

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: P360144

Luminaire Tested: NVN-SA2D-730-U-SLL-HSS

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P360144  
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-SA2D-730-U-SLL-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 3000K, 1200mA 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: 10773 lumens  
Efficiency: N/A  
Efficacy: 83.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B1 - U0 - G2

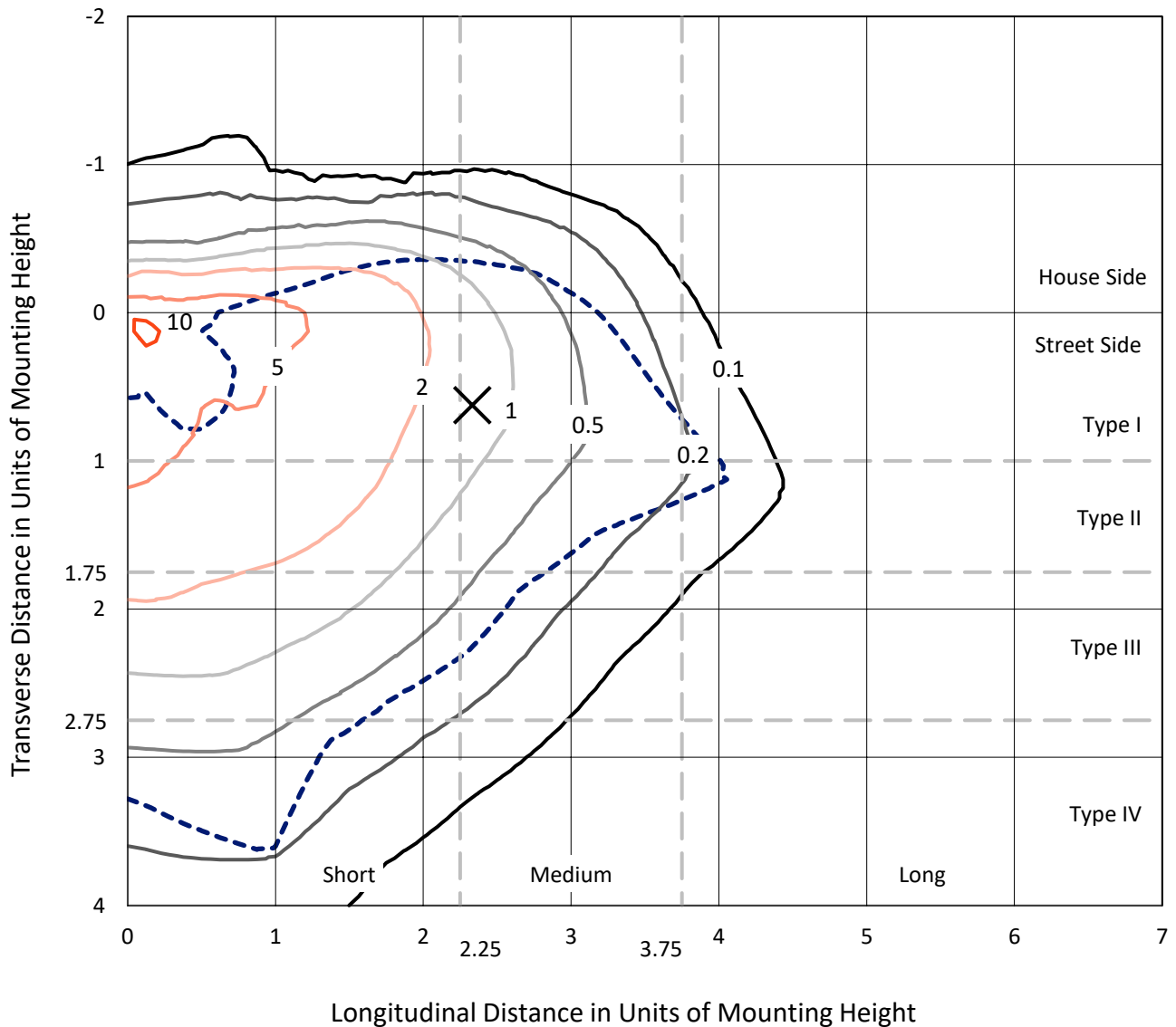
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

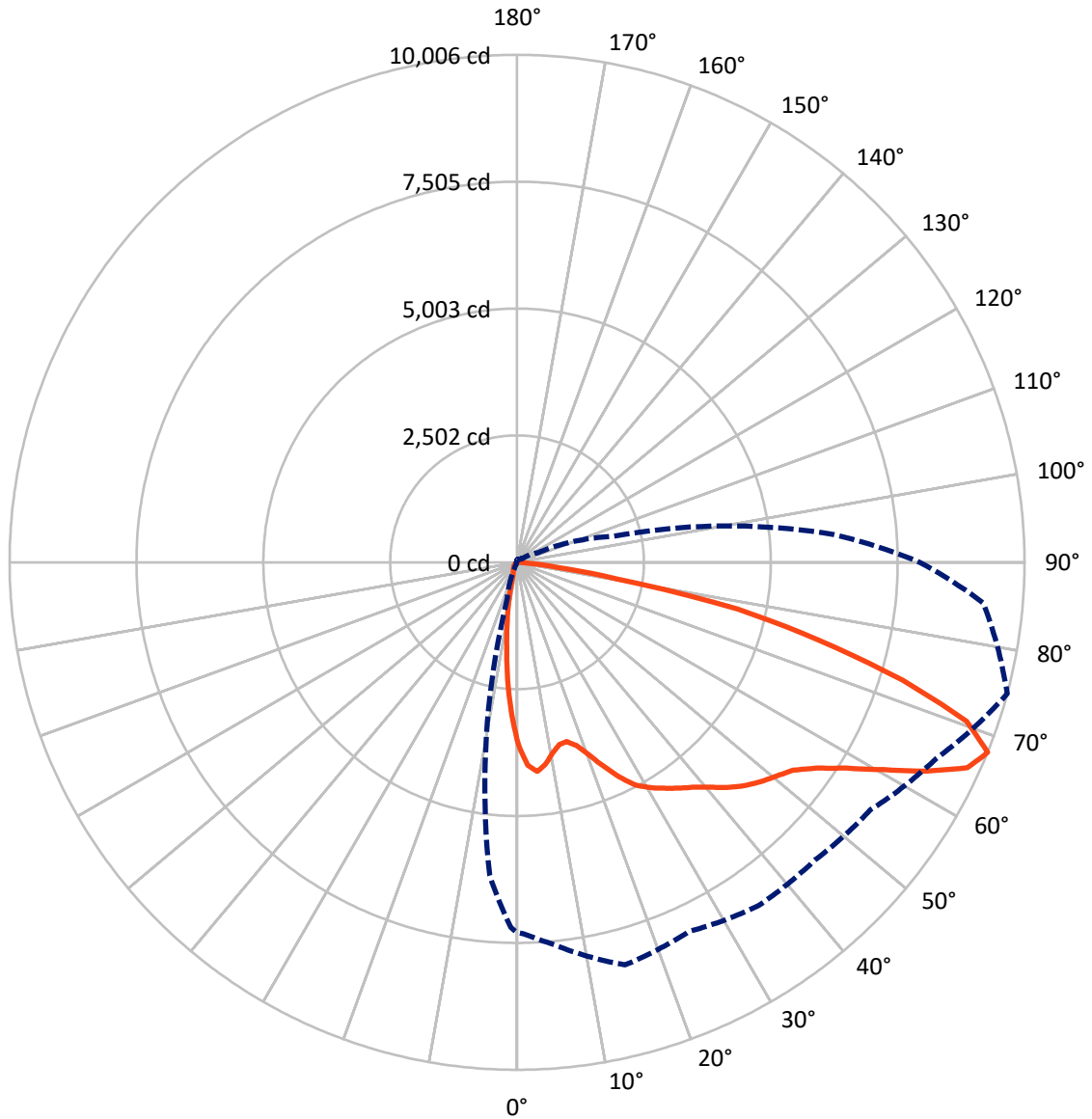
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.7 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral      - - - Horizontal Cone Through 67.5-Deg Vertical



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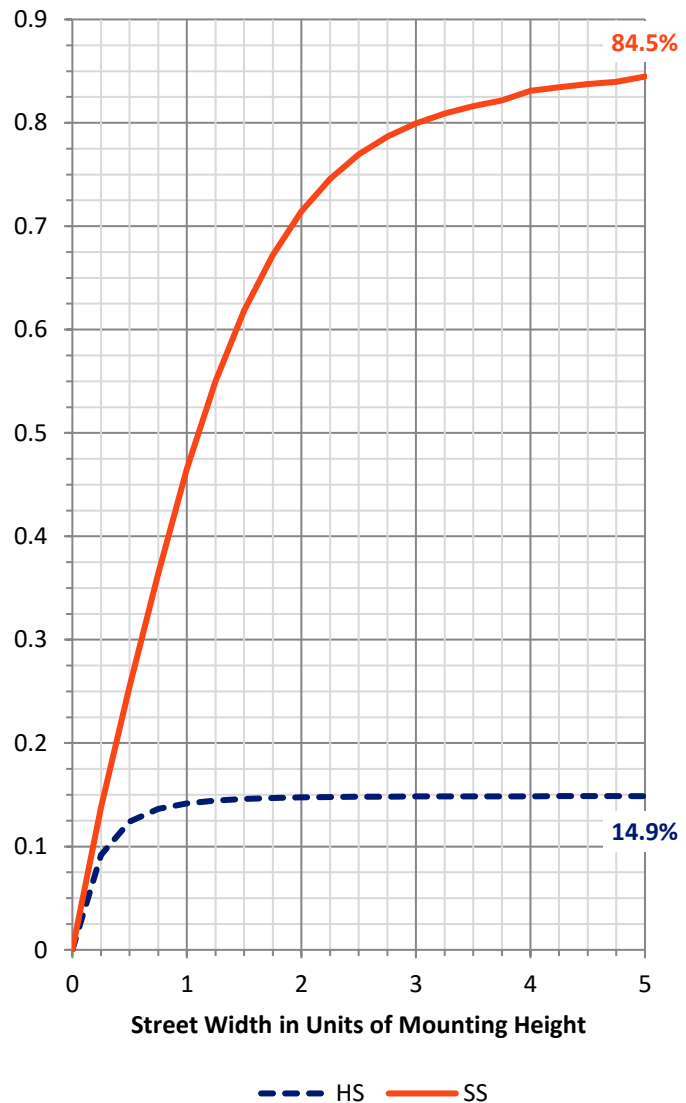
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1616.6   | 0.0    | 1616.6  |
|                    | % Fixture | 15.0     | 0.0    | 15.0    |
| <b>Street Side</b> | Lumens    | 9156.4   | 0.0    | 9156.4  |
|                    | % Fixture | 85.0     | 0.0    | 85.0    |
| <b>Total</b>       | Lumens    | 10773.0  | 0.0    | 10773.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 274.2   | 2.5       |
| 10°-20°   | 539.8   | 5.0       |
| 20°-30°   | 763.7   | 7.1       |
| 30°-40°   | 1122.8  | 10.4      |
| 40°-50°   | 1613.9  | 15.0      |
| 50°-60°   | 2271.9  | 21.1      |
| 60°-70°   | 2653.4  | 24.6      |
| 70°-80°   | 1353.7  | 12.6      |
| 80°-90°   | 179.8   | 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°    | 10773.0 | 100.0     |
| 0°-180°   | 10773.0 | 100.0     |

**Coefficient of Utilization**

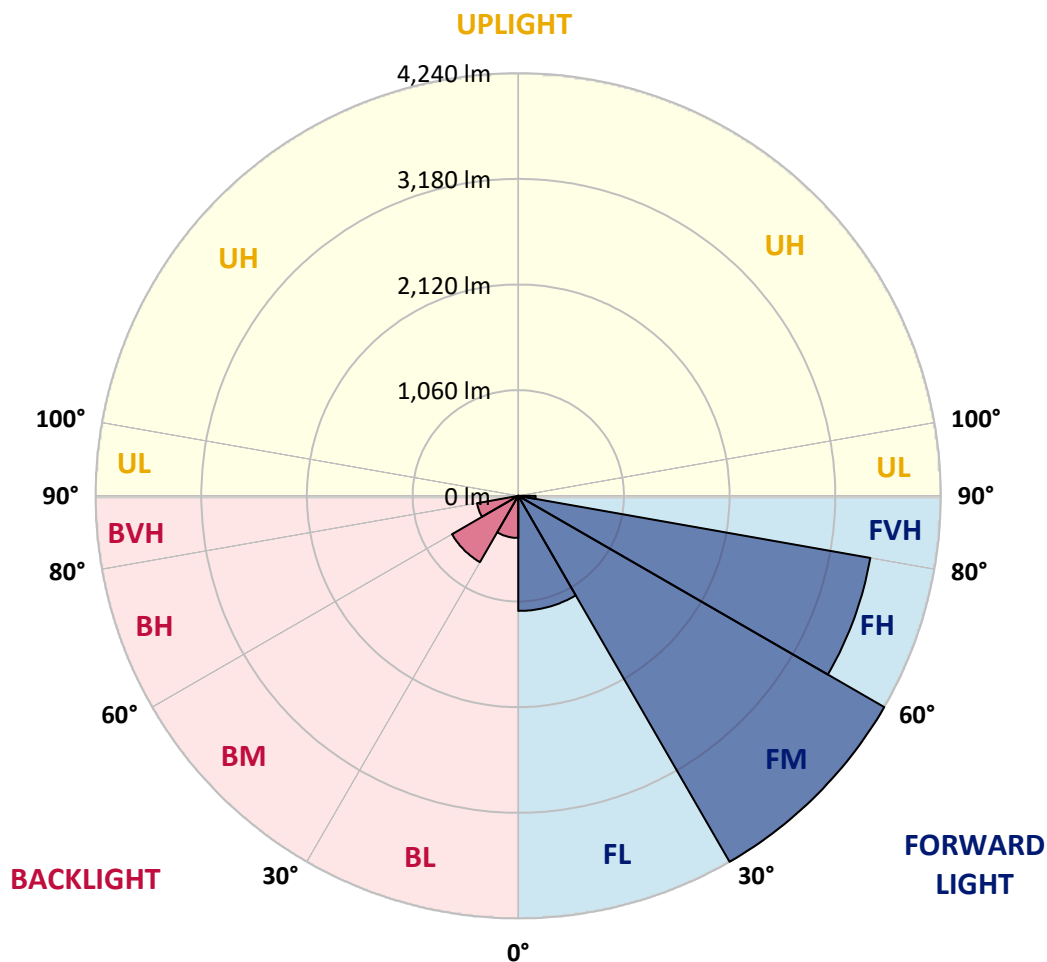


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1154.9 | 10.7      |                         |      |         |
| FM (30°-60°)   | 4240.1 | 39.4      |                         |      |         |
| FH (60°-80°)   | 3587.1 | 33.3      |                         |      | G2/5000 |
| FVH (80°-90°)  | 174.4  | 1.6       |                         |      | G2/225  |
| BL (0°-30°)    | 422.8  | 3.9       | B1/500                  |      |         |
| BM (30°-60°)   | 768.5  | 7.1       | B1/1000                 |      |         |
| BH (60°-80°)   | 419.9  | 3.9       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 5.5    | 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°    | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2  | 3614.2 |
| 2.5°  | 3917.8 | 3923.9 | 3955.6 | 4029.1 | 4109.2 | 4115.3 | 4169.4 | 4113.8 | 4094.9 | 4005.1  | 3912.2 |
| 5°    | 3947.4 | 3970.9 | 4079.6 | 4295.4 | 4482.7 | 4543.0 | 4585.8 | 4476.6 | 4361.8 | 4142.3  | 3908.1 |
| 7.5°  | 3709.1 | 3748.4 | 3919.3 | 4324.5 | 4659.3 | 4807.3 | 4835.4 | 4664.4 | 4383.2 | 4021.9  | 3669.8 |
| 10°   | 3403.9 | 3448.8 | 3655.0 | 4153.1 | 4612.9 | 4866.5 | 4905.3 | 4681.3 | 4277.1 | 3827.0  | 3412.1 |
| 12.5° | 3156.9 | 3209.5 | 3420.2 | 3960.2 | 4453.1 | 4733.8 | 4810.4 | 4624.6 | 4185.2 | 3688.7  | 3236.0 |
| 15°   | 3043.1 | 3103.3 | 3324.8 | 3835.6 | 4276.1 | 4497.0 | 4560.3 | 4480.2 | 4134.2 | 3666.7  | 3195.2 |
| 17.5° | 3108.4 | 3173.7 | 3402.4 | 3846.4 | 4109.7 | 4204.1 | 4255.1 | 4287.8 | 4134.2 | 3798.9  | 3314.6 |
| 20°   | 3376.3 | 3446.8 | 3688.7 | 3955.1 | 3971.9 | 3936.7 | 3991.3 | 4106.1 | 4182.2 | 4050.0  | 3601.4 |
| 22.5° | 3746.8 | 3829.5 | 4102.5 | 4141.3 | 3904.5 | 3771.3 | 3778.5 | 3958.6 | 4269.4 | 4368.4  | 3999.5 |
| 25°   | 4198.5 | 4299.5 | 4577.2 | 4418.9 | 3932.6 | 3672.8 | 3670.3 | 3837.2 | 4354.6 | 4687.4  | 4442.9 |
| 27.5° | 4647.1 | 4758.3 | 5002.3 | 4757.8 | 4048.4 | 3655.0 | 3649.9 | 3800.4 | 4437.8 | 4971.1  | 4927.2 |
| 30°   | 5023.2 | 5131.4 | 5341.6 | 5003.3 | 4173.5 | 3696.8 | 3672.3 | 3839.7 | 4487.3 | 5155.4  | 5280.4 |
| 32.5° | 5329.4 | 5416.1 | 5586.1 | 5172.2 | 4307.2 | 3778.0 | 3724.9 | 3944.9 | 4571.5 | 5311.0  | 5605.0 |
| 35°   | 5666.2 | 5757.5 | 5825.4 | 5332.9 | 4457.2 | 3894.8 | 3818.8 | 4111.7 | 4701.2 | 5469.2  | 5960.7 |
| 37.5° | 6050.5 | 6141.3 | 6133.1 | 5479.9 | 4647.6 | 4088.3 | 4039.8 | 4376.1 | 4902.7 | 5625.9  | 6357.7 |
| 40°   | 6426.6 | 6519.5 | 6453.1 | 5640.7 | 4871.1 | 4407.2 | 4371.5 | 4773.1 | 5172.7 | 5826.4  | 6823.1 |
| 42.5° | 6778.7 | 6879.2 | 6737.4 | 5792.8 | 5137.5 | 4809.4 | 4870.6 | 5284.5 | 5510.5 | 6073.4  | 7224.2 |
| 45°   | 7062.5 | 7165.0 | 6975.7 | 5940.8 | 5418.2 | 5297.2 | 5481.5 | 5850.9 | 5916.8 | 6282.2  | 7495.2 |
| 47.5° | 7268.6 | 7365.6 | 7141.0 | 6088.7 | 5777.4 | 5893.8 | 6214.8 | 6445.0 | 6283.7 | 6463.3  | 7687.6 |
| 50°   | 7400.3 | 7475.8 | 7189.5 | 6274.0 | 6249.0 | 6589.9 | 6978.8 | 7091.0 | 6629.2 | 6626.6  | 7921.3 |
| 52.5° | 7484.0 | 7518.2 | 7225.3 | 6467.4 | 6740.9 | 7347.7 | 7726.9 | 7762.1 | 6984.9 | 6806.3  | 8236.2 |
| 55°   | 7772.3 | 7799.9 | 7478.4 | 6701.7 | 7147.7 | 8011.7 | 8403.6 | 8370.9 | 7387.5 | 7157.9  | 8607.7 |
| 57.5° | 8264.3 | 8293.4 | 8001.5 | 7038.5 | 7476.8 | 8422.0 | 8894.0 | 8952.7 | 7859.6 | 7651.9  | 9005.8 |
| 60°   | 8511.3 | 8565.4 | 8461.3 | 7465.1 | 7795.8 | 8684.3 | 9228.3 | 9415.6 | 8449.5 | 8303.1  | 9391.6 |
| 62.5° | 8287.2 | 8365.8 | 8516.9 | 7938.2 | 8112.7 | 8828.7 | 9332.4 | 9581.4 | 9053.8 | 9061.9  | 9629.4 |
| 65°   | 7840.2 | 7903.0 | 8159.2 | 8197.4 | 8296.4 | 8810.8 | 9075.2 | 9349.8 | 9423.8 | 9759.0  | 9616.7 |
| 67.5° | 7300.3 | 7323.7 | 7541.1 | 8217.8 | 8030.0 | 8274.0 | 8302.6 | 8505.7 | 9131.3 | 10006.0 | 9230.3 |
| 70°   | 6523.0 | 6535.8 | 6725.6 | 7534.5 | 6900.7 | 6954.3 | 6911.9 | 6953.2 | 7850.4 | 9404.4  | 8255.1 |
| 72.5° | 5249.8 | 5281.9 | 5551.9 | 6257.2 | 5027.3 | 4872.6 | 5205.4 | 5187.0 | 6045.9 | 7945.3  | 6131.1 |
| 75°   | 3865.2 | 3920.9 | 4328.6 | 5040.0 | 3528.4 | 3191.6 | 3434.5 | 3499.3 | 4298.0 | 6145.9  | 3834.1 |
| 77.5° | 2706.3 | 2747.6 | 3142.6 | 3705.0 | 2553.7 | 2282.2 | 2194.4 | 2271.5 | 2836.9 | 4446.0  | 1931.6 |
| 80°   | 1559.1 | 1574.4 | 1826.5 | 2139.3 | 1720.8 | 1968.9 | 1783.6 | 1836.7 | 1699.9 | 1978.0  | 830.8  |
| 82.5° | 1020.1 | 1022.7 | 1121.2 | 1273.3 | 1071.7 | 1245.2 | 921.7  | 1178.4 | 1045.7 | 794.6   | 270.5  |
| 85°   | 551.2  | 554.2  | 650.2  | 903.8  | 606.8  | 342.9  | 201.6  | 413.9  | 646.6  | 182.2   | 74.0   |
| 87.5° | 60.7   | 55.6   | 196.0  | 328.7  | 168.4  | 31.1   | 10.7   | 46.4   | 103.6  | 11.7    | 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°    | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 |
| 2.5°  | 3864.7 | 3822.4 | 3716.7 | 3605.0 | 3515.2 | 3430.9 | 3346.2 | 3242.6 | 3162.5 | 3146.2 | 3119.6 |
| 5°    | 3782.1 | 3647.8 | 3426.4 | 3203.9 | 3024.7 | 2798.6 | 2655.2 | 2543.5 | 2434.3 | 2427.6 | 2405.7 |
| 7.5°  | 3493.2 | 3316.6 | 3004.8 | 2697.1 | 2445.0 | 2229.6 | 2012.2 | 1866.8 | 1752.5 | 1712.2 | 1688.2 |
| 10°   | 3215.6 | 3017.1 | 2627.7 | 2276.6 | 2051.5 | 1861.2 | 1708.1 | 1556.0 | 1418.2 | 1323.3 | 1280.4 |
| 12.5° | 3021.7 | 2802.2 | 2373.0 | 2070.4 | 1909.1 | 1728.5 | 1541.7 | 1351.9 | 1193.2 | 1078.8 | 1008.9 |
| 15°   | 2946.6 | 2712.4 | 2287.8 | 1988.8 | 1789.7 | 1561.1 | 1322.3 | 1105.4 | 929.3  | 825.7  | 762.9  |
| 17.5° | 3036.0 | 2763.4 | 2281.2 | 1889.2 | 1611.1 | 1326.9 | 1063.0 | 806.8  | 641.0  | 562.4  | 522.1  |
| 20°   | 3262.5 | 2925.7 | 2278.6 | 1767.3 | 1398.8 | 1049.2 | 720.1  | 530.7  | 430.2  | 386.3  | 367.4  |
| 22.5° | 3583.0 | 3132.9 | 2299.0 | 1646.8 | 1177.8 | 749.7  | 497.1  | 389.9  | 338.3  | 314.9  | 304.2  |
| 25°   | 3995.4 | 3423.8 | 2356.7 | 1537.6 | 970.1  | 559.3  | 387.3  | 326.6  | 290.4  | 272.0  | 264.4  |
| 27.5° | 4434.8 | 3758.6 | 2446.5 | 1442.7 | 801.2  | 446.0  | 331.7  | 279.7  | 253.6  | 240.9  | 233.7  |
| 30°   | 4797.1 | 4146.4 | 2537.4 | 1337.1 | 678.7  | 388.9  | 303.6  | 255.2  | 225.1  | 216.9  | 210.3  |
| 32.5° | 5114.0 | 4439.9 | 2601.7 | 1241.6 | 598.6  | 345.5  | 274.6  | 228.1  | 207.7  | 191.9  | 184.7  |
| 35°   | 5442.2 | 4684.3 | 2599.6 | 1174.8 | 543.5  | 312.8  | 250.1  | 204.1  | 179.6  | 161.3  | 155.7  |
| 37.5° | 5797.3 | 4960.4 | 2555.2 | 1117.6 | 519.5  | 286.8  | 236.3  | 191.4  | 166.9  | 148.5  | 141.4  |
| 40°   | 6213.3 | 5250.3 | 2509.8 | 1064.0 | 512.9  | 265.9  | 226.6  | 181.2  | 155.1  | 137.3  | 130.1  |
| 42.5° | 6618.5 | 5511.6 | 2470.0 | 1024.2 | 484.3  | 265.4  | 217.9  | 173.5  | 146.0  | 128.6  | 120.4  |
| 45°   | 6942.5 | 5755.0 | 2462.3 | 1000.2 | 454.2  | 274.6  | 213.3  | 168.4  | 138.8  | 121.5  | 113.8  |
| 47.5° | 7212.0 | 6019.3 | 2511.3 | 983.4  | 425.6  | 250.6  | 224.5  | 164.8  | 132.2  | 115.3  | 106.7  |
| 50°   | 7532.5 | 6343.9 | 2626.7 | 955.8  | 395.5  | 225.6  | 257.2  | 165.9  | 126.6  | 109.2  | 100.0  |
| 52.5° | 7979.5 | 6793.0 | 2796.1 | 909.4  | 354.2  | 202.6  | 253.1  | 166.9  | 120.4  | 102.6  | 93.4   |
| 55°   | 8480.7 | 7353.9 | 2978.3 | 832.3  | 296.5  | 172.5  | 216.9  | 159.7  | 108.7  | 95.4   | 86.8   |
| 57.5° | 9007.3 | 7862.7 | 3086.5 | 740.5  | 235.8  | 149.0  | 173.5  | 145.4  | 95.9   | 85.7   | 80.1   |
| 60°   | 9090.0 | 8056.1 | 3037.0 | 627.7  | 187.3  | 129.6  | 128.6  | 148.0  | 85.7   | 75.5   | 71.4   |
| 62.5° | 8884.3 | 7813.2 | 2797.6 | 527.2  | 156.7  | 113.8  | 105.6  | 129.1  | 77.6   | 67.4   | 63.3   |
| 65°   | 8488.8 | 7156.4 | 2409.8 | 475.1  | 145.4  | 97.5   | 87.8   | 90.8   | 67.9   | 58.7   | 55.1   |
| 67.5° | 7938.7 | 6279.6 | 1978.5 | 445.5  | 143.9  | 83.7   | 75.0   | 68.9   | 58.7   | 51.0   | 48.0   |
| 70°   | 6813.9 | 5231.4 | 1578.5 | 429.2  | 139.8  | 70.4   | 63.3   | 56.1   | 49.0   | 43.4   | 40.8   |
| 72.5° | 5015.0 | 3707.0 | 1227.9 | 411.3  | 140.9  | 56.1   | 55.1   | 46.4   | 39.3   | 33.7   | 32.7   |
| 75°   | 2897.7 | 2117.9 | 805.3  | 333.2  | 134.2  | 43.4   | 45.9   | 32.7   | 27.6   | 23.5   | 23.5   |
| 77.5° | 1544.3 | 1291.6 | 306.7  | 138.8  | 49.0   | 27.6   | 26.0   | 19.4   | 17.4   | 14.3   | 13.8   |
| 80°   | 673.1  | 568.5  | 92.4   | 38.8   | 27.0   | 14.8   | 9.7    | 8.7    | 7.7    | 6.1    | 5.6    |
| 82.5° | 238.3  | 205.7  | 30.1   | 18.9   | 11.7   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 54.1   | 38.8   | 0.0    | 4.6    | 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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 CATALOG NUMBER: NVN-SA2D-730-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°   | 270°   | 275°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 |
| 2.5°  | 3065.6 | 3054.3 | 2988.0 | 2990.5 | 3002.3 | 3019.1 | 2979.3 | 2997.7 | 3047.2 | 3094.6 | 3112.5 |
| 5°    | 2370.5 | 2373.0 | 2332.7 | 2357.7 | 2380.2 | 2395.5 | 2331.2 | 2332.2 | 2371.5 | 2425.1 | 2453.2 |
| 7.5°  | 1670.3 | 1666.2 | 1668.3 | 1728.0 | 1770.3 | 1739.7 | 1763.7 | 1680.5 | 1685.6 | 1723.9 | 1695.3 |
| 10°   | 1241.6 | 1185.5 | 1153.9 | 1198.8 | 1245.2 | 1228.4 | 1187.0 | 1160.0 | 1178.9 | 1221.2 | 1218.2 |
| 12.5° | 975.8  | 895.1  | 847.7  | 815.5  | 853.8  | 822.1  | 821.1  | 797.6  | 772.1  | 776.7  | 844.6  |
| 15°   | 733.9  | 675.2  | 619.0  | 567.5  | 566.5  | 555.7  | 501.1  | 439.9  | 434.8  | 437.9  | 473.1  |
| 17.5° | 504.7  | 484.8  | 461.8  | 417.4  | 405.7  | 360.8  | 307.7  | 283.2  | 271.0  | 276.6  | 288.3  |
| 20°   | 354.7  | 347.0  | 349.6  | 325.6  | 308.7  | 265.9  | 234.8  | 225.1  | 223.0  | 228.6  | 234.2  |
| 22.5° | 294.0  | 280.2  | 278.6  | 267.9  | 251.1  | 220.0  | 203.1  | 197.5  | 194.9  | 200.0  | 204.1  |
| 25°   | 257.2  | 243.4  | 237.8  | 231.2  | 213.3  | 191.9  | 181.7  | 176.6  | 174.0  | 177.1  | 179.6  |
| 27.5° | 226.6  | 213.8  | 208.7  | 204.1  | 186.8  | 171.5  | 163.3  | 158.7  | 156.7  | 157.7  | 160.2  |
| 30°   | 203.6  | 192.4  | 185.8  | 180.1  | 165.3  | 154.6  | 147.5  | 142.9  | 140.9  | 140.9  | 143.4  |
| 32.5° | 179.6  | 173.5  | 167.4  | 160.2  | 146.5  | 139.3  | 132.2  | 127.1  | 125.0  | 125.5  | 127.6  |
| 35°   | 149.5  | 147.5  | 149.0  | 142.4  | 130.6  | 124.5  | 117.4  | 111.8  | 110.2  | 110.7  | 112.8  |
| 37.5° | 132.7  | 123.5  | 129.1  | 125.5  | 118.9  | 110.7  | 101.6  | 96.5   | 93.9   | 95.4   | 96.5   |
| 40°   | 122.0  | 110.7  | 106.7  | 110.2  | 109.2  | 95.9   | 87.8   | 82.7   | 80.6   | 81.1   | 82.2   |
| 42.5° | 112.8  | 99.5   | 90.3   | 89.8   | 95.9   | 83.7   | 75.0   | 70.4   | 67.9   | 67.9   | 68.9   |
| 45°   | 104.1  | 89.8   | 78.6   | 69.9   | 80.6   | 70.9   | 62.8   | 58.7   | 55.6   | 55.6   | 56.1   |
| 47.5° | 97.5   | 81.7   | 68.4   | 57.2   | 60.7   | 58.2   | 51.5   | 47.5   | 44.4   | 44.4   | 44.9   |
| 50°   | 91.3   | 73.5   | 59.2   | 48.0   | 45.4   | 48.0   | 41.8   | 37.3   | 35.2   | 34.7   | 35.7   |
| 52.5° | 84.7   | 65.3   | 50.5   | 40.8   | 35.7   | 36.2   | 32.7   | 29.6   | 27.0   | 27.0   | 28.1   |
| 55°   | 78.1   | 58.7   | 43.9   | 34.7   | 29.6   | 27.0   | 26.0   | 24.0   | 21.9   | 21.9   | 23.0   |
| 57.5° | 71.4   | 51.5   | 37.3   | 28.6   | 23.5   | 21.4   | 21.4   | 19.9   | 18.4   | 18.4   | 19.4   |
| 60°   | 65.3   | 44.4   | 30.6   | 23.5   | 18.4   | 17.9   | 18.4   | 16.8   | 15.8   | 15.8   | 16.8   |
| 62.5° | 58.2   | 37.8   | 25.0   | 19.4   | 14.8   | 14.3   | 15.8   | 14.8   | 13.8   | 13.8   | 14.8   |
| 65°   | 49.5   | 32.2   | 19.9   | 14.8   | 11.2   | 11.2   | 13.3   | 12.2   | 11.2   | 11.2   | 12.2   |
| 67.5° | 41.8   | 27.0   | 15.3   | 10.7   | 8.2    | 8.7    | 11.2   | 10.2   | 9.7    | 9.7    | 10.7   |
| 70°   | 34.7   | 20.9   | 10.7   | 6.6    | 4.6    | 6.6    | 8.7    | 8.7    | 8.7    | 8.7    | 9.7    |
| 72.5° | 26.0   | 14.3   | 6.1    | 2.6    | 2.0    | 4.6    | 7.1    | 8.2    | 7.7    | 7.7    | 9.2    |
| 75°   | 16.8   | 8.2    | 2.0    | 0.0    | 0.0    | 2.6    | 5.6    | 6.6    | 6.6    | 6.1    | 7.7    |
| 77.5° | 9.7    | 2.6    | 0.0    | 0.0    | 0.0    | 0.0    | 3.6    | 3.1    | 2.6    | 2.0    | 3.6    |
| 80°   | 2.6    | 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: P360144  
 CATALOG NUMBER: NVN-SA2D-730-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 | 3614.2 |
| 2.5°  | 3184.5 | 3244.7 | 3329.4 | 3419.2 | 3557.5 | 3667.2 | 3774.9 | 3867.3 | 3903.0 | 3917.8 |
| 5°    | 2520.5 | 2608.8 | 2732.8 | 2892.0 | 3141.6 | 3366.1 | 3593.7 | 3822.9 | 3922.4 | 3947.4 |
| 7.5°  | 1808.6 | 1921.4 | 2079.1 | 2278.6 | 2571.0 | 2861.9 | 3179.9 | 3516.2 | 3670.3 | 3709.1 |
| 10°   | 1338.6 | 1476.4 | 1657.0 | 1867.3 | 2146.4 | 2445.5 | 2792.0 | 3176.3 | 3352.4 | 3403.9 |
| 12.5° | 949.7  | 1136.0 | 1377.9 | 1633.6 | 1875.5 | 2142.4 | 2493.0 | 2916.5 | 3101.3 | 3156.9 |
| 15°   | 557.8  | 737.9  | 1024.2 | 1366.7 | 1676.4 | 1946.9 | 2303.1 | 2783.3 | 2987.0 | 3043.1 |
| 17.5° | 320.0  | 409.8  | 626.2  | 1007.9 | 1428.4 | 1803.0 | 2243.4 | 2816.5 | 3056.4 | 3108.4 |
| 20°   | 244.4  | 273.0  | 360.8  | 649.1  | 1138.5 | 1661.6 | 2243.4 | 3004.3 | 3299.8 | 3376.3 |
| 22.5° | 213.8  | 234.8  | 270.5  | 387.3  | 838.0  | 1510.1 | 2269.4 | 3275.8 | 3662.1 | 3746.8 |
| 25°   | 189.8  | 208.7  | 239.3  | 291.4  | 571.6  | 1329.9 | 2331.2 | 3609.1 | 4088.8 | 4198.5 |
| 27.5° | 169.9  | 187.8  | 215.4  | 255.2  | 390.9  | 1112.5 | 2414.4 | 4000.0 | 4559.3 | 4647.1 |
| 30°   | 152.1  | 168.9  | 193.9  | 222.0  | 301.6  | 866.0  | 2485.3 | 4368.4 | 4928.8 | 5023.2 |
| 32.5° | 135.2  | 150.5  | 173.0  | 193.9  | 247.0  | 640.5  | 2493.0 | 4660.3 | 5235.5 | 5329.4 |
| 35°   | 119.4  | 133.2  | 153.6  | 169.9  | 204.6  | 505.7  | 2374.1 | 4913.5 | 5542.2 | 5666.2 |
| 37.5° | 104.1  | 117.4  | 135.2  | 147.5  | 180.1  | 412.3  | 2192.4 | 5195.7 | 5935.6 | 6050.5 |
| 40°   | 89.8   | 101.6  | 119.9  | 128.1  | 170.5  | 316.9  | 1994.9 | 5491.7 | 6321.5 | 6426.6 |
| 42.5° | 76.5   | 87.8   | 105.6  | 121.5  | 149.5  | 236.8  | 1781.6 | 5769.3 | 6668.5 | 6778.7 |
| 45°   | 63.8   | 75.5   | 93.4   | 128.6  | 124.0  | 177.1  | 1553.4 | 5953.5 | 6942.5 | 7062.5 |
| 47.5° | 51.5   | 64.8   | 89.3   | 122.5  | 99.0   | 130.1  | 1372.8 | 6128.0 | 7150.2 | 7268.6 |
| 50°   | 41.3   | 54.6   | 100.5  | 109.2  | 81.1   | 99.5   | 1297.3 | 6284.2 | 7286.5 | 7400.3 |
| 52.5° | 33.7   | 45.9   | 94.9   | 83.7   | 67.9   | 82.2   | 1338.1 | 6537.3 | 7412.5 | 7484.0 |
| 55°   | 28.1   | 36.2   | 57.2   | 58.2   | 57.7   | 69.9   | 1388.6 | 6900.7 | 7738.6 | 7772.3 |
| 57.5° | 24.5   | 29.1   | 39.8   | 44.9   | 48.5   | 62.3   | 1389.6 | 7422.2 | 8243.4 | 8264.3 |
| 60°   | 20.9   | 25.5   | 33.2   | 36.2   | 41.8   | 55.6   | 1339.1 | 7604.4 | 8441.9 | 8511.3 |
| 62.5° | 18.4   | 22.5   | 27.6   | 30.1   | 35.2   | 50.0   | 1220.7 | 7340.6 | 8169.4 | 8287.2 |
| 65°   | 16.3   | 20.4   | 23.0   | 25.5   | 31.1   | 44.9   | 1025.8 | 6812.9 | 7717.2 | 7840.2 |
| 67.5° | 14.3   | 17.9   | 20.4   | 23.0   | 28.1   | 39.8   | 755.3  | 6200.0 | 7198.2 | 7300.3 |
| 70°   | 12.8   | 15.8   | 18.4   | 20.4   | 24.5   | 33.7   | 458.3  | 5261.0 | 6480.7 | 6523.0 |
| 72.5° | 12.2   | 14.3   | 16.8   | 18.4   | 21.4   | 29.6   | 232.2  | 3866.3 | 5180.9 | 5249.8 |
| 75°   | 10.7   | 12.8   | 15.3   | 16.3   | 18.9   | 25.5   | 94.4   | 2539.4 | 3754.5 | 3865.2 |
| 77.5° | 8.7    | 11.7   | 13.8   | 14.8   | 16.3   | 20.9   | 48.0   | 1622.8 | 2634.8 | 2706.3 |
| 80°   | 3.1    | 8.7    | 11.7   | 12.2   | 13.8   | 15.3   | 31.6   | 888.5  | 1528.4 | 1559.1 |
| 82.5° | 0.0    | 5.6    | 9.2    | 8.7    | 9.7    | 11.7   | 20.4   | 422.6  | 1008.9 | 1020.1 |
| 85°   | 0.0    | 2.6    | 7.1    | 5.6    | 4.1    | 8.2    | 7.1    | 92.4   | 529.2  | 551.2  |
| 87.5° | 0.0    | 0.0    | 0.5    | 2.6    | 2.0    | 3.1    | 1.0    | 0.5    | 48.0   | 60.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

**Test Information**

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-2-R4  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 10/28/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW-EDISON  
 Catalog Number: **SA1C-730-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

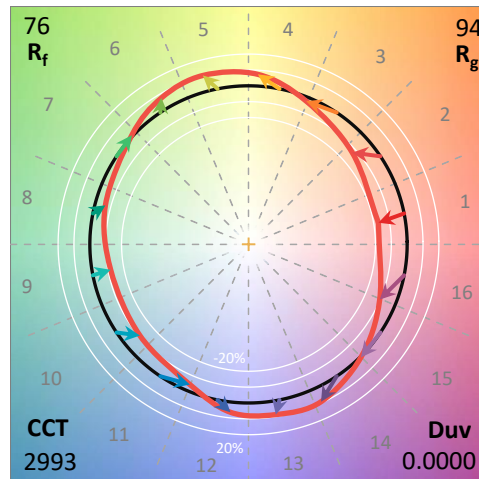
\*\*\*THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.\*\*\*TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

**Spectral Parameters**

CCT (K): 2993  
 CIE u': 0.2508  
 CIE v': 0.5215  
 Duv: 0.0000  
 CIE x: 0.4374  
 CIE y: 0.4043  
 CIE z: 0.1583  
 Peak Wavelength (nm): 593  
 Dominant Wavelength (nm): 582  
 Purity: 53

|           |      |      |       |
|-----------|------|------|-------|
| CRI (Ra): | 71.8 |      |       |
| R1:       | 67.5 | R9:  | -38.3 |
| R2:       | 82.9 | R10: | 62.5  |
| R3:       | 94.7 | R11: | 63.7  |
| R4:       | 67.7 | R12: | 57.8  |
| R5:       | 67.9 | R13: | 70.4  |
| R6:       | 77.6 | R14: | 97.3  |
| R7:       | 76.0 |      |       |
| R8:       | 40.5 |      |       |

Rf: 75.7  
 Rg: 93.9



**Test Conditions**

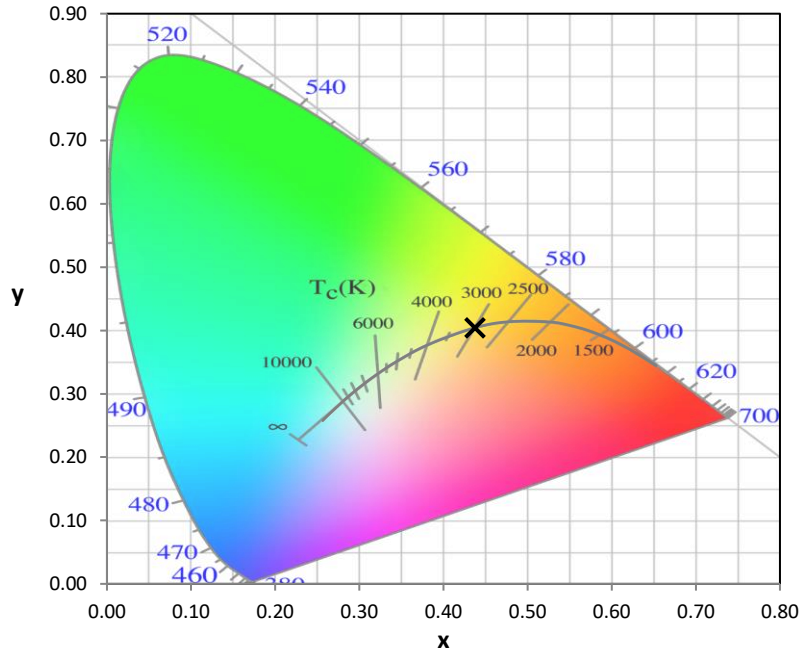
Stabilization Time: 53M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7

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

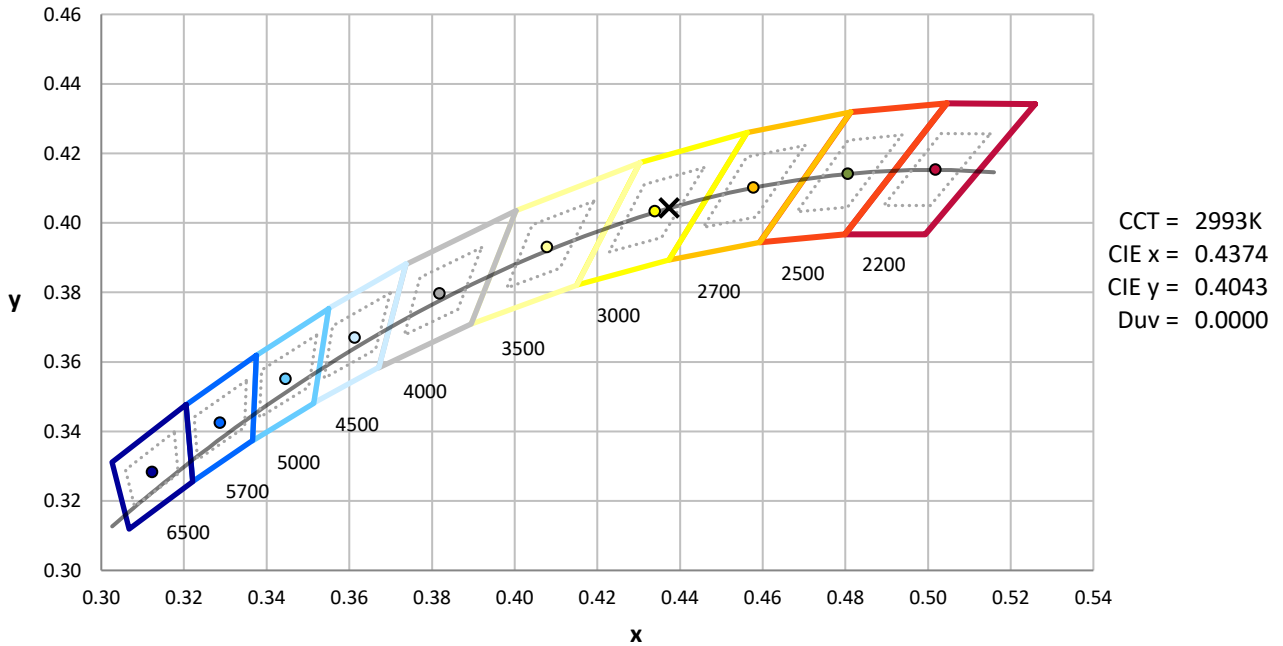
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date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

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 (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2397          | NR            | 490    | 24908         | NR            | 620    | 118784        | NR            | 750    | 5037          | NR            | 880    | 2677          | NR            |
| 365    | 2084          | NR            | 495    | 30998         | NR            | 625    | 108951        | NR            | 755    | 4413          | NR            | 885    | 2940          | NR            |
| 370    | 2143          | NR            | 500    | 37103         | NR            | 630    | 99573         | NR            | 760    | 4189          | NR            | 890    | 3116          | NR            |
| 375    | 2413          | NR            | 505    | 42987         | NR            | 635    | 90444         | NR            | 765    | 3677          | NR            | 895    | 3345          | NR            |
| 380    | 2172          | NR            | 510    | 48702         | NR            | 640    | 80749         | NR            | 770    | 3366          | NR            | 900    | 2312          | NR            |
| 385    | 1997          | NR            | 515    | 53741         | NR            | 645    | 71664         | NR            | 775    | 3211          | NR            | 905    | 2829          | NR            |
| 390    | 1830          | NR            | 520    | 57283         | NR            | 650    | 63936         | NR            | 780    | 2682          | NR            | 910    | 2783          | NR            |
| 395    | 1861          | NR            | 525    | 61876         | NR            | 655    | 56611         | NR            | 785    | 2804          | NR            | 915    | 2662          | NR            |
| 400    | 1717          | NR            | 530    | 65398         | NR            | 660    | 49763         | NR            | 790    | 2581          | NR            | 920    | 3047          | NR            |
| 405    | 1761          | NR            | 535    | 69597         | NR            | 665    | 42891         | NR            | 795    | 2711          | NR            | 925    | 2256          | NR            |
| 410    | 2680          | NR            | 540    | 74214         | NR            | 670    | 36939         | NR            | 800    | 2609          | NR            | 930    | 2976          | NR            |
| 415    | 4374          | NR            | 545    | 79911         | NR            | 675    | 31946         | NR            | 805    | 2581          | NR            | 935    | 3503          | NR            |
| 420    | 8071          | NR            | 550    | 86153         | NR            | 680    | 27385         | NR            | 810    | 2404          | NR            | 940    | 4226          | NR            |
| 425    | 15169         | NR            | 555    | 93952         | NR            | 685    | 23504         | NR            | 815    | 2556          | NR            | 945    | 2930          | NR            |
| 430    | 26038         | NR            | 560    | 102904        | NR            | 690    | 20210         | NR            | 820    | 2742          | NR            | 950    | 2115          | NR            |
| 435    | 41316         | NR            | 565    | 112009        | NR            | 695    | 17459         | NR            | 825    | 2014          | NR            | 955    | 2634          | NR            |
| 440    | 59674         | NR            | 570    | 121662        | NR            | 700    | 15207         | NR            | 830    | 2488          | NR            | 960    | 4200          | NR            |
| 445    | 72751         | NR            | 575    | 130476        | NR            | 705    | 13322         | NR            | 835    | 2625          | NR            | 965    | 1982          | NR            |
| 450    | 65091         | NR            | 580    | 137926        | NR            | 710    | 11676         | NR            | 840    | 2754          | NR            | 970    | 3613          | NR            |
| 455    | 44894         | NR            | 585    | 143406        | NR            | 715    | 10626         | NR            | 845    | 2708          | NR            | 975    | 4034          | NR            |
| 460    | 32712         | NR            | 590    | 147039        | NR            | 720    | 9416          | NR            | 850    | 2608          | NR            | 980    | 3922          | NR            |
| 465    | 25296         | NR            | 595    | 147365        | NR            | 725    | 8333          | NR            | 855    | 2605          | NR            | 985    | 1909          | NR            |
| 470    | 19318         | NR            | 600    | 145800        | NR            | 730    | 7134          | NR            | 860    | 1765          | NR            | 990    | 3617          | NR            |
| 475    | 17265         | NR            | 605    | 141363        | NR            | 735    | 6437          | NR            | 865    | 2581          | NR            | 995    | 4767          | NR            |
| 480    | 18260         | NR            | 610    | 134199        | NR            | 740    | 5834          | NR            | 870    | 3016          | NR            | 1000   | 2528          | NR            |
| 485    | 20845         | NR            | 615    | 127683        | NR            | 745    | 5500          | NR            | 875    | 3952          | NR            |        |               |               |

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

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360    | 2397          | NR            | 490    | 24908         | NR            | 620    | 118784        | NR            | 750    | 5037          | NR            | 880    | 2677          | NR            |
| 365    | 2084          | NR            | 495    | 30998         | NR            | 625    | 108951        | NR            | 755    | 4413          | NR            | 885    | 2940          | NR            |
| 370    | 2143          | NR            | 500    | 37103         | NR            | 630    | 99573         | NR            | 760    | 4189          | NR            | 890    | 3116          | NR            |
| 375    | 2413          | NR            | 505    | 42987         | NR            | 635    | 90444         | NR            | 765    | 3677          | NR            | 895    | 3345          | NR            |
| 380    | 2172          | NR            | 510    | 48702         | NR            | 640    | 80749         | NR            | 770    | 3366          | NR            | 900    | 2312          | NR            |
| 385    | 1997          | NR            | 515    | 53741         | NR            | 645    | 71664         | NR            | 775    | 3211          | NR            | 905    | 2829          | NR            |
| 390    | 1830          | NR            | 520    | 57283         | NR            | 650    | 63936         | NR            | 780    | 2682          | NR            | 910    | 2783          | NR            |
| 395    | 1861          | NR            | 525    | 61876         | NR            | 655    | 56611         | NR            | 785    | 2804          | NR            | 915    | 2662          | NR            |
| 400    | 1717          | NR            | 530    | 65398         | NR            | 660    | 49763         | NR            | 790    | 2581          | NR            | 920    | 3047          | NR            |
| 405    | 1761          | NR            | 535    | 69597         | NR            | 665    | 42891         | NR            | 795    | 2711          | NR            | 925    | 2256          | NR            |
| 410    | 2680          | NR            | 540    | 74214         | NR            | 670    | 36939         | NR            | 800    | 2609          | NR            | 930    | 2976          | NR            |
| 415    | 4374          | NR            | 545    | 79911         | NR            | 675    | 31946         | NR            | 805    | 2581          | NR            | 935    | 3503          | NR            |
| 420    | 8071          | NR            | 550    | 86153         | NR            | 680    | 27385         | NR            | 810    | 2404          | NR            | 940    | 4226          | NR            |
| 425    | 15169         | NR            | 555    | 93952         | NR            | 685    | 23504         | NR            | 815    | 2556          | NR            | 945    | 2930          | NR            |
| 430    | 26038         | NR            | 560    | 102904        | NR            | 690    | 20210         | NR            | 820    | 2742          | NR            | 950    | 2115          | NR            |
| 435    | 41316         | NR            | 565    | 112009        | NR            | 695    | 17459         | NR            | 825    | 2014          | NR            | 955    | 2634          | NR            |
| 440    | 59674         | NR            | 570    | 121662        | NR            | 700    | 15207         | NR            | 830    | 2488          | NR            | 960    | 4200          | NR            |
| 445    | 72751         | NR            | 575    | 130476        | NR            | 705    | 13322         | NR            | 835    | 2625          | NR            | 965    | 1982          | NR            |
| 450    | 65091         | NR            | 580    | 137926        | NR            | 710    | 11676         | NR            | 840    | 2754          | NR            | 970    | 3613          | NR            |
| 455    | 44894         | NR            | 585    | 143406        | NR            | 715    | 10626         | NR            | 845    | 2708          | NR            | 975    | 4034          | NR            |
| 460    | 32712         | NR            | 590    | 147039        | NR            | 720    | 9416          | NR            | 850    | 2608          | NR            | 980    | 3922          | NR            |
| 465    | 25296         | NR            | 595    | 147365        | NR            | 725    | 8333          | NR            | 855    | 2605          | NR            | 985    | 1909          | NR            |
| 470    | 19318         | NR            | 600    | 145800        | NR            | 730    | 7134          | NR            | 860    | 1765          | NR            | 990    | 3617          | NR            |
| 475    | 17265         | NR            | 605    | 141363        | NR            | 735    | 6437          | NR            | 865    | 2581          | NR            | 995    | 4767          | NR            |
| 480    | 18260         | NR            | 610    | 134199        | NR            | 740    | 5834          | NR            | 870    | 3016          | NR            | 1000   | 2528          | NR            |
| 485    | 20845         | NR            | 615    | 127683        | NR            | 745    | 5500          | NR            | 875    | 3952          | NR            |        |               |               |



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**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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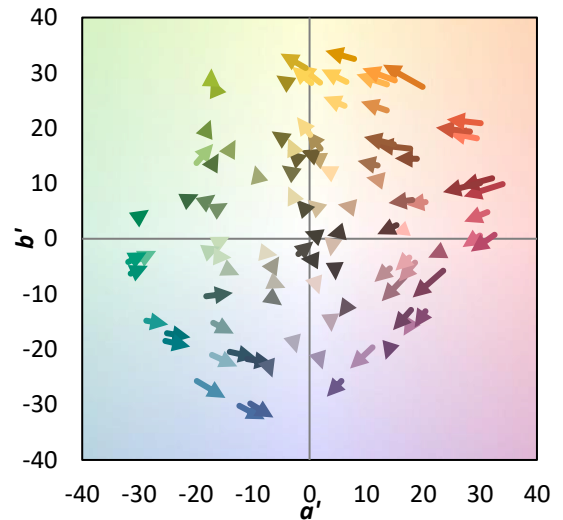
TM-30-18

**Summary**

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



**Color Vector Graphics**

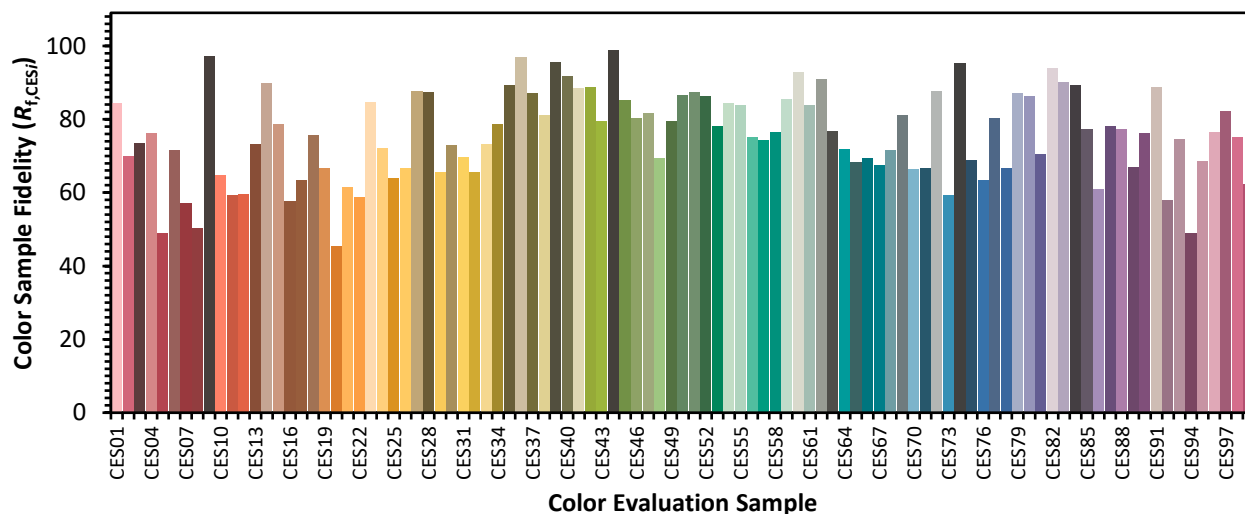


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

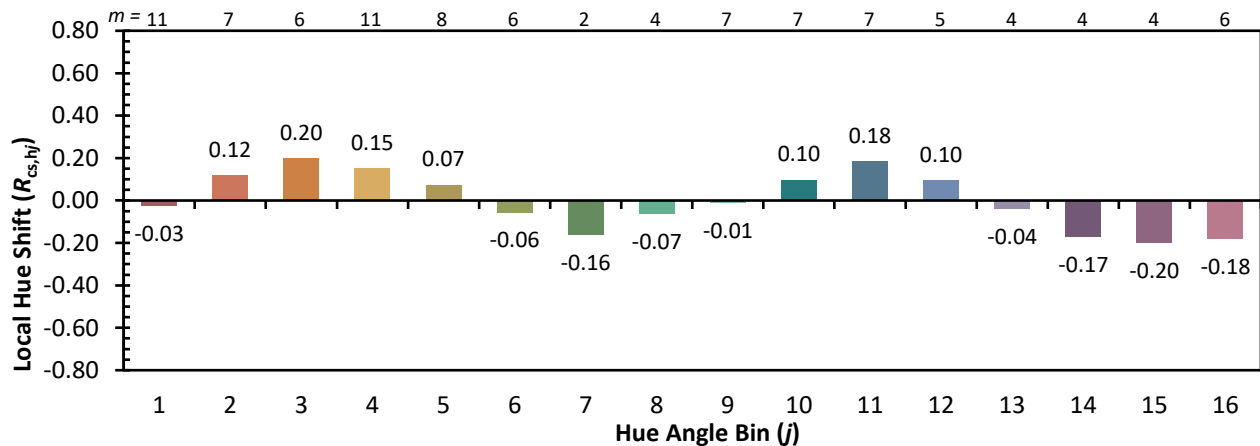
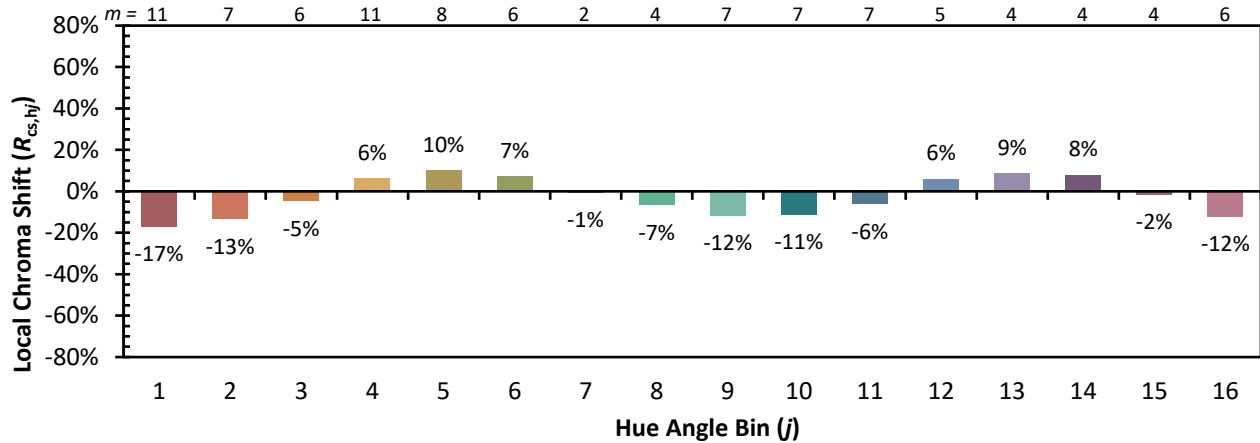
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| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 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 |
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| 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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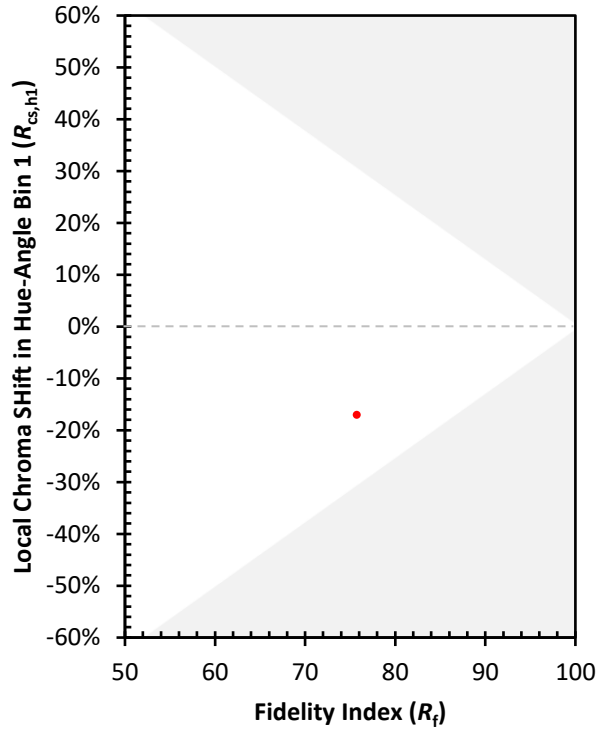
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)