

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: P197116

Luminaire Tested: **NVN-AF-04-LED-U-SL4-8030-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197116
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: NVN-AF-04-LED-U-SL4-8030-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10686 lumens
Efficiency: N/A
Efficacy: 82.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

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

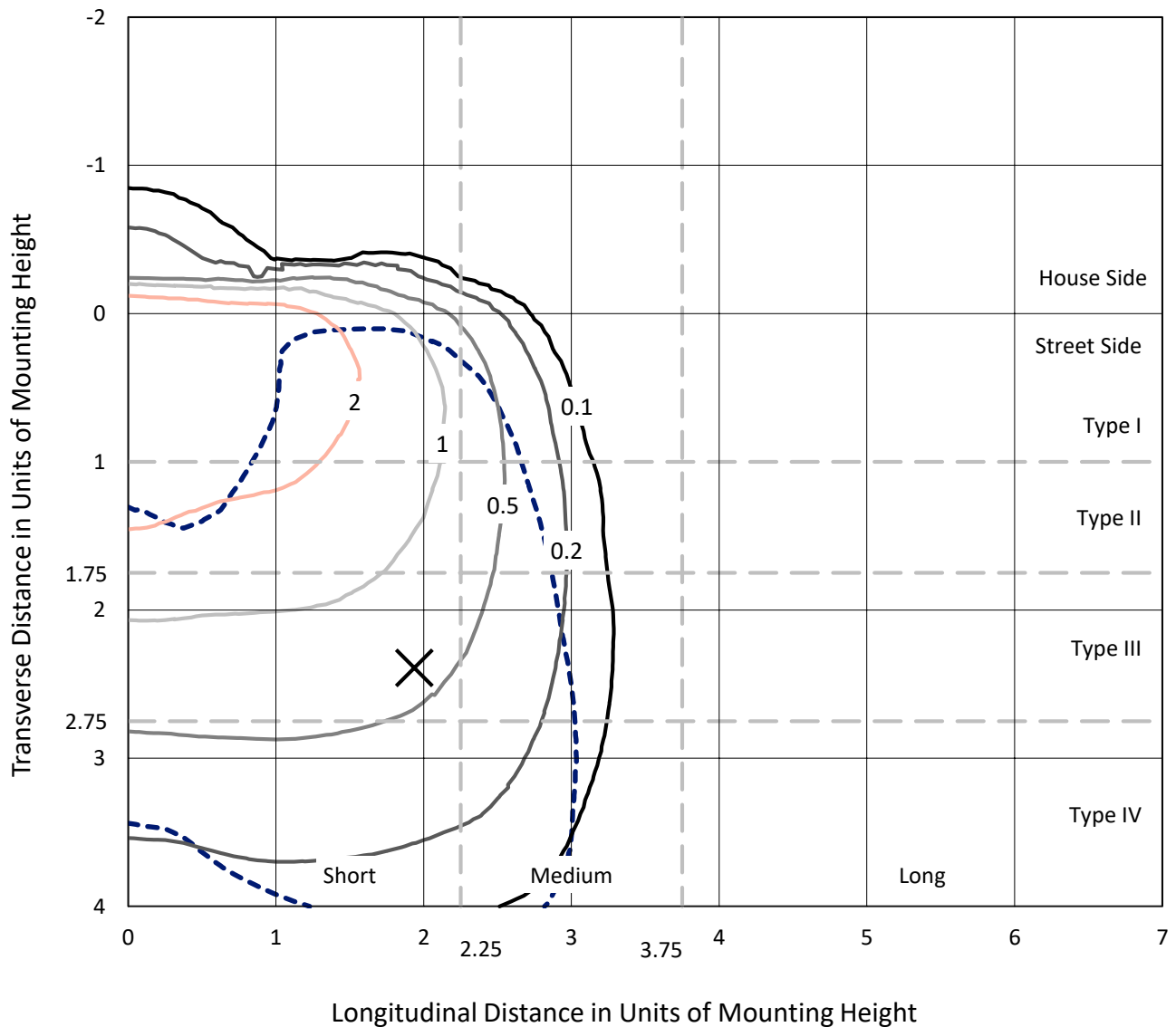


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

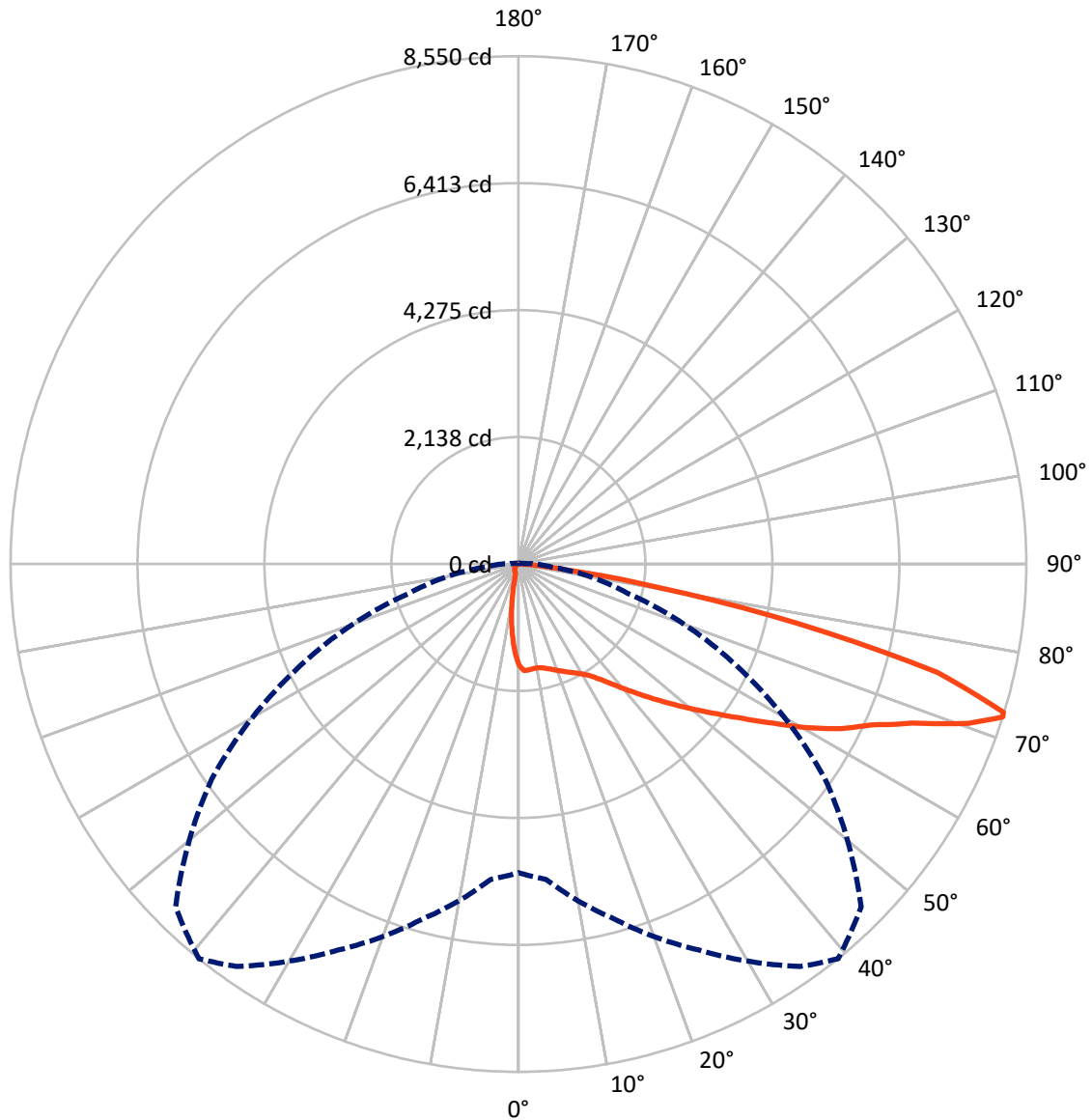


Based on 20 foot mounting height. Maximum calculated value = 4.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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



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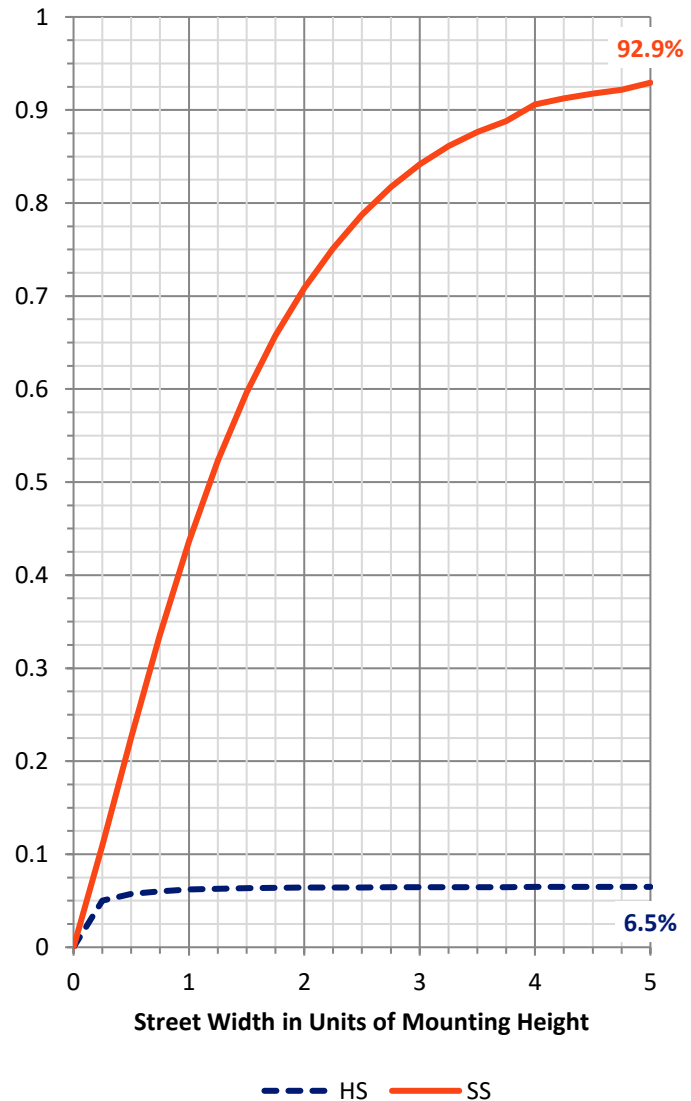
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 700.3 | 0.0 | 700.3 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 9985.7 | 0.0 | 9985.7 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 10686.0 | 0.0 | 10686.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 139.1 | 1.3 |
| 10°-20° | 336.8 | 3.2 |
| 20°-30° | 559.4 | 5.2 |
| 30°-40° | 891.5 | 8.3 |
| 40°-50° | 1471.6 | 13.8 |
| 50°-60° | 2222.3 | 20.8 |
| 60°-70° | 2894.9 | 27.1 |
| 70°-80° | 1956.1 | 18.3 |
| 80°-90° | 214.2 | 2.0 |
| 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° | 10686.0 | 100.0 |
| 0°-180° | 10686.0 | 100.0 |

Coefficient of Utilization



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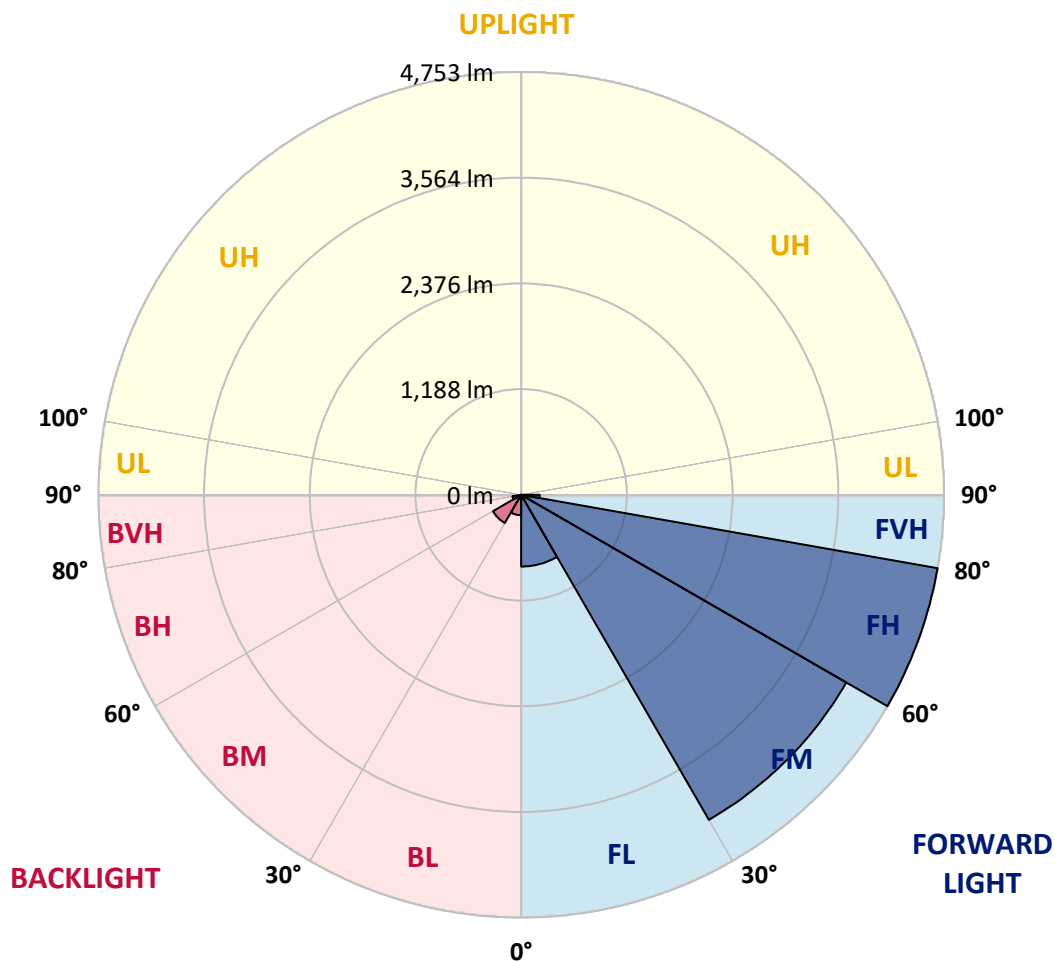
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 806.0 | 7.5 | | | |
| FM | (30°-60°) | 4219.0 | 39.5 | | | |
| FH | (60°-80°) | 4752.6 | 44.5 | | | G2/5000 |
| FVH | (80°-90°) | 208.1 | 1.9 | | | G2/225 |
| BL | (0°-30°) | 229.3 | 2.1 | B1/500 | | |
| BM | (30°-60°) | 366.4 | 3.4 | B1/1000 | | |
| BH | (60°-80°) | 98.4 | 0.9 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 6.2 | 0.1 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 |
| 2.5° | 1821.3 | 1824.6 | 1820.4 | 1812.9 | 1801.9 | 1795.2 | 1786.0 | 1765.8 | 1740.6 | 1718.8 | 1693.6 |
| 5° | 1835.5 | 1837.2 | 1832.2 | 1817.9 | 1801.1 | 1791.8 | 1780.1 | 1758.2 | 1732.2 | 1702.0 | 1656.6 |
| 7.5° | 1839.7 | 1838.9 | 1833.0 | 1815.4 | 1789.3 | 1777.6 | 1757.4 | 1730.5 | 1703.6 | 1675.9 | 1624.7 |
| 10° | 1838.1 | 1838.1 | 1833.9 | 1817.1 | 1787.6 | 1776.7 | 1754.0 | 1725.5 | 1691.9 | 1664.2 | 1609.6 |
| 12.5° | 1832.2 | 1835.5 | 1833.0 | 1823.8 | 1801.9 | 1793.5 | 1773.4 | 1744.8 | 1712.9 | 1684.3 | 1626.4 |
| 15° | 1839.7 | 1844.8 | 1849.8 | 1846.5 | 1833.9 | 1826.3 | 1807.8 | 1778.4 | 1752.4 | 1722.1 | 1660.0 |
| 17.5° | 1870.0 | 1880.9 | 1892.7 | 1893.5 | 1880.1 | 1866.6 | 1845.6 | 1815.4 | 1790.2 | 1762.4 | 1695.2 |
| 20° | 1927.1 | 1935.5 | 1957.3 | 1961.5 | 1934.7 | 1915.3 | 1885.9 | 1850.7 | 1825.5 | 1801.9 | 1728.0 |
| 22.5° | 2011.9 | 2021.2 | 2038.8 | 2032.9 | 1987.6 | 1964.9 | 1927.9 | 1887.6 | 1861.6 | 1848.1 | 1765.8 |
| 25° | 2140.5 | 2143.0 | 2147.2 | 2121.2 | 2046.4 | 2021.2 | 1975.8 | 1930.5 | 1909.5 | 1907.8 | 1819.6 |
| 27.5° | 2291.7 | 2295.0 | 2276.6 | 2218.6 | 2111.9 | 2079.2 | 2027.9 | 1986.7 | 1976.7 | 1989.3 | 1887.6 |
| 30° | 2464.7 | 2465.6 | 2414.3 | 2320.2 | 2187.5 | 2151.4 | 2098.5 | 2053.1 | 2062.3 | 2093.4 | 1975.0 |
| 32.5° | 2642.0 | 2633.6 | 2563.0 | 2440.4 | 2290.8 | 2247.2 | 2201.8 | 2156.4 | 2183.3 | 2246.3 | 2102.7 |
| 35° | 2804.1 | 2800.8 | 2717.6 | 2574.8 | 2425.3 | 2386.6 | 2353.8 | 2306.0 | 2349.6 | 2452.1 | 2276.6 |
| 37.5° | 2966.3 | 2963.7 | 2868.8 | 2720.1 | 2590.7 | 2563.0 | 2538.7 | 2501.7 | 2573.1 | 2723.5 | 2509.3 |
| 40° | 3145.2 | 3141.0 | 3024.2 | 2881.4 | 2783.1 | 2768.0 | 2753.7 | 2737.8 | 2859.6 | 3068.7 | 2799.1 |
| 42.5° | 3366.1 | 3347.6 | 3188.9 | 3057.0 | 2994.8 | 2999.0 | 2999.9 | 3015.8 | 3206.5 | 3479.5 | 3141.0 |
| 45° | 3619.8 | 3578.7 | 3354.4 | 3245.2 | 3227.5 | 3252.7 | 3277.9 | 3344.3 | 3610.6 | 3952.5 | 3519.0 |
| 47.5° | 3866.0 | 3799.6 | 3545.1 | 3447.6 | 3483.7 | 3535.8 | 3596.3 | 3725.7 | 4064.2 | 4447.3 | 3861.8 |
| 50° | 4077.7 | 4009.6 | 3734.1 | 3653.4 | 3768.5 | 3845.8 | 3953.3 | 4149.1 | 4543.0 | 4865.6 | 4077.7 |
| 52.5° | 4244.0 | 4190.2 | 3934.0 | 3880.2 | 4084.4 | 4190.2 | 4359.1 | 4616.1 | 4995.0 | 5141.2 | 4228.9 |
| 55° | 4366.6 | 4339.8 | 4125.5 | 4133.1 | 4435.5 | 4588.4 | 4798.4 | 5089.1 | 5376.4 | 5355.4 | 4342.3 |
| 57.5° | 4505.2 | 4484.2 | 4326.3 | 4431.3 | 4858.1 | 5055.5 | 5298.3 | 5531.8 | 5653.6 | 5527.6 | 4453.2 |
| 60° | 4647.2 | 4653.9 | 4569.9 | 4792.5 | 5380.6 | 5599.0 | 5810.7 | 5868.7 | 5891.3 | 5702.3 | 4569.9 |
| 62.5° | 4754.7 | 4783.3 | 4790.9 | 5182.3 | 5916.5 | 6103.0 | 6194.6 | 6153.4 | 6148.4 | 5936.7 | 4560.7 |
| 65° | 4878.2 | 4953.0 | 5077.3 | 5609.9 | 6403.8 | 6526.4 | 6592.0 | 6651.6 | 6525.6 | 6006.4 | 4112.1 |
| 67.5° | 5091.6 | 5209.2 | 5489.0 | 6134.1 | 6966.6 | 7148.1 | 7333.7 | 7270.7 | 6581.9 | 5298.3 | 3132.6 |
| 70° | 5378.9 | 5522.6 | 6016.5 | 6818.8 | 7730.2 | 8034.3 | 8189.8 | 7221.2 | 5588.1 | 3661.0 | 1652.4 |
| 72° | 5197.5 | 5327.7 | 6179.5 | 7168.2 | 8271.2 | 8550.1 | 8161.2 | 6298.8 | 4050.8 | 1897.7 | 553.6 |
| 72.5° | 5021.0 | 5155.5 | 6127.4 | 7164.0 | 8325.0 | 8538.4 | 7975.5 | 5935.0 | 3584.5 | 1476.8 | 381.4 |
| 75° | 3483.7 | 3653.4 | 5252.9 | 6439.9 | 7517.7 | 7283.3 | 6102.2 | 3593.8 | 1298.7 | 253.7 | 126.0 |
| 77.5° | 1801.1 | 1932.1 | 3186.3 | 4550.6 | 5239.5 | 4798.4 | 3606.4 | 1559.2 | 359.5 | 134.4 | 83.2 |
| 80° | 1116.4 | 1181.1 | 1490.3 | 2242.1 | 2721.8 | 2380.7 | 1591.1 | 630.0 | 230.2 | 79.8 | 66.4 |
| 82.5° | 578.0 | 627.5 | 938.3 | 904.7 | 1005.6 | 835.9 | 587.2 | 527.6 | 142.0 | 49.6 | 68.0 |
| 85° | 189.9 | 201.6 | 576.3 | 601.5 | 430.1 | 289.0 | 260.4 | 503.2 | 41.2 | 31.9 | 58.0 |
| 87.5° | 25.2 | 29.4 | 202.5 | 344.4 | 211.7 | 131.0 | 156.3 | 177.3 | 14.3 | 17.6 | 16.0 |
| 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° | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 | 1710.4 |
| 2.5° | 1676.8 | 1665.8 | 1631.4 | 1597.0 | 1557.5 | 1521.3 | 1492.8 | 1474.3 | 1482.7 | 1455.0 | 1459.2 |
| 5° | 1628.9 | 1601.2 | 1525.6 | 1444.1 | 1355.9 | 1273.5 | 1208.0 | 1159.3 | 1150.0 | 1108.0 | 1109.7 |
| 7.5° | 1582.7 | 1537.3 | 1414.7 | 1280.3 | 1134.1 | 1015.6 | 908.1 | 814.0 | 780.4 | 746.0 | 725.8 |
| 10° | 1557.5 | 1495.3 | 1321.4 | 1125.7 | 919.9 | 746.0 | 594.8 | 476.3 | 426.8 | 390.6 | 373.0 |
| 12.5° | 1565.0 | 1482.7 | 1251.7 | 985.4 | 714.9 | 494.0 | 336.0 | 249.5 | 219.3 | 202.5 | 196.6 |
| 15° | 1590.2 | 1485.2 | 1188.7 | 848.5 | 520.0 | 299.1 | 197.4 | 168.9 | 166.3 | 165.5 | 164.7 |
| 17.5° | 1613.8 | 1487.7 | 1122.3 | 705.7 | 347.8 | 190.7 | 158.8 | 156.3 | 156.3 | 156.3 | 156.3 |
| 20° | 1638.1 | 1488.6 | 1049.2 | 556.1 | 228.5 | 156.3 | 149.5 | 147.9 | 149.5 | 149.5 | 149.5 |
| 22.5° | 1666.7 | 1494.5 | 978.7 | 410.8 | 168.9 | 147.0 | 142.8 | 142.0 | 142.8 | 142.8 | 142.0 |
| 25° | 1702.0 | 1507.1 | 902.2 | 294.0 | 152.9 | 141.1 | 136.9 | 136.1 | 136.9 | 136.1 | 136.1 |
| 27.5° | 1749.0 | 1523.9 | 813.2 | 210.9 | 146.2 | 135.2 | 131.0 | 131.0 | 131.0 | 130.2 | 130.2 |
| 30° | 1809.5 | 1544.0 | 693.9 | 166.3 | 139.5 | 129.4 | 126.0 | 126.0 | 125.2 | 124.3 | 124.3 |
| 32.5° | 1896.0 | 1576.8 | 563.7 | 150.4 | 131.9 | 121.8 | 118.4 | 119.3 | 118.4 | 117.6 | 116.8 |
| 35° | 2018.7 | 1628.0 | 435.2 | 142.0 | 124.3 | 114.2 | 110.9 | 110.9 | 110.9 | 109.2 | 109.2 |
| 37.5° | 2192.6 | 1706.2 | 325.9 | 133.6 | 116.8 | 106.7 | 102.5 | 102.5 | 101.6 | 100.0 | 100.8 |
| 40° | 2407.6 | 1804.5 | 236.1 | 126.0 | 109.2 | 98.3 | 94.9 | 93.2 | 91.6 | 89.9 | 89.9 |
| 42.5° | 2666.4 | 1900.2 | 177.3 | 118.4 | 101.6 | 91.6 | 87.4 | 85.7 | 82.3 | 80.6 | 79.8 |
| 45° | 2956.2 | 2001.9 | 147.0 | 109.2 | 93.2 | 84.0 | 80.6 | 77.3 | 73.1 | 70.6 | 69.7 |
| 47.5° | 3200.6 | 2064.0 | 131.0 | 100.0 | 84.8 | 76.4 | 73.1 | 68.0 | 63.0 | 61.3 | 61.3 |
| 50° | 3347.6 | 2038.0 | 117.6 | 90.7 | 76.4 | 68.9 | 64.7 | 58.0 | 54.6 | 52.9 | 52.1 |
| 52.5° | 3430.0 | 1960.7 | 106.7 | 83.2 | 68.9 | 60.5 | 54.6 | 48.7 | 47.0 | 45.4 | 45.4 |
| 55° | 3486.3 | 1849.0 | 94.9 | 75.6 | 62.2 | 52.9 | 46.2 | 42.0 | 40.3 | 39.5 | 38.6 |
| 57.5° | 3540.0 | 1712.9 | 84.0 | 68.9 | 55.4 | 47.0 | 39.5 | 37.8 | 34.4 | 33.6 | 33.6 |
| 60° | 3556.0 | 1525.6 | 73.9 | 61.3 | 49.6 | 41.2 | 34.4 | 31.9 | 28.6 | 27.7 | 27.7 |
| 62.5° | 3352.7 | 1213.9 | 65.5 | 52.1 | 43.7 | 35.3 | 30.2 | 26.9 | 23.5 | 23.5 | 23.5 |
| 65° | 2801.6 | 824.1 | 56.3 | 45.4 | 38.6 | 30.2 | 26.0 | 21.8 | 20.2 | 20.2 | 20.2 |
| 67.5° | 1951.5 | 459.5 | 47.9 | 38.6 | 32.8 | 25.2 | 21.8 | 18.5 | 17.6 | 18.5 | 18.5 |
| 70° | 879.5 | 182.3 | 40.3 | 31.9 | 26.9 | 21.0 | 18.5 | 16.0 | 17.6 | 17.6 | 17.6 |
| 72° | 263.8 | 97.4 | 33.6 | 26.0 | 21.8 | 18.5 | 16.0 | 15.1 | 16.8 | 17.6 | 17.6 |
| 72.5° | 195.7 | 87.4 | 31.9 | 25.2 | 21.8 | 17.6 | 15.1 | 15.1 | 16.8 | 17.6 | 17.6 |
| 75° | 100.8 | 59.6 | 24.4 | 18.5 | 16.0 | 14.3 | 12.6 | 14.3 | 16.8 | 16.8 | 16.8 |
| 77.5° | 79.0 | 48.7 | 20.2 | 14.3 | 13.4 | 12.6 | 11.8 | 13.4 | 15.1 | 15.1 | 15.1 |
| 80° | 73.9 | 31.9 | 16.0 | 13.4 | 11.8 | 10.9 | 10.9 | 11.8 | 13.4 | 14.3 | 14.3 |
| 82.5° | 74.8 | 26.0 | 14.3 | 12.6 | 10.9 | 10.1 | 10.1 | 10.9 | 12.6 | 13.4 | 13.4 |
| 85° | 47.9 | 17.6 | 12.6 | 10.9 | 10.1 | 9.2 | 9.2 | 10.1 | 11.8 | 12.6 | 12.6 |
| 87.5° | 16.0 | 13.4 | 10.9 | 10.1 | 8.4 | 8.4 | 8.4 | 8.4 | 10.1 | 10.9 | 11.8 |
| 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)