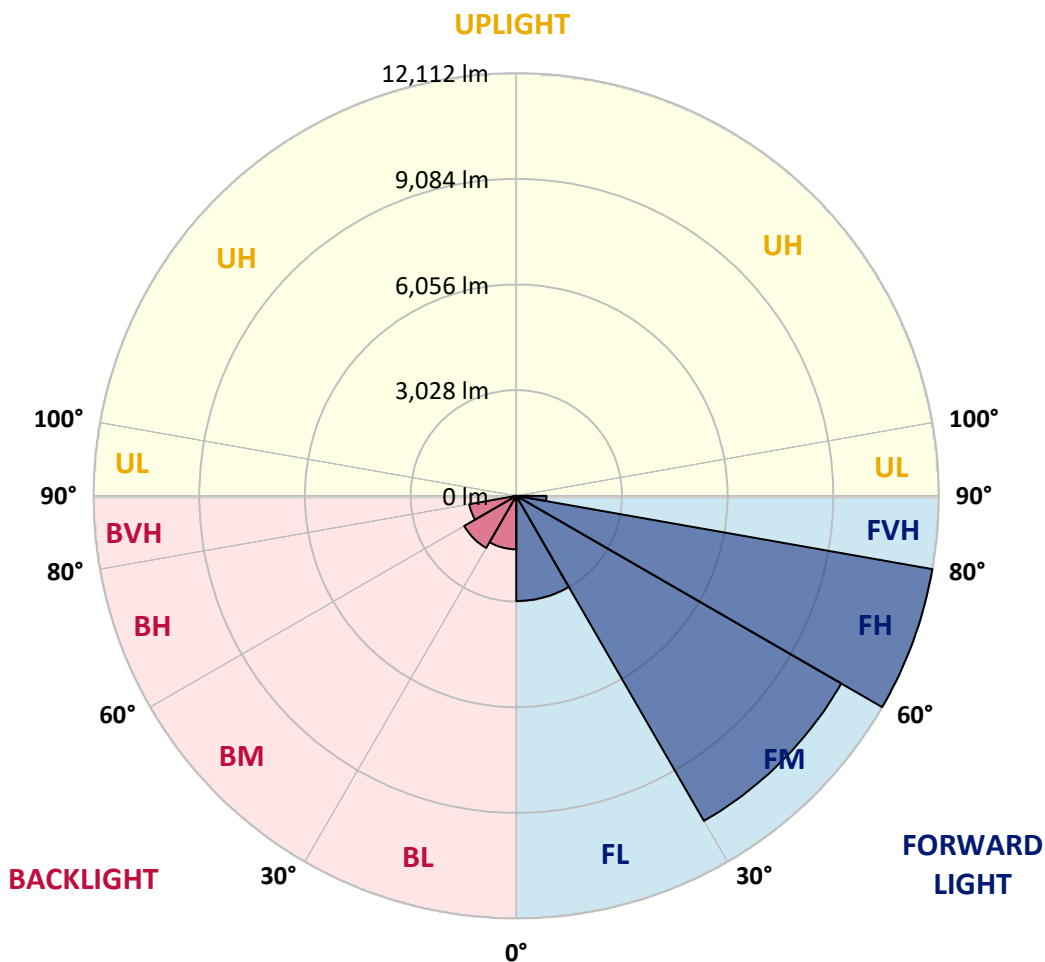


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 3015.3 | 9.6 | | | |
| FM (30°-60°) | 10758.4 | 34.2 | | | |
| FH (60°-80°) | 12112.2 | 38.5 | | | G5 |
| FVH (80°-90°) | 864.7 | 2.7 | | | G5 |
| BL (0°-30°) | 1532.9 | 4.9 | B3/2500 | | |
| BM (30°-60°) | 1724.5 | 5.5 | B2/2500 | | |
| BH (60°-80°) | 1366.7 | 4.3 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 78.3 | 0.2 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5
 Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 |
| 2.5° | 8945.8 | 8933.7 | 8938.1 | 8929.3 | 8908.5 | 8887.7 | 8857.0 | 8862.5 | 8819.8 | 8756.2 | 8677.3 |
| 5° | 8777.0 | 8772.7 | 8805.5 | 8824.1 | 8839.5 | 8827.4 | 8818.7 | 8829.6 | 8767.2 | 8679.5 | 8542.6 |
| 7.5° | 8423.1 | 8374.9 | 8416.6 | 8479.0 | 8538.2 | 8583.1 | 8642.3 | 8649.9 | 8610.5 | 8518.5 | 8338.8 |
| 10° | 7920.3 | 7874.2 | 7935.6 | 8033.1 | 8151.4 | 8258.8 | 8378.2 | 8400.1 | 8407.8 | 8324.5 | 8106.5 |
| 12.5° | 7398.7 | 7363.7 | 7425.0 | 7562.0 | 7758.1 | 7923.5 | 8114.2 | 8147.1 | 8215.0 | 8159.1 | 7891.8 |
| 15° | 6932.0 | 6918.9 | 6993.4 | 7128.1 | 7353.8 | 7606.9 | 7881.9 | 7942.2 | 8057.2 | 8038.6 | 7724.1 |
| 17.5° | 6528.8 | 6525.5 | 6582.5 | 6723.8 | 6973.6 | 7293.6 | 7650.7 | 7752.6 | 7923.5 | 7945.5 | 7586.1 |
| 20° | 6228.6 | 6222.0 | 6261.5 | 6365.6 | 6623.0 | 6985.7 | 7400.9 | 7541.2 | 7787.7 | 7864.4 | 7443.7 |
| 22.5° | 6067.6 | 6066.5 | 6067.6 | 6116.9 | 6327.2 | 6664.7 | 7157.7 | 7328.6 | 7655.1 | 7799.7 | 7285.9 |
| 25° | 6040.2 | 6036.9 | 6012.8 | 6007.3 | 6126.7 | 6396.2 | 6916.7 | 7105.1 | 7529.1 | 7754.8 | 7135.8 |
| 27.5° | 6111.4 | 6115.8 | 6084.0 | 6032.5 | 6056.6 | 6219.9 | 6707.4 | 6909.0 | 7428.3 | 7746.1 | 7031.7 |
| 30° | 6259.3 | 6257.1 | 6229.7 | 6176.0 | 6128.9 | 6154.1 | 6558.4 | 6760.0 | 7360.4 | 7784.4 | 6960.5 |
| 32.5° | 6422.5 | 6434.6 | 6429.1 | 6399.5 | 6329.4 | 6228.6 | 6513.5 | 6710.7 | 7340.7 | 7876.4 | 6929.8 |
| 35° | 6618.7 | 6631.8 | 6671.2 | 6694.3 | 6612.1 | 6449.9 | 6609.9 | 6780.8 | 7397.6 | 8049.5 | 6979.1 |
| 37.5° | 6804.9 | 6838.9 | 6949.5 | 7047.0 | 6976.9 | 6796.1 | 6866.3 | 6987.9 | 7574.0 | 8322.4 | 7111.7 |
| 40° | 7019.7 | 7049.2 | 7230.0 | 7437.1 | 7426.1 | 7238.8 | 7279.3 | 7360.4 | 7885.2 | 8713.5 | 7351.6 |
| 42.5° | 7231.1 | 7290.3 | 7552.1 | 7845.8 | 7930.1 | 7764.7 | 7829.3 | 7872.0 | 8323.4 | 9231.7 | 7770.2 |
| 45° | 7512.7 | 7576.2 | 7940.0 | 8293.9 | 8491.1 | 8397.9 | 8500.9 | 8517.4 | 8874.5 | 9937.3 | 8378.2 |
| 47.5° | 7938.9 | 8011.2 | 8435.2 | 8806.6 | 9107.9 | 9117.8 | 9287.6 | 9281.0 | 9562.6 | 10744.8 | 9144.1 |
| 50° | 8602.8 | 8706.9 | 9054.2 | 9401.5 | 9767.5 | 9971.3 | 10198.1 | 10166.3 | 10387.6 | 11604.8 | 10026.0 |
| 52.5° | 9472.8 | 9521.0 | 9778.4 | 10034.8 | 10489.5 | 10946.4 | 11271.8 | 11243.3 | 11323.3 | 12489.0 | 11027.4 |
| 55° | 10374.5 | 10410.6 | 10516.9 | 10657.1 | 11268.5 | 12013.5 | 12701.6 | 12656.6 | 12453.9 | 13407.1 | 12016.8 |
| 57.5° | 11185.2 | 11258.6 | 11332.0 | 11390.1 | 12052.9 | 13128.8 | 14164.2 | 14167.5 | 13681.0 | 14397.6 | 13039.0 |
| 60° | 11311.2 | 11375.9 | 11861.2 | 12319.2 | 13395.1 | 14616.7 | 15729.9 | 15697.0 | 14950.9 | 15472.4 | 14178.5 |
| 62.5° | 9998.7 | 10144.4 | 10955.1 | 12173.5 | 14687.9 | 17338.2 | 17727.2 | 17686.6 | 16469.4 | 16797.0 | 15505.3 |
| 65° | 7165.4 | 7330.8 | 8309.2 | 10140.0 | 14061.2 | 20337.0 | 21331.8 | 20786.2 | 18540.1 | 18426.2 | 17058.8 |
| 67.5° | 4133.8 | 4173.2 | 4597.2 | 6067.6 | 10706.4 | 20493.6 | 26830.7 | 26067.1 | 21755.8 | 20274.5 | 17819.2 |
| 70° | 3056.8 | 3055.7 | 3156.5 | 3733.9 | 5793.7 | 16725.8 | 29446.0 | 30130.7 | 25141.3 | 20882.6 | 16744.4 |
| 71° | 2764.3 | 2767.5 | 2880.4 | 3398.6 | 4588.5 | 13999.9 | 28890.5 | 30389.3 | 26033.1 | 20582.4 | 15966.5 |
| 72.5° | 2364.4 | 2375.3 | 2532.0 | 3048.0 | 3859.9 | 9654.6 | 26497.6 | 28837.9 | 26456.0 | 19841.7 | 14749.3 |
| 75° | 1793.5 | 1818.7 | 2035.7 | 2569.2 | 3527.9 | 4896.3 | 19447.3 | 23027.8 | 23502.2 | 17508.1 | 10959.5 |
| 77.5° | 1279.7 | 1308.2 | 1553.6 | 2160.6 | 3353.7 | 3690.1 | 13023.7 | 16797.0 | 17295.5 | 11220.3 | 4943.5 |
| 80° | 808.6 | 842.5 | 1027.7 | 1719.0 | 3151.0 | 3503.8 | 8184.3 | 11290.4 | 9431.1 | 3590.4 | 1257.8 |
| 82.5° | 474.4 | 500.7 | 637.7 | 1123.0 | 2573.6 | 3374.5 | 4815.3 | 6258.2 | 3670.3 | 1084.7 | 571.9 |
| 85° | 275.0 | 287.1 | 397.7 | 715.4 | 1869.1 | 3185.0 | 3537.8 | 3498.3 | 1593.0 | 530.3 | 270.6 |
| 87.5° | 128.2 | 142.4 | 235.6 | 373.6 | 1037.6 | 2308.5 | 2796.0 | 2415.8 | 990.4 | 248.7 | 127.1 |
| 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: P359464
 CATALOG NUMBER: NVN-SA6B-730-U-SL3

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 | 8714.6 |
| 2.5° | 8639.0 | 8620.4 | 8542.6 | 8473.5 | 8401.2 | 8307.0 | 8202.9 | 8189.8 | 8126.2 | 8138.3 | 8116.4 |
| 5° | 8468.1 | 8421.0 | 8233.6 | 8063.8 | 7863.3 | 7683.6 | 7488.6 | 7398.7 | 7269.5 | 7260.7 | 7227.8 |
| 7.5° | 8223.7 | 8136.1 | 7845.8 | 7523.6 | 7201.5 | 6894.8 | 6591.3 | 6391.9 | 6188.1 | 6101.5 | 6093.9 |
| 10° | 7948.7 | 7799.7 | 7372.4 | 6895.8 | 6431.3 | 5983.2 | 5549.3 | 5228.3 | 4939.1 | 4802.1 | 4796.6 |
| 12.5° | 7688.0 | 7467.8 | 6881.6 | 6233.0 | 5597.5 | 5016.9 | 4421.9 | 4000.1 | 3637.5 | 3515.9 | 3464.4 |
| 15° | 7466.7 | 7156.6 | 6403.9 | 5574.5 | 4803.2 | 3996.8 | 3319.7 | 2876.0 | 2540.7 | 2424.6 | 2402.7 |
| 17.5° | 7251.9 | 6853.1 | 5914.2 | 4909.5 | 3977.1 | 3090.8 | 2412.6 | 2082.8 | 1904.2 | 1857.1 | 1856.0 |
| 20° | 7038.3 | 6540.9 | 5402.5 | 4229.1 | 3178.4 | 2311.8 | 1854.9 | 1707.0 | 1646.7 | 1641.2 | 1632.5 |
| 22.5° | 6796.1 | 6210.0 | 4864.6 | 3546.5 | 2480.5 | 1817.6 | 1576.6 | 1517.4 | 1509.8 | 1529.5 | 1529.5 |
| 25° | 6569.4 | 5881.3 | 4318.9 | 2878.2 | 1929.4 | 1516.3 | 1407.9 | 1395.8 | 1416.6 | 1451.7 | 1455.0 |
| 27.5° | 6357.9 | 5564.7 | 3786.5 | 2284.4 | 1545.9 | 1335.6 | 1290.6 | 1304.9 | 1342.1 | 1382.7 | 1383.8 |
| 30° | 6183.7 | 5265.6 | 3269.3 | 1800.1 | 1306.0 | 1200.8 | 1193.1 | 1221.6 | 1262.2 | 1293.9 | 1301.6 |
| 32.5° | 6048.9 | 5010.3 | 2769.7 | 1447.3 | 1149.3 | 1100.0 | 1106.6 | 1130.7 | 1155.9 | 1173.4 | 1185.5 |
| 35° | 5986.5 | 4791.2 | 2308.5 | 1220.5 | 1049.6 | 1022.2 | 1031.0 | 1044.1 | 1055.1 | 1068.2 | 1078.1 |
| 37.5° | 5997.4 | 4621.3 | 1896.5 | 1079.2 | 982.8 | 968.5 | 968.5 | 968.5 | 968.5 | 975.1 | 976.2 |
| 40° | 6099.3 | 4523.8 | 1561.3 | 989.3 | 937.9 | 922.5 | 910.5 | 899.5 | 890.7 | 895.1 | 892.9 |
| 42.5° | 6360.1 | 4515.1 | 1315.8 | 932.4 | 901.7 | 876.5 | 852.4 | 837.1 | 826.1 | 830.5 | 832.7 |
| 45° | 6802.7 | 4624.6 | 1150.4 | 891.8 | 867.7 | 829.4 | 798.7 | 782.3 | 774.6 | 788.8 | 791.0 |
| 47.5° | 7375.7 | 4863.5 | 1049.6 | 862.3 | 836.0 | 785.6 | 752.7 | 737.4 | 739.5 | 760.4 | 765.8 |
| 50° | 8114.2 | 5251.3 | 1001.4 | 843.6 | 814.0 | 748.3 | 714.3 | 701.2 | 707.8 | 737.4 | 743.9 |
| 52.5° | 8924.9 | 5810.1 | 1006.9 | 838.2 | 799.8 | 720.9 | 684.8 | 669.4 | 680.4 | 707.8 | 713.3 |
| 55° | 9860.6 | 6481.7 | 1097.8 | 845.8 | 779.0 | 703.4 | 660.7 | 634.4 | 643.1 | 668.3 | 672.7 |
| 57.5° | 10900.4 | 7250.8 | 1280.8 | 843.6 | 752.7 | 687.0 | 635.5 | 596.0 | 602.6 | 617.9 | 622.3 |
| 60° | 11982.8 | 8179.9 | 1564.5 | 850.2 | 740.6 | 667.2 | 601.5 | 552.2 | 550.0 | 563.2 | 565.3 |
| 62.5° | 13282.2 | 9254.7 | 1888.9 | 854.6 | 748.3 | 642.0 | 556.6 | 508.4 | 501.8 | 505.1 | 507.3 |
| 65° | 14621.1 | 10032.6 | 1767.2 | 837.1 | 772.4 | 621.2 | 517.1 | 465.6 | 453.6 | 451.4 | 452.5 |
| 67.5° | 14662.7 | 9198.8 | 1239.1 | 802.0 | 782.3 | 610.3 | 487.6 | 429.5 | 409.8 | 402.1 | 401.0 |
| 70° | 13149.7 | 7473.2 | 965.2 | 764.7 | 742.8 | 592.7 | 460.2 | 399.9 | 370.3 | 358.3 | 357.2 |
| 71° | 12411.2 | 6879.4 | 914.8 | 746.1 | 713.3 | 575.2 | 448.1 | 386.8 | 356.1 | 342.9 | 340.7 |
| 72.5° | 11253.1 | 6167.3 | 853.5 | 716.5 | 656.3 | 530.3 | 425.1 | 368.1 | 336.4 | 321.0 | 317.7 |
| 75° | 8075.8 | 4033.0 | 733.0 | 638.7 | 543.4 | 422.9 | 372.5 | 330.9 | 303.5 | 284.9 | 282.7 |
| 77.5° | 3111.6 | 1605.1 | 554.4 | 531.4 | 416.3 | 330.9 | 306.8 | 286.0 | 266.2 | 247.6 | 246.5 |
| 80° | 962.0 | 717.6 | 404.3 | 399.9 | 301.3 | 246.5 | 238.8 | 233.4 | 225.7 | 206.0 | 201.6 |
| 82.5° | 513.8 | 412.0 | 278.3 | 258.6 | 197.2 | 164.3 | 173.1 | 175.3 | 176.4 | 155.6 | 153.4 |
| 85° | 245.4 | 218.0 | 156.7 | 146.8 | 115.0 | 92.0 | 106.3 | 115.0 | 116.1 | 95.3 | 88.7 |
| 87.5° | 117.2 | 113.9 | 73.4 | 55.9 | 42.7 | 30.7 | 37.3 | 46.0 | 50.4 | 36.2 | 31.8 |
| 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 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| 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 |

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

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Photopic Flux vs. Wavelength



#####

| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 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)