

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: P361552

Luminaire Tested: NVN-SA6B-722-U-T4FT

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2019
Report Number: P361552
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: STREETWORKS
Catalog Number: NVN-SA6B-722-U-T4FT
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 2200K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25624 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G5

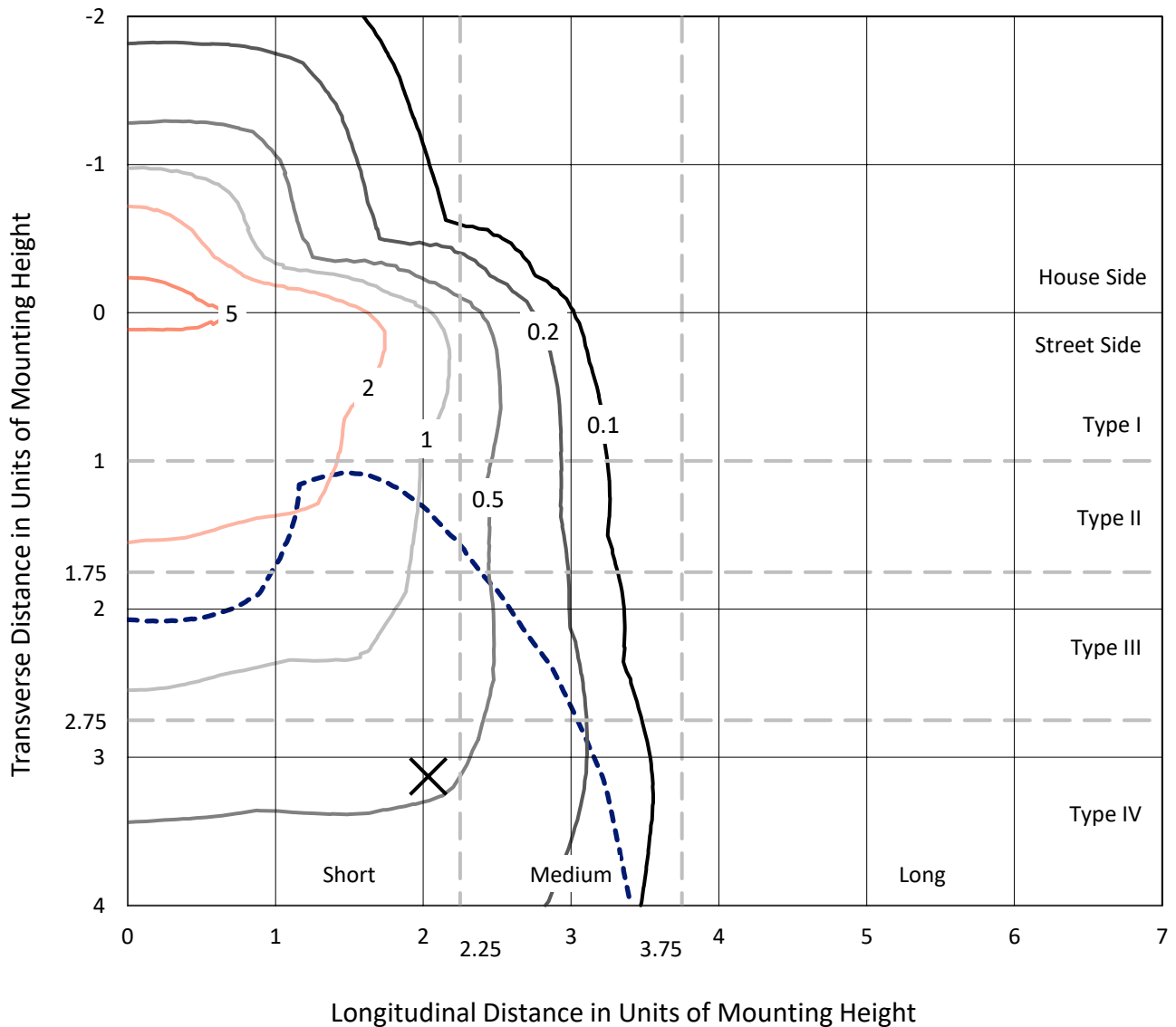
Input Watts (W): 249
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

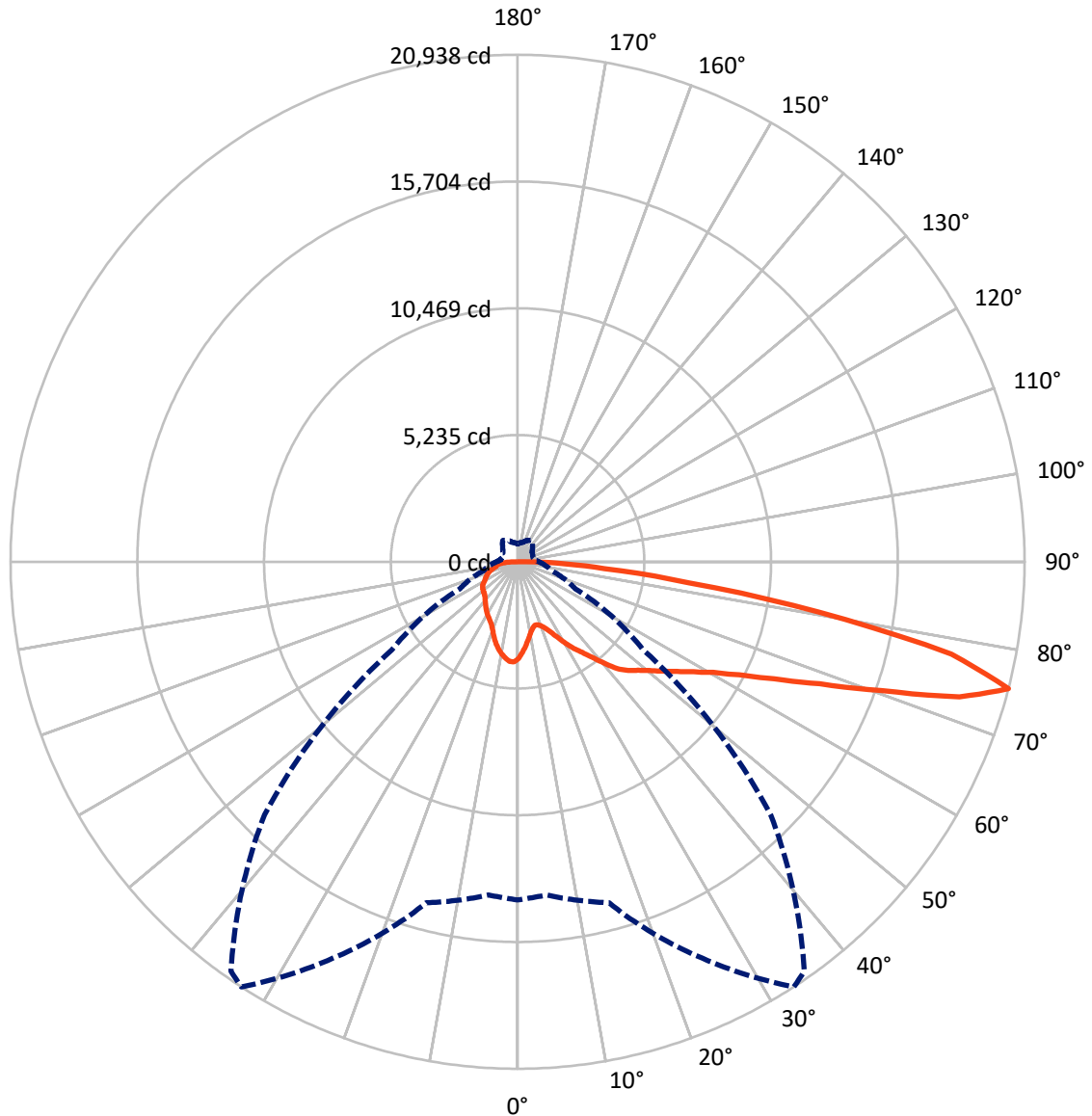
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.4 fc
 Type IV - Short - N/A

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CATALOG NUMBER: NVN-SA6B-722-U-T4FT

Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral - - - Horizontal Cone Through 75-Deg Vertical

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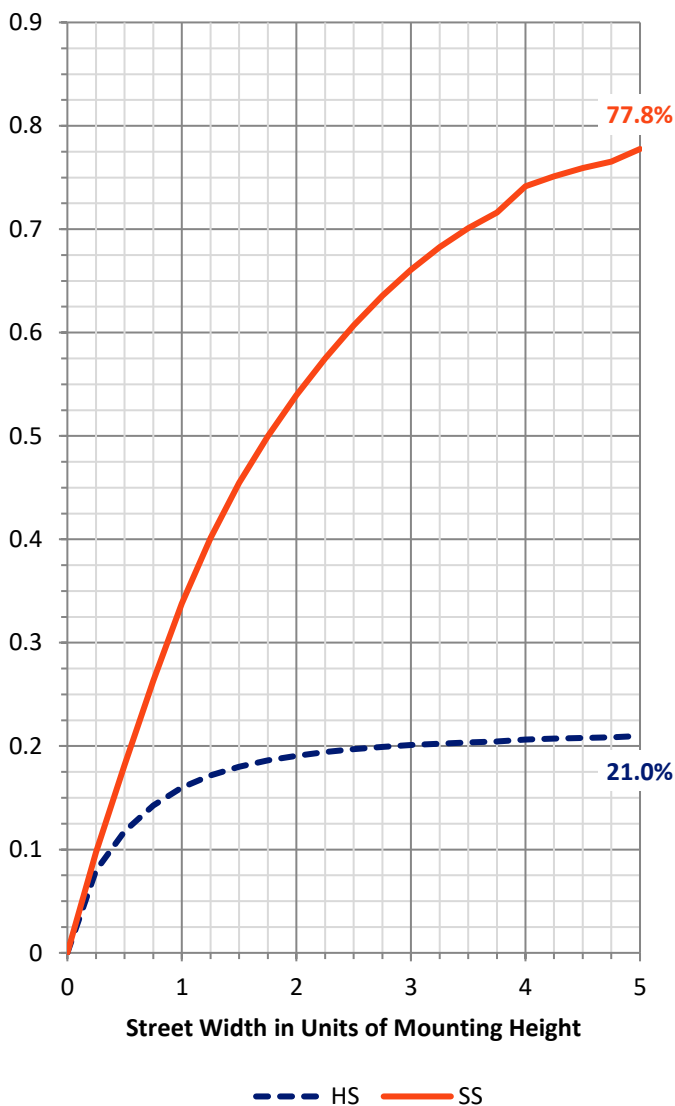
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5502.1 | 0.0 | 5502.1 |
| | % Fixture | 21.5 | 0.0 | 21.5 |
| Street Side | Lumens | 20121.9 | 0.0 | 20121.9 |
| | % Fixture | 78.5 | 0.0 | 78.5 |
| Total | Lumens | 25624.0 | 0.0 | 25624.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 362.2 | 1.4 |
| 10°-20° | 981.0 | 3.8 |
| 20°-30° | 1602.2 | 6.3 |
| 30°-40° | 2386.0 | 9.3 |
| 40°-50° | 3422.2 | 13.4 |
| 50°-60° | 4698.2 | 18.3 |
| 60°-70° | 5881.9 | 23.0 |
| 70°-80° | 5321.1 | 20.8 |
| 80°-90° | 969.3 | 3.8 |
| 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° | 25624.0 | 100.0 |
| 0°-180° | 25624.0 | 100.0 |

Coefficient of Utilization



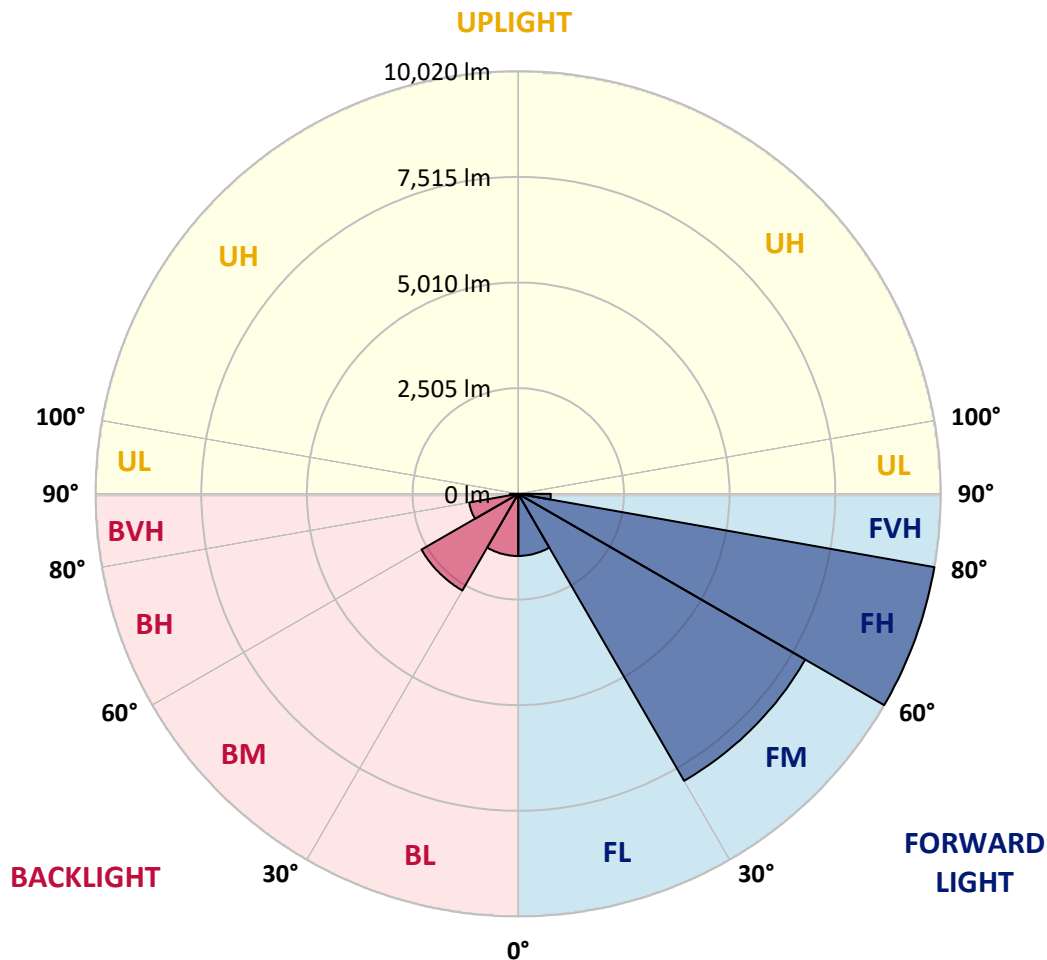
REPORT NUMBER: P361552
 CATALOG NUMBER: NVN-SA6B-722-U-T4FT

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 1471.7 | 5.7 | | | |
| FM (30°-60°) | 7858.4 | 30.7 | | | |
| FH (60°-80°) | 10019.9 | 39.1 | | | G4/12000 |
| FVH (80°-90°) | 771.9 | 3.0 | | | G5 |
| BL (0°-30°) | 1473.7 | 5.8 | B3/2500 | | |
| BM (30°-60°) | 2648.0 | 10.3 | B3/5000 | | |
| BH (60°-80°) | 1183.1 | 4.6 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 197.3 | 0.8 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G5

Type IV Short





REPORT NUMBER: P361552
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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|
| 0° | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 |
| 2.5° | 3719.3 | 3705.1 | 3731.7 | 3735.2 | 3758.2 | 3767.1 | 3798.9 | 3848.5 | 3889.2 | 3936.1 | 3978.6 |
| 5° | 3382.0 | 3372.3 | 3409.5 | 3436.0 | 3486.5 | 3507.7 | 3583.0 | 3688.3 | 3782.1 | 3888.3 | 3984.8 |
| 7.5° | 3061.6 | 3056.3 | 3097.9 | 3158.1 | 3216.5 | 3245.7 | 3375.9 | 3529.0 | 3685.6 | 3857.4 | 4005.2 |
| 10° | 2791.7 | 2789.9 | 2829.7 | 2889.0 | 2974.9 | 3007.6 | 3175.8 | 3377.6 | 3597.1 | 3833.5 | 4039.7 |
| 12.5° | 2640.3 | 2646.5 | 2665.1 | 2714.7 | 2794.3 | 2827.1 | 3013.8 | 3251.1 | 3522.8 | 3825.5 | 4090.1 |
| 15° | 2677.5 | 2687.2 | 2655.4 | 2653.6 | 2710.2 | 2735.9 | 2911.2 | 3160.8 | 3469.7 | 3838.8 | 4163.6 |
| 17.5° | 2835.9 | 2837.7 | 2753.6 | 2700.5 | 2735.0 | 2748.3 | 2879.3 | 3109.4 | 3438.7 | 3868.9 | 4255.7 |
| 20° | 3059.0 | 3054.6 | 2905.9 | 2817.3 | 2835.9 | 2839.5 | 2924.4 | 3110.3 | 3436.0 | 3921.1 | 4375.2 |
| 22.5° | 3354.6 | 3321.9 | 3121.8 | 3001.4 | 2997.0 | 2991.7 | 3040.4 | 3175.8 | 3475.0 | 4006.1 | 4517.7 |
| 25° | 3740.5 | 3709.5 | 3434.3 | 3269.6 | 3234.2 | 3221.0 | 3228.0 | 3315.7 | 3552.0 | 4097.2 | 4677.0 |
| 27.5° | 4169.8 | 4115.8 | 3850.3 | 3617.5 | 3544.0 | 3525.4 | 3483.0 | 3513.0 | 3636.1 | 4184.9 | 4866.4 |
| 30° | 4529.2 | 4500.0 | 4268.1 | 3991.9 | 3905.2 | 3878.6 | 3767.1 | 3734.3 | 3757.3 | 4304.3 | 5105.4 |
| 32.5° | 4730.1 | 4710.6 | 4569.9 | 4346.8 | 4266.3 | 4229.1 | 4071.6 | 4006.1 | 3952.1 | 4492.9 | 5429.3 |
| 35° | 4973.5 | 4961.1 | 4876.1 | 4714.2 | 4594.7 | 4555.7 | 4433.6 | 4365.4 | 4226.5 | 4752.2 | 5848.0 |
| 37.5° | 5283.3 | 5270.0 | 5271.8 | 5140.8 | 4998.3 | 4962.0 | 4881.4 | 4809.8 | 4582.3 | 5093.0 | 6303.0 |
| 40° | 5633.8 | 5608.1 | 5598.4 | 5592.2 | 5501.9 | 5481.6 | 5439.1 | 5341.7 | 5028.4 | 5500.1 | 6751.7 |
| 42.5° | 6161.3 | 6070.2 | 5875.4 | 5948.9 | 6038.3 | 6027.7 | 6062.2 | 5922.3 | 5524.0 | 5981.7 | 7189.8 |
| 45° | 6670.3 | 6520.7 | 6184.3 | 6200.3 | 6395.9 | 6455.2 | 6713.6 | 6614.5 | 6061.3 | 6509.2 | 7643.0 |
| 47.5° | 6902.2 | 6788.9 | 6503.0 | 6503.9 | 6697.7 | 6820.7 | 7387.2 | 7316.4 | 6626.0 | 7108.4 | 8196.2 |
| 50° | 7161.5 | 7048.2 | 6791.5 | 6888.0 | 7057.1 | 7188.1 | 8037.8 | 8001.5 | 7163.3 | 7764.3 | 8859.2 |
| 52.5° | 7444.8 | 7252.7 | 7089.8 | 7262.4 | 7499.6 | 7651.9 | 8689.2 | 8590.1 | 7656.3 | 8424.6 | 9621.3 |
| 55° | 7448.3 | 7396.1 | 7520.0 | 7646.6 | 8001.5 | 8188.3 | 9371.7 | 9109.7 | 8058.1 | 9073.4 | 10241.7 |
| 57.5° | 7872.3 | 7787.3 | 8050.2 | 8108.6 | 8572.4 | 8783.1 | 10050.6 | 9562.0 | 8467.1 | 9570.8 | 10576.3 |
| 60° | 8433.4 | 8360.9 | 8575.9 | 8730.0 | 9278.7 | 9560.2 | 10775.5 | 10026.7 | 8788.4 | 9946.1 | 10560.4 |
| 62.5° | 9402.6 | 9320.3 | 9317.7 | 9533.6 | 10272.7 | 10600.2 | 11588.9 | 10482.5 | 8915.8 | 10020.5 | 10109.9 |
| 65° | 10821.5 | 10690.5 | 10443.5 | 10546.2 | 11645.5 | 11972.2 | 12497.9 | 10812.6 | 8747.7 | 9622.2 | 8949.5 |
| 67.5° | 12202.3 | 12197.9 | 11894.3 | 12104.9 | 13458.3 | 13720.3 | 13533.5 | 10845.4 | 8222.8 | 8235.2 | 6890.7 |
| 70° | 13578.6 | 13596.4 | 13545.0 | 14277.9 | 15907.4 | 16180.0 | 14636.4 | 10405.5 | 7042.9 | 5947.1 | 4128.2 |
| 72.5° | 14669.1 | 14664.7 | 14923.1 | 16812.9 | 19085.9 | 19024.8 | 15565.7 | 9072.5 | 5056.7 | 3210.3 | 1972.9 |
| 75° | 13962.8 | 13808.8 | 14578.8 | 18068.0 | 20938.4 | 20640.1 | 14775.3 | 6328.6 | 2624.4 | 1461.3 | 1062.1 |
| 77.5° | 9107.0 | 9253.1 | 10383.4 | 14925.8 | 18314.9 | 17952.0 | 10840.1 | 2952.8 | 1236.5 | 958.6 | 770.1 |
| 80° | 3298.0 | 3452.0 | 4862.0 | 8454.7 | 12618.3 | 12559.0 | 5338.2 | 1213.5 | 836.4 | 724.0 | 561.2 |
| 82.5° | 1134.7 | 1191.4 | 1918.1 | 3754.7 | 7124.3 | 7389.9 | 2008.3 | 689.5 | 608.1 | 513.4 | 384.1 |
| 85° | 445.2 | 509.8 | 877.2 | 1806.5 | 3593.6 | 3620.1 | 813.4 | 412.5 | 423.1 | 336.3 | 210.7 |
| 87.5° | 169.1 | 205.3 | 419.5 | 839.1 | 1641.0 | 1507.4 | 291.2 | 196.5 | 240.8 | 200.0 | 100.0 |
| 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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 CATALOG NUMBER: NVN-SA6B-722-U-T4FT

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 | 4005.2 |
| 2.5° | 4011.4 | 4030.0 | 4068.9 | 4095.5 | 4123.8 | 4131.7 | 4135.3 | 4142.4 | 4149.4 | 4146.8 | 4147.7 |
| 5° | 4036.2 | 4072.4 | 4135.3 | 4161.8 | 4174.2 | 4160.1 | 4132.6 | 4110.5 | 4094.6 | 4085.7 | 4083.1 |
| 7.5° | 4076.9 | 4128.2 | 4195.5 | 4191.1 | 4162.7 | 4099.9 | 4029.1 | 3976.0 | 3931.7 | 3915.8 | 3906.9 |
| 10° | 4130.9 | 4191.1 | 4238.0 | 4187.5 | 4105.2 | 3996.3 | 3890.1 | 3807.8 | 3741.4 | 3715.7 | 3711.3 |
| 12.5° | 4199.9 | 4261.0 | 4269.8 | 4162.7 | 4026.4 | 3877.7 | 3733.4 | 3624.6 | 3525.4 | 3493.6 | 3486.5 |
| 15° | 4289.3 | 4346.8 | 4292.0 | 4119.4 | 3929.1 | 3729.0 | 3542.3 | 3394.4 | 3290.0 | 3251.1 | 3236.9 |
| 17.5° | 4383.1 | 4438.0 | 4296.4 | 4047.7 | 3801.6 | 3552.9 | 3318.3 | 3167.0 | 3047.5 | 3002.3 | 2997.0 |
| 20° | 4495.5 | 4520.3 | 4277.8 | 3945.0 | 3626.3 | 3324.5 | 3077.6 | 2935.1 | 2871.3 | 2839.5 | 2835.9 |
| 22.5° | 4634.5 | 4607.9 | 4235.3 | 3806.0 | 3404.2 | 3060.8 | 2859.8 | 2793.4 | 2777.5 | 2770.4 | 2773.1 |
| 25° | 4781.4 | 4700.0 | 4172.5 | 3624.6 | 3123.6 | 2797.0 | 2700.5 | 2719.1 | 2740.3 | 2737.7 | 2737.7 |
| 27.5° | 4943.4 | 4793.8 | 4076.0 | 3383.8 | 2812.9 | 2581.0 | 2592.5 | 2660.7 | 2692.5 | 2691.7 | 2690.8 |
| 30° | 5151.4 | 4900.0 | 3953.0 | 3094.4 | 2522.6 | 2428.8 | 2498.7 | 2581.9 | 2625.3 | 2623.5 | 2624.4 |
| 32.5° | 5407.2 | 5016.9 | 3785.7 | 2771.3 | 2312.8 | 2316.4 | 2396.9 | 2479.2 | 2529.7 | 2525.3 | 2526.1 |
| 35° | 5706.4 | 5147.9 | 3559.1 | 2452.7 | 2173.9 | 2227.0 | 2290.7 | 2348.2 | 2396.0 | 2389.8 | 2383.6 |
| 37.5° | 6032.1 | 5276.2 | 3258.1 | 2167.7 | 2060.6 | 2143.8 | 2196.9 | 2206.6 | 2228.7 | 2212.8 | 2201.3 |
| 40° | 6341.9 | 5374.5 | 2870.4 | 1934.0 | 1946.4 | 2073.0 | 2107.5 | 2068.5 | 2028.7 | 2023.4 | 2007.5 |
| 42.5° | 6611.9 | 5407.2 | 2478.3 | 1747.2 | 1826.0 | 1998.6 | 2019.8 | 1938.4 | 1866.7 | 1833.1 | 1818.9 |
| 45° | 6896.9 | 5418.7 | 2112.8 | 1590.6 | 1710.1 | 1932.2 | 1955.2 | 1846.4 | 1745.5 | 1672.9 | 1649.0 |
| 47.5° | 7269.5 | 5501.9 | 1828.7 | 1474.6 | 1621.5 | 1888.0 | 1920.7 | 1772.9 | 1641.9 | 1538.3 | 1516.2 |
| 50° | 7757.2 | 5666.5 | 1597.6 | 1386.1 | 1564.0 | 1858.8 | 1895.9 | 1701.2 | 1556.9 | 1432.1 | 1410.0 |
| 52.5° | 8298.9 | 5817.9 | 1410.9 | 1314.4 | 1508.2 | 1807.4 | 1864.1 | 1649.9 | 1477.3 | 1333.9 | 1310.0 |
| 55° | 8677.7 | 5702.0 | 1260.4 | 1240.1 | 1435.7 | 1734.0 | 1819.8 | 1606.5 | 1363.1 | 1238.3 | 1217.0 |
| 57.5° | 8750.3 | 5305.4 | 1146.2 | 1163.0 | 1348.0 | 1641.9 | 1751.7 | 1510.0 | 1301.1 | 1196.7 | 1174.6 |
| 60° | 8552.0 | 4753.1 | 1061.3 | 1092.2 | 1254.2 | 1525.9 | 1624.2 | 1441.9 | 1241.8 | 1152.4 | 1133.8 |
| 62.5° | 8053.7 | 4187.5 | 998.4 | 1028.5 | 1166.6 | 1408.2 | 1544.5 | 1370.2 | 1181.6 | 1102.0 | 1083.4 |
| 65° | 7047.3 | 3515.7 | 938.2 | 971.9 | 1085.2 | 1306.4 | 1472.8 | 1303.8 | 1122.3 | 1061.3 | 1043.6 |
| 67.5° | 5319.6 | 2633.2 | 881.6 | 911.7 | 1012.6 | 1217.9 | 1395.0 | 1238.3 | 1064.8 | 1025.9 | 1004.6 |
| 70° | 3132.4 | 1649.0 | 817.0 | 848.8 | 936.5 | 1125.9 | 1311.8 | 1166.6 | 993.1 | 975.4 | 948.0 |
| 72.5° | 1457.8 | 992.2 | 743.5 | 774.5 | 840.9 | 1002.8 | 1204.7 | 1072.8 | 908.1 | 869.2 | 832.0 |
| 75° | 870.1 | 725.8 | 656.8 | 684.2 | 731.1 | 871.8 | 1070.1 | 977.2 | 827.6 | 776.3 | 737.3 |
| 77.5° | 650.6 | 555.0 | 561.2 | 590.4 | 628.4 | 763.0 | 948.0 | 901.9 | 765.6 | 725.8 | 699.2 |
| 80° | 468.2 | 421.3 | 457.6 | 489.5 | 529.3 | 693.9 | 908.1 | 833.8 | 692.2 | 639.1 | 614.3 |
| 82.5° | 312.4 | 302.7 | 344.3 | 377.1 | 416.0 | 607.2 | 853.3 | 730.2 | 591.3 | 524.0 | 469.1 |
| 85° | 172.6 | 182.3 | 231.9 | 246.1 | 279.7 | 427.5 | 699.2 | 586.8 | 445.2 | 358.5 | 342.5 |
| 87.5° | 71.7 | 84.1 | 124.8 | 120.4 | 148.7 | 254.9 | 460.3 | 354.0 | 283.2 | 211.5 | 164.6 |
| 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: SP1-1908-441-10-R4

Test Date: 10/25/2019

Luminaire Tested: SA1C-722-U-5WQ

Data in this report applies to families of products SA1C-722-U-5WQ.

Test Information

Test Method: LM-79-2008 Report
 Number: SP1-1908-441-10-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-722-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

CCT (K): 2237
 CIE u': 0.2876
 CIE v': 0.5346
 Duv: -0.0006
 CIE x: 0.5005
 CIE y: 0.4134
 CIE z: 0.0860
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 587
 Purity: 74.5
 Rf: 69.8
 Rg: 99.2

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 72.0 | | |
| R1: | 68.9 | R9: | -17.4 |
| R2: | 83.0 | R10: | 61.3 |
| R3: | 95.2 | R11: | 59.8 |
| R4: | 66.2 | R12: | 50.5 |
| R5: | 65.9 | R13: | 71.1 |
| R6: | 76.3 | R14: | 96.9 |
| R7: | 76.7 | | |
| R8: | 43.8 | | |



Test Conditions

Stabilization Time: 71M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.7/41%
 Sphere Temperature (°C): 25.6

REPORT NUMBER: SP1-1908-441-10-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 2200K 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 4696.9

S/P: 0.85

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

REPORT NUMBER: SP1-1908-441-10-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 1470.8 M/P: 0.27

| 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 | 1768 | NR | 490 | 5206 | NR | 620 | 130919 | NR | 750 | 8553 | NR | 880 | 2713 | NR |
| 365 | 1569 | NR | 495 | 7286 | NR | 625 | 125335 | NR | 755 | 7696 | NR | 885 | 2316 | NR |
| 370 | 1594 | NR | 500 | 10654 | NR | 630 | 118388 | NR | 760 | 6978 | NR | 890 | 2539 | NR |
| 375 | 1744 | NR | 505 | 15189 | NR | 635 | 111855 | NR | 765 | 6377 | NR | 895 | 1933 | NR |
| 380 | 1659 | NR | 510 | 20541 | NR | 640 | 104062 | NR | 770 | 5600 | NR | 900 | 2216 | NR |
| 385 | 1504 | NR | 515 | 26492 | NR | 645 | 96365 | NR | 775 | 5000 | NR | 905 | 2067 | NR |
| 390 | 1541 | NR | 520 | 32294 | NR | 650 | 88651 | NR | 780 | 4709 | NR | 910 | 1959 | NR |
| 395 | 1355 | NR | 525 | 38123 | NR | 655 | 81152 | NR | 785 | 4305 | NR | 915 | 1874 | NR |
| 400 | 1243 | NR | 530 | 43232 | NR | 660 | 73523 | NR | 790 | 4040 | NR | 920 | 1484 | NR |
| 405 | 1417 | NR | 535 | 48012 | NR | 665 | 66123 | NR | 795 | 3642 | NR | 925 | 1914 | NR |
| 410 | 2147 | NR | 540 | 52623 | NR | 670 | 58677 | NR | 800 | 3594 | NR | 930 | 1948 | NR |
| 415 | 3837 | NR | 545 | 57516 | NR | 675 | 52349 | NR | 805 | 3190 | NR | 935 | 2079 | NR |
| 420 | 7159 | NR | 550 | 62613 | NR | 680 | 46159 | NR | 810 | 3241 | NR | 940 | 2263 | NR |
| 425 | 12599 | NR | 555 | 68554 | NR | 685 | 40525 | NR | 815 | 2732 | NR | 945 | 1688 | NR |
| 430 | 19019 | NR | 560 | 75325 | NR | 690 | 35615 | NR | 820 | 2612 | NR | 950 | 1560 | NR |
| 435 | 24875 | NR | 565 | 82533 | NR | 695 | 31158 | NR | 825 | 2966 | NR | 955 | 2826 | NR |
| 440 | 29103 | NR | 570 | 90909 | NR | 700 | 27409 | NR | 830 | 2574 | NR | 960 | 1477 | NR |
| 445 | 29901 | NR | 575 | 99621 | NR | 705 | 24204 | NR | 835 | 2633 | NR | 965 | 1568 | NR |
| 450 | 24862 | NR | 580 | 108484 | NR | 710 | 21558 | NR | 840 | 2526 | NR | 970 | 2030 | NR |
| 455 | 15942 | NR | 585 | 116679 | NR | 715 | 19222 | NR | 845 | 2631 | NR | 975 | 1986 | NR |
| 460 | 9916 | NR | 590 | 123752 | NR | 720 | 17310 | NR | 850 | 2079 | NR | 980 | 2540 | NR |
| 465 | 7051 | NR | 595 | 129324 | NR | 725 | 15280 | NR | 855 | 2309 | NR | 985 | 1139 | NR |
| 470 | 5227 | NR | 600 | 134082 | NR | 730 | 13282 | NR | 860 | 2528 | NR | 990 | 2018 | NR |
| 475 | 4257 | NR | 605 | 135698 | NR | 735 | 11753 | NR | 865 | 2121 | NR | 995 | 3445 | NR |
| 480 | 4052 | NR | 610 | 135144 | NR | 740 | 10654 | NR | 870 | 2751 | NR | 1000 | 3704 | NR |
| 485 | 4298 | NR | 615 | 134180 | NR | 745 | 9451 | NR | 875 | 2317 | NR | | | |

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Summary

$R_f = 69.8$
 $R_g = 99.2$
 $CIE R_a = 72.0$
 $R_g = -17.4$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 87 | CES26 = 56 | CES51 = 74 | CES76 = 56 |
| CES02 = 65 | CES27 = 76 | CES52 = 76 | CES77 = 81 |
| CES03 = 32 | CES28 = 83 | CES53 = 65 | CES78 = 63 |
| CES04 = 72 | CES29 = 46 | CES54 = 78 | CES79 = 84 |
| CES05 = 52 | CES30 = 48 | CES55 = 75 | CES80 = 84 |
| CES06 = 52 | CES31 = 51 | CES56 = 65 | CES81 = 63 |
| CES07 = 44 | CES32 = 51 | CES57 = 62 | CES82 = 92 |
| CES08 = 42 | CES33 = 53 | CES58 = 66 | CES83 = 83 |
| CES09 = 29 | CES34 = 70 | CES59 = 84 | CES84 = 92 |
| CES10 = 78 | CES35 = 85 | CES60 = 90 | CES85 = 81 |
| CES11 = 61 | CES36 = 78 | CES61 = 84 | CES86 = 56 |
| CES12 = 68 | CES37 = 80 | CES62 = 70 | CES87 = 78 |
| CES13 = 45 | CES38 = 53 | CES63 = 68 | CES88 = 72 |
| CES14 = 75 | CES39 = 90 | CES64 = 69 | CES89 = 62 |
| CES15 = 72 | CES40 = 84 | CES65 = 67 | CES90 = 67 |
| CES16 = 49 | CES41 = 75 | CES66 = 64 | CES91 = 90 |
| CES17 = 51 | CES42 = 79 | CES67 = 63 | CES92 = 67 |
| CES18 = 57 | CES43 = 64 | CES68 = 69 | CES93 = 79 |
| CES19 = 74 | CES44 = 98 | CES69 = 80 | CES94 = 52 |
| CES20 = 68 | CES45 = 73 | CES70 = 63 | CES95 = 76 |
| CES21 = 89 | CES46 = 67 | CES71 = 63 | CES96 = 78 |
| CES22 = 81 | CES47 = 60 | CES72 = 87 | CES97 = 77 |
| CES23 = 92 | CES48 = 48 | CES73 = 56 | CES98 = 71 |
| CES24 = 92 | CES49 = 64 | CES74 = 87 | CES99 = 65 |
| CES25 = 74 | CES50 = 74 | CES75 = 66 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)