

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: P360127

Luminaire Tested: NVN-SA3A-730-U-SLL-HSS

Issue Date: 3/3/2020

### Test Information

Test Method: LM-79-2019  
Report Number: P360127  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-27)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: NVN-SA3A-730-U-SLL-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

### Summary

Lumens per Lamp: N/A  
Luminaire Lumens: 9624 lumens  
Efficiency: N/A  
Efficacy: 100.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2

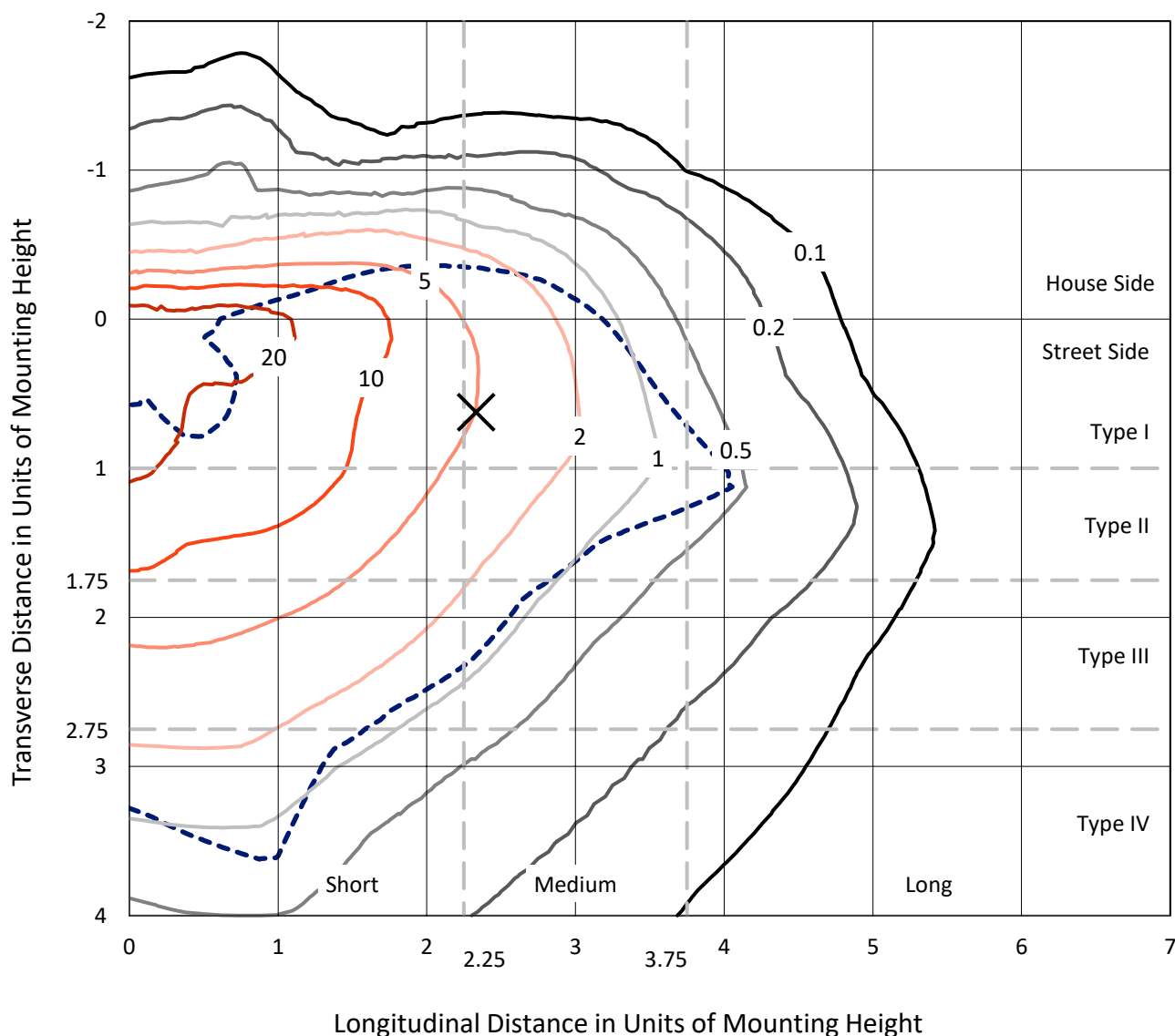
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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## Iso-Footcandle Lines of Horizontal Illumination

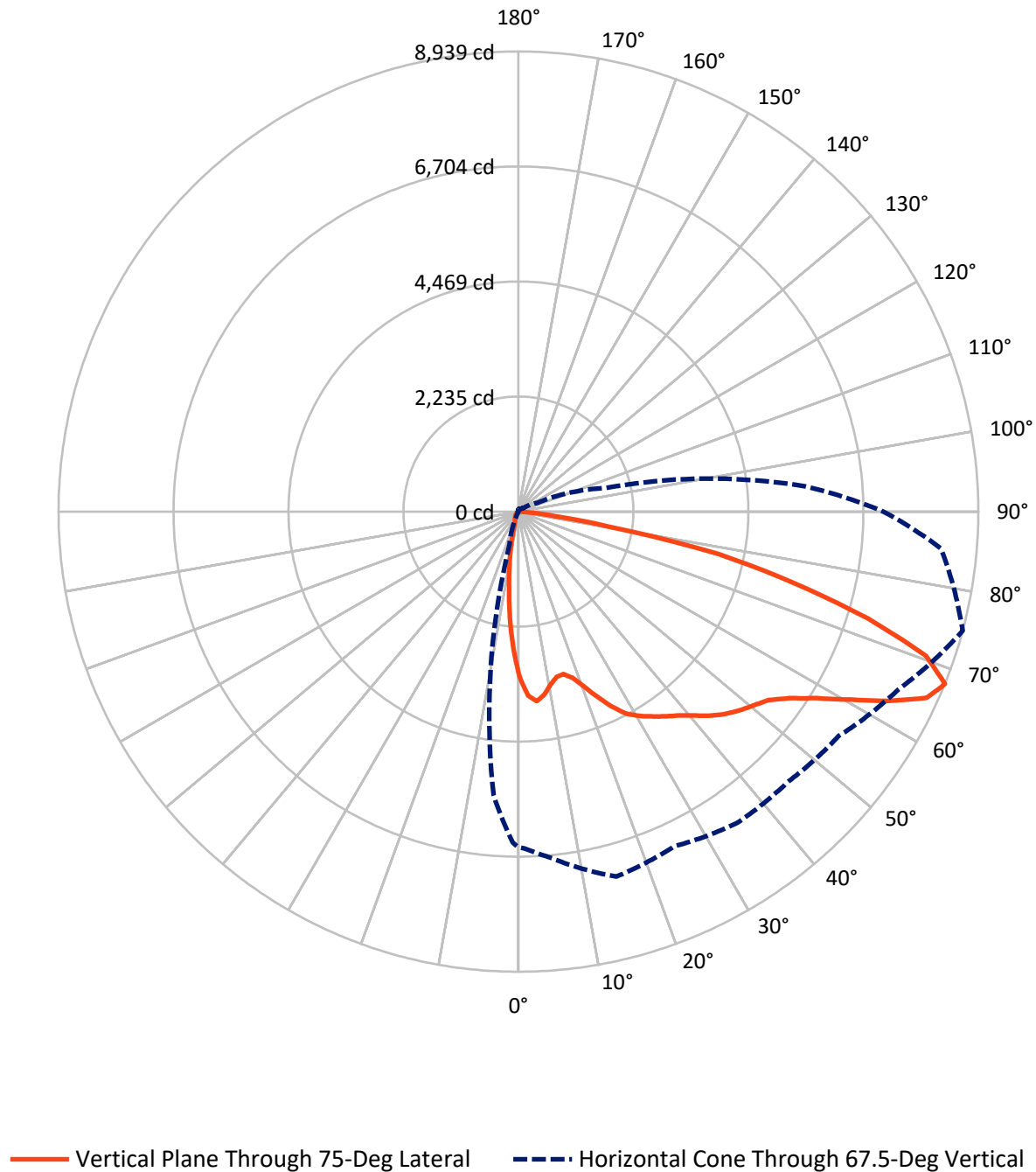
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 41.8 fc  
 Type III - Medium - N/A

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## Luminous Intensity Polar Plot



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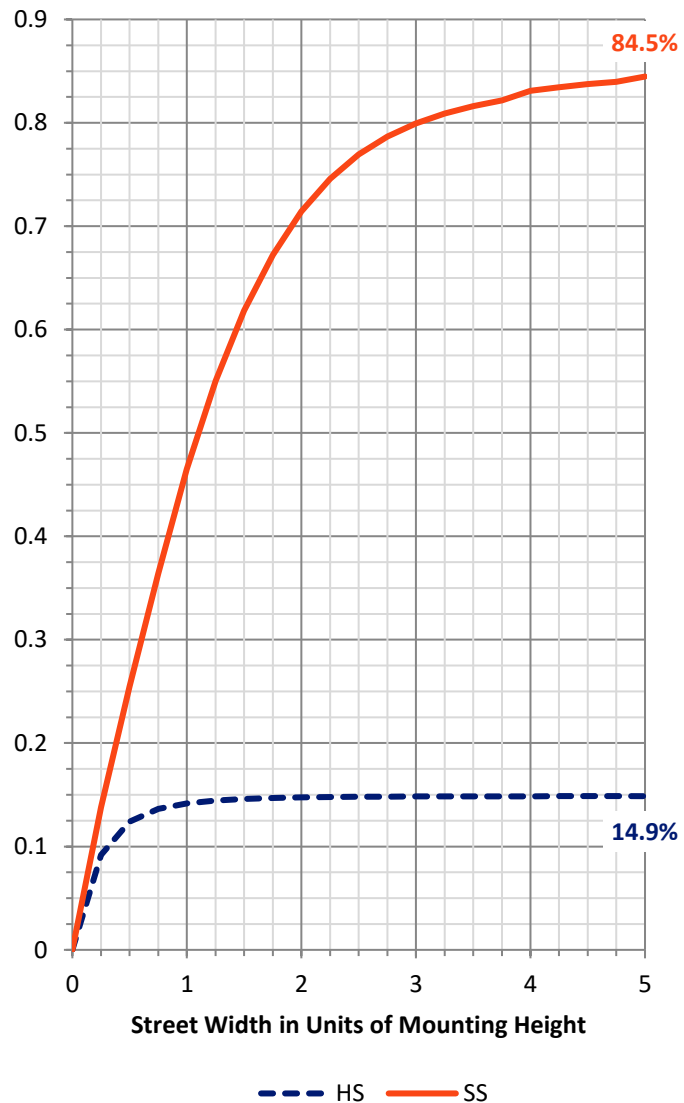
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1444.2   | 0.0    | 1444.2 |
|                    | % Fixture | 15.0     | 0.0    | 15.0   |
| <b>Street Side</b> | Lumens    | 8179.8   | 0.0    | 8179.8 |
|                    | % Fixture | 85.0     | 0.0    | 85.0   |
| <b>Total</b>       | Lumens    | 9624.0   | 0.0    | 9624.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 244.9  | 2.5       |
| 10°-20°   | 482.2  | 5.0       |
| 20°-30°   | 682.2  | 7.1       |
| 30°-40°   | 1003.1 | 10.4      |
| 40°-50°   | 1441.7 | 15.0      |
| 50°-60°   | 2029.6 | 21.1      |
| 60°-70°   | 2370.4 | 24.6      |
| 70°-80°   | 1209.3 | 12.6      |
| 80°-90°   | 160.6  | 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°    | 9624.0 | 100.0     |
| 0°-180°   | 9624.0 | 100.0     |

**Coefficient of Utilization**



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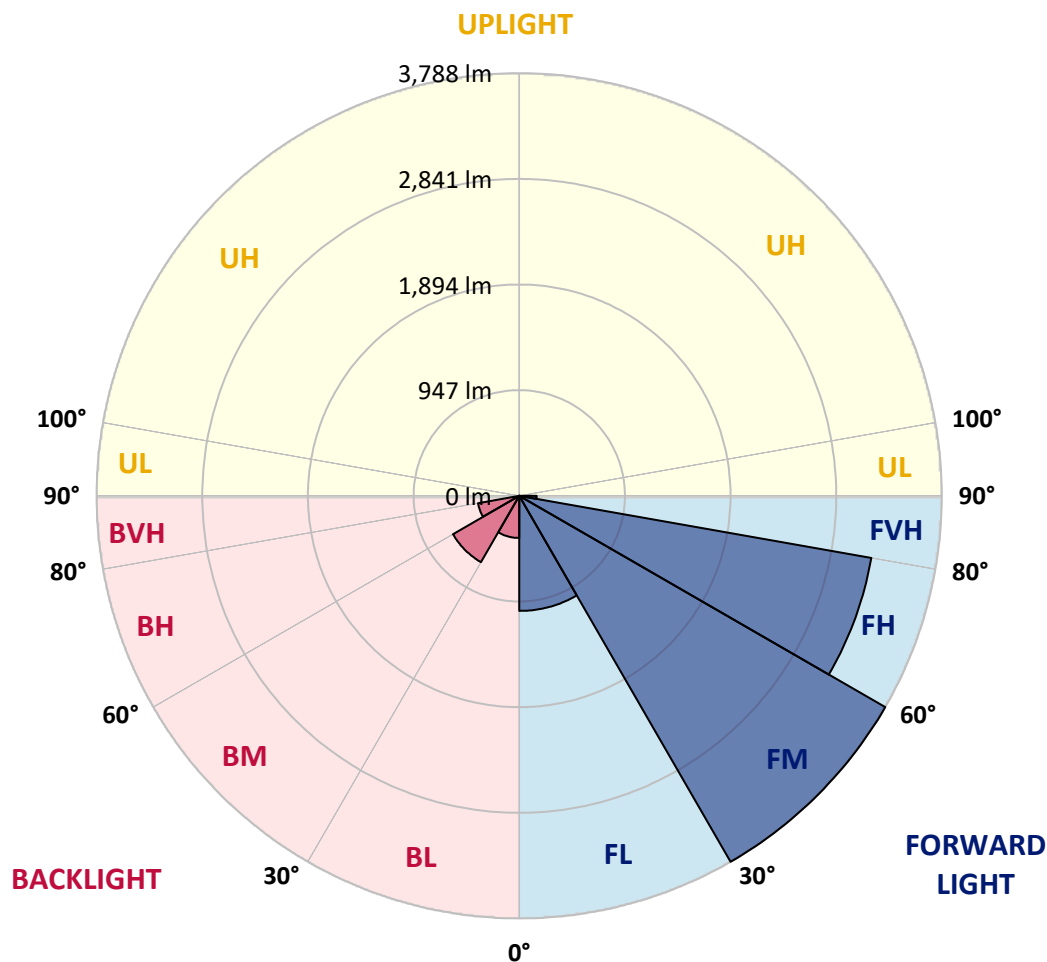
CATALOG NUMBER: NVN-SA3A-730-U-SLL-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1031.7 | 10.7      |                         |      |         |
| FM   | (30°-60°)   | 3787.8 | 39.4      |                         |      |         |
| FH   | (60°-80°)   | 3204.5 | 33.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 155.8  | 1.6       |                         |      | G2/225  |
| BL   | (0°-30°)    | 377.7  | 3.9       | B1/500                  |      |         |
| BM   | (30°-60°)   | 686.5  | 7.1       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 375.1  | 3.9       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 4.9    | 0.1       |                         |      | G0/10   |
| 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°     | 1°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 |
| 2.5°  | 3499.9 | 3505.4 | 3533.7 | 3599.3 | 3670.9 | 3676.4 | 3724.7 | 3675.0 | 3658.1 | 3577.9 | 3494.9 |
| 5°    | 3526.4 | 3547.4 | 3644.5 | 3837.3 | 4004.6 | 4058.4 | 4096.7 | 3999.2 | 3896.6 | 3700.5 | 3491.3 |
| 7.5°  | 3313.5 | 3348.6 | 3501.3 | 3863.3 | 4162.4 | 4294.6 | 4319.7 | 4166.9 | 3915.7 | 3593.0 | 3278.4 |
| 10°   | 3040.9 | 3081.0 | 3265.2 | 3710.1 | 4120.9 | 4347.5 | 4382.1 | 4182.0 | 3820.9 | 3418.8 | 3048.2 |
| 12.5° | 2820.2 | 2867.2 | 3055.4 | 3537.8 | 3978.2 | 4228.9 | 4297.3 | 4131.4 | 3738.8 | 3295.2 | 2890.9 |
| 15°   | 2718.5 | 2772.3 | 2970.2 | 3426.5 | 3820.0 | 4017.4 | 4073.9 | 4002.4 | 3693.3 | 3275.6 | 2854.4 |
| 17.5° | 2776.9 | 2835.2 | 3039.5 | 3436.1 | 3671.4 | 3755.7 | 3801.3 | 3830.5 | 3693.3 | 3393.7 | 2961.1 |
| 20°   | 3016.2 | 3079.2 | 3295.2 | 3533.2 | 3548.3 | 3516.8 | 3565.6 | 3668.2 | 3736.1 | 3618.0 | 3217.3 |
| 22.5° | 3347.2 | 3421.1 | 3665.0 | 3699.6 | 3488.1 | 3369.1 | 3375.5 | 3536.4 | 3814.1 | 3902.5 | 3572.9 |
| 25°   | 3750.7 | 3841.0 | 4089.0 | 3947.6 | 3513.2 | 3281.1 | 3278.8 | 3427.9 | 3890.2 | 4187.4 | 3969.1 |
| 27.5° | 4151.4 | 4250.8 | 4468.7 | 4250.4 | 3616.7 | 3265.2 | 3260.6 | 3395.1 | 3964.5 | 4440.9 | 4401.7 |
| 30°   | 4487.4 | 4584.1 | 4771.9 | 4469.6 | 3728.4 | 3302.5 | 3280.7 | 3430.2 | 4008.7 | 4605.5 | 4717.2 |
| 32.5° | 4761.0 | 4838.5 | 4990.3 | 4620.6 | 3847.8 | 3375.0 | 3327.6 | 3524.1 | 4084.0 | 4744.6 | 5007.2 |
| 35°   | 5061.9 | 5143.5 | 5204.1 | 4764.2 | 3981.8 | 3479.4 | 3411.5 | 3673.2 | 4199.8 | 4885.9 | 5324.9 |
| 37.5° | 5405.2 | 5486.3 | 5479.0 | 4895.5 | 4151.9 | 3652.2 | 3608.9 | 3909.3 | 4379.8 | 5025.8 | 5679.6 |
| 40°   | 5741.2 | 5824.1 | 5764.9 | 5039.1 | 4351.6 | 3937.2 | 3905.2 | 4264.0 | 4621.0 | 5205.0 | 6095.4 |
| 42.5° | 6055.7 | 6145.5 | 6018.8 | 5174.9 | 4589.6 | 4296.4 | 4351.1 | 4720.8 | 4922.8 | 5425.7 | 6453.7 |
| 45°   | 6309.2 | 6400.8 | 6231.7 | 5307.1 | 4840.3 | 4732.2 | 4896.8 | 5226.9 | 5285.7 | 5612.1 | 6695.8 |
| 47.5° | 6493.4 | 6580.0 | 6379.4 | 5439.3 | 5161.2 | 5265.2 | 5552.0 | 5757.6 | 5613.5 | 5774.0 | 6867.7 |
| 50°   | 6611.0 | 6678.5 | 6422.7 | 5604.8 | 5582.5 | 5887.0 | 6234.4 | 6334.7 | 5922.1 | 5919.9 | 7076.5 |
| 52.5° | 6685.8 | 6716.3 | 6454.6 | 5777.6 | 6022.0 | 6564.1 | 6902.8 | 6934.2 | 6239.9 | 6080.3 | 7357.8 |
| 55°   | 6943.4 | 6968.0 | 6680.8 | 5986.9 | 6385.3 | 7157.2 | 7507.3 | 7478.1 | 6599.6 | 6394.5 | 7689.7 |
| 57.5° | 7382.9 | 7408.8 | 7148.1 | 6287.8 | 6679.4 | 7523.7 | 7945.4 | 7997.9 | 7021.3 | 6835.8 | 8045.3 |
| 60°   | 7603.5 | 7651.8 | 7558.8 | 6668.9 | 6964.3 | 7758.1 | 8244.0 | 8411.4 | 7548.3 | 7417.5 | 8389.9 |
| 62.5° | 7403.4 | 7473.6 | 7608.5 | 7091.5 | 7247.5 | 7887.1 | 8337.1 | 8559.5 | 8088.1 | 8095.4 | 8602.4 |
| 65°   | 7004.0 | 7060.1 | 7288.9 | 7323.1 | 7411.6 | 7871.1 | 8107.3 | 8352.6 | 8418.7 | 8718.2 | 8591.0 |
| 67.5° | 6521.7 | 6542.6 | 6736.8 | 7341.4 | 7173.6 | 7391.5 | 7417.0 | 7598.5 | 8157.4 | 8938.8 | 8245.9 |
| 70°   | 5827.3 | 5838.7 | 6008.3 | 6730.9 | 6164.7 | 6212.6 | 6174.7 | 6211.6 | 7013.1 | 8401.3 | 7374.6 |
| 72.5° | 4689.8 | 4718.6 | 4959.7 | 5589.8 | 4491.1 | 4352.9 | 4650.2 | 4633.8 | 5401.1 | 7097.9 | 5477.2 |
| 75°   | 3453.0 | 3502.7 | 3866.9 | 4502.5 | 3152.1 | 2851.2 | 3068.2 | 3126.1 | 3839.6 | 5490.4 | 3425.2 |
| 77.5° | 2417.6 | 2454.6 | 2807.4 | 3309.8 | 2281.3 | 2038.8 | 1960.4 | 2029.2 | 2534.4 | 3971.8 | 1725.6 |
| 80°   | 1392.8 | 1406.5 | 1631.7 | 1911.1 | 1537.3 | 1758.9 | 1593.4 | 1640.8 | 1518.6 | 1767.1 | 742.2  |
| 82.5° | 911.3  | 913.6  | 1001.6 | 1137.5 | 957.4  | 1112.4 | 823.4  | 1052.7 | 934.1  | 709.8  | 241.6  |
| 85°   | 492.4  | 495.1  | 580.8  | 807.4  | 542.1  | 306.4  | 180.1  | 369.7  | 577.6  | 162.8  | 66.1   |
| 87.5° | 54.3   | 49.7   | 175.1  | 293.6  | 150.4  | 27.8   | 9.6    | 41.5   | 92.5   | 10.5   | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 |
| 2.5°  | 3452.5 | 3414.7 | 3320.3 | 3220.5 | 3140.2 | 3065.0 | 2989.3 | 2896.8 | 2825.2 | 2810.6 | 2786.9 |
| 5°    | 3378.7 | 3258.8 | 3060.9 | 2862.1 | 2702.1 | 2500.2 | 2372.1 | 2272.2 | 2174.6 | 2168.7 | 2149.1 |
| 7.5°  | 3120.6 | 2962.9 | 2684.3 | 2409.4 | 2184.2 | 1991.8 | 1797.6 | 1667.7 | 1565.6 | 1529.5 | 1508.1 |
| 10°   | 2872.6 | 2695.3 | 2347.4 | 2033.8 | 1832.7 | 1662.7 | 1525.9 | 1390.0 | 1266.9 | 1182.2 | 1143.9 |
| 12.5° | 2699.4 | 2503.3 | 2119.9 | 1849.6 | 1705.5 | 1544.1 | 1377.3 | 1207.7 | 1065.9 | 963.8  | 901.3  |
| 15°   | 2632.4 | 2423.1 | 2043.8 | 1776.6 | 1598.8 | 1394.6 | 1181.2 | 987.5  | 830.2  | 737.6  | 681.6  |
| 17.5° | 2712.2 | 2468.7 | 2037.9 | 1687.7 | 1439.3 | 1185.3 | 949.6  | 720.8  | 572.6  | 502.4  | 466.4  |
| 20°   | 2914.6 | 2613.7 | 2035.6 | 1578.8 | 1249.6 | 937.3  | 643.3  | 474.1  | 384.3  | 345.1  | 328.2  |
| 22.5° | 3200.9 | 2798.8 | 2053.8 | 1471.2 | 1052.2 | 669.7  | 444.0  | 348.3  | 302.3  | 281.3  | 271.7  |
| 25°   | 3569.2 | 3058.6 | 2105.3 | 1373.6 | 866.7  | 499.7  | 346.0  | 291.8  | 259.4  | 243.0  | 236.2  |
| 27.5° | 3961.8 | 3357.7 | 2185.6 | 1288.8 | 715.8  | 398.5  | 296.3  | 249.8  | 226.6  | 215.2  | 208.8  |
| 30°   | 4285.5 | 3704.2 | 2266.7 | 1194.5 | 606.3  | 347.4  | 271.3  | 228.0  | 201.1  | 193.8  | 187.8  |
| 32.5° | 4568.6 | 3966.3 | 2324.2 | 1109.2 | 534.8  | 308.6  | 245.3  | 203.8  | 185.6  | 171.4  | 165.0  |
| 35°   | 4861.7 | 4184.7 | 2322.4 | 1049.5 | 485.5  | 279.5  | 223.4  | 182.4  | 160.5  | 144.1  | 139.0  |
| 37.5° | 5179.0 | 4431.4 | 2282.7 | 998.4  | 464.1  | 256.2  | 211.1  | 171.0  | 149.1  | 132.7  | 126.3  |
| 40°   | 5550.6 | 4690.3 | 2242.1 | 950.6  | 458.2  | 237.5  | 202.4  | 161.8  | 138.6  | 122.6  | 116.3  |
| 42.5° | 5912.6 | 4923.7 | 2206.6 | 915.0  | 432.6  | 237.1  | 194.7  | 155.0  | 130.4  | 114.9  | 107.6  |
| 45°   | 6202.1 | 5141.2 | 2199.7 | 893.6  | 405.8  | 245.3  | 190.6  | 150.4  | 124.0  | 108.5  | 101.7  |
| 47.5° | 6442.8 | 5377.3 | 2243.5 | 878.5  | 380.2  | 223.8  | 200.6  | 147.3  | 118.1  | 103.0  | 95.3   |
| 50°   | 6729.1 | 5667.3 | 2346.5 | 853.9  | 353.3  | 201.5  | 229.8  | 148.2  | 113.1  | 97.6   | 89.4   |
| 52.5° | 7128.5 | 6068.5 | 2497.9 | 812.4  | 316.4  | 181.0  | 226.1  | 149.1  | 107.6  | 91.6   | 83.4   |
| 55°   | 7576.2 | 6569.5 | 2660.6 | 743.6  | 264.9  | 154.1  | 193.8  | 142.7  | 97.1   | 85.3   | 77.5   |
| 57.5° | 8046.6 | 7024.1 | 2757.3 | 661.5  | 210.6  | 133.1  | 155.0  | 129.9  | 85.7   | 76.6   | 71.6   |
| 60°   | 8120.5 | 7196.8 | 2713.1 | 560.8  | 167.3  | 115.8  | 114.9  | 132.2  | 76.6   | 67.5   | 63.8   |
| 62.5° | 7936.8 | 6979.8 | 2499.2 | 470.9  | 140.0  | 101.7  | 94.4   | 115.3  | 69.3   | 60.2   | 56.5   |
| 65°   | 7583.4 | 6393.1 | 2152.8 | 424.4  | 129.9  | 87.1   | 78.4   | 81.2   | 60.6   | 52.4   | 49.2   |
| 67.5° | 7092.0 | 5609.9 | 1767.5 | 398.0  | 128.6  | 74.8   | 67.0   | 61.5   | 52.4   | 45.6   | 42.9   |
| 70°   | 6087.2 | 4673.4 | 1410.1 | 383.4  | 124.9  | 62.9   | 56.5   | 50.1   | 43.8   | 38.8   | 36.5   |
| 72.5° | 4480.1 | 3311.7 | 1096.9 | 367.5  | 125.8  | 50.1   | 49.2   | 41.5   | 35.1   | 30.1   | 29.2   |
| 75°   | 2588.6 | 1892.0 | 719.4  | 297.7  | 119.9  | 38.8   | 41.0   | 29.2   | 24.6   | 21.0   | 21.0   |
| 77.5° | 1379.6 | 1153.9 | 274.0  | 124.0  | 43.8   | 24.6   | 23.3   | 17.3   | 15.5   | 12.8   | 12.3   |
| 80°   | 601.3  | 507.9  | 82.5   | 34.6   | 24.2   | 13.2   | 8.7    | 7.8    | 6.8    | 5.5    | 5.0    |
| 82.5° | 212.9  | 183.7  | 26.9   | 16.9   | 10.5   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 48.3   | 34.6   | 0.0    | 4.1    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



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**CANDELA DISTRIBUTION (continued):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°   | 270°   | 275°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 |
| 2.5°  | 2738.6 | 2728.6 | 2669.3 | 2671.6 | 2682.1 | 2697.1 | 2661.5 | 2678.0 | 2722.2 | 2764.6 | 2780.5 |
| 5°    | 2117.7 | 2119.9 | 2083.9 | 2106.3 | 2126.3 | 2140.0 | 2082.6 | 2083.5 | 2118.6 | 2166.4 | 2191.5 |
| 7.5°  | 1492.2 | 1488.5 | 1490.3 | 1543.7 | 1581.5 | 1554.2 | 1575.6 | 1501.3 | 1505.8 | 1540.0 | 1514.5 |
| 10°   | 1109.2 | 1059.1 | 1030.8 | 1070.9 | 1112.4 | 1097.4 | 1060.4 | 1036.3 | 1053.1 | 1091.0 | 1088.2 |
| 12.5° | 871.7  | 799.6  | 757.3  | 728.5  | 762.7  | 734.5  | 733.5  | 712.6  | 689.8  | 693.9  | 754.5  |
| 15°   | 655.6  | 603.2  | 553.0  | 507.0  | 506.0  | 496.5  | 447.7  | 393.0  | 388.4  | 391.2  | 422.6  |
| 17.5° | 450.9  | 433.1  | 412.6  | 372.9  | 362.4  | 322.3  | 274.9  | 253.0  | 242.1  | 247.1  | 257.6  |
| 20°   | 316.9  | 310.0  | 312.3  | 290.9  | 275.8  | 237.5  | 209.7  | 201.1  | 199.2  | 204.2  | 209.3  |
| 22.5° | 262.6  | 250.3  | 248.9  | 239.3  | 224.3  | 196.5  | 181.4  | 176.4  | 174.2  | 178.7  | 182.4  |
| 25°   | 229.8  | 217.5  | 212.4  | 206.5  | 190.6  | 171.4  | 162.3  | 157.7  | 155.5  | 158.2  | 160.5  |
| 27.5° | 202.4  | 191.0  | 186.5  | 182.4  | 166.9  | 153.2  | 145.9  | 141.8  | 140.0  | 140.9  | 143.2  |
| 30°   | 181.9  | 171.9  | 165.9  | 160.9  | 147.7  | 138.1  | 131.8  | 127.7  | 125.8  | 125.8  | 128.1  |
| 32.5° | 160.5  | 155.0  | 149.5  | 143.2  | 130.8  | 124.5  | 118.1  | 113.5  | 111.7  | 112.2  | 114.0  |
| 35°   | 133.6  | 131.8  | 133.1  | 127.2  | 116.7  | 111.2  | 104.9  | 99.8   | 98.5   | 98.9   | 100.8  |
| 37.5° | 118.5  | 110.3  | 115.3  | 112.2  | 106.2  | 98.9   | 90.7   | 86.2   | 83.9   | 85.3   | 86.2   |
| 40°   | 109.0  | 98.9   | 95.3   | 98.5   | 97.6   | 85.7   | 78.4   | 73.9   | 72.0   | 72.5   | 73.4   |
| 42.5° | 100.8  | 88.9   | 80.7   | 80.2   | 85.7   | 74.8   | 67.0   | 62.9   | 60.6   | 60.6   | 61.5   |
| 45°   | 93.0   | 80.2   | 70.2   | 62.5   | 72.0   | 63.4   | 56.1   | 52.4   | 49.7   | 49.7   | 50.1   |
| 47.5° | 87.1   | 72.9   | 61.1   | 51.1   | 54.3   | 52.0   | 46.0   | 42.4   | 39.7   | 39.7   | 40.1   |
| 50°   | 81.6   | 65.6   | 52.9   | 42.9   | 40.6   | 42.9   | 37.4   | 33.3   | 31.5   | 31.0   | 31.9   |
| 52.5° | 75.7   | 58.4   | 45.1   | 36.5   | 31.9   | 32.4   | 29.2   | 26.4   | 24.2   | 24.2   | 25.1   |
| 55°   | 69.8   | 52.4   | 39.2   | 31.0   | 26.4   | 24.2   | 23.3   | 21.4   | 19.6   | 19.6   | 20.5   |
| 57.5° | 63.8   | 46.0   | 33.3   | 25.5   | 21.0   | 19.1   | 19.1   | 17.8   | 16.4   | 16.4   | 17.3   |
| 60°   | 58.4   | 39.7   | 27.4   | 21.0   | 16.4   | 16.0   | 16.4   | 15.0   | 14.1   | 14.1   | 15.0   |
| 62.5° | 52.0   | 33.7   | 22.3   | 17.3   | 13.2   | 12.8   | 14.1   | 13.2   | 12.3   | 12.3   | 13.2   |
| 65°   | 44.2   | 28.7   | 17.8   | 13.2   | 10.0   | 10.0   | 11.9   | 10.9   | 10.0   | 10.0   | 10.9   |
| 67.5° | 37.4   | 24.2   | 13.7   | 9.6    | 7.3    | 7.8    | 10.0   | 9.1    | 8.7    | 8.7    | 9.6    |
| 70°   | 31.0   | 18.7   | 9.6    | 5.9    | 4.1    | 5.9    | 7.8    | 7.8    | 7.8    | 7.8    | 8.7    |
| 72.5° | 23.3   | 12.8   | 5.5    | 2.3    | 1.8    | 4.1    | 6.4    | 7.3    | 6.8    | 6.8    | 8.2    |
| 75°   | 15.0   | 7.3    | 1.8    | 0.0    | 0.0    | 2.3    | 5.0    | 5.9    | 5.9    | 5.5    | 6.8    |
| 77.5° | 8.7    | 2.3    | 0.0    | 0.0    | 0.0    | 0.0    | 3.2    | 2.7    | 2.3    | 1.8    | 3.2    |
| 80°   | 2.3    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 82.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 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    |

REPORT NUMBER: P360127

CATALOG NUMBER: NVN-SA3A-730-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 | 3228.7 |
| 2.5°  | 2844.8 | 2898.6 | 2974.3 | 3054.5 | 3178.1 | 3276.1 | 3372.3 | 3454.8 | 3486.7 | 3499.9 |
| 5°    | 2251.7 | 2330.6 | 2441.3 | 2583.6 | 2806.5 | 3007.1 | 3210.5 | 3415.2 | 3504.1 | 3526.4 |
| 7.5°  | 1615.7 | 1716.5 | 1857.3 | 2035.6 | 2296.8 | 2556.7 | 2840.7 | 3141.2 | 3278.8 | 3313.5 |
| 10°   | 1195.8 | 1318.9 | 1480.3 | 1668.1 | 1917.5 | 2184.7 | 2494.2 | 2837.5 | 2994.8 | 3040.9 |
| 12.5° | 848.4  | 1014.8 | 1230.9 | 1459.3 | 1675.4 | 1913.9 | 2227.1 | 2605.5 | 2770.5 | 2820.2 |
| 15°   | 498.3  | 659.2  | 915.0  | 1220.9 | 1497.6 | 1739.3 | 2057.5 | 2486.5 | 2668.4 | 2718.5 |
| 17.5° | 285.8  | 366.1  | 559.4  | 900.4  | 1276.1 | 1610.7 | 2004.1 | 2516.1 | 2730.4 | 2776.9 |
| 20°   | 218.4  | 243.9  | 322.3  | 579.9  | 1017.1 | 1484.4 | 2004.1 | 2683.9 | 2947.9 | 3016.2 |
| 22.5° | 191.0  | 209.7  | 241.6  | 346.0  | 748.6  | 1349.0 | 2027.4 | 2926.4 | 3271.5 | 3347.2 |
| 25°   | 169.6  | 186.5  | 213.8  | 260.3  | 510.6  | 1188.1 | 2082.6 | 3224.1 | 3652.7 | 3750.7 |
| 27.5° | 151.8  | 167.8  | 192.4  | 228.0  | 349.2  | 993.9  | 2156.9 | 3573.3 | 4073.0 | 4151.4 |
| 30°   | 135.9  | 150.9  | 173.2  | 198.3  | 269.4  | 773.7  | 2220.2 | 3902.5 | 4403.1 | 4487.4 |
| 32.5° | 120.8  | 134.5  | 154.6  | 173.2  | 220.7  | 572.2  | 2227.1 | 4163.3 | 4677.1 | 4761.0 |
| 35°   | 106.7  | 119.0  | 137.2  | 151.8  | 182.8  | 451.8  | 2120.8 | 4389.4 | 4951.1 | 5061.9 |
| 37.5° | 93.0   | 104.9  | 120.8  | 131.8  | 160.9  | 368.4  | 1958.5 | 4641.5 | 5302.6 | 5405.2 |
| 40°   | 80.2   | 90.7   | 107.1  | 114.4  | 152.3  | 283.1  | 1782.1 | 4905.9 | 5647.2 | 5741.2 |
| 42.5° | 68.4   | 78.4   | 94.4   | 108.5  | 133.6  | 211.5  | 1591.5 | 5154.0 | 5957.3 | 6055.7 |
| 45°   | 57.0   | 67.5   | 83.4   | 114.9  | 110.8  | 158.2  | 1387.8 | 5318.5 | 6202.1 | 6309.2 |
| 47.5° | 46.0   | 57.9   | 79.8   | 109.4  | 88.4   | 116.3  | 1226.4 | 5474.5 | 6387.6 | 6493.4 |
| 50°   | 36.9   | 48.8   | 89.8   | 97.6   | 72.5   | 88.9   | 1158.9 | 5614.0 | 6509.3 | 6611.0 |
| 52.5° | 30.1   | 41.0   | 84.8   | 74.8   | 60.6   | 73.4   | 1195.4 | 5840.1 | 6622.0 | 6685.8 |
| 55°   | 25.1   | 32.4   | 51.1   | 52.0   | 51.5   | 62.5   | 1240.5 | 6164.7 | 6913.3 | 6943.4 |
| 57.5° | 21.9   | 26.0   | 35.6   | 40.1   | 43.3   | 55.6   | 1241.4 | 6630.6 | 7364.2 | 7382.9 |
| 60°   | 18.7   | 22.8   | 29.6   | 32.4   | 37.4   | 49.7   | 1196.3 | 6793.4 | 7541.5 | 7603.5 |
| 62.5° | 16.4   | 20.1   | 24.6   | 26.9   | 31.5   | 44.7   | 1090.5 | 6557.7 | 7298.1 | 7403.4 |
| 65°   | 14.6   | 18.2   | 20.5   | 22.8   | 27.8   | 40.1   | 916.4  | 6086.3 | 6894.1 | 7004.0 |
| 67.5° | 12.8   | 16.0   | 18.2   | 20.5   | 25.1   | 35.6   | 674.7  | 5538.7 | 6430.5 | 6521.7 |
| 70°   | 11.4   | 14.1   | 16.4   | 18.2   | 21.9   | 30.1   | 409.4  | 4699.9 | 5789.5 | 5827.3 |
| 72.5° | 10.9   | 12.8   | 15.0   | 16.4   | 19.1   | 26.4   | 207.4  | 3453.9 | 4628.3 | 4689.8 |
| 75°   | 9.6    | 11.4   | 13.7   | 14.6   | 16.9   | 22.8   | 84.3   | 2268.6 | 3354.1 | 3453.0 |
| 77.5° | 7.8    | 10.5   | 12.3   | 13.2   | 14.6   | 18.7   | 42.9   | 1449.8 | 2353.8 | 2417.6 |
| 80°   | 2.7    | 7.8    | 10.5   | 10.9   | 12.3   | 13.7   | 28.3   | 793.7  | 1365.4 | 1392.8 |
| 82.5° | 0.0    | 5.0    | 8.2    | 7.8    | 8.7    | 10.5   | 18.2   | 377.5  | 901.3  | 911.3  |
| 85°   | 0.0    | 2.3    | 6.4    | 5.0    | 3.6    | 7.3    | 6.4    | 82.5   | 472.8  | 492.4  |
| 87.5° | 0.0    | 0.0    | 0.5    | 2.3    | 1.8    | 2.7    | 0.9    | 0.5    | 42.9   | 54.3   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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 .

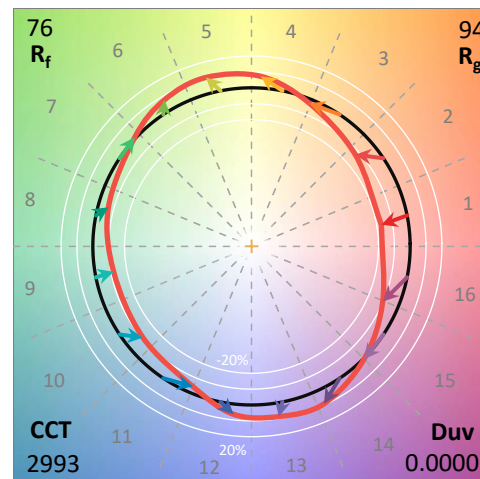
### Test Information

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-2-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 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 |      |       |
| CIE u':                   | 0.2508 | R1:       | 67.5 | R9:  | -38.3 |
| CIE v':                   | 0.5215 | R2:       | 82.9 | R10: | 62.5  |
| Duv:                      | 0.0000 | R3:       | 94.7 | R11: | 63.7  |
| CIE x:                    | 0.4374 | R4:       | 67.7 | R12: | 57.8  |
| CIE y:                    | 0.4043 | R5:       | 67.9 | R13: | 70.4  |
| CIE z:                    | 0.1583 | R6:       | 77.6 | R14: | 97.3  |
| Peak Wavelength (nm):     | 593    | R7:       | 76.0 |      |       |
| Dominant Wavelength (nm): | 582    | R8:       | 40.5 |      |       |
| Purity:                   | 53     |           |      |      |       |
| Rf:                       | 75.7   |           |      |      |       |
| Rg:                       | 93.9   |           |      |      |       |



### Test Conditions

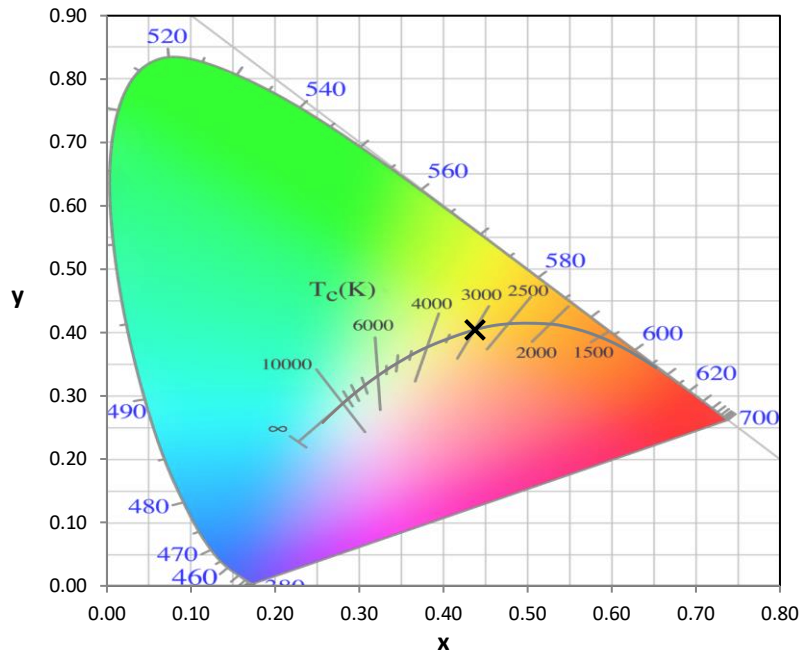
Stabilization Time: 53M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7

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

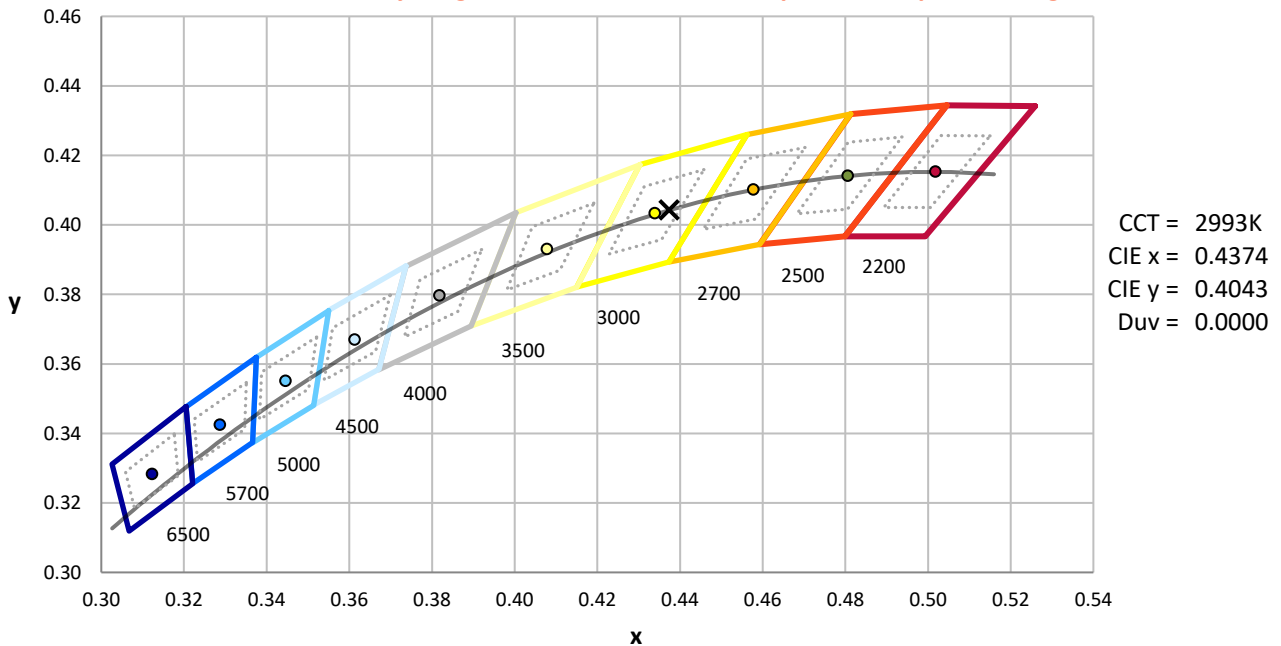
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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

CIE 1931 Chromaticity Diagram



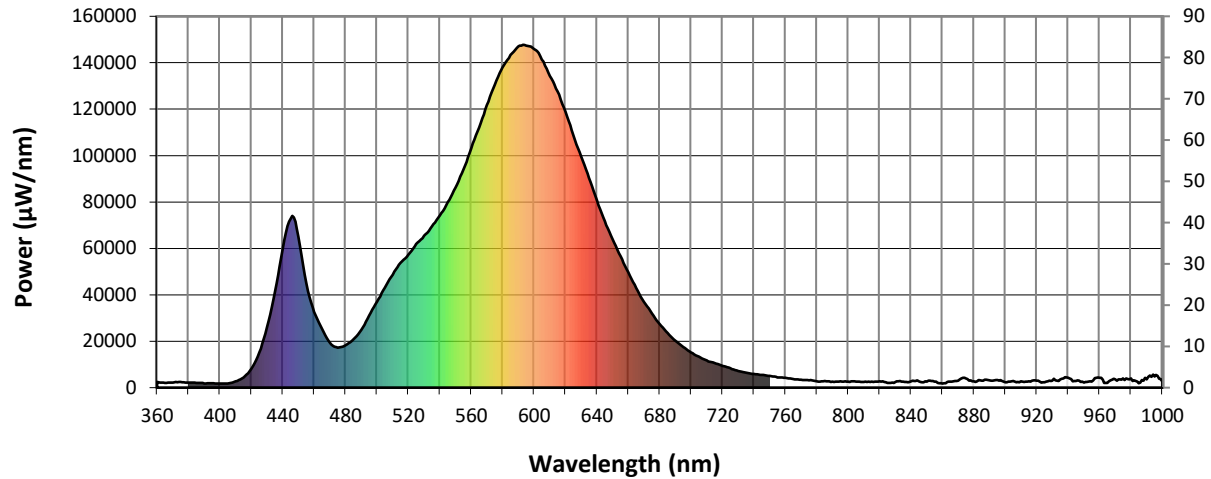
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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

**Photopic Flux vs. Wavelength**

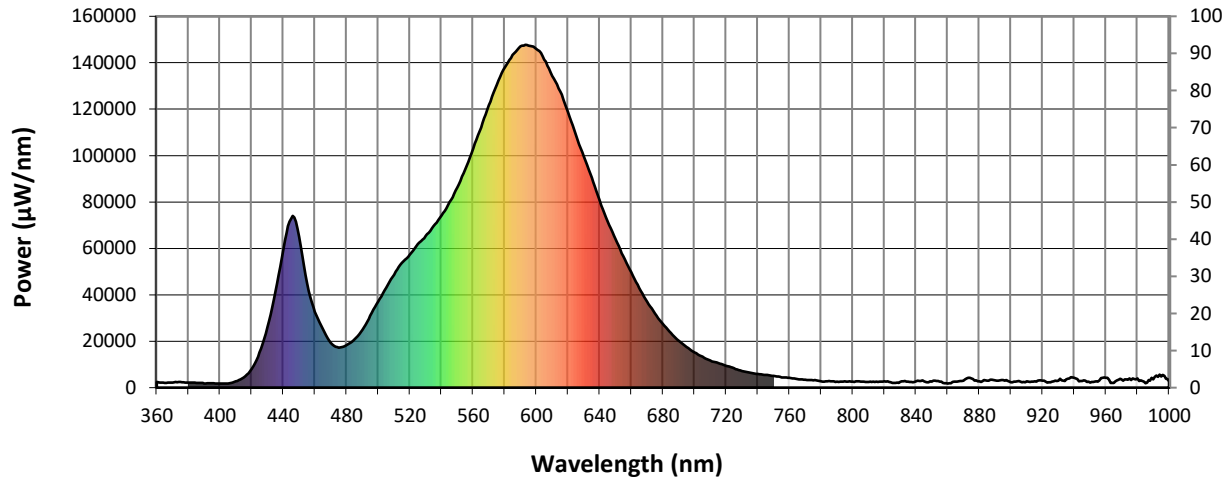


#####

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(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



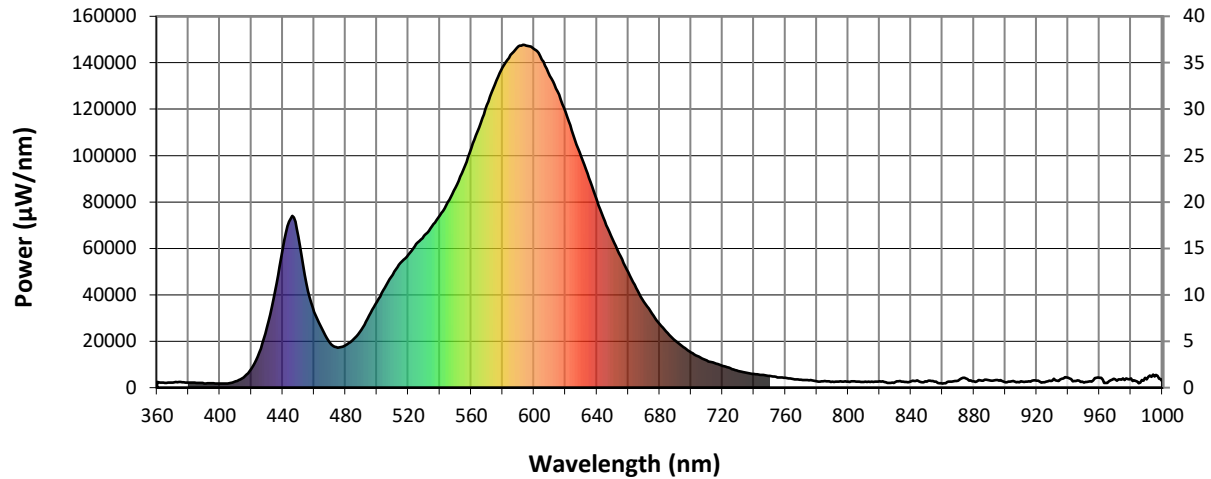
Scotopic Lumens: 8494.8

S/P: 1.23

| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(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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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 3101.5**

**M/P: 0.45**

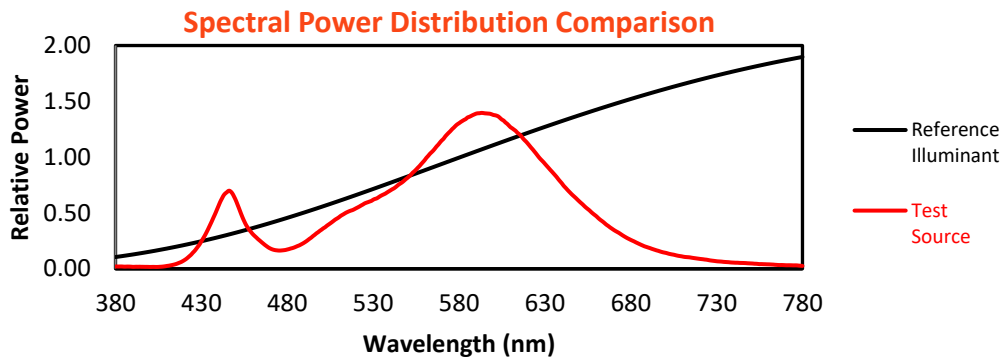
| λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>(μW/nm) | Lumens<br>(φ/nm) |
|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|-----------|------------------|------------------|
| 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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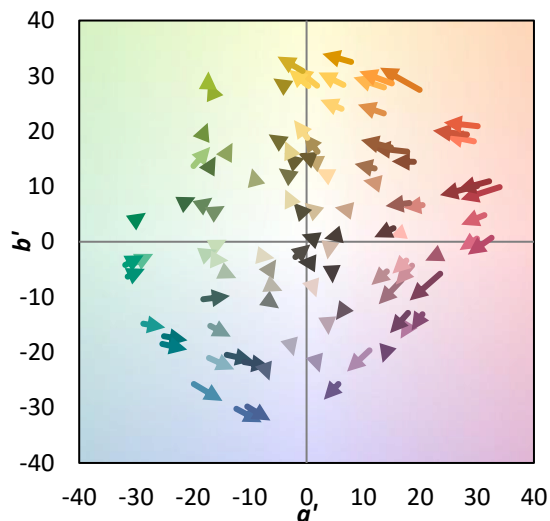
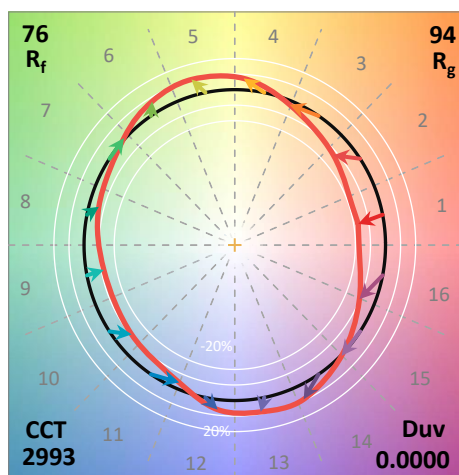
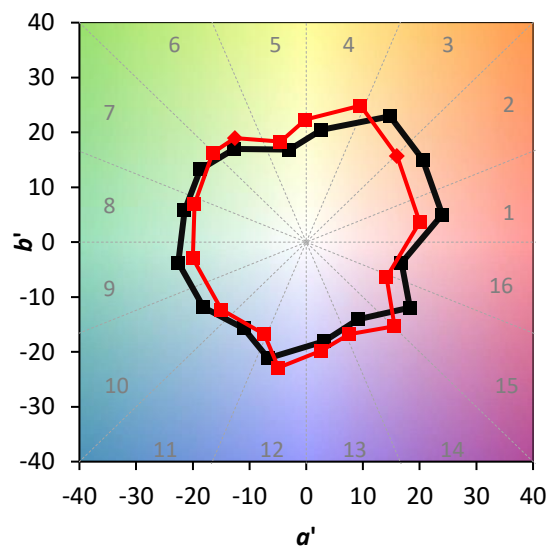
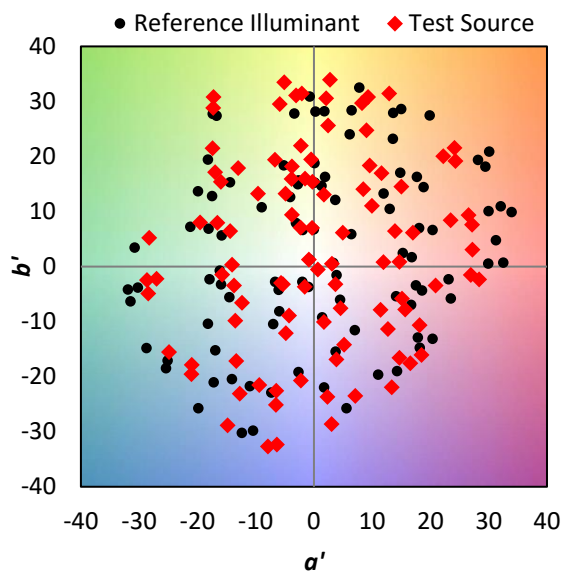
**TM-30-18**

**Summary**

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



**Color Vector Graphics**

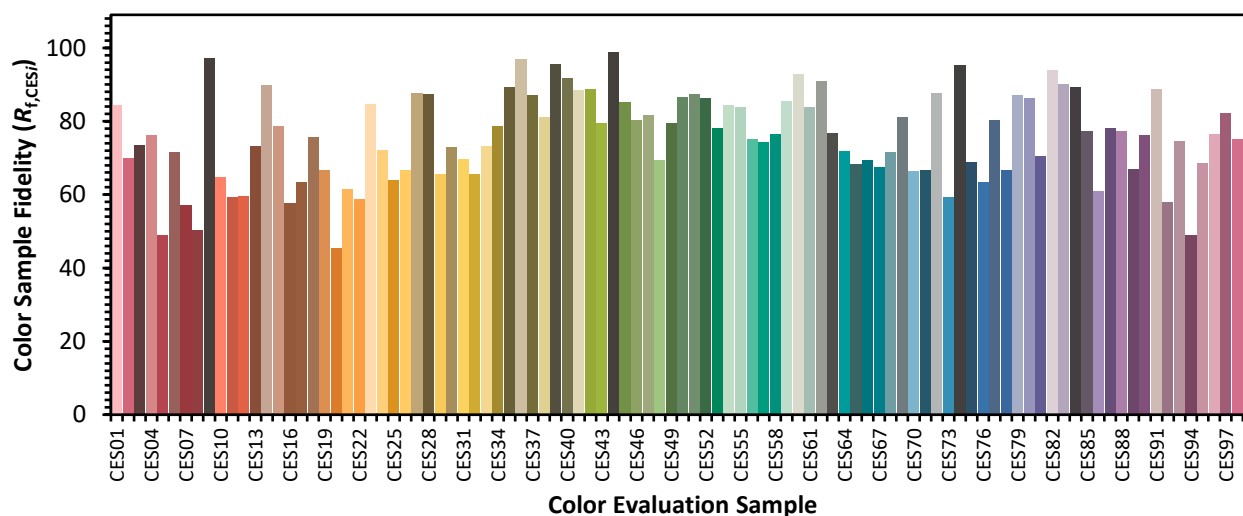


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Individual Sample Fidelity Index ( $R_{f,i}$ )

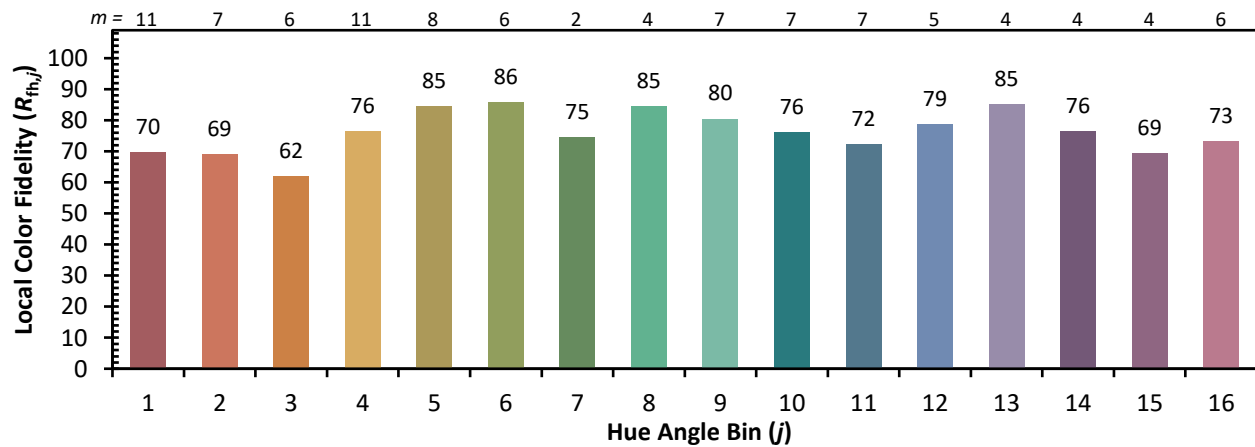
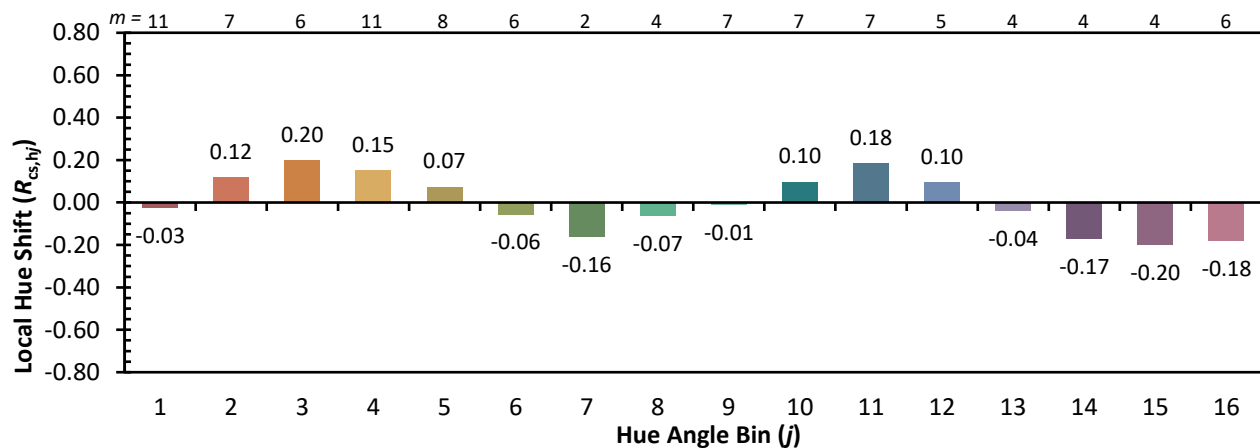
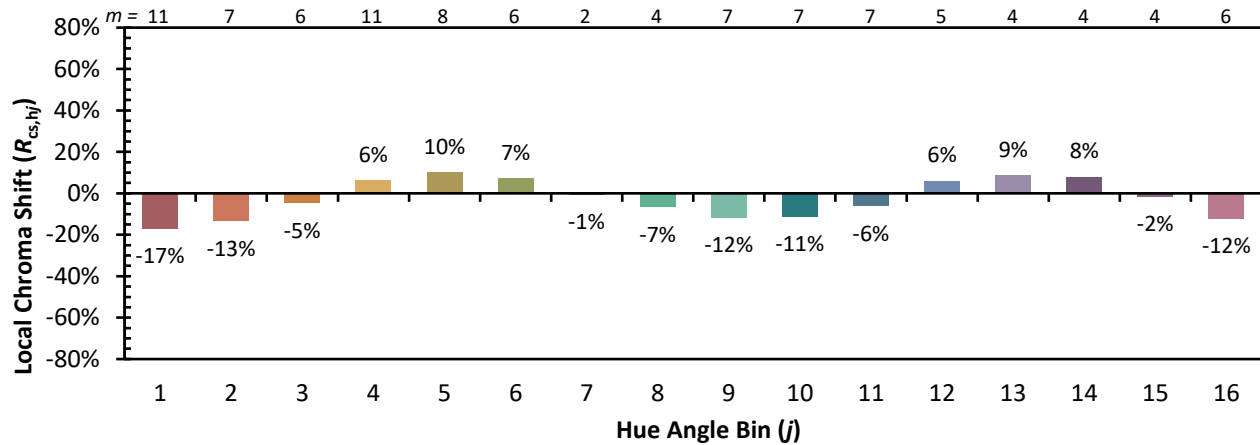
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|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 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 |
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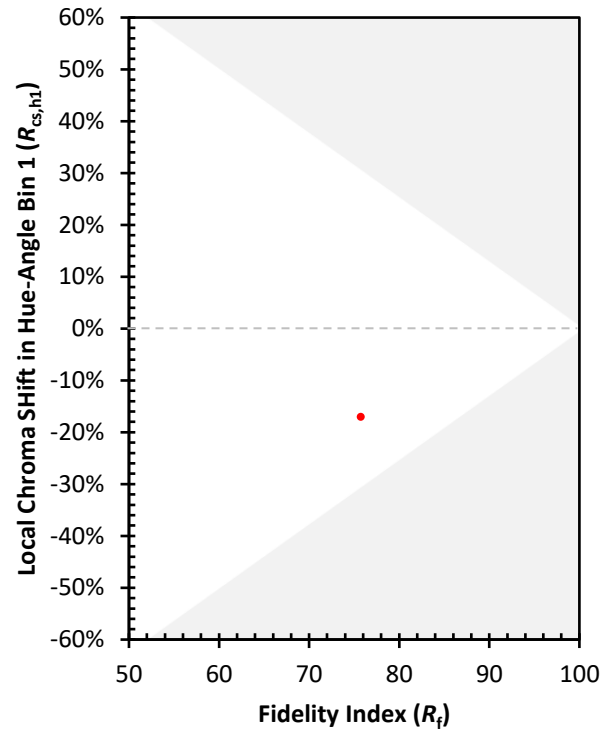
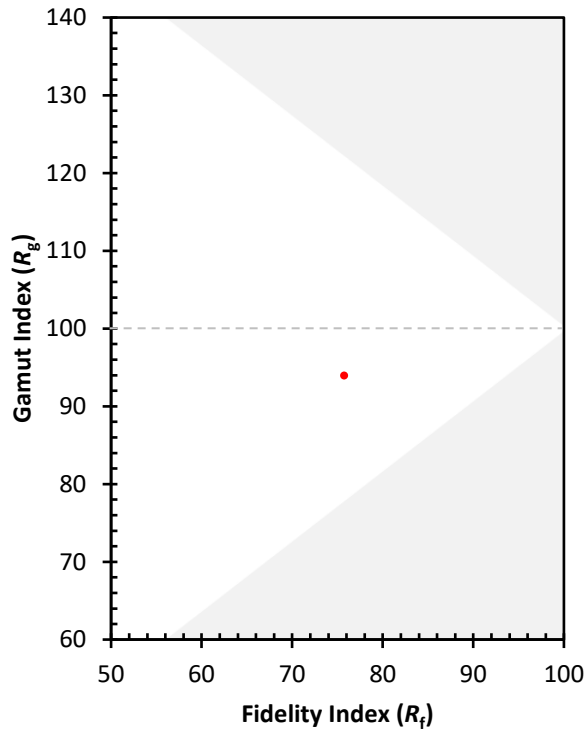
**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)