

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: P360179

Luminaire Tested: NVN-SA1B-730-U-SLR-HSS

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P360179  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: STREETWORKS  
Catalog Number: NVN-SA1B-730-U-SLR-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(1) 70 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3979 lumens  
Efficiency: N/A  
Efficacy: 90.4 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B1 - U0 - G1

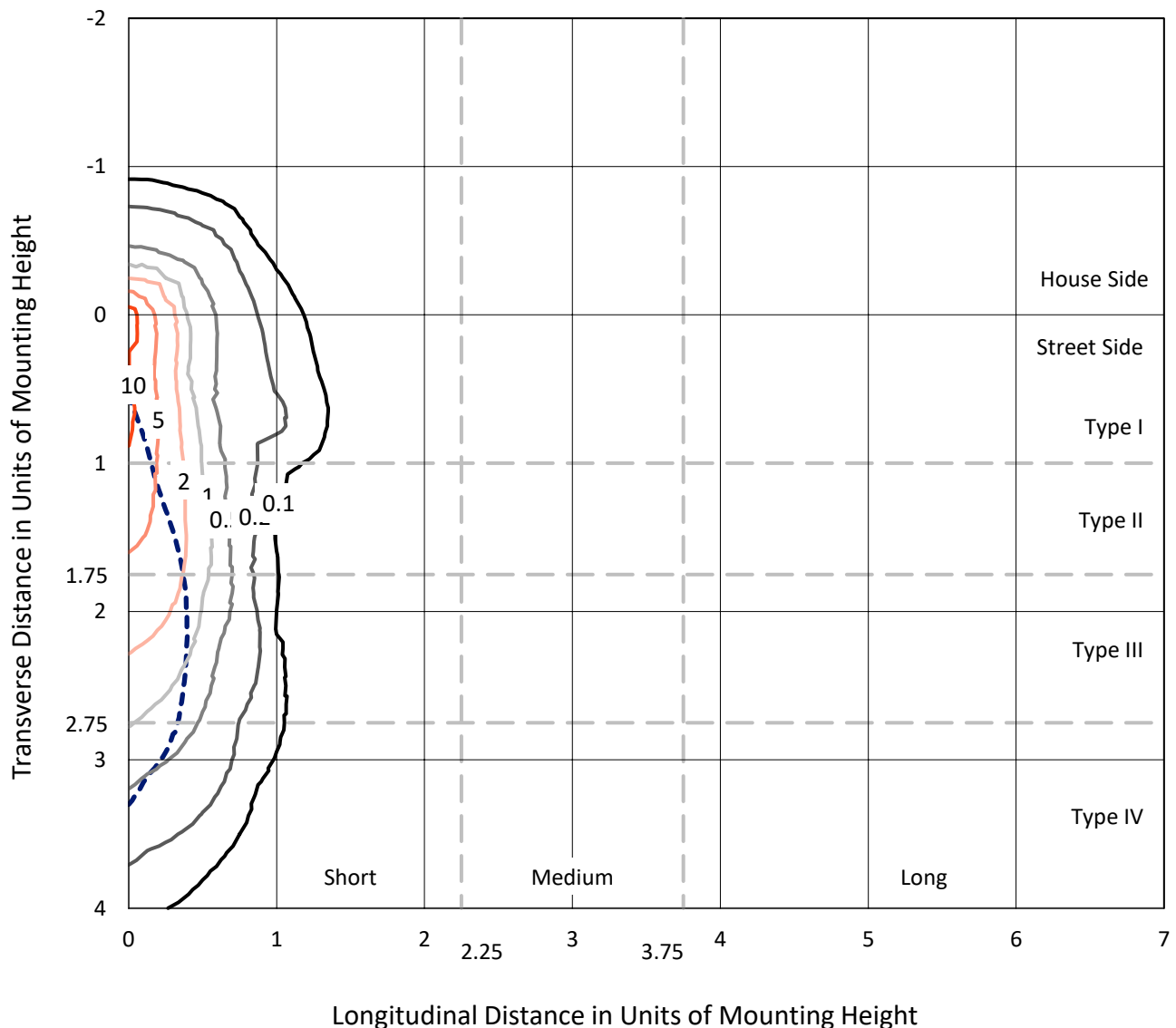
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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## Iso-Footcandle Lines of Horizontal Illumination

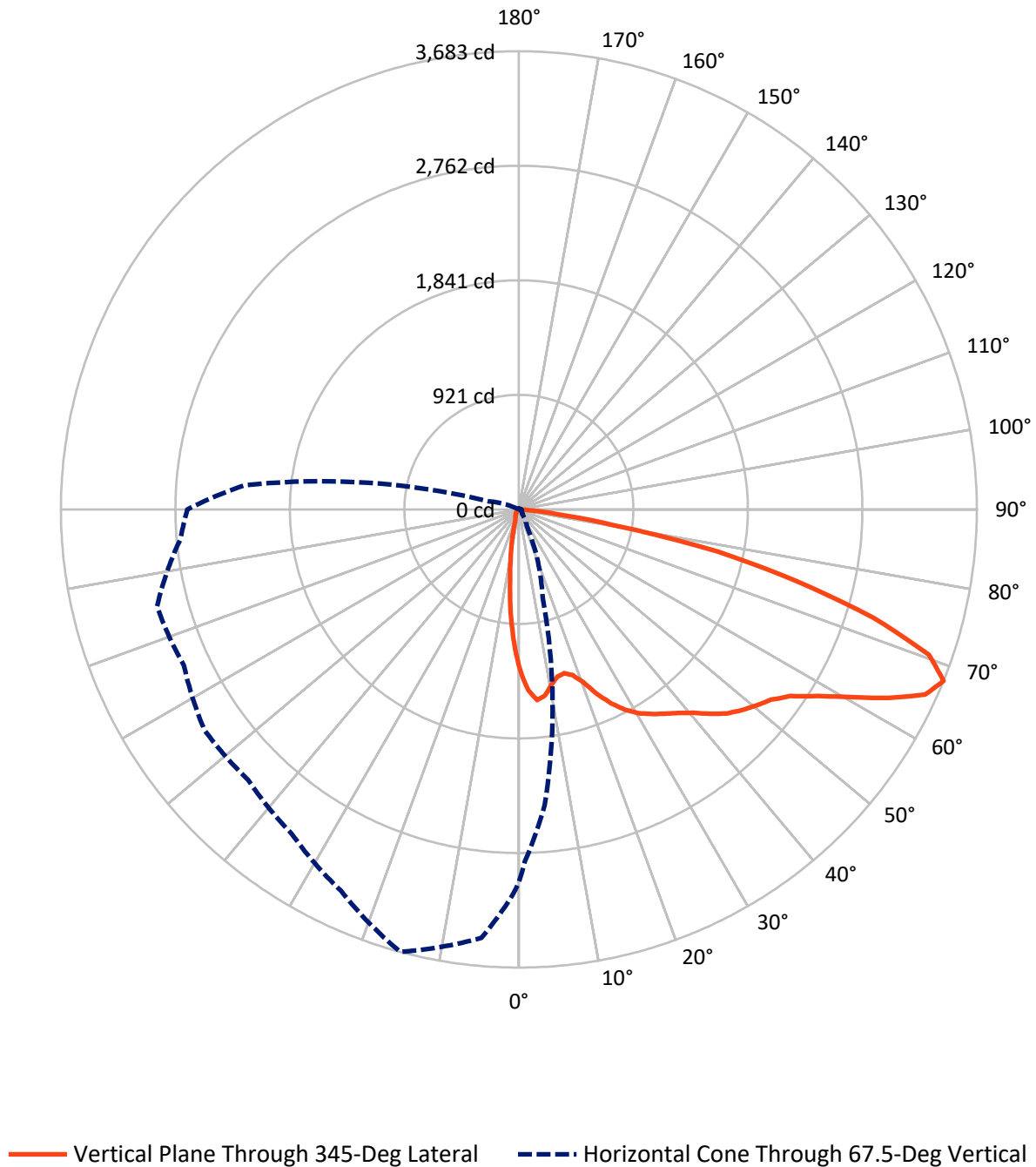
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13 fc  
 Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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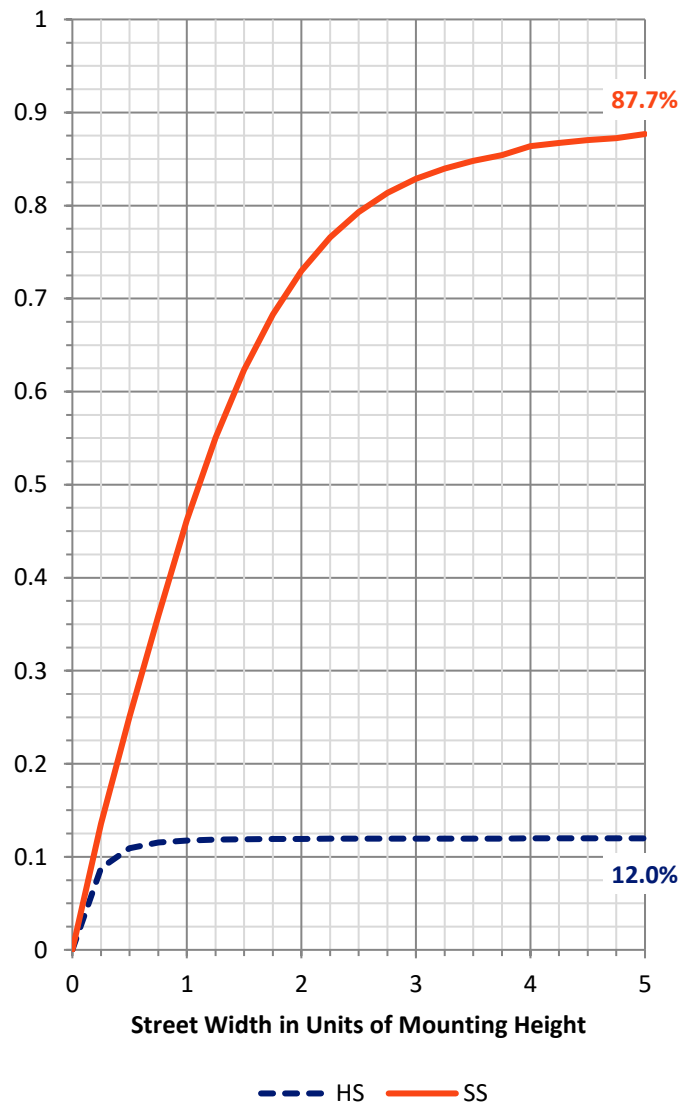
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 481.6    | 0.0    | 481.6  |
|                    | % Fixture | 12.1     | 0.0    | 12.1   |
| <b>Street Side</b> | Lumens    | 3497.4   | 0.0    | 3497.4 |
|                    | % Fixture | 87.9     | 0.0    | 87.9   |
| <b>Total</b>       | Lumens    | 3979.0   | 0.0    | 3979.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 99.5   | 2.5       |
| 10°-20°   | 198.0  | 5.0       |
| 20°-30°   | 281.2  | 7.1       |
| 30°-40°   | 415.3  | 10.4      |
| 40°-50°   | 599.0  | 15.1      |
| 50°-60°   | 840.8  | 21.1      |
| 60°-70°   | 980.2  | 24.6      |
| 70°-80°   | 501.1  | 12.6      |
| 80°-90°   | 64.0   | 1.6       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 3979.0 | 100.0     |
| 0°-180°   | 3979.0 | 100.0     |

**Coefficient of Utilization**



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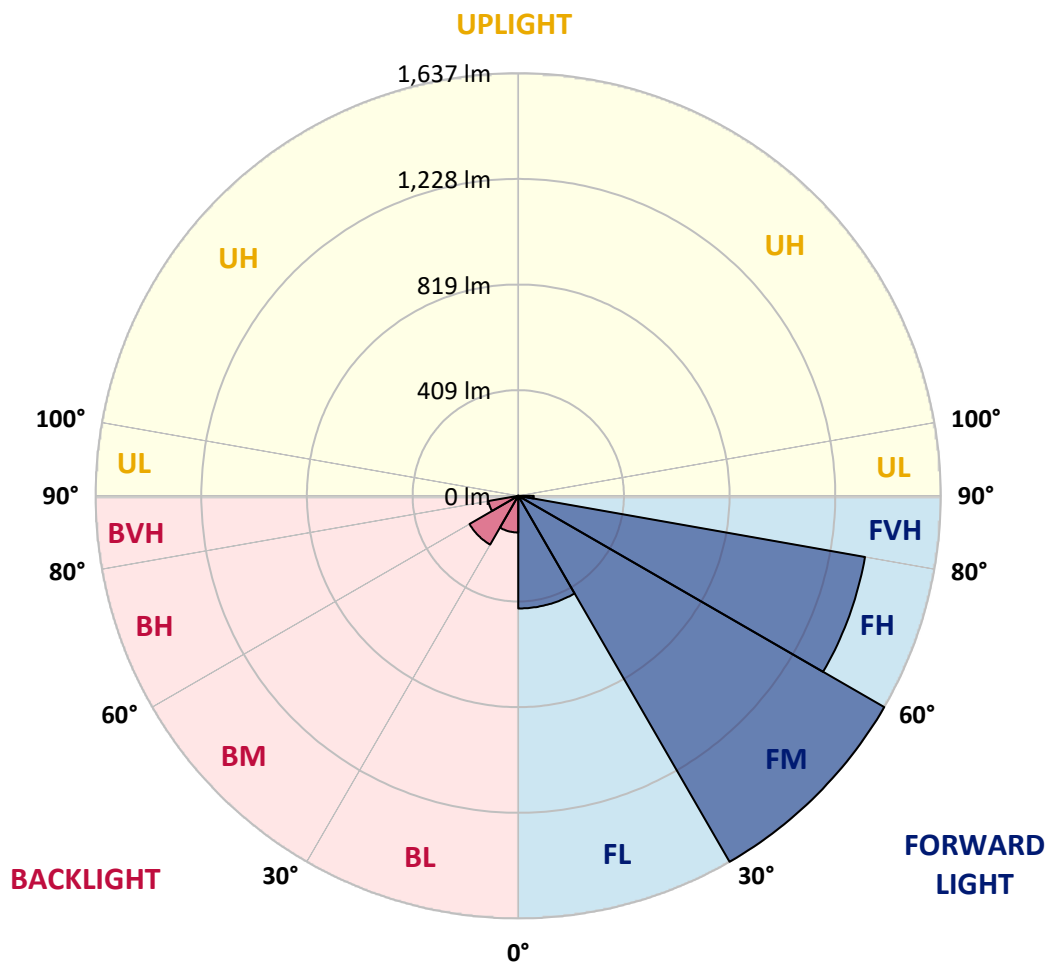
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 436.4  | 11.0      |                         |      |         |
| FM   | (30°-60°)   | 1637.0 | 41.1      |                         |      |         |
| FH   | (60°-80°)   | 1363.9 | 34.3      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 60.1   | 1.5       |                         |      | G1/100  |
| BL   | (0°-30°)    | 142.2  | 3.6       | B1/500                  |      |         |
| BM   | (30°-60°)   | 218.1  | 5.5       | B0/220                  |      |         |
| BH   | (60°-80°)   | 117.4  | 2.9       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 3.9    | 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-G1**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 1°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 |
| 2.5°  | 1419.2 | 1408.3 | 1396.2 | 1356.9 | 1320.3 | 1278.4 | 1244.3 | 1220.6 | 1190.8 | 1152.1 | 1142.3 |
| 5°    | 1409.1 | 1397.4 | 1359.5 | 1271.8 | 1195.1 | 1120.5 | 1048.5 | 1006.2 | 953.8  | 900.7  | 887.5  |
| 7.5°  | 1306.7 | 1294.5 | 1239.8 | 1119.7 | 1016.4 | 908.6  | 815.1  | 757.2  | 698.0  | 649.4  | 623.6  |
| 10°   | 1200.2 | 1186.8 | 1125.4 | 979.7  | 852.4  | 755.0  | 686.3  | 631.1  | 575.1  | 523.1  | 481.6  |
| 12.5° | 1126.9 | 1109.3 | 1042.6 | 877.5  | 766.6  | 700.5  | 636.4  | 570.2  | 494.4  | 438.6  | 393.0  |
| 15°   | 1096.1 | 1076.2 | 1005.7 | 838.1  | 736.3  | 658.6  | 575.1  | 493.9  | 405.1  | 341.2  | 299.3  |
| 17.5° | 1119.9 | 1093.9 | 1018.3 | 835.4  | 698.2  | 592.5  | 486.9  | 391.5  | 295.2  | 230.5  | 200.8  |
| 20°   | 1200.6 | 1166.5 | 1070.5 | 834.7  | 652.0  | 513.9  | 380.0  | 272.2  | 194.5  | 156.5  | 140.8  |
| 22.5° | 1327.6 | 1282.6 | 1145.5 | 840.7  | 604.3  | 431.3  | 274.5  | 184.9  | 146.1  | 126.3  | 117.1  |
| 25°   | 1481.1 | 1428.9 | 1253.6 | 862.0  | 562.5  | 351.0  | 199.4  | 146.1  | 123.3  | 108.8  | 101.0  |
| 27.5° | 1627.0 | 1584.6 | 1390.0 | 892.8  | 530.1  | 286.1  | 161.9  | 123.8  | 105.4  | 95.8   | 89.5   |
| 30°   | 1772.7 | 1719.3 | 1530.1 | 929.3  | 491.1  | 242.2  | 142.3  | 112.9  | 94.4   | 84.3   | 80.3   |
| 32.5° | 1878.6 | 1834.3 | 1639.8 | 955.7  | 449.4  | 213.6  | 127.2  | 103.3  | 88.2   | 77.9   | 72.0   |
| 35°   | 2003.2 | 1953.1 | 1733.9 | 961.6  | 422.6  | 195.5  | 114.4  | 92.9   | 76.5   | 67.3   | 61.1   |
| 37.5° | 2137.8 | 2075.4 | 1842.4 | 948.7  | 401.7  | 186.6  | 104.8  | 88.2   | 71.4   | 62.0   | 55.4   |
| 40°   | 2286.7 | 2216.2 | 1946.7 | 930.3  | 381.2  | 183.6  | 97.5   | 84.6   | 67.5   | 57.9   | 51.1   |
| 42.5° | 2443.6 | 2360.4 | 2037.0 | 910.9  | 368.1  | 173.2  | 96.7   | 81.1   | 64.5   | 54.1   | 47.3   |
| 45°   | 2575.3 | 2491.1 | 2129.7 | 904.4  | 358.9  | 161.9  | 99.9   | 78.6   | 62.4   | 51.1   | 44.5   |
| 47.5° | 2680.3 | 2600.6 | 2224.7 | 918.8  | 353.6  | 151.6  | 91.0   | 81.8   | 61.3   | 48.4   | 42.0   |
| 50°   | 2805.7 | 2715.4 | 2358.6 | 961.6  | 345.9  | 141.2  | 82.4   | 93.7   | 61.3   | 46.7   | 40.0   |
| 52.5° | 2962.9 | 2873.6 | 2507.9 | 1027.9 | 330.4  | 126.9  | 74.1   | 93.9   | 61.8   | 44.5   | 37.3   |
| 55°   | 3160.6 | 3095.8 | 2721.1 | 1100.7 | 305.8  | 105.8  | 64.1   | 80.7   | 59.6   | 40.3   | 34.9   |
| 57.5° | 3350.3 | 3297.3 | 2915.4 | 1150.4 | 272.8  | 82.6   | 55.8   | 65.0   | 54.5   | 35.4   | 31.1   |
| 59°   | 3402.1 | 3344.2 | 2986.7 | 1152.7 | 248.1  | 72.0   | 51.7   | 53.7   | 53.3   | 33.2   | 28.8   |
| 60°   | 3402.1 | 3340.7 | 3007.2 | 1140.6 | 230.2  | 66.2   | 49.0   | 47.9   | 55.6   | 31.7   | 27.5   |
| 62.5° | 3340.5 | 3254.1 | 2940.5 | 1059.0 | 187.7  | 56.4   | 42.8   | 39.6   | 50.0   | 28.5   | 24.3   |
| 65°   | 3212.3 | 3086.6 | 2713.1 | 911.4  | 167.4  | 51.7   | 36.9   | 32.4   | 34.7   | 25.1   | 21.3   |
| 67.5° | 2998.5 | 2828.1 | 2385.3 | 736.3  | 159.3  | 50.3   | 31.9   | 27.5   | 26.2   | 21.5   | 18.7   |
| 70°   | 2622.1 | 2433.0 | 1987.4 | 578.9  | 152.3  | 49.8   | 26.8   | 23.2   | 21.1   | 18.1   | 15.8   |
| 72.5° | 1908.4 | 1711.2 | 1411.0 | 452.6  | 148.2  | 50.9   | 21.5   | 19.4   | 17.3   | 14.1   | 12.3   |
| 75°   | 1091.6 | 962.5  | 793.0  | 299.0  | 126.3  | 48.6   | 16.6   | 16.2   | 12.4   | 10.2   | 8.5    |
| 77.5° | 564.0  | 546.8  | 475.2  | 114.8  | 60.5   | 21.3   | 10.9   | 9.4    | 7.4    | 6.2    | 5.1    |
| 80°   | 243.4  | 240.7  | 208.3  | 33.2   | 16.0   | 11.9   | 6.2    | 4.0    | 3.4    | 2.6    | 2.1    |
| 82.5° | 84.1   | 84.1   | 74.1   | 11.1   | 7.2    | 5.8    | 0.8    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 17.0   | 19.0   | 13.4   | 0.0    | 2.5    | 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 |
| 2.5°  | 1130.5 | 1107.6 | 1106.1 | 1091.8 | 1073.9 | 1065.8 | 1061.1 | 1069.4 | 1079.6 | 1080.7 | 1096.0 |
| 5°    | 877.5  | 853.5  | 863.5  | 838.1  | 843.2  | 838.1  | 829.8  | 831.3  | 835.8  | 821.7  | 839.2  |
| 7.5°  | 616.2  | 598.1  | 609.6  | 602.8  | 611.9  | 615.5  | 610.4  | 602.8  | 580.6  | 578.0  | 593.2  |
| 10°   | 464.5  | 443.9  | 431.7  | 418.9  | 421.7  | 427.5  | 425.6  | 420.2  | 406.0  | 406.8  | 421.5  |
| 12.5° | 373.2  | 350.2  | 325.9  | 294.4  | 286.7  | 291.0  | 286.7  | 283.5  | 269.9  | 271.1  | 284.1  |
| 15°   | 283.1  | 264.3  | 238.8  | 213.6  | 199.8  | 201.1  | 189.1  | 180.6  | 172.1  | 161.9  | 169.8  |
| 17.5° | 191.1  | 179.6  | 172.1  | 164.6  | 148.2  | 144.4  | 129.1  | 112.7  | 106.3  | 101.6  | 105.0  |
| 20°   | 135.3  | 129.1  | 126.1  | 125.7  | 116.3  | 111.6  | 96.7   | 86.5   | 83.3   | 82.4   | 84.4   |
| 22.5° | 113.1  | 108.6  | 104.2  | 101.8  | 97.1   | 91.6   | 80.3   | 75.2   | 73.0   | 71.8   | 73.3   |
| 25°   | 98.4   | 95.0   | 90.5   | 86.3   | 84.4   | 78.6   | 70.5   | 66.7   | 65.2   | 64.1   | 64.8   |
| 27.5° | 87.5   | 84.4   | 79.2   | 76.5   | 75.0   | 69.9   | 63.0   | 59.9   | 58.6   | 58.2   | 58.1   |
| 30°   | 78.8   | 76.0   | 71.1   | 68.0   | 65.4   | 60.9   | 56.7   | 53.7   | 52.4   | 52.0   | 51.7   |
| 32.5° | 70.1   | 67.9   | 64.7   | 61.6   | 58.8   | 54.7   | 51.1   | 48.6   | 46.6   | 46.2   | 46.0   |
| 35°   | 59.2   | 56.9   | 55.2   | 55.0   | 52.4   | 48.4   | 45.8   | 42.6   | 40.9   | 40.3   | 40.5   |
| 37.5° | 52.6   | 49.6   | 45.8   | 47.1   | 46.4   | 43.5   | 40.0   | 36.8   | 35.1   | 34.7   | 34.7   |
| 40°   | 48.4   | 45.2   | 40.9   | 38.6   | 40.9   | 40.3   | 34.7   | 31.5   | 29.8   | 29.6   | 29.2   |
| 42.5° | 44.5   | 41.3   | 36.4   | 32.6   | 33.7   | 35.4   | 30.0   | 27.0   | 25.3   | 24.9   | 24.3   |
| 45°   | 41.7   | 38.3   | 32.8   | 28.5   | 26.2   | 29.8   | 25.6   | 21.9   | 20.9   | 20.2   | 19.8   |
| 47.5° | 39.0   | 35.8   | 29.6   | 24.7   | 20.9   | 21.5   | 20.5   | 17.9   | 16.8   | 16.0   | 15.8   |
| 50°   | 36.8   | 33.4   | 26.8   | 21.1   | 17.3   | 15.8   | 16.6   | 14.1   | 13.2   | 12.4   | 12.1   |
| 52.5° | 34.1   | 30.9   | 23.8   | 18.3   | 14.5   | 12.4   | 12.6   | 11.1   | 10.2   | 9.6    | 9.4    |
| 55°   | 32.0   | 28.8   | 21.3   | 16.0   | 12.8   | 10.2   | 9.0    | 8.7    | 8.1    | 7.7    | 7.5    |
| 57.5° | 29.2   | 26.2   | 18.9   | 13.6   | 10.9   | 8.3    | 7.0    | 7.0    | 6.8    | 6.4    | 6.2    |
| 59°   | 27.5   | 24.9   | 17.3   | 12.3   | 10.0   | 7.2    | 6.2    | 6.4    | 6.2    | 5.8    | 5.7    |
| 60°   | 26.2   | 23.8   | 16.2   | 11.3   | 9.4    | 6.6    | 5.7    | 6.0    | 5.8    | 5.5    | 5.3    |
| 62.5° | 23.2   | 21.5   | 13.9   | 9.4    | 8.3    | 5.3    | 4.7    | 5.1    | 5.1    | 4.9    | 4.7    |
| 65°   | 20.4   | 18.5   | 11.9   | 7.9    | 7.7    | 4.5    | 3.8    | 4.5    | 4.7    | 4.3    | 4.0    |
| 67.5° | 17.7   | 15.8   | 10.4   | 6.4    | 7.2    | 3.6    | 2.8    | 3.8    | 5.1    | 4.0    | 3.6    |
| 70°   | 15.1   | 13.2   | 8.1    | 5.1    | 7.5    | 2.5    | 2.3    | 3.4    | 6.0    | 4.3    | 3.4    |
| 72.5° | 11.7   | 10.2   | 5.7    | 3.8    | 8.1    | 1.7    | 1.7    | 2.8    | 6.8    | 4.7    | 3.2    |
| 75°   | 8.1    | 6.6    | 3.4    | 2.3    | 6.6    | 1.1    | 1.1    | 2.6    | 6.4    | 4.3    | 3.0    |
| 77.5° | 4.7    | 3.6    | 1.1    | 0.2    | 3.4    | 0.0    | 0.2    | 1.9    | 4.5    | 2.6    | 1.3    |
| 80°   | 1.7    | 0.8    | 0.0    | 0.0    | 2.1    | 0.0    | 0.0    | 0.0    | 0.4    | 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    |



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**CANDELA DISTRIBUTION (continued):**

|       | 185°   | 195°   | 205°   | 215°   | 225°   | 235°   | 245°   | 255°   | 265°   | 270°   | 275°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 |
| 2.5°  | 1099.9 | 1125.4 | 1148.2 | 1182.7 | 1223.6 | 1270.7 | 1311.2 | 1354.8 | 1395.7 | 1412.6 | 1424.3 |
| 5°    | 842.8  | 874.3  | 911.0  | 961.7  | 1029.2 | 1112.4 | 1190.2 | 1278.2 | 1372.9 | 1420.2 | 1464.7 |
| 7.5°  | 595.9  | 627.9  | 673.5  | 727.4  | 809.1  | 908.0  | 1009.8 | 1131.4 | 1259.6 | 1334.4 | 1408.1 |
| 10°   | 428.5  | 467.9  | 510.5  | 584.2  | 667.1  | 761.0  | 865.8  | 1001.5 | 1144.4 | 1227.3 | 1316.1 |
| 12.5° | 291.6  | 336.5  | 400.9  | 483.5  | 581.0  | 673.0  | 764.0  | 893.5  | 1059.4 | 1141.6 | 1236.8 |
| 15°   | 174.9  | 199.8  | 268.1  | 363.6  | 483.1  | 597.7  | 697.5  | 827.3  | 1004.2 | 1104.8 | 1203.8 |
| 17.5° | 107.8  | 119.3  | 156.5  | 234.9  | 360.4  | 505.4  | 642.0  | 804.9  | 1012.1 | 1134.6 | 1240.5 |
| 20°   | 86.0   | 90.5   | 102.4  | 138.7  | 238.8  | 403.6  | 579.6  | 800.4  | 1076.7 | 1227.5 | 1341.2 |
| 22.5° | 74.6   | 79.0   | 86.9   | 100.8  | 150.2  | 302.2  | 520.5  | 804.5  | 1169.5 | 1366.8 | 1499.5 |
| 25°   | 65.8   | 69.6   | 77.1   | 88.6   | 110.1  | 212.8  | 457.1  | 823.0  | 1290.3 | 1539.7 | 1680.7 |
| 27.5° | 58.8   | 62.0   | 69.0   | 79.5   | 94.4   | 148.5  | 385.3  | 845.4  | 1433.6 | 1716.5 | 1855.6 |
| 30°   | 52.4   | 55.2   | 61.5   | 71.3   | 82.0   | 114.2  | 306.5  | 860.7  | 1577.0 | 1855.6 | 1980.6 |
| 32.5° | 46.9   | 49.0   | 54.7   | 63.0   | 71.3   | 91.0   | 233.0  | 858.3  | 1683.5 | 1971.4 | 2070.5 |
| 35°   | 41.3   | 43.4   | 48.3   | 55.4   | 62.0   | 75.2   | 183.2  | 812.5  | 1776.3 | 2091.4 | 2173.4 |
| 37.5° | 35.1   | 37.7   | 42.4   | 48.8   | 53.3   | 66.2   | 148.2  | 757.2  | 1870.3 | 2228.7 | 2288.2 |
| 40°   | 29.8   | 32.4   | 36.6   | 43.5   | 46.4   | 62.8   | 113.9  | 689.9  | 1976.1 | 2382.1 | 2414.2 |
| 42.5° | 24.7   | 27.1   | 31.5   | 37.5   | 43.7   | 54.1   | 84.3   | 613.0  | 2077.7 | 2513.3 | 2529.0 |
| 45°   | 20.0   | 22.4   | 27.0   | 33.0   | 46.7   | 44.9   | 65.2   | 530.6  | 2159.7 | 2622.5 | 2627.6 |
| 47.5° | 15.8   | 18.1   | 22.8   | 31.1   | 43.5   | 35.8   | 46.6   | 466.0  | 2228.5 | 2707.7 | 2694.3 |
| 50°   | 12.3   | 14.1   | 19.0   | 35.6   | 38.1   | 29.6   | 35.3   | 444.5  | 2290.1 | 2760.4 | 2725.8 |
| 52.5° | 9.6    | 11.3   | 15.6   | 33.4   | 29.6   | 24.5   | 29.6   | 464.7  | 2374.6 | 2804.2 | 2743.5 |
| 55°   | 7.7    | 9.4    | 12.3   | 19.0   | 20.2   | 20.7   | 25.3   | 483.5  | 2520.3 | 2906.7 | 2848.1 |
| 57.5° | 6.4    | 8.1    | 10.0   | 13.4   | 15.3   | 17.5   | 22.4   | 485.6  | 2692.0 | 3077.1 | 3021.7 |
| 59°   | 5.8    | 7.4    | 9.0    | 11.9   | 13.4   | 16.0   | 21.1   | 474.3  | 2752.5 | 3139.2 | 3111.4 |
| 60°   | 5.5    | 7.0    | 8.5    | 10.9   | 12.4   | 15.1   | 20.4   | 463.5  | 2755.2 | 3136.9 | 3149.7 |
| 62.5° | 4.7    | 6.2    | 7.5    | 9.2    | 10.6   | 12.8   | 18.3   | 423.8  | 2643.6 | 3034.2 | 3126.7 |
| 65°   | 4.1    | 5.5    | 6.8    | 7.9    | 9.0    | 11.5   | 16.6   | 351.2  | 2453.0 | 2868.5 | 2969.3 |
| 67.5° | 3.8    | 4.7    | 6.2    | 7.0    | 8.1    | 10.2   | 14.7   | 250.3  | 2214.9 | 2665.8 | 2731.2 |
| 70°   | 3.4    | 4.5    | 5.7    | 6.4    | 7.4    | 8.9    | 12.6   | 143.8  | 1870.3 | 2369.1 | 2415.7 |
| 72.5° | 3.2    | 4.3    | 5.1    | 6.0    | 6.6    | 7.9    | 11.5   | 67.7   | 1369.5 | 1897.9 | 2019.4 |
| 75°   | 2.8    | 4.0    | 4.7    | 5.7    | 6.2    | 7.2    | 9.8    | 32.4   | 910.9  | 1373.4 | 1511.6 |
| 77.5° | 1.7    | 3.2    | 4.3    | 5.1    | 5.5    | 6.2    | 8.1    | 18.7   | 581.3  | 950.6  | 1119.7 |
| 80°   | 0.0    | 1.1    | 3.2    | 4.3    | 4.7    | 5.3    | 6.2    | 14.7   | 311.0  | 543.1  | 651.8  |
| 82.5° | 0.0    | 0.0    | 2.3    | 3.4    | 3.2    | 3.6    | 4.7    | 9.2    | 140.2  | 355.0  | 400.0  |
| 85°   | 0.0    | 0.0    | 0.8    | 2.6    | 2.3    | 1.7    | 3.2    | 3.2    | 30.7   | 179.6  | 224.1  |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.2    | 1.1    | 0.8    | 1.3    | 0.4    | 0.2    | 13.4   | 54.3   |
| 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: P360179

CATALOG NUMBER: NVN-SA1B-730-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°   | 295°   | 305°   | 315°   | 325°   | 335°   | 345°   | 355°   | 359°   | 360°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 | 1296.2 |
| 2.5°  | 1465.2 | 1479.2 | 1502.8 | 1513.9 | 1508.4 | 1485.2 | 1457.5 | 1429.2 | 1412.6 | 1419.2 |
| 5°    | 1555.3 | 1627.2 | 1668.6 | 1682.4 | 1659.4 | 1607.4 | 1539.3 | 1449.6 | 1417.7 | 1409.1 |
| 7.5°  | 1555.3 | 1690.5 | 1776.1 | 1791.2 | 1739.9 | 1637.9 | 1510.3 | 1370.2 | 1323.7 | 1306.7 |
| 10°   | 1500.7 | 1684.7 | 1804.0 | 1827.9 | 1756.3 | 1603.8 | 1432.8 | 1273.0 | 1217.7 | 1200.2 |
| 12.5° | 1439.0 | 1637.2 | 1762.9 | 1795.9 | 1737.1 | 1569.9 | 1379.1 | 1207.2 | 1142.1 | 1126.9 |
| 15°   | 1401.1 | 1578.7 | 1682.8 | 1706.7 | 1681.8 | 1550.1 | 1366.3 | 1187.4 | 1110.9 | 1096.1 |
| 17.5° | 1414.7 | 1533.5 | 1571.0 | 1584.9 | 1601.7 | 1543.1 | 1401.1 | 1230.7 | 1133.9 | 1119.9 |
| 20°   | 1465.8 | 1485.8 | 1466.4 | 1483.9 | 1529.1 | 1549.9 | 1484.3 | 1335.5 | 1219.2 | 1200.6 |
| 22.5° | 1552.5 | 1461.1 | 1406.6 | 1413.6 | 1468.6 | 1572.3 | 1611.3 | 1485.2 | 1351.0 | 1327.6 |
| 25°   | 1653.6 | 1481.1 | 1373.4 | 1367.2 | 1423.8 | 1601.9 | 1727.4 | 1648.1 | 1506.9 | 1481.1 |
| 27.5° | 1780.6 | 1525.9 | 1366.7 | 1360.4 | 1408.1 | 1629.6 | 1824.0 | 1809.1 | 1671.1 | 1627.0 |
| 30°   | 1878.6 | 1570.0 | 1386.8 | 1372.5 | 1423.8 | 1648.8 | 1901.4 | 1945.7 | 1801.9 | 1772.7 |
| 32.5° | 1948.9 | 1622.1 | 1419.6 | 1398.9 | 1467.9 | 1682.0 | 1961.2 | 2070.9 | 1922.9 | 1878.6 |
| 35°   | 2002.5 | 1678.6 | 1472.6 | 1438.5 | 1528.6 | 1732.3 | 2017.2 | 2204.2 | 2051.7 | 2003.2 |
| 37.5° | 2052.6 | 1758.0 | 1555.3 | 1514.6 | 1623.8 | 1813.4 | 2076.4 | 2355.4 | 2195.7 | 2137.8 |
| 40°   | 2122.6 | 1847.9 | 1683.0 | 1646.8 | 1783.8 | 1923.9 | 2150.3 | 2512.9 | 2359.5 | 2286.7 |
| 42.5° | 2192.5 | 1944.4 | 1813.6 | 1823.4 | 1983.4 | 2058.1 | 2245.6 | 2679.6 | 2521.2 | 2443.6 |
| 45°   | 2256.4 | 2043.9 | 1999.6 | 2044.9 | 2168.7 | 2205.3 | 2340.5 | 2775.9 | 2650.4 | 2575.3 |
| 47.5° | 2313.3 | 2168.4 | 2184.6 | 2305.0 | 2379.5 | 2338.6 | 2411.3 | 2859.0 | 2746.5 | 2680.3 |
| 50°   | 2379.5 | 2329.3 | 2428.3 | 2598.7 | 2622.1 | 2459.2 | 2475.8 | 2957.4 | 2858.8 | 2805.7 |
| 52.5° | 2451.9 | 2499.0 | 2698.2 | 2848.5 | 2840.9 | 2590.2 | 2540.7 | 3067.7 | 3012.9 | 2962.9 |
| 55°   | 2534.1 | 2636.0 | 2935.9 | 3082.2 | 3075.8 | 2736.5 | 2648.1 | 3204.0 | 3205.9 | 3160.6 |
| 57.5° | 2656.0 | 2754.0 | 3097.3 | 3271.3 | 3282.0 | 2905.4 | 2830.2 | 3356.7 | 3380.4 | 3350.3 |
| 59°   | 2743.5 | 2830.6 | 3161.2 | 3350.3 | 3394.0 | 3036.0 | 2963.3 | 3445.3 | 3429.6 | 3402.1 |
| 60°   | 2808.3 | 2879.2 | 3192.9 | 3391.6 | 3459.0 | 3124.6 | 3061.5 | 3497.3 | 3435.5 | 3402.1 |
| 62.5° | 2968.7 | 2985.1 | 3250.0 | 3438.3 | 3533.9 | 3321.4 | 3337.8 | 3585.9 | 3395.0 | 3340.5 |
| 65°   | 3043.6 | 3052.1 | 3249.2 | 3354.6 | 3461.5 | 3474.7 | 3588.5 | 3588.5 | 3296.0 | 3212.3 |
| 67.5° | 3012.3 | 2971.4 | 3088.1 | 3077.1 | 3183.8 | 3383.6 | 3682.8 | 3457.0 | 3106.7 | 2998.5 |
| 70°   | 2757.8 | 2600.4 | 2548.6 | 2553.3 | 2634.9 | 2943.1 | 3496.2 | 3069.8 | 2748.6 | 2622.1 |
| 72.5° | 2294.7 | 1917.1 | 1789.1 | 1935.2 | 1956.5 | 2261.9 | 2979.5 | 2311.8 | 2027.0 | 1908.4 |
| 75°   | 1845.6 | 1351.4 | 1143.3 | 1297.5 | 1333.7 | 1655.3 | 2304.8 | 1439.8 | 1184.0 | 1091.6 |
| 77.5° | 1325.9 | 970.0  | 820.4  | 809.6  | 856.4  | 1049.8 | 1635.5 | 724.6  | 604.3  | 564.0  |
| 80°   | 753.3  | 638.5  | 687.5  | 648.6  | 672.2  | 656.4  | 777.0  | 317.8  | 260.3  | 243.4  |
| 82.5° | 454.7  | 377.4  | 408.7  | 340.2  | 430.5  | 374.9  | 299.3  | 101.8  | 88.4   | 84.1   |
| 85°   | 295.8  | 206.2  | 107.4  | 72.0   | 148.4  | 239.6  | 66.9   | 27.7   | 21.3   | 17.0   |
| 87.5° | 102.0  | 52.6   | 5.3    | 2.3    | 15.8   | 44.7   | 2.5    | 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    |

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

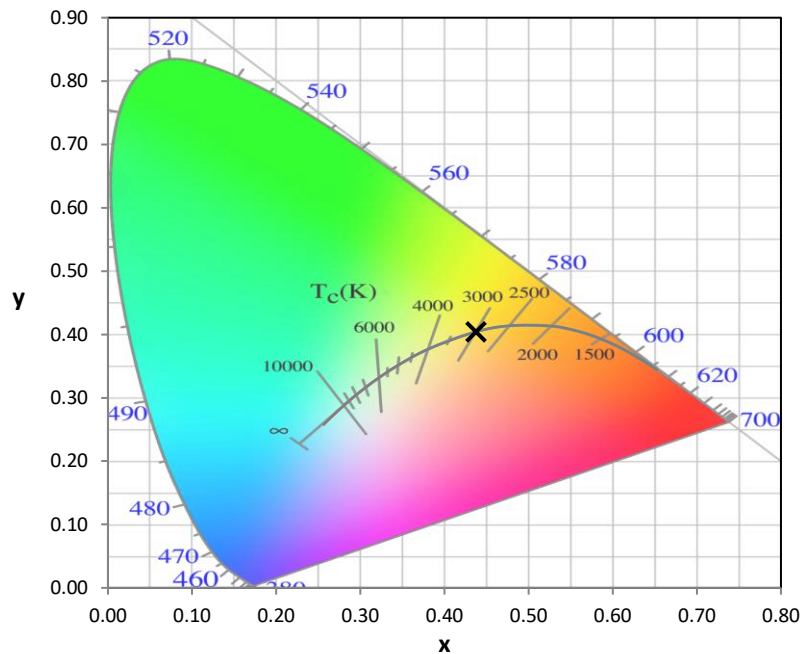
Stabilization Time: 53M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7

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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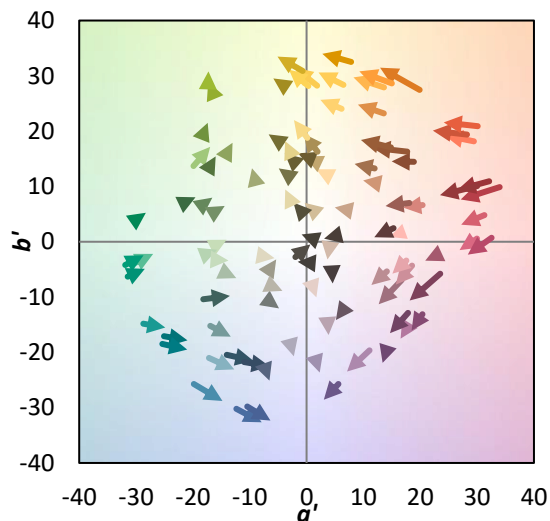
**TM-30-18**

**Summary**

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



**Color Vector Graphics**

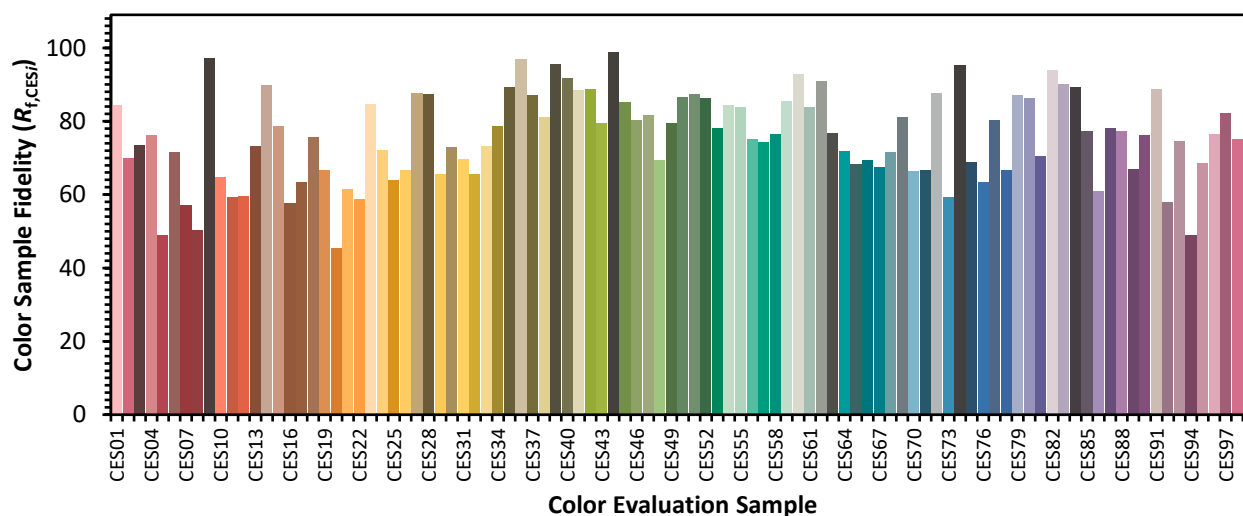


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 |            |



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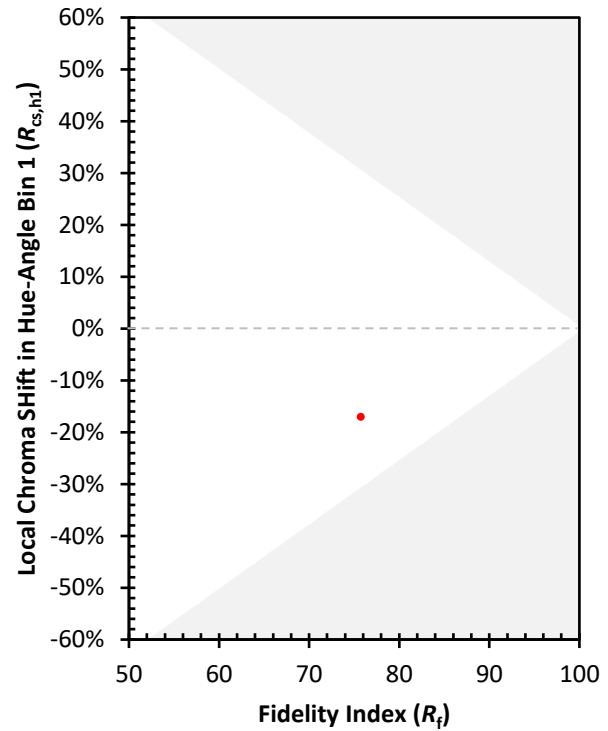
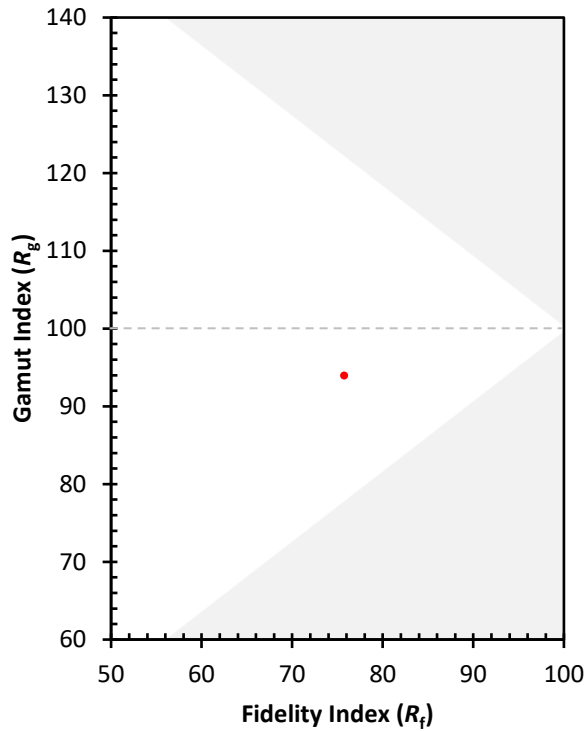
**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)