

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: STREETWORKS

Report Number: P196190

Luminaire Tested: **NVN-AF-02-LED-U-SL4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196190
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: NVN-AF-02-LED-U-SL4
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11886.7 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

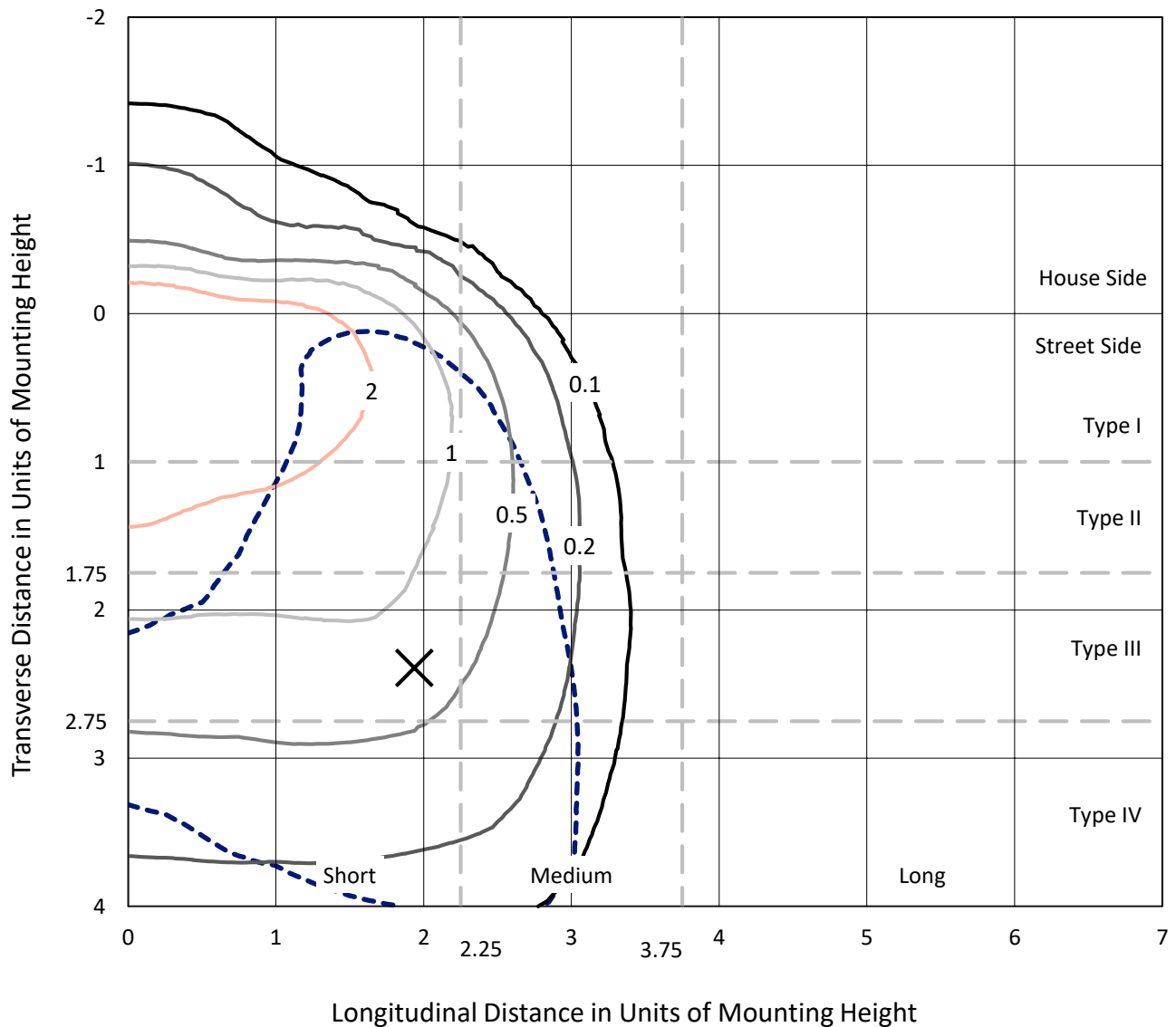
Input Watts (W): 113
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

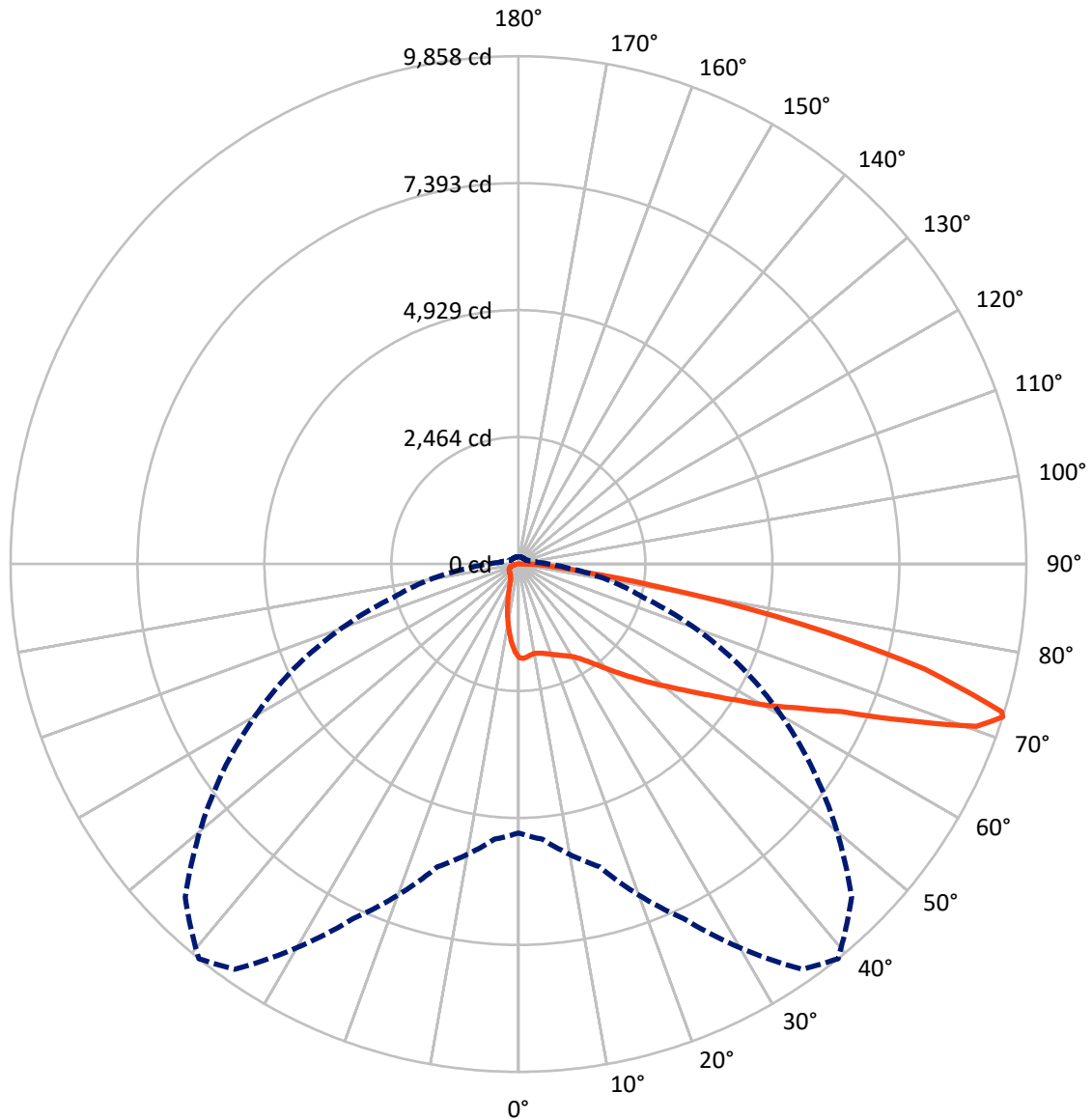
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1363.0 | 0.0 | 1363.0 |
| | % Fixture | 11.5 | 0.0 | 11.5 |
| Street Side | Lumens | 10523.7 | 0.0 | 10523.7 |
| | % Fixture | 88.5 | 0.0 | 88.5 |
| Total | Lumens | 11886.7 | 0.0 | 11886.7 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 156.0 | 1.3 |
| 10°-20° | 392.0 | 3.3 |
| 20°-30° | 610.9 | 5.1 |
| 30°-40° | 940.6 | 7.9 |
| 40°-50° | 1533.3 | 12.9 |
| 50°-60° | 2382.6 | 20.0 |
| 60°-70° | 3189.1 | 26.8 |
| 70°-80° | 2293.4 | 19.3 |
| 80°-90° | 388.8 | 3.3 |
| 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° | 11886.7 | 100.0 |
| 0°-180° | 11886.7 | 100.0 |

Coefficient of Utilization



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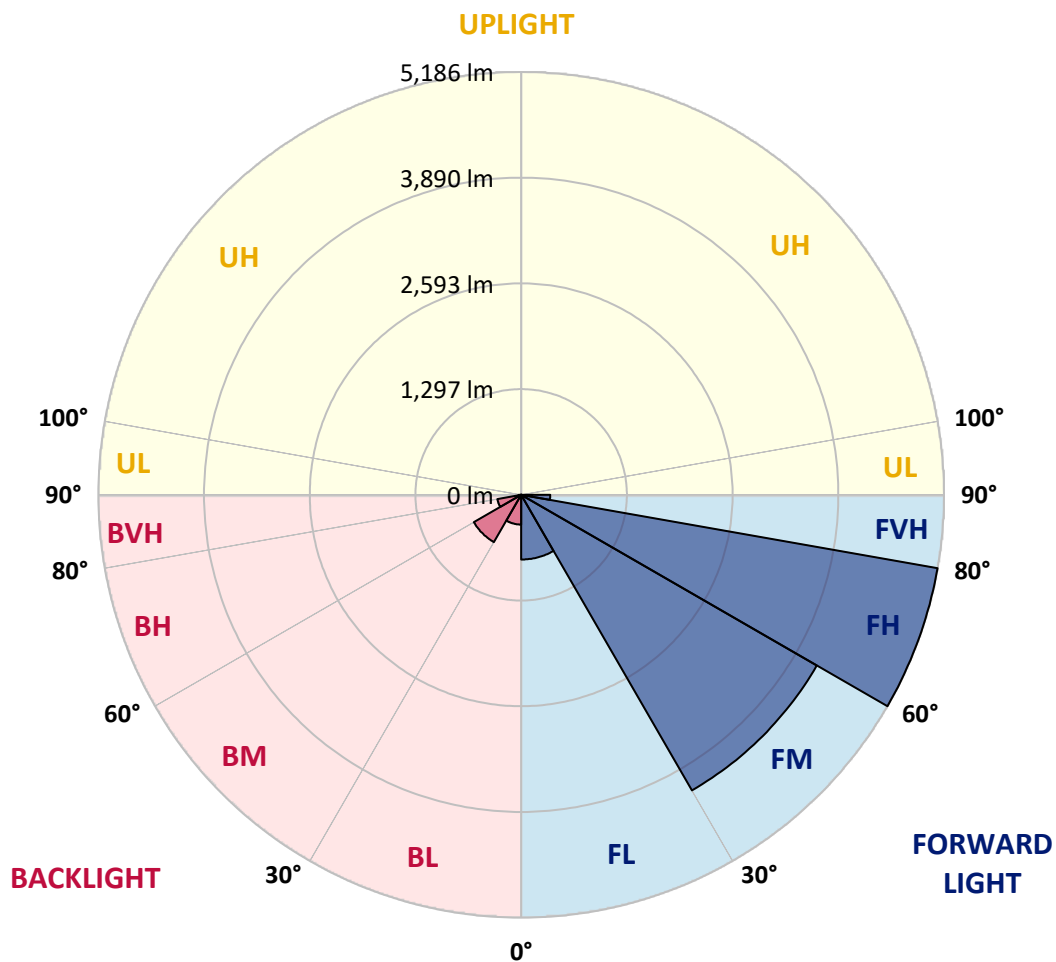
CATALOG NUMBER: NVN-AF-02-LED-U-SL4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 794.0 | 6.7 | | | |
| FM | (30°-60°) | 4186.7 | 35.2 | | | |
| FH | (60°-80°) | 5186.4 | 43.6 | | | G3/7500 |
| FVH | (80°-90°) | 356.6 | 3.0 | | | G3/500 |
| BL | (0°-30°) | 364.9 | 3.1 | B1/500 | | |
| BM | (30°-60°) | 669.8 | 5.6 | B1/1000 | | |
| BH | (60°-80°) | 296.1 | 2.5 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 32.1 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 |
| 2.5° | 1854.4 | 1855.2 | 1852.8 | 1845.6 | 1839.3 | 1836.1 | 1830.5 | 1820.9 | 1808.2 | 1799.4 | 1792.2 |
| 5° | 1836.8 | 1839.3 | 1837.6 | 1825.7 | 1814.5 | 1808.2 | 1799.4 | 1785.8 | 1769.0 | 1761.8 | 1745.1 |
| 7.5° | 1823.3 | 1824.8 | 1820.1 | 1806.5 | 1784.9 | 1777.0 | 1761.0 | 1743.5 | 1728.4 | 1717.9 | 1698.0 |
| 10° | 1813.7 | 1815.3 | 1811.3 | 1797.7 | 1773.8 | 1764.3 | 1745.1 | 1725.9 | 1706.0 | 1693.2 | 1670.9 |
| 12.5° | 1800.2 | 1803.4 | 1803.4 | 1796.9 | 1781.0 | 1774.6 | 1755.5 | 1734.7 | 1716.4 | 1702.8 | 1674.9 |
| 15° | 1797.7 | 1801.7 | 1808.9 | 1808.2 | 1803.4 | 1798.6 | 1783.4 | 1762.6 | 1746.7 | 1730.7 | 1696.5 |
| 17.5° | 1817.7 | 1826.5 | 1840.8 | 1845.6 | 1842.4 | 1832.1 | 1814.5 | 1795.4 | 1777.8 | 1762.6 | 1720.4 |
| 20° | 1868.0 | 1872.7 | 1894.3 | 1903.9 | 1888.0 | 1872.7 | 1849.6 | 1824.8 | 1808.9 | 1796.9 | 1742.7 |
| 22.5° | 1943.8 | 1950.2 | 1967.7 | 1968.5 | 1935.0 | 1916.6 | 1887.1 | 1856.8 | 1841.6 | 1836.8 | 1773.0 |
| 25° | 2065.0 | 2063.5 | 2068.3 | 2048.4 | 1987.7 | 1966.1 | 1930.2 | 1895.1 | 1884.7 | 1894.3 | 1817.7 |
| 27.5° | 2210.3 | 2206.3 | 2191.2 | 2139.3 | 2047.5 | 2019.6 | 1976.4 | 1945.3 | 1945.3 | 1967.7 | 1878.3 |
| 30° | 2377.8 | 2373.9 | 2324.3 | 2237.4 | 2118.5 | 2086.6 | 2041.1 | 2008.5 | 2025.1 | 2068.3 | 1960.5 |
| 32.5° | 2555.0 | 2540.6 | 2471.2 | 2354.7 | 2219.9 | 2184.7 | 2140.8 | 2107.4 | 2139.3 | 2212.6 | 2078.6 |
| 35° | 2721.8 | 2713.8 | 2628.4 | 2490.4 | 2350.7 | 2321.2 | 2290.9 | 2249.4 | 2300.4 | 2414.6 | 2245.4 |
| 37.5° | 2894.1 | 2887.8 | 2783.2 | 2636.3 | 2510.3 | 2490.4 | 2464.8 | 2436.2 | 2518.3 | 2668.3 | 2471.2 |
| 40° | 3086.4 | 3073.7 | 2942.0 | 2795.2 | 2696.2 | 2686.7 | 2673.1 | 2665.1 | 2797.6 | 3021.0 | 2756.9 |
| 42.5° | 3304.2 | 3279.5 | 3109.6 | 2969.9 | 2898.9 | 2906.9 | 2899.8 | 2931.7 | 3134.3 | 3427.9 | 3096.8 |
| 45° | 3553.2 | 3503.7 | 3276.3 | 3155.8 | 3123.2 | 3155.1 | 3170.2 | 3251.6 | 3532.5 | 3898.0 | 3476.6 |
| 47.5° | 3786.2 | 3722.4 | 3459.1 | 3357.7 | 3376.0 | 3431.2 | 3474.2 | 3617.9 | 3968.9 | 4362.4 | 3864.4 |
| 50° | 4000.9 | 3929.1 | 3654.6 | 3566.8 | 3656.1 | 3734.4 | 3823.7 | 4026.4 | 4433.4 | 4840.3 | 4220.3 |
| 52.5° | 4159.6 | 4107.8 | 3850.1 | 3795.0 | 3977.7 | 4081.5 | 4224.3 | 4480.4 | 4902.5 | 5295.9 | 4537.9 |
| 55° | 4282.6 | 4254.7 | 4040.8 | 4056.7 | 4341.6 | 4490.0 | 4663.1 | 4957.6 | 5398.8 | 5704.5 | 4793.2 |
| 57.5° | 4424.6 | 4403.8 | 4258.6 | 4372.7 | 4793.2 | 4979.9 | 5184.2 | 5511.4 | 5871.2 | 6064.4 | 4993.5 |
| 60° | 4574.5 | 4574.5 | 4501.2 | 4753.3 | 5358.1 | 5572.0 | 5775.5 | 6030.0 | 6342.0 | 6388.3 | 5074.9 |
| 62.5° | 4687.9 | 4717.4 | 4743.7 | 5158.6 | 5894.3 | 6160.1 | 6383.5 | 6627.7 | 6829.5 | 6547.9 | 4883.4 |
| 65° | 4852.3 | 4915.3 | 5063.7 | 5627.0 | 6558.2 | 6906.1 | 7207.8 | 7412.8 | 7224.5 | 6421.1 | 4258.6 |
| 67.5° | 5134.7 | 5228.1 | 5544.1 | 6324.5 | 7574.8 | 8095.8 | 8388.7 | 8034.5 | 7147.2 | 5622.2 | 3262.0 |
| 70° | 5389.3 | 5521.0 | 6061.2 | 7209.3 | 8896.2 | 9437.2 | 9302.4 | 7890.0 | 6224.8 | 4121.4 | 2006.8 |
| 72° | 5220.1 | 5363.7 | 6085.1 | 7594.8 | 9602.4 | 9857.8 | 9146.8 | 6992.4 | 4810.0 | 2515.1 | 989.4 |
| 72.5° | 5109.2 | 5258.4 | 6007.7 | 7585.2 | 9621.6 | 9804.3 | 8930.6 | 6635.7 | 4366.4 | 2200.7 | 800.4 |
| 75° | 4268.2 | 4395.8 | 5165.9 | 6722.6 | 8478.9 | 8143.8 | 6969.2 | 4294.6 | 2006.8 | 711.0 | 411.7 |
| 77.5° | 2787.2 | 2884.5 | 3562.0 | 4657.6 | 5939.0 | 5616.7 | 4241.9 | 2010.8 | 752.5 | 431.7 | 309.6 |
| 80° | 1400.4 | 1469.8 | 1906.3 | 2448.8 | 3205.3 | 2949.2 | 1958.1 | 972.7 | 503.5 | 312.0 | 243.4 |
| 82.5° | 974.3 | 1038.1 | 1312.7 | 1250.4 | 1339.8 | 1296.7 | 920.9 | 811.5 | 376.7 | 197.1 | 127.7 |
| 85° | 817.1 | 883.3 | 1086.0 | 891.3 | 729.4 | 664.7 | 659.9 | 766.8 | 249.0 | 97.4 | 107.7 |
| 87.5° | 712.6 | 813.1 | 896.1 | 651.1 | 500.3 | 441.3 | 485.9 | 703.0 | 79.0 | 53.5 | 32.7 |
| 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° | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 | 1815.3 |
| 2.5° | 1780.2 | 1777.8 | 1765.8 | 1747.5 | 1733.9 | 1725.1 | 1708.4 | 1707.6 | 1709.1 | 1694.8 | 1700.5 |
| 5° | 1729.9 | 1720.4 | 1689.2 | 1647.0 | 1612.7 | 1579.9 | 1544.0 | 1532.1 | 1521.6 | 1500.2 | 1502.5 |
| 7.5° | 1677.2 | 1660.6 | 1606.2 | 1536.8 | 1470.6 | 1409.9 | 1350.1 | 1320.6 | 1298.2 | 1270.3 | 1270.3 |
| 10° | 1646.1 | 1619.8 | 1536.8 | 1435.5 | 1330.1 | 1241.6 | 1152.3 | 1098.8 | 1059.7 | 1023.8 | 1021.3 |
| 12.5° | 1644.6 | 1604.7 | 1488.9 | 1349.3 | 1204.9 | 1080.4 | 958.3 | 876.2 | 817.8 | 775.6 | 771.6 |
| 15° | 1657.3 | 1601.4 | 1449.0 | 1268.8 | 1086.8 | 924.8 | 774.0 | 669.5 | 595.3 | 548.2 | 543.4 |
| 17.5° | 1668.5 | 1597.4 | 1405.9 | 1184.2 | 971.9 | 774.8 | 607.2 | 498.7 | 428.5 | 390.2 | 386.2 |
| 20° | 1678.9 | 1588.7 | 1350.9 | 1094.8 | 845.1 | 634.3 | 474.8 | 387.0 | 340.7 | 319.2 | 316.8 |
| 22.5° | 1694.0 | 1580.8 | 1293.4 | 994.2 | 720.6 | 516.3 | 391.8 | 328.8 | 304.0 | 293.7 | 292.1 |
| 25° | 1718.8 | 1581.5 | 1237.6 | 891.3 | 606.4 | 430.0 | 339.1 | 300.0 | 286.4 | 279.3 | 279.3 |
| 27.5° | 1754.7 | 1591.1 | 1182.5 | 786.8 | 509.8 | 371.0 | 308.0 | 284.9 | 276.1 | 270.5 | 268.9 |
| 30° | 1807.3 | 1608.7 | 1124.3 | 687.8 | 433.3 | 330.3 | 289.7 | 275.3 | 268.1 | 263.3 | 262.5 |
| 32.5° | 1884.0 | 1639.8 | 1062.8 | 597.6 | 375.0 | 301.7 | 276.1 | 267.3 | 261.8 | 257.8 | 257.0 |
| 35° | 1998.0 | 1694.8 | 1003.0 | 521.1 | 333.6 | 280.9 | 264.9 | 257.8 | 254.5 | 253.0 | 252.2 |
| 37.5° | 2165.6 | 1783.4 | 946.3 | 461.2 | 306.4 | 267.3 | 253.8 | 249.8 | 248.2 | 248.2 | 248.2 |
| 40° | 2376.2 | 1899.9 | 895.3 | 418.9 | 291.2 | 257.0 | 245.8 | 242.5 | 242.5 | 243.4 | 243.4 |
| 42.5° | 2632.4 | 2045.9 | 851.4 | 390.2 | 282.4 | 249.8 | 240.2 | 238.6 | 237.8 | 237.8 | 238.6 |
| 45° | 2930.0 | 2218.3 | 824.3 | 367.9 | 276.1 | 245.8 | 236.2 | 235.4 | 232.2 | 230.6 | 230.6 |
| 47.5° | 3229.3 | 2402.6 | 822.7 | 355.1 | 268.1 | 241.0 | 232.2 | 232.2 | 225.9 | 222.6 | 223.4 |
| 50° | 3508.5 | 2567.8 | 840.3 | 351.9 | 263.3 | 233.8 | 228.2 | 229.0 | 220.2 | 216.3 | 215.4 |
| 52.5° | 3733.6 | 2693.8 | 861.7 | 355.9 | 263.3 | 227.4 | 221.1 | 225.0 | 215.4 | 210.6 | 209.8 |
| 55° | 3907.5 | 2781.6 | 869.7 | 364.7 | 266.5 | 221.9 | 214.6 | 221.1 | 213.8 | 207.5 | 207.5 |
| 57.5° | 4032.0 | 2809.5 | 835.4 | 368.7 | 271.3 | 221.1 | 208.3 | 220.2 | 216.3 | 208.3 | 208.3 |
| 60° | 3986.5 | 2647.6 | 707.8 | 353.5 | 270.5 | 219.4 | 203.5 | 221.9 | 224.2 | 215.4 | 215.4 |
| 62.5° | 3631.4 | 2215.1 | 568.1 | 319.2 | 257.0 | 213.8 | 197.8 | 220.2 | 229.9 | 226.6 | 225.0 |
| 65° | 2956.3 | 1624.7 | 440.5 | 278.4 | 233.8 | 201.8 | 185.9 | 205.8 | 217.1 | 220.2 | 221.1 |
| 67.5° | 2083.4 | 1028.6 | 342.3 | 237.0 | 205.1 | 184.3 | 172.4 | 181.9 | 185.9 | 187.5 | 190.7 |
| 70° | 1139.5 | 557.0 | 272.1 | 199.5 | 175.5 | 166.7 | 157.9 | 158.8 | 157.2 | 155.6 | 157.2 |
| 72° | 572.1 | 363.9 | 229.9 | 173.2 | 155.6 | 150.0 | 146.0 | 143.6 | 143.6 | 141.3 | 142.0 |
| 72.5° | 492.3 | 338.3 | 221.9 | 166.7 | 150.8 | 146.0 | 142.8 | 140.5 | 139.6 | 138.0 | 138.8 |
| 75° | 328.0 | 268.1 | 185.2 | 139.6 | 128.5 | 125.3 | 126.8 | 124.5 | 125.3 | 123.7 | 124.5 |
| 77.5° | 264.9 | 230.6 | 157.2 | 118.0 | 110.1 | 105.4 | 108.5 | 109.4 | 110.9 | 109.4 | 108.5 |
| 80° | 221.9 | 196.3 | 131.7 | 97.4 | 91.8 | 87.8 | 89.4 | 94.9 | 95.7 | 90.9 | 90.1 |
| 82.5° | 143.6 | 157.9 | 103.7 | 75.8 | 70.2 | 68.6 | 72.6 | 78.2 | 79.8 | 73.4 | 71.8 |
| 85° | 120.5 | 126.8 | 75.0 | 51.9 | 46.2 | 44.7 | 52.7 | 58.2 | 62.2 | 55.9 | 54.2 |
| 87.5° | 33.6 | 62.2 | 36.7 | 24.8 | 20.8 | 20.8 | 25.6 | 30.3 | 35.9 | 36.7 | 36.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)