

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: P364041

Luminaire Tested: NVN-SA5A-750-U-SLR-HSS

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P364041  
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-SA5A-750-U-SLR-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT  
ELIMINATOR RIGHT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17539 lumens  
Efficiency: N/A  
Efficacy: 108.3 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Medium  
BUG Rating: B2 - U0 - G3

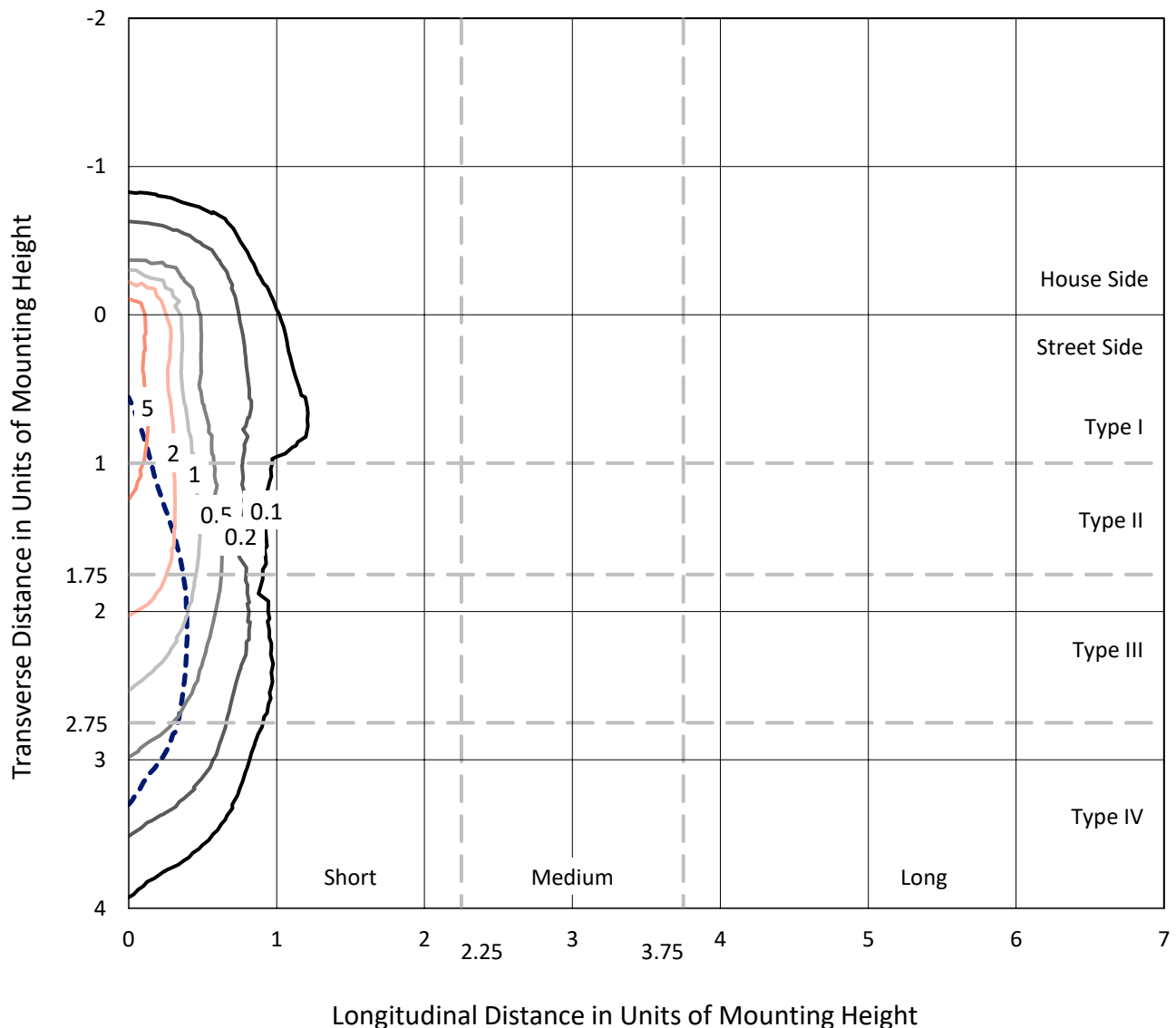
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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## Iso-Footcandle Lines of Horizontal Illumination

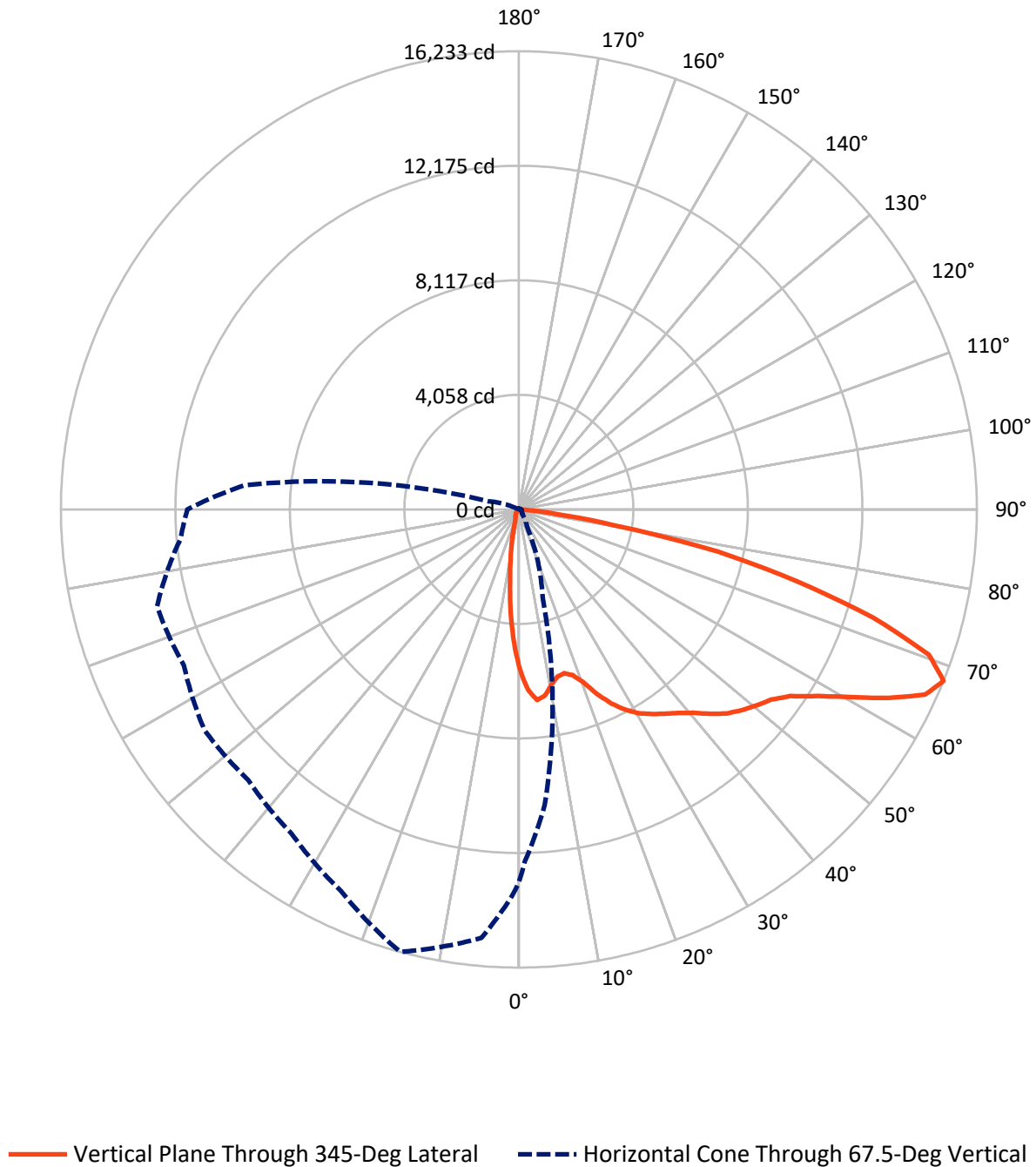
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.1 fc  
 Type IV - Medium - N/A

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## Luminous Intensity Polar Plot



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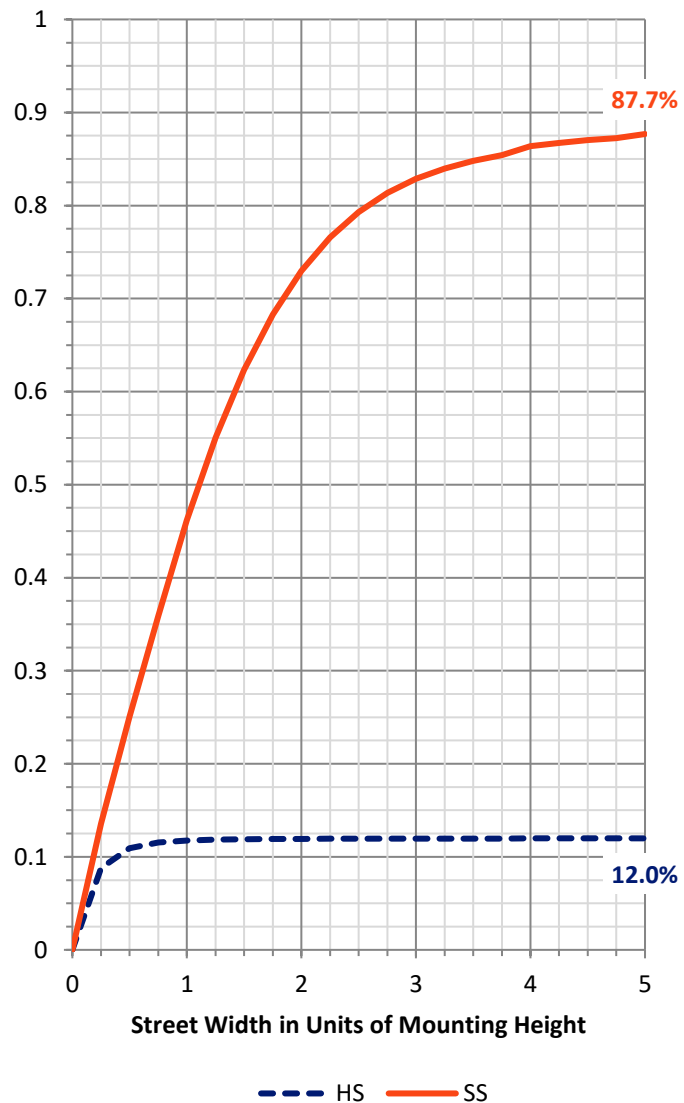
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2122.8   | 0.0    | 2122.8  |
|                    | % Fixture | 12.1     | 0.0    | 12.1    |
| <b>Street Side</b> | Lumens    | 15416.2  | 0.0    | 15416.2 |
|                    | % Fixture | 87.9     | 0.0    | 87.9    |
| <b>Total</b>       | Lumens    | 17539.0  | 0.0    | 17539.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 438.5   | 2.5       |
| 10°-20°   | 872.8   | 5.0       |
| 20°-30°   | 1239.4  | 7.1       |
| 30°-40°   | 1830.6  | 10.4      |
| 40°-50°   | 2640.2  | 15.1      |
| 50°-60°   | 3706.3  | 21.1      |
| 60°-70°   | 4320.4  | 24.6      |
| 70°-80°   | 2208.7  | 12.6      |
| 80°-90°   | 282.1   | 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°    | 17539.0 | 100.0     |
| 0°-180°   | 17539.0 | 100.0     |

**Coefficient of Utilization**



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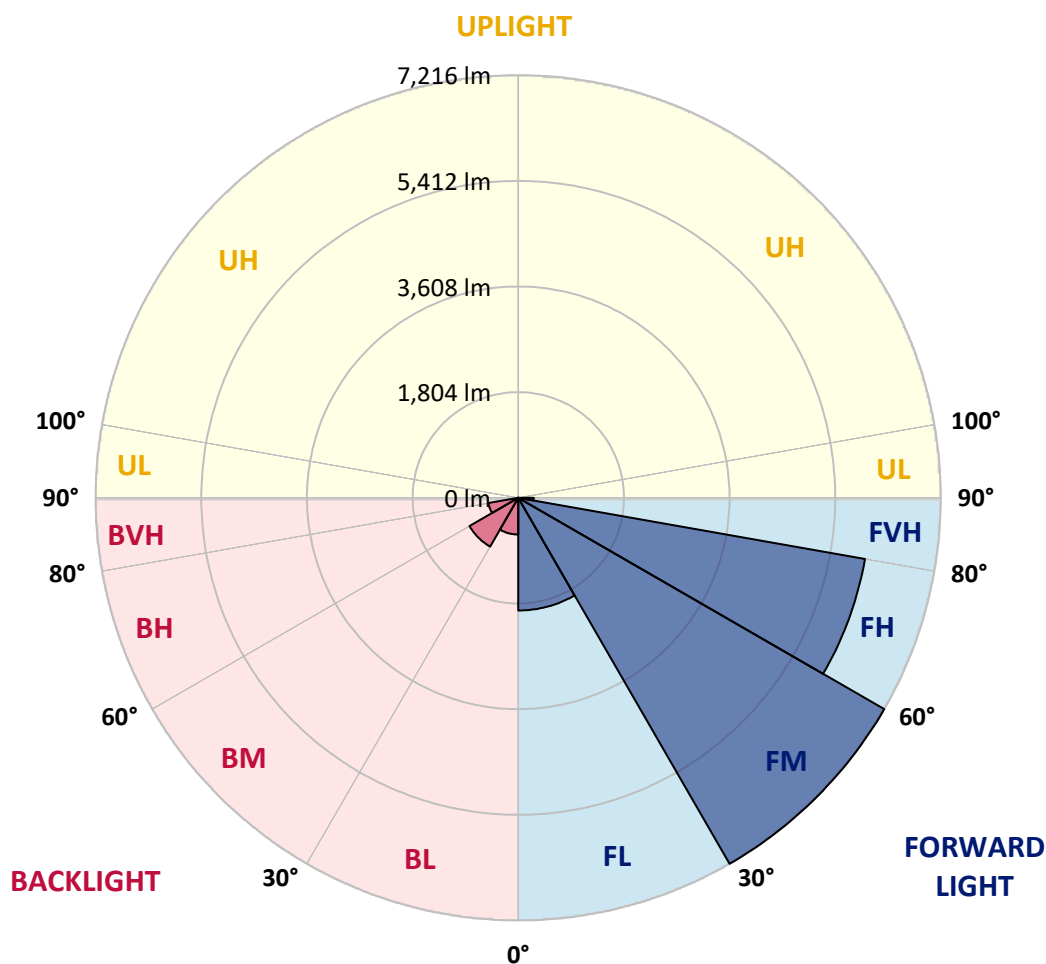
CATALOG NUMBER: NVN-SA5A-750-U-SLR-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 1923.7 | 11.0      |                         |      |         |
| FM   | (30°-60°)   | 7215.8 | 41.1      |                         |      |         |
| FH   | (60°-80°)   | 6011.8 | 34.3      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 264.9  | 1.5       |                         |      | G3/500  |
| BL   | (0°-30°)    | 627.0  | 3.6       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 961.3  | 5.5       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 517.4  | 2.9       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 17.1   | 0.1       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B2-U0-G3**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 1°      | 5°      | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 5713.3  | 5713.3  | 5713.3  | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 |
| 2.5°  | 6255.9  | 6207.7  | 6154.5  | 5980.8 | 5819.7 | 5635.2 | 5484.8 | 5380.1 | 5248.8 | 5078.5 | 5035.3 |
| 5°    | 6211.0  | 6159.5  | 5992.5  | 5606.1 | 5267.9 | 4938.9 | 4621.5 | 4435.4 | 4204.4 | 3970.1 | 3911.9 |
| 7.5°  | 5759.8  | 5705.8  | 5464.9  | 4935.6 | 4480.2 | 4005.0 | 3592.8 | 3337.7 | 3076.8 | 2862.5 | 2748.6 |
| 10°   | 5290.4  | 5231.4  | 4960.5  | 4318.2 | 3757.3 | 3327.8 | 3025.3 | 2781.9 | 2535.1 | 2305.8 | 2123.0 |
| 12.5° | 4967.1  | 4889.9  | 4595.7  | 3867.9 | 3379.3 | 3087.6 | 2805.1 | 2513.5 | 2179.5 | 1933.5 | 1732.4 |
| 15°   | 4831.7  | 4743.6  | 4432.9  | 3694.2 | 3245.5 | 2903.2 | 2535.1 | 2177.0 | 1785.6 | 1503.9 | 1319.5 |
| 17.5° | 4936.4  | 4821.7  | 4488.5  | 3682.6 | 3077.7 | 2611.5 | 2146.2 | 1725.8 | 1301.2 | 1016.2 | 884.9  |
| 20°   | 5292.0  | 5141.6  | 4718.7  | 3679.2 | 2874.1 | 2265.0 | 1675.1 | 1199.8 | 857.5  | 689.7  | 620.7  |
| 22.5° | 5852.1  | 5653.5  | 5049.4  | 3705.8 | 2663.9 | 1901.1 | 1209.8 | 815.1  | 644.0  | 556.7  | 516.0  |
| 25°   | 6528.4  | 6298.3  | 5525.5  | 3799.7 | 2479.4 | 1547.1 | 879.1  | 644.0  | 543.4  | 479.4  | 445.4  |
| 27.5° | 7171.5  | 6984.6  | 6127.1  | 3935.2 | 2336.5 | 1261.3 | 713.7  | 545.9  | 464.5  | 422.1  | 394.7  |
| 30°   | 7813.8  | 7578.7  | 6744.4  | 4096.4 | 2164.5 | 1067.7 | 627.3  | 497.7  | 416.3  | 371.4  | 354.0  |
| 32.5° | 8280.8  | 8085.5  | 7228.0  | 4212.7 | 1980.9 | 941.4  | 560.9  | 455.3  | 388.9  | 343.2  | 317.4  |
| 35°   | 8830.0  | 8609.0  | 7642.7  | 4238.4 | 1862.9 | 861.6  | 504.4  | 409.6  | 337.3  | 296.6  | 269.2  |
| 37.5° | 9423.3  | 9148.3  | 8121.3  | 4181.9 | 1770.7 | 822.6  | 462.0  | 388.9  | 314.9  | 273.4  | 244.3  |
| 40°   | 10079.7 | 9768.9  | 8580.7  | 4100.5 | 1680.1 | 809.3  | 429.6  | 373.1  | 297.5  | 255.1  | 225.2  |
| 42.5° | 10771.0 | 10404.6 | 8978.7  | 4014.9 | 1622.8 | 763.6  | 426.3  | 357.3  | 284.2  | 238.5  | 208.6  |
| 45°   | 11351.8 | 10980.4 | 9387.6  | 3986.7 | 1582.0 | 713.7  | 440.4  | 346.5  | 275.0  | 225.2  | 196.1  |
| 47.5° | 11814.6 | 11463.2 | 9806.3  | 4049.8 | 1558.8 | 668.0  | 401.3  | 360.6  | 270.0  | 213.5  | 185.3  |
| 50°   | 12367.2 | 11969.2 | 10396.3 | 4238.4 | 1524.7 | 622.3  | 363.1  | 413.0  | 270.0  | 206.1  | 176.2  |
| 52.5° | 13060.2 | 12666.3 | 11054.3 | 4530.9 | 1456.6 | 559.2  | 326.5  | 413.8  | 272.5  | 196.1  | 164.5  |
| 55°   | 13931.8 | 13645.9 | 11994.1 | 4851.6 | 1347.7 | 466.1  | 282.5  | 355.6  | 262.6  | 177.8  | 153.7  |
| 57.5° | 14767.7 | 14534.2 | 12850.8 | 5071.0 | 1202.3 | 363.9  | 245.9  | 286.7  | 240.1  | 156.2  | 137.1  |
| 59°   | 14996.2 | 14741.1 | 13164.8 | 5081.0 | 1093.5 | 317.4  | 227.7  | 236.8  | 235.1  | 146.2  | 127.1  |
| 60°   | 14996.2 | 14725.3 | 13255.4 | 5027.8 | 1014.5 | 291.6  | 216.0  | 211.0  | 245.1  | 139.6  | 121.3  |
| 62.5° | 14724.5 | 14343.9 | 12961.3 | 4668.0 | 827.6  | 248.4  | 188.6  | 174.5  | 220.2  | 125.5  | 107.2  |
| 65°   | 14159.4 | 13605.2 | 11959.2 | 4017.4 | 737.8  | 227.7  | 162.9  | 142.9  | 152.9  | 110.5  | 93.9   |
| 67.5° | 13217.2 | 12466.1 | 10514.3 | 3245.5 | 702.1  | 221.9  | 140.4  | 121.3  | 115.5  | 94.7   | 82.3   |
| 70°   | 11557.9 | 10724.5 | 8760.2  | 2551.7 | 671.4  | 219.4  | 118.0  | 102.2  | 93.1   | 79.8   | 69.8   |
| 72.5° | 8412.1  | 7542.9  | 6219.3  | 1995.0 | 653.1  | 224.3  | 94.7   | 85.6   | 76.4   | 62.3   | 54.0   |
| 75°   | 4811.8  | 4242.6  | 3495.6  | 1317.8 | 556.7  | 214.4  | 73.1   | 71.5   | 54.8   | 44.9   | 37.4   |
| 77.5° | 2486.1  | 2410.5  | 2094.7  | 506.0  | 266.7  | 93.9   | 48.2   | 41.5   | 32.4   | 27.4   | 22.4   |
| 80°   | 1072.7  | 1061.1  | 918.1   | 146.2  | 70.6   | 52.3   | 27.4   | 17.4   | 15.0   | 11.6   | 9.1    |
| 82.5° | 370.6   | 370.6   | 326.5   | 49.0   | 31.6   | 25.8   | 3.3    | 0.0    | 0.0    | 0.0    | 0.0    |
| 85°   | 74.8    | 83.9    | 59.0    | 0.0    | 10.8   | 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°    | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 |
| 2.5°  | 4982.9 | 4882.4 | 4875.7 | 4812.6 | 4733.7 | 4697.9 | 4677.2 | 4713.7 | 4758.6 | 4763.6 | 4830.9 |
| 5°    | 3867.9 | 3762.3 | 3806.4 | 3694.2 | 3716.6 | 3694.2 | 3657.6 | 3664.3 | 3684.2 | 3621.9 | 3699.2 |
| 7.5°  | 2716.2 | 2636.5 | 2687.1 | 2657.2 | 2697.1 | 2712.9 | 2690.5 | 2657.2 | 2559.2 | 2547.6 | 2614.9 |
| 10°   | 2047.3 | 1956.8 | 1902.8 | 1846.3 | 1858.7 | 1884.5 | 1876.2 | 1852.1 | 1789.8 | 1793.1 | 1857.9 |
| 12.5° | 1645.2 | 1543.8 | 1436.6 | 1297.9 | 1263.8 | 1282.9 | 1263.8 | 1249.7 | 1189.9 | 1194.8 | 1252.2 |
| 15°   | 1248.0 | 1164.9 | 1052.8 | 941.4  | 880.8  | 886.6  | 833.4  | 796.0  | 758.6  | 713.7  | 748.6  |
| 17.5° | 842.5  | 791.9  | 758.6  | 725.4  | 653.1  | 636.5  | 569.2  | 496.9  | 468.6  | 447.9  | 462.8  |
| 20°   | 596.6  | 569.2  | 555.9  | 554.2  | 512.7  | 491.9  | 426.3  | 381.4  | 367.3  | 363.1  | 372.2  |
| 22.5° | 498.5  | 478.6  | 459.5  | 448.7  | 427.9  | 403.8  | 354.0  | 331.5  | 321.6  | 316.6  | 323.2  |
| 25°   | 433.7  | 418.8  | 398.8  | 380.6  | 372.2  | 346.5  | 310.8  | 294.1  | 287.5  | 282.5  | 285.8  |
| 27.5° | 385.5  | 372.2  | 349.0  | 337.3  | 330.7  | 308.3  | 277.5  | 264.2  | 258.4  | 256.7  | 255.9  |
| 30°   | 347.3  | 334.9  | 313.3  | 300.0  | 288.3  | 268.4  | 250.1  | 236.8  | 231.0  | 229.3  | 227.7  |
| 32.5° | 309.1  | 299.1  | 285.0  | 271.7  | 259.2  | 241.0  | 225.2  | 214.4  | 205.2  | 203.6  | 202.7  |
| 35°   | 260.9  | 250.9  | 243.5  | 242.6  | 231.0  | 213.5  | 201.9  | 187.8  | 180.3  | 177.8  | 178.6  |
| 37.5° | 231.8  | 218.5  | 201.9  | 207.7  | 204.4  | 191.9  | 176.2  | 162.0  | 154.5  | 152.9  | 152.9  |
| 40°   | 213.5  | 199.4  | 180.3  | 170.3  | 180.3  | 177.8  | 152.9  | 138.8  | 131.3  | 130.5  | 128.8  |
| 42.5° | 196.1  | 182.0  | 160.4  | 143.7  | 148.7  | 156.2  | 132.1  | 118.8  | 111.3  | 109.7  | 107.2  |
| 45°   | 183.6  | 168.7  | 144.6  | 125.5  | 115.5  | 131.3  | 113.0  | 96.4   | 92.2   | 88.9   | 87.2   |
| 47.5° | 172.0  | 157.9  | 130.5  | 108.8  | 92.2   | 94.7   | 90.6   | 78.9   | 74.0   | 70.6   | 69.8   |
| 50°   | 162.0  | 147.1  | 118.0  | 93.1   | 76.4   | 69.8   | 73.1   | 62.3   | 58.2   | 54.8   | 53.2   |
| 52.5° | 150.4  | 136.3  | 104.7  | 80.6   | 64.0   | 54.8   | 55.7   | 49.0   | 44.9   | 42.4   | 41.5   |
| 55°   | 141.3  | 127.1  | 93.9   | 70.6   | 56.5   | 44.9   | 39.9   | 38.2   | 35.7   | 34.1   | 33.2   |
| 57.5° | 128.8  | 115.5  | 83.1   | 59.8   | 48.2   | 36.6   | 30.7   | 30.7   | 29.9   | 28.3   | 27.4   |
| 59°   | 121.3  | 109.7  | 76.4   | 54.0   | 44.0   | 31.6   | 27.4   | 28.3   | 27.4   | 25.8   | 24.9   |
| 60°   | 115.5  | 104.7  | 71.5   | 49.9   | 41.5   | 29.1   | 24.9   | 26.6   | 25.8   | 24.1   | 23.3   |
| 62.5° | 102.2  | 94.7   | 61.5   | 41.5   | 36.6   | 23.3   | 20.8   | 22.4   | 22.4   | 21.6   | 20.8   |
| 65°   | 89.7   | 81.4   | 52.3   | 34.9   | 34.1   | 19.9   | 16.6   | 19.9   | 20.8   | 19.1   | 17.4   |
| 67.5° | 78.1   | 69.8   | 45.7   | 28.3   | 31.6   | 15.8   | 12.5   | 16.6   | 22.4   | 17.4   | 15.8   |
| 70°   | 66.5   | 58.2   | 35.7   | 22.4   | 33.2   | 10.8   | 10.0   | 15.0   | 26.6   | 19.1   | 15.0   |
| 72.5° | 51.5   | 44.9   | 24.9   | 16.6   | 35.7   | 7.5    | 7.5    | 12.5   | 29.9   | 20.8   | 14.1   |
| 75°   | 35.7   | 29.1   | 15.0   | 10.0   | 29.1   | 5.0    | 5.0    | 11.6   | 28.3   | 19.1   | 13.3   |
| 77.5° | 20.8   | 15.8   | 5.0    | 0.8    | 15.0   | 0.0    | 0.8    | 8.3    | 19.9   | 11.6   | 5.8    |
| 80°   | 7.5    | 3.3    | 0.0    | 0.0    | 9.1    | 0.0    | 0.0    | 0.0    | 1.7    | 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°    | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3 | 5713.3  | 5713.3  | 5713.3  |
| 2.5°  | 4848.3 | 4960.5 | 5061.0 | 5213.1 | 5393.4 | 5601.1 | 5779.8 | 5971.7 | 6152.0  | 6226.8  | 6278.3  |
| 5°    | 3715.0 | 3853.7 | 4015.8 | 4239.3 | 4536.7 | 4903.2 | 5246.3 | 5634.4 | 6051.5  | 6260.0  | 6456.1  |
| 7.5°  | 2626.5 | 2767.7 | 2968.8 | 3206.5 | 3566.2 | 4002.5 | 4451.2 | 4987.1 | 5552.1  | 5882.0  | 6206.9  |
| 10°   | 1888.6 | 2062.3 | 2250.1 | 2575.0 | 2940.6 | 3354.4 | 3816.3 | 4414.6 | 5044.4  | 5410.0  | 5801.4  |
| 12.5° | 1285.4 | 1483.2 | 1767.3 | 2131.3 | 2560.8 | 2966.3 | 3367.7 | 3938.5 | 4669.7  | 5032.0  | 5451.6  |
| 15°   | 771.1  | 880.8  | 1181.5 | 1602.8 | 2129.6 | 2634.8 | 3074.3 | 3646.8 | 4426.2  | 4869.9  | 5306.2  |
| 17.5° | 475.3  | 526.0  | 689.7  | 1035.3 | 1588.7 | 2227.7 | 2830.1 | 3548.0 | 4461.1  | 5001.2  | 5468.2  |
| 20°   | 378.9  | 398.8  | 451.2  | 611.5  | 1052.8 | 1779.0 | 2555.0 | 3528.0 | 4746.1  | 5410.8  | 5911.9  |
| 22.5° | 329.0  | 348.1  | 383.0  | 444.5  | 662.2  | 1331.9 | 2294.1 | 3546.3 | 5154.9  | 6024.9  | 6609.8  |
| 25°   | 290.0  | 306.6  | 339.8  | 390.5  | 485.2  | 938.1  | 2014.9 | 3627.7 | 5687.5  | 6786.8  | 7408.3  |
| 27.5° | 259.2  | 273.4  | 304.1  | 350.6  | 416.3  | 654.8  | 1698.4 | 3726.6 | 6319.0  | 7566.2  | 8179.4  |
| 30°   | 231.0  | 243.5  | 270.9  | 314.1  | 361.4  | 503.5  | 1351.1 | 3793.9 | 6951.3  | 8179.4  | 8730.3  |
| 32.5° | 206.9  | 216.0  | 241.0  | 277.5  | 314.1  | 401.3  | 1027.0 | 3783.1 | 7420.8  | 8689.6  | 9126.7  |
| 35°   | 182.0  | 191.1  | 212.7  | 244.3  | 273.4  | 331.5  | 807.6  | 3581.2 | 7829.6  | 9218.9  | 9580.3  |
| 37.5° | 154.5  | 166.2  | 187.0  | 215.2  | 235.1  | 291.6  | 653.1  | 3337.7 | 8244.2  | 9823.8  | 10086.3 |
| 40°   | 131.3  | 142.9  | 161.2  | 191.9  | 204.4  | 276.7  | 501.9  | 3041.1 | 8710.4  | 10500.1 | 10641.4 |
| 42.5° | 108.8  | 119.7  | 138.8  | 165.3  | 192.8  | 238.5  | 371.4  | 2702.1 | 9158.2  | 11078.4 | 11147.4 |
| 45°   | 88.1   | 98.9   | 118.8  | 145.4  | 206.1  | 197.8  | 287.5  | 2339.0 | 9519.7  | 11559.5 | 11582.0 |
| 47.5° | 69.8   | 79.8   | 100.5  | 137.1  | 191.9  | 157.9  | 205.2  | 2054.0 | 9822.9  | 11935.1 | 11876.1 |
| 50°   | 54.0   | 62.3   | 83.9   | 157.0  | 167.8  | 130.5  | 155.4  | 1959.3 | 10094.7 | 12167.8 | 12014.9 |
| 52.5° | 42.4   | 49.9   | 69.0   | 147.1  | 130.5  | 108.0  | 130.5  | 2048.2 | 10466.9 | 12360.5 | 12093.0 |
| 55°   | 34.1   | 41.5   | 54.0   | 83.9   | 88.9   | 91.4   | 111.3  | 2131.3 | 11109.2 | 12812.5 | 12554.1 |
| 57.5° | 28.3   | 35.7   | 44.0   | 59.0   | 67.3   | 77.3   | 98.9   | 2140.4 | 11866.1 | 13563.7 | 13319.4 |
| 59°   | 25.8   | 32.4   | 39.9   | 52.3   | 59.0   | 70.6   | 93.1   | 2090.6 | 12132.9 | 13837.0 | 13714.9 |
| 60°   | 24.1   | 30.7   | 37.4   | 48.2   | 54.8   | 66.5   | 89.7   | 2043.2 | 12144.5 | 13827.1 | 13883.6 |
| 62.5° | 20.8   | 27.4   | 33.2   | 40.7   | 46.5   | 56.5   | 80.6   | 1867.9 | 11652.6 | 13374.2 | 13782.2 |
| 65°   | 18.3   | 24.1   | 29.9   | 34.9   | 39.9   | 50.7   | 73.1   | 1548.0 | 10812.6 | 12643.9 | 13088.4 |
| 67.5° | 16.6   | 20.8   | 27.4   | 30.7   | 35.7   | 44.9   | 64.8   | 1103.4 | 9763.1  | 11750.6 | 12039.0 |
| 70°   | 15.0   | 19.9   | 24.9   | 28.3   | 32.4   | 39.1   | 55.7   | 634.0  | 8244.2  | 10442.8 | 10648.0 |
| 72.5° | 14.1   | 19.1   | 22.4   | 26.6   | 29.1   | 34.9   | 50.7   | 298.3  | 6036.5  | 8365.5  | 8901.5  |
| 75°   | 12.5   | 17.4   | 20.8   | 24.9   | 27.4   | 31.6   | 43.2   | 142.9  | 4014.9  | 6054.0  | 6663.0  |
| 77.5° | 7.5    | 14.1   | 19.1   | 22.4   | 24.1   | 27.4   | 35.7   | 82.3   | 2562.5  | 4190.2  | 4935.6  |
| 80°   | 0.0    | 5.0    | 14.1   | 19.1   | 20.8   | 23.3   | 27.4   | 64.8   | 1371.0  | 2393.8  | 2873.3  |
| 82.5° | 0.0    | 0.0    | 10.0   | 15.0   | 14.1   | 15.8   | 20.8   | 40.7   | 618.2   | 1564.6  | 1763.2  |
| 85°   | 0.0    | 0.0    | 3.3    | 11.6   | 10.0   | 7.5    | 14.1   | 14.1   | 135.4   | 791.9   | 987.9   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.8    | 5.0    | 3.3    | 5.8    | 1.7    | 0.8     | 59.0    | 239.3   |
| 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: P364041

CATALOG NUMBER: NVN-SA5A-750-U-SLR-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 285°    | 295°    | 305°    | 315°    | 325°    | 335°    | 345°    | 355°    | 359°    | 360°    |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  | 5713.3  |
| 2.5°  | 6458.6  | 6520.1  | 6624.0  | 6673.0  | 6648.9  | 6546.7  | 6424.6  | 6299.9  | 6226.8  | 6255.9  |
| 5°    | 6855.8  | 7172.4  | 7355.2  | 7415.8  | 7314.4  | 7085.1  | 6785.2  | 6389.7  | 6249.2  | 6211.0  |
| 7.5°  | 6855.8  | 7451.5  | 7828.8  | 7895.3  | 7669.2  | 7219.7  | 6657.2  | 6039.8  | 5834.6  | 5759.8  |
| 10°   | 6614.8  | 7425.8  | 7951.8  | 8057.3  | 7741.5  | 7069.3  | 6315.7  | 5611.1  | 5367.6  | 5290.4  |
| 12.5° | 6343.1  | 7216.4  | 7770.6  | 7916.0  | 7656.8  | 6919.8  | 6078.9  | 5321.1  | 5034.4  | 4967.1  |
| 15°   | 6176.1  | 6958.8  | 7417.5  | 7523.0  | 7413.3  | 6832.5  | 6022.4  | 5233.9  | 4896.5  | 4831.7  |
| 17.5° | 6235.9  | 6759.4  | 6924.8  | 6986.2  | 7060.2  | 6801.8  | 6176.1  | 5425.0  | 4997.9  | 4936.4  |
| 20°   | 6461.1  | 6549.2  | 6463.6  | 6540.9  | 6740.3  | 6831.7  | 6542.5  | 5887.0  | 5374.3  | 5292.0  |
| 22.5° | 6843.3  | 6440.3  | 6200.2  | 6230.9  | 6473.6  | 6930.6  | 7102.6  | 6546.7  | 5955.1  | 5852.1  |
| 25°   | 7288.7  | 6528.4  | 6054.0  | 6026.5  | 6275.8  | 7061.0  | 7614.4  | 7264.6  | 6642.2  | 6528.4  |
| 27.5° | 7848.7  | 6726.2  | 6024.1  | 5996.6  | 6206.9  | 7183.2  | 8039.8  | 7974.2  | 7366.0  | 7171.5  |
| 30°   | 8280.8  | 6920.6  | 6113.0  | 6049.8  | 6275.8  | 7267.9  | 8381.3  | 8576.6  | 7942.6  | 7813.8  |
| 32.5° | 8590.7  | 7149.9  | 6257.5  | 6166.1  | 6470.3  | 7414.2  | 8644.7  | 9128.3  | 8476.1  | 8280.8  |
| 35°   | 8826.7  | 7399.2  | 6491.0  | 6340.6  | 6737.8  | 7636.0  | 8891.5  | 9715.8  | 9043.6  | 8830.0  |
| 37.5° | 9047.7  | 7749.0  | 6855.8  | 6676.3  | 7157.4  | 7993.3  | 9152.4  | 10382.1 | 9678.4  | 9423.3  |
| 40°   | 9356.0  | 8145.4  | 7418.3  | 7258.8  | 7862.8  | 8480.2  | 9478.1  | 11076.8 | 10400.4 | 10079.7 |
| 42.5° | 9664.2  | 8570.8  | 7994.1  | 8037.3  | 8742.8  | 9071.8  | 9898.6  | 11811.3 | 11113.3 | 10771.0 |
| 45°   | 9945.9  | 9009.5  | 8814.2  | 9013.6  | 9559.6  | 9720.7  | 10316.5 | 12235.9 | 11682.5 | 11351.8 |
| 47.5° | 10196.9 | 9557.9  | 9629.3  | 10160.3 | 10488.5 | 10308.2 | 10628.9 | 12602.3 | 12106.3 | 11814.6 |
| 50°   | 10488.5 | 10267.5 | 10703.7 | 11454.8 | 11557.9 | 10840.0 | 10913.1 | 13036.1 | 12601.5 | 12367.2 |
| 52.5° | 10807.6 | 11015.3 | 11893.6 | 12555.8 | 12522.6 | 11417.5 | 11198.9 | 13522.1 | 13280.3 | 13060.2 |
| 55°   | 11169.8 | 11619.4 | 12941.3 | 13586.1 | 13557.9 | 12062.2 | 11672.5 | 14122.9 | 14131.2 | 13931.8 |
| 57.5° | 11707.4 | 12139.5 | 13652.6 | 14419.5 | 14466.9 | 12806.7 | 12475.2 | 14795.9 | 14900.6 | 14767.7 |
| 59°   | 12093.0 | 12476.9 | 13934.3 | 14767.7 | 14960.4 | 13382.5 | 13061.8 | 15186.4 | 15117.5 | 14996.2 |
| 60°   | 12378.8 | 12691.2 | 14073.9 | 14949.6 | 15247.1 | 13773.1 | 13494.7 | 15415.8 | 15143.2 | 14996.2 |
| 62.5° | 13085.9 | 13158.2 | 14325.6 | 15155.7 | 15577.0 | 14640.5 | 14712.8 | 15806.3 | 14964.6 | 14724.5 |
| 65°   | 13415.8 | 13453.2 | 14322.3 | 14786.8 | 15257.9 | 15316.1 | 15817.9 | 15817.9 | 14528.4 | 14159.4 |
| 67.5° | 13277.8 | 13097.5 | 13611.9 | 13563.7 | 14034.0 | 14914.7 | 16233.4 | 15238.0 | 13694.1 | 13217.2 |
| 70°   | 12156.1 | 11462.3 | 11233.8 | 11254.6 | 11614.4 | 12972.9 | 15410.8 | 13531.3 | 12115.4 | 11557.9 |
| 72.5° | 10114.6 | 8450.3  | 7886.1  | 8530.1  | 8624.0  | 9970.0  | 13133.3 | 10190.2 | 8934.7  | 8412.1  |
| 75°   | 8135.4  | 5956.8  | 5039.4  | 5719.1  | 5878.6  | 7296.2  | 10159.5 | 6346.4  | 5218.9  | 4811.8  |
| 77.5° | 5844.6  | 4275.8  | 3616.1  | 3568.7  | 3774.8  | 4627.3  | 7208.9  | 3194.0  | 2663.9  | 2486.1  |
| 80°   | 3320.3  | 2814.3  | 3030.3  | 2859.1  | 2963.0  | 2893.2  | 3425.0  | 1400.9  | 1147.5  | 1072.7  |
| 82.5° | 2004.1  | 1663.5  | 1801.4  | 1499.8  | 1897.8  | 1652.7  | 1319.5  | 448.7   | 389.7   | 370.6   |
| 85°   | 1303.7  | 909.0   | 473.6   | 317.4   | 653.9   | 1056.1  | 295.0   | 122.1   | 93.9    | 74.8    |
| 87.5° | 449.5   | 231.8   | 23.3    | 10.0    | 69.8    | 196.9   | 10.8    | 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: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

### Test Information

Test Method: LM-79-2008  
 Report Number: SP1-1908-441-4-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-750-U-5WQ**  
 Description: MCGRAW EDISON ROADWAY AND AREA LUMINAIRE

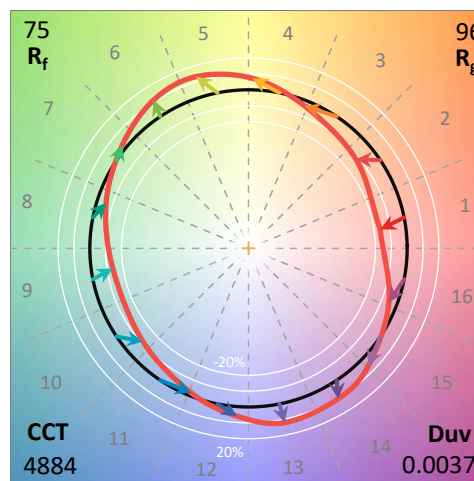
\*\*\*THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.\*\*\*TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

### Spectral Parameters

|                           |        |           |      |      |       |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K):                  | 4884   | CRI (Ra): | 73.5 |      |       |
| CIE u':                   | 0.2101 | R1:       | 70.5 | R9:  | -28.4 |
| CIE v':                   | 0.4904 | R2:       | 77.7 | R10: | 48.6  |
| Duv:                      | 0.0037 | R3:       | 84.6 | R11: | 73.2  |
| CIE x:                    | 0.3493 | R4:       | 74.7 | R12: | 50.7  |
| CIE y:                    | 0.3624 | R5:       | 71.9 | R13: | 71.2  |
| CIE z:                    | 0.2884 | R6:       | 70.7 | R14: | 91.4  |
| Peak Wavelength (nm):     | 444    | R7:       | 81.2 |      |       |
| Dominant Wavelength (nm): | 571    | R8:       | 56.9 |      |       |
| Purity:                   | 13.7   |           |      |      |       |
| Rf:                       | 74.9   |           |      |      |       |
| Rg:                       | 96.3   |           |      |      |       |

### Test Conditions

Stabilization Time: 240M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.0./44%  
 Sphere Temperature (°C): 25.7



REPORT NUMBER: SP1-1908-441-4-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: SP1-1908-441-4-R4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-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       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5

S/P: 1.77

| 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       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 5378.9**

**M/P: 0.71**

| 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       | 2945             | NR               | 490       | 37941            | NR               | 620       | 88803            | NR               | 750       | 3908             | NR               | 880       | 2997             | NR               |
| 365       | 2596             | NR               | 495       | 48525            | NR               | 625       | 80578            | NR               | 755       | 3988             | NR               | 885       | 2927             | NR               |
| 370       | 2732             | NR               | 500       | 60609            | NR               | 630       | 73127            | NR               | 760       | 3335             | NR               | 890       | 2649             | NR               |
| 375       | 2894             | NR               | 505       | 72036            | NR               | 635       | 66244            | NR               | 765       | 3438             | NR               | 895       | 2828             | NR               |
| 380       | 2822             | NR               | 510       | 82168            | NR               | 640       | 59440            | NR               | 770       | 3427             | NR               | 900       | 1407             | NR               |
| 385       | 2394             | NR               | 515       | 90898            | NR               | 645       | 52864            | NR               | 775       | 2759             | NR               | 905       | 2224             | NR               |
| 390       | 2370             | NR               | 520       | 97142            | NR               | 650       | 47085            | NR               | 780       | 2340             | NR               | 910       | 2905             | NR               |
| 395       | 2267             | NR               | 525       | 103255           | NR               | 655       | 41789            | NR               | 785       | 2412             | NR               | 915       | 3350             | NR               |
| 400       | 2262             | NR               | 530       | 106697           | NR               | 660       | 37064            | NR               | 790       | 1999             | NR               | 920       | 3114             | NR               |
| 405       | 3000             | NR               | 535       | 110081           | NR               | 665       | 32299            | NR               | 795       | 2054             | NR               | 925       | 2834             | NR               |
| 410       | 5324             | NR               | 540       | 112494           | NR               | 670       | 28142            | NR               | 800       | 2331             | NR               | 930       | 2271             | NR               |
| 415       | 10725            | NR               | 545       | 115513           | NR               | 675       | 24505            | NR               | 805       | 2648             | NR               | 935       | 2228             | NR               |
| 420       | 22128            | NR               | 550       | 117203           | NR               | 680       | 21162            | NR               | 810       | 2485             | NR               | 940       | 2833             | NR               |
| 425       | 44095            | NR               | 555       | 119753           | NR               | 685       | 18400            | NR               | 815       | 2409             | NR               | 945       | 2941             | NR               |
| 430       | 77002            | NR               | 560       | 122602           | NR               | 690       | 16065            | NR               | 820       | 2221             | NR               | 950       | 2323             | NR               |
| 435       | 119881           | NR               | 565       | 124314           | NR               | 695       | 13860            | NR               | 825       | 1562             | NR               | 955       | 1667             | NR               |
| 440       | 164454           | NR               | 570       | 126775           | NR               | 700       | 12177            | NR               | 830       | 2249             | NR               | 960       | 749              | NR               |
| 445       | 179997           | NR               | 575       | 127511           | NR               | 705       | 10757            | NR               | 835       | 2573             | NR               | 965       | 2669             | NR               |
| 450       | 142822           | NR               | 580       | 127577           | NR               | 710       | 9601             | NR               | 840       | 2764             | NR               | 970       | 3968             | NR               |
| 455       | 90008            | NR               | 585       | 126153           | NR               | 715       | 8944             | NR               | 845       | 3109             | NR               | 975       | 3886             | NR               |
| 460       | 60557            | NR               | 590       | 123678           | NR               | 720       | 7947             | NR               | 850       | 2963             | NR               | 980       | 2788             | NR               |
| 465       | 43305            | NR               | 595       | 119774           | NR               | 725       | 7062             | NR               | 855       | 2336             | NR               | 985       | 3496             | NR               |
| 470       | 31089            | NR               | 600       | 115733           | NR               | 730       | 6004             | NR               | 860       | 2118             | NR               | 990       | 2913             | NR               |
| 475       | 26278            | NR               | 605       | 109231           | NR               | 735       | 5594             | NR               | 865       | 3144             | NR               | 995       | 4659             | NR               |
| 480       | 27060            | NR               | 610       | 102408           | NR               | 740       | 5165             | NR               | 870       | 3069             | NR               | 1000      | 1308             | NR               |
| 485       | 30698            | NR               | 615       | 96015            | NR               | 745       | 4687             | NR               | 875       | 3311             | NR               |           |                  |                  |

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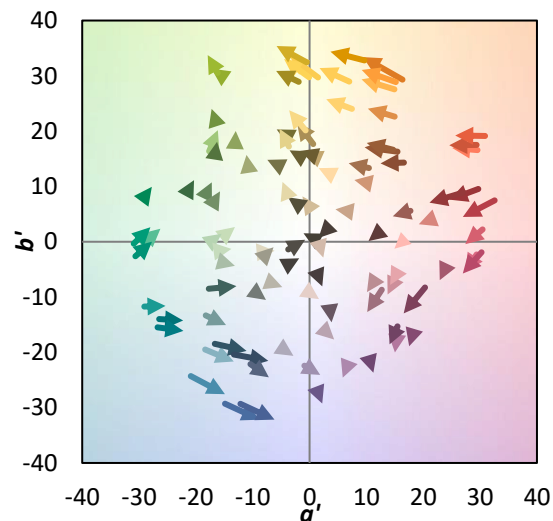
**TM-30-18**

**Summary**

$R_f = 74.9$   
 $R_g = 96.3$   
 CIE  $R_a = 73.5$   
 $R_g = -28.4$



**Color Vector Graphics**



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

|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 |            |



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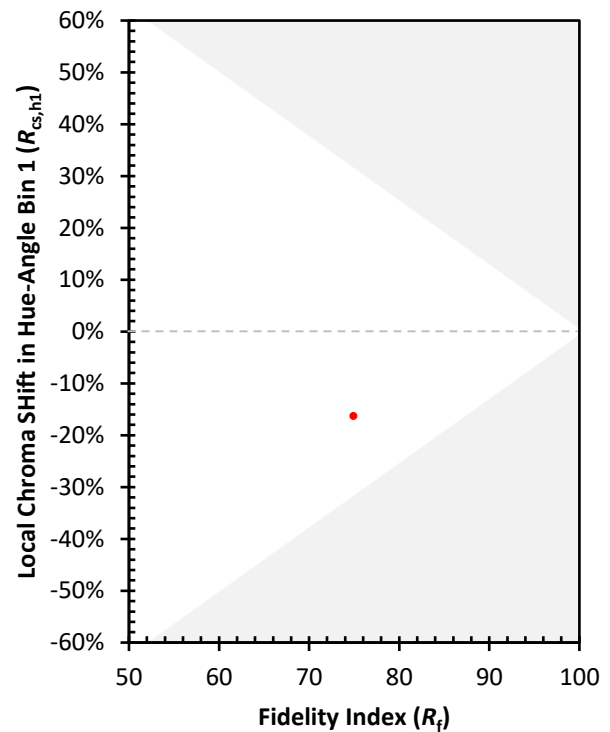
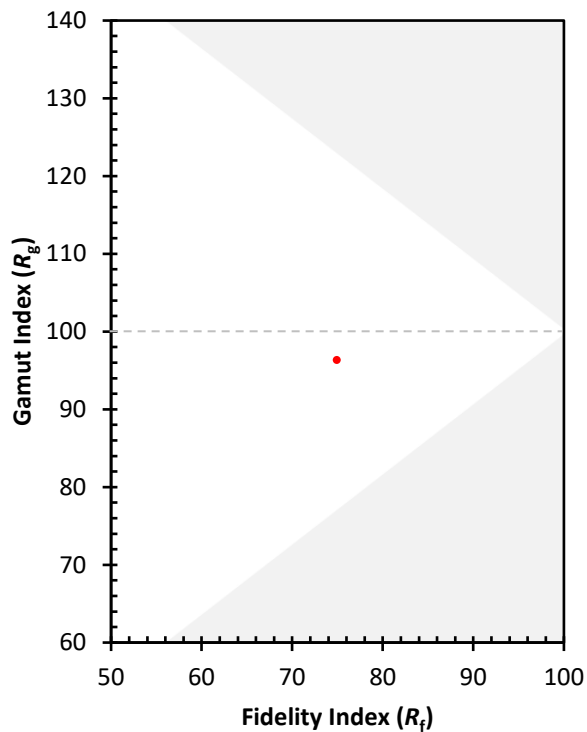
**Color Rendition by Hue-Angle Bin**



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**Measure Comparisons**



(END OF REPORT)