

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: LUMARK

Report Number: P195212

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7060-1200-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195212
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: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SL4-7060-1200-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 1200mA 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: 10885 lumens
Efficiency: N/A
Efficacy: 84.4 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 - 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: 25 FT

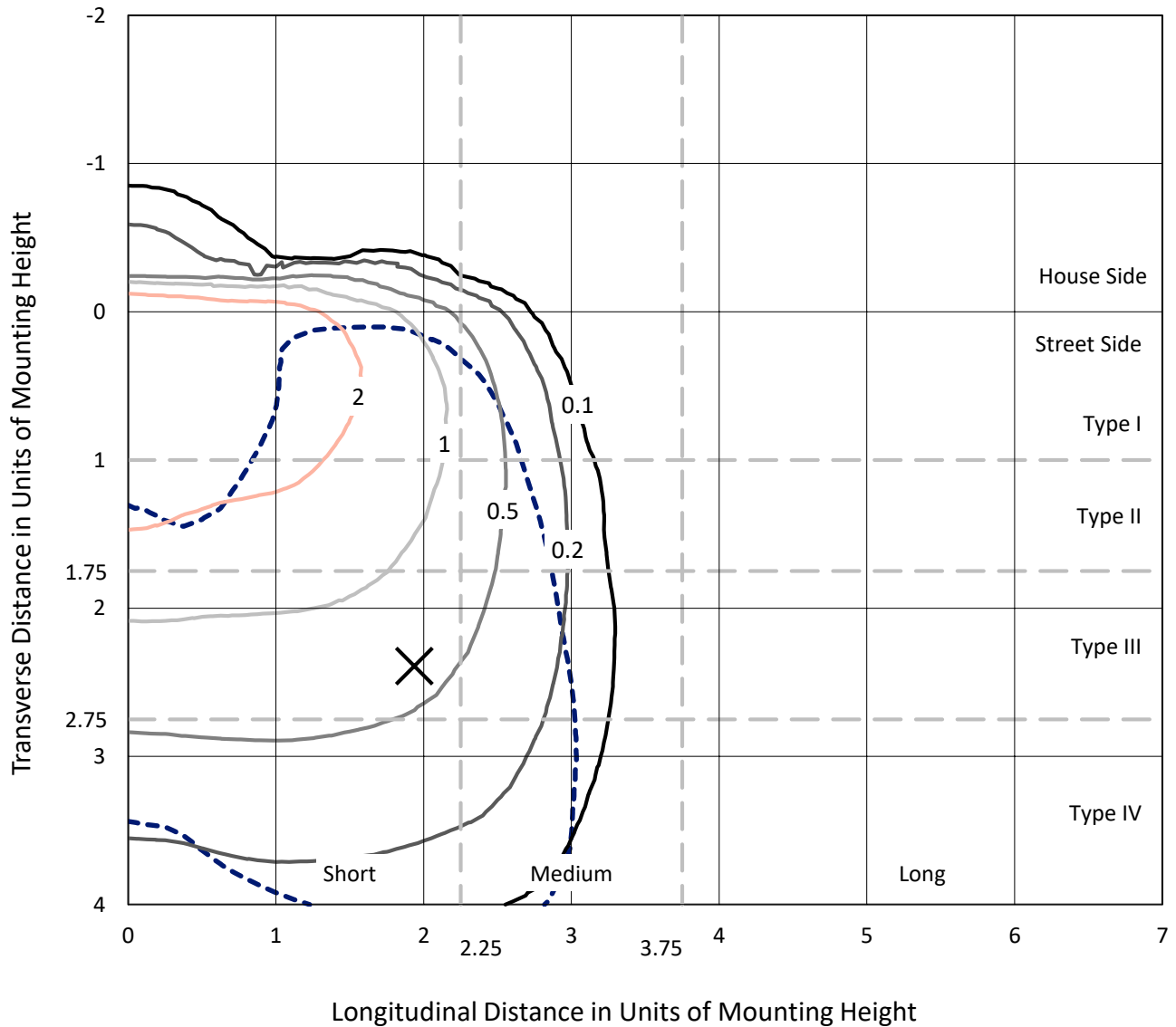


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

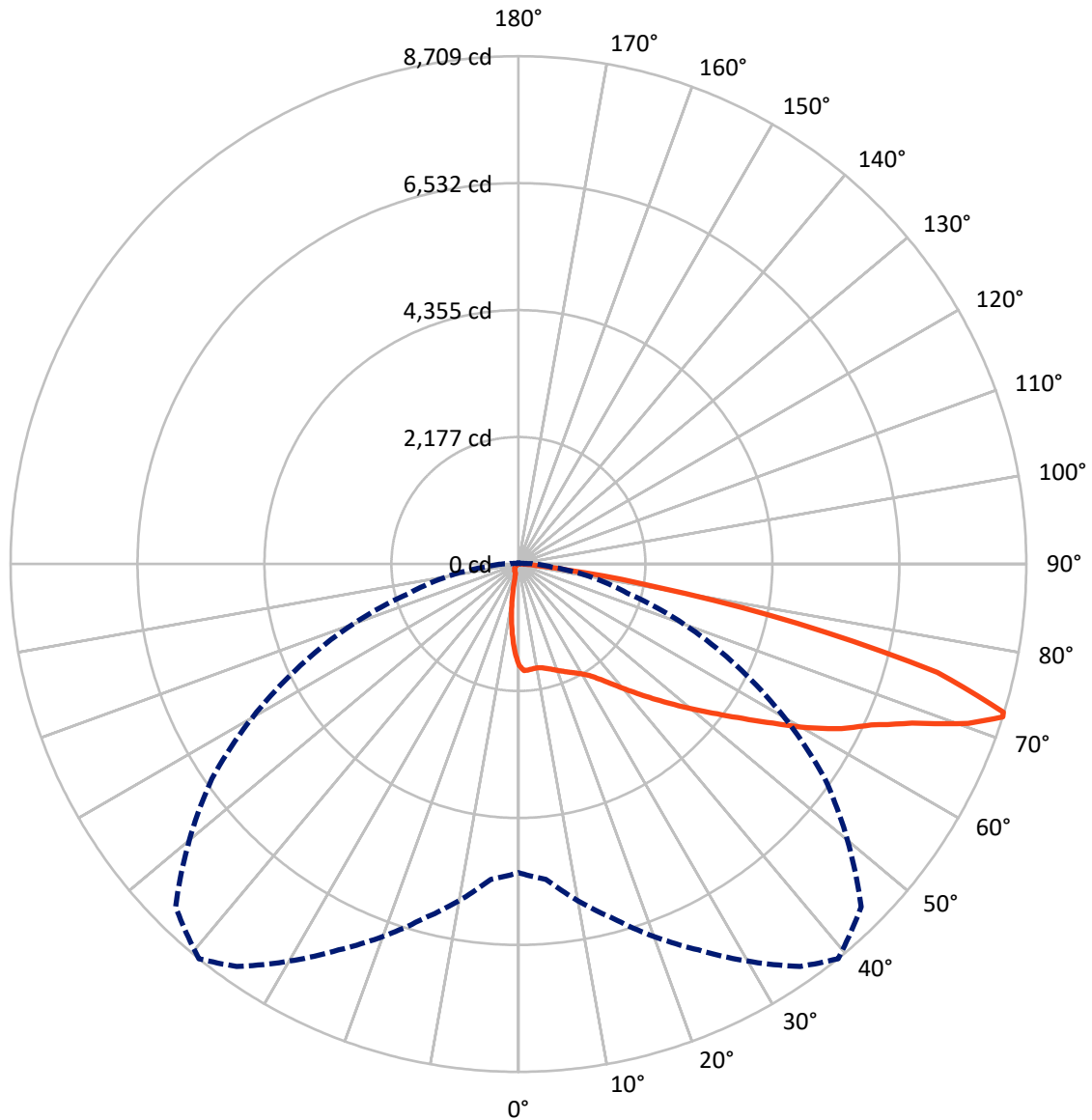


Based on 20 foot mounting height. Maximum calculated value = 4.6 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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

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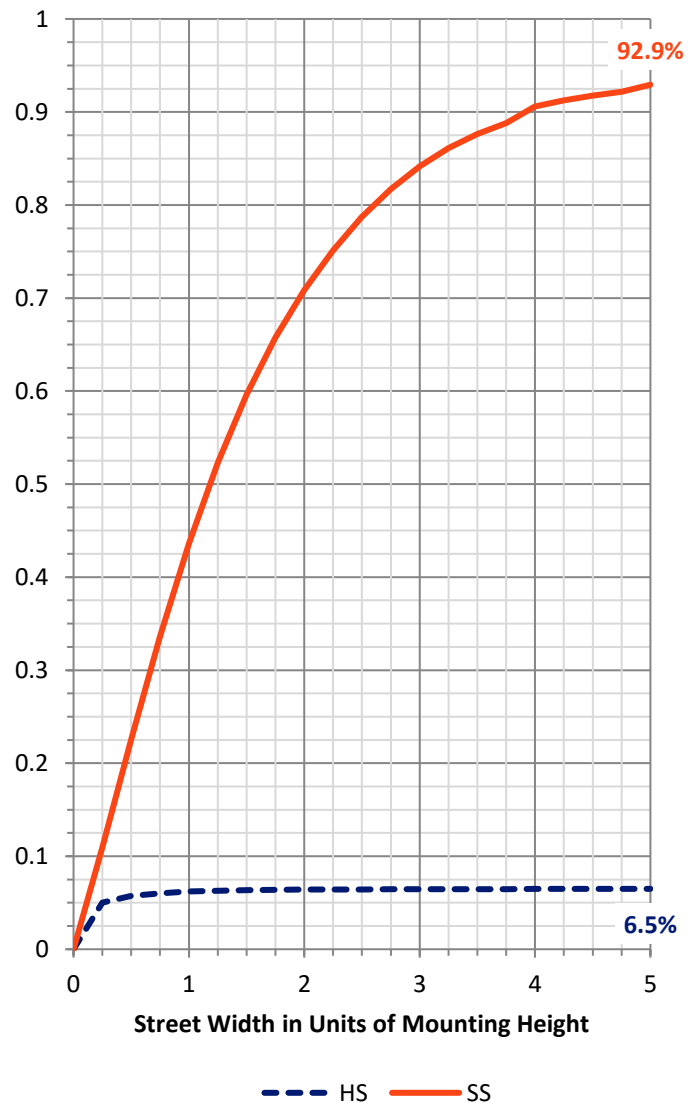
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 713.4 | 0.0 | 713.4 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 10171.6 | 0.0 | 10171.6 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 10885.0 | 0.0 | 10885.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 141.7 | 1.3 |
| 10°-20° | 343.1 | 3.2 |
| 20°-30° | 569.8 | 5.2 |
| 30°-40° | 908.1 | 8.3 |
| 40°-50° | 1499.0 | 13.8 |
| 50°-60° | 2263.7 | 20.8 |
| 60°-70° | 2948.9 | 27.1 |
| 70°-80° | 1992.6 | 18.3 |
| 80°-90° | 218.2 | 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° | 10885.0 | 100.0 |
| 0°-180° | 10885.0 | 100.0 |

Coefficient of Utilization



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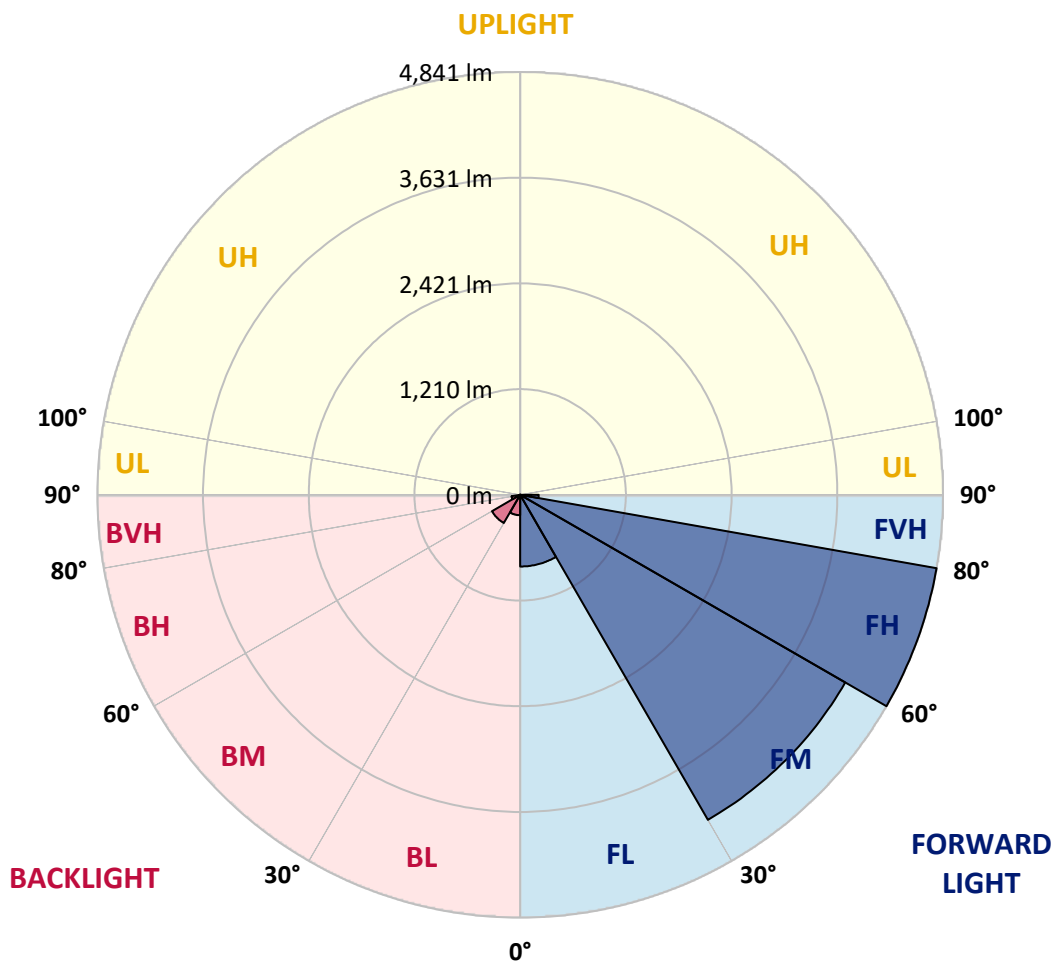
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 821.0 | 7.5 | | | |
| FM | (30°-60°) | 4297.5 | 39.5 | | | |
| FH | (60°-80°) | 4841.2 | 44.5 | | | G2/5000 |
| FVH | (80°-90°) | 211.9 | 1.9 | | | G2/225 |
| BL | (0°-30°) | 233.6 | 2.1 | B1/500 | | |
| BM | (30°-60°) | 373.2 | 3.4 | B1/1000 | | |
| BH | (60°-80°) | 100.3 | 0.9 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 6.3 | 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° | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 |
| 2.5° | 1855.2 | 1858.6 | 1854.3 | 1846.6 | 1835.5 | 1828.6 | 1819.2 | 1798.7 | 1773.0 | 1750.8 | 1725.1 |
| 5° | 1869.7 | 1871.4 | 1866.3 | 1851.7 | 1834.6 | 1825.2 | 1813.2 | 1791.0 | 1764.5 | 1733.7 | 1687.4 |
| 7.5° | 1874.0 | 1873.1 | 1867.1 | 1849.2 | 1822.7 | 1810.7 | 1790.1 | 1762.8 | 1735.4 | 1707.1 | 1654.9 |
| 10° | 1872.3 | 1872.3 | 1868.0 | 1850.9 | 1820.9 | 1809.8 | 1786.7 | 1757.6 | 1723.4 | 1695.2 | 1639.5 |
| 12.5° | 1866.3 | 1869.7 | 1867.1 | 1857.7 | 1835.5 | 1826.9 | 1806.4 | 1777.3 | 1744.8 | 1715.7 | 1656.6 |
| 15° | 1874.0 | 1879.1 | 1884.3 | 1880.8 | 1868.0 | 1860.3 | 1841.5 | 1811.5 | 1785.0 | 1754.2 | 1690.9 |
| 17.5° | 1904.8 | 1915.9 | 1927.9 | 1928.8 | 1915.1 | 1901.4 | 1880.0 | 1849.2 | 1823.5 | 1795.3 | 1726.8 |
| 20° | 1963.0 | 1971.5 | 1993.8 | 1998.1 | 1970.7 | 1951.0 | 1921.1 | 1885.1 | 1859.4 | 1835.5 | 1760.2 |
| 22.5° | 2049.4 | 2058.8 | 2076.8 | 2070.8 | 2024.6 | 2001.5 | 1963.8 | 1922.8 | 1896.2 | 1882.6 | 1798.7 |
| 25° | 2180.3 | 2182.9 | 2187.2 | 2160.7 | 2084.5 | 2058.8 | 2012.6 | 1966.4 | 1945.0 | 1943.3 | 1853.5 |
| 27.5° | 2334.4 | 2337.8 | 2319.0 | 2259.9 | 2151.2 | 2117.9 | 2065.7 | 2023.7 | 2013.5 | 2026.3 | 1922.8 |
| 30° | 2510.6 | 2511.5 | 2459.3 | 2363.5 | 2228.3 | 2191.5 | 2137.6 | 2091.3 | 2100.8 | 2132.4 | 2011.8 |
| 32.5° | 2691.2 | 2682.6 | 2610.8 | 2485.8 | 2333.5 | 2289.0 | 2242.8 | 2196.6 | 2224.0 | 2288.2 | 2141.8 |
| 35° | 2856.3 | 2852.9 | 2768.2 | 2622.7 | 2470.4 | 2431.1 | 2397.7 | 2348.9 | 2393.4 | 2497.8 | 2319.0 |
| 37.5° | 3021.5 | 3018.9 | 2922.2 | 2770.8 | 2639.0 | 2610.8 | 2585.9 | 2548.3 | 2621.0 | 2774.2 | 2556.0 |
| 40° | 3203.8 | 3199.5 | 3080.5 | 2935.1 | 2834.9 | 2819.5 | 2805.0 | 2788.7 | 2912.8 | 3125.9 | 2851.2 |
| 42.5° | 3428.8 | 3410.0 | 3248.3 | 3113.9 | 3050.6 | 3054.9 | 3055.7 | 3072.0 | 3266.2 | 3544.3 | 3199.5 |
| 45° | 3687.2 | 3645.3 | 3416.8 | 3305.6 | 3287.6 | 3313.3 | 3339.0 | 3406.6 | 3677.8 | 4026.1 | 3584.5 |
| 47.5° | 3938.0 | 3870.4 | 3611.1 | 3511.8 | 3548.6 | 3601.7 | 3663.3 | 3795.1 | 4139.9 | 4530.1 | 3933.7 |
| 50° | 4153.6 | 4084.3 | 3803.6 | 3721.5 | 3838.7 | 3917.4 | 4026.9 | 4226.3 | 4627.7 | 4956.2 | 4153.6 |
| 52.5° | 4323.0 | 4268.3 | 4007.3 | 3952.5 | 4160.4 | 4268.3 | 4440.3 | 4702.1 | 5088.0 | 5236.9 | 4307.6 |
| 55° | 4448.0 | 4420.6 | 4202.4 | 4210.1 | 4518.1 | 4673.9 | 4887.8 | 5183.9 | 5476.5 | 5455.1 | 4423.1 |
| 57.5° | 4589.1 | 4567.8 | 4406.9 | 4513.8 | 4948.5 | 5149.6 | 5396.9 | 5634.8 | 5758.9 | 5630.5 | 4536.1 |
| 60° | 4733.8 | 4740.6 | 4655.0 | 4881.8 | 5480.8 | 5703.3 | 5918.9 | 5978.0 | 6001.1 | 5808.5 | 4655.0 |
| 62.5° | 4843.3 | 4872.4 | 4880.1 | 5278.8 | 6026.7 | 6216.7 | 6310.0 | 6268.0 | 6262.9 | 6047.3 | 4645.6 |
| 65° | 4969.1 | 5045.2 | 5171.9 | 5714.4 | 6523.0 | 6648.0 | 6714.7 | 6775.5 | 6647.1 | 6118.3 | 4188.7 |
| 67.5° | 5186.4 | 5306.2 | 5591.2 | 6248.4 | 7096.4 | 7281.2 | 7470.3 | 7406.1 | 6704.4 | 5396.9 | 3190.9 |
| 70° | 5479.1 | 5625.4 | 6128.6 | 6945.8 | 7874.2 | 8184.0 | 8342.3 | 7355.6 | 5692.1 | 3729.2 | 1683.2 |
| 72° | 5294.2 | 5426.9 | 6294.6 | 7301.7 | 8425.3 | 8709.4 | 8313.2 | 6416.1 | 4126.2 | 1933.0 | 563.9 |
| 72.5° | 5114.5 | 5251.5 | 6241.5 | 7297.4 | 8480.0 | 8697.4 | 8124.1 | 6045.6 | 3651.3 | 1504.3 | 388.5 |
| 75° | 3548.6 | 3721.5 | 5350.7 | 6559.8 | 7657.7 | 7419.0 | 6215.8 | 3660.7 | 1322.9 | 258.4 | 128.4 |
| 77.5° | 1834.6 | 1968.1 | 3245.7 | 4635.4 | 5337.0 | 4887.8 | 3673.5 | 1588.2 | 366.2 | 136.9 | 84.7 |
| 80° | 1137.2 | 1203.1 | 1518.0 | 2283.9 | 2772.5 | 2425.1 | 1620.7 | 641.8 | 234.5 | 81.3 | 67.6 |
| 82.5° | 588.7 | 639.2 | 955.8 | 921.6 | 1024.3 | 851.4 | 598.1 | 537.4 | 144.6 | 50.5 | 69.3 |
| 85° | 193.4 | 205.4 | 587.0 | 612.7 | 438.1 | 294.4 | 265.3 | 512.6 | 41.9 | 32.5 | 59.0 |
| 87.5° | 25.7 | 29.9 | 206.2 | 350.8 | 215.6 | 133.5 | 159.2 | 180.6 | 14.5 | 18.0 | 16.3 |
| 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° | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 | 1742.2 |
| 2.5° | 1708.0 | 1696.9 | 1661.8 | 1626.7 | 1586.5 | 1549.7 | 1520.6 | 1501.8 | 1510.3 | 1482.1 | 1486.4 |
| 5° | 1659.2 | 1631.0 | 1554.0 | 1471.0 | 1381.1 | 1297.2 | 1230.5 | 1180.9 | 1171.5 | 1128.7 | 1130.4 |
| 7.5° | 1612.1 | 1565.9 | 1441.0 | 1304.1 | 1155.2 | 1034.5 | 925.0 | 829.2 | 794.9 | 759.9 | 739.3 |
| 10° | 1586.5 | 1523.2 | 1346.0 | 1146.6 | 937.0 | 759.9 | 605.8 | 485.2 | 434.7 | 397.9 | 379.9 |
| 12.5° | 1594.2 | 1510.3 | 1275.0 | 1003.7 | 728.2 | 503.2 | 342.3 | 254.1 | 223.3 | 206.2 | 200.2 |
| 15° | 1619.8 | 1512.9 | 1210.8 | 864.3 | 529.7 | 304.6 | 201.1 | 172.0 | 169.4 | 168.6 | 167.7 |
| 17.5° | 1643.8 | 1515.5 | 1143.2 | 718.8 | 354.3 | 194.2 | 161.7 | 159.2 | 159.2 | 159.2 | 159.2 |
| 20° | 1668.6 | 1516.3 | 1068.8 | 566.5 | 232.8 | 159.2 | 152.3 | 150.6 | 152.3 | 152.3 | 152.3 |
| 22.5° | 1697.7 | 1522.3 | 996.9 | 418.4 | 172.0 | 149.7 | 145.5 | 144.6 | 145.5 | 145.5 | 144.6 |
| 25° | 1733.7 | 1535.1 | 919.0 | 299.5 | 155.7 | 143.8 | 139.5 | 138.6 | 139.5 | 138.6 | 138.6 |
| 27.5° | 1781.6 | 1552.2 | 828.3 | 214.8 | 148.9 | 137.8 | 133.5 | 133.5 | 133.5 | 132.6 | 132.6 |
| 30° | 1843.2 | 1572.8 | 706.8 | 169.4 | 142.0 | 131.8 | 128.4 | 128.4 | 127.5 | 126.6 | 126.6 |
| 32.5° | 1931.3 | 1606.2 | 574.2 | 153.2 | 134.3 | 124.1 | 120.7 | 121.5 | 120.7 | 119.8 | 118.9 |
| 35° | 2056.3 | 1658.4 | 443.3 | 144.6 | 126.6 | 116.4 | 113.0 | 113.0 | 113.0 | 111.2 | 111.2 |
| 37.5° | 2233.4 | 1737.9 | 332.0 | 136.1 | 118.9 | 108.7 | 104.4 | 104.4 | 103.5 | 101.8 | 102.7 |
| 40° | 2452.4 | 1838.1 | 240.5 | 128.4 | 111.2 | 100.1 | 96.7 | 95.0 | 93.3 | 91.6 | 91.6 |
| 42.5° | 2716.0 | 1935.6 | 180.6 | 120.7 | 103.5 | 93.3 | 89.0 | 87.3 | 83.9 | 82.1 | 81.3 |
| 45° | 3011.2 | 2039.1 | 149.7 | 111.2 | 95.0 | 85.6 | 82.1 | 78.7 | 74.4 | 71.9 | 71.0 |
| 47.5° | 3260.2 | 2102.5 | 133.5 | 101.8 | 86.4 | 77.9 | 74.4 | 69.3 | 64.2 | 62.5 | 62.5 |
| 50° | 3410.0 | 2075.9 | 119.8 | 92.4 | 77.9 | 70.2 | 65.9 | 59.0 | 55.6 | 53.9 | 53.1 |
| 52.5° | 3493.8 | 1997.2 | 108.7 | 84.7 | 70.2 | 61.6 | 55.6 | 49.6 | 47.9 | 46.2 | 46.2 |
| 55° | 3551.2 | 1883.4 | 96.7 | 77.0 | 63.3 | 53.9 | 47.1 | 42.8 | 41.1 | 40.2 | 39.4 |
| 57.5° | 3605.9 | 1744.8 | 85.6 | 70.2 | 56.5 | 47.9 | 40.2 | 38.5 | 35.1 | 34.2 | 34.2 |
| 60° | 3622.2 | 1554.0 | 75.3 | 62.5 | 50.5 | 41.9 | 35.1 | 32.5 | 29.1 | 28.2 | 28.2 |
| 62.5° | 3415.1 | 1236.5 | 66.7 | 53.1 | 44.5 | 35.9 | 30.8 | 27.4 | 24.0 | 24.0 | 24.0 |
| 65° | 2853.8 | 839.4 | 57.3 | 46.2 | 39.4 | 30.8 | 26.5 | 22.2 | 20.5 | 20.5 | 20.5 |
| 67.5° | 1987.8 | 468.1 | 48.8 | 39.4 | 33.4 | 25.7 | 22.2 | 18.8 | 18.0 | 18.8 | 18.8 |
| 70° | 895.9 | 185.7 | 41.1 | 32.5 | 27.4 | 21.4 | 18.8 | 16.3 | 18.0 | 18.0 | 18.0 |
| 72° | 268.7 | 99.3 | 34.2 | 26.5 | 22.2 | 18.8 | 16.3 | 15.4 | 17.1 | 18.0 | 18.0 |
| 72.5° | 199.4 | 89.0 | 32.5 | 25.7 | 22.2 | 18.0 | 15.4 | 15.4 | 17.1 | 18.0 | 18.0 |
| 75° | 102.7 | 60.8 | 24.8 | 18.8 | 16.3 | 14.5 | 12.8 | 14.5 | 17.1 | 17.1 | 17.1 |
| 77.5° | 80.4 | 49.6 | 20.5 | 14.5 | 13.7 | 12.8 | 12.0 | 13.7 | 15.4 | 15.4 | 15.4 |
| 80° | 75.3 | 32.5 | 16.3 | 13.7 | 12.0 | 11.1 | 11.1 | 12.0 | 13.7 | 14.5 | 14.5 |
| 82.5° | 76.2 | 26.5 | 14.5 | 12.8 | 11.1 | 10.3 | 10.3 | 11.1 | 12.8 | 13.7 | 13.7 |
| 85° | 48.8 | 18.0 | 12.8 | 11.1 | 10.3 | 9.4 | 9.4 | 10.3 | 12.0 | 12.8 | 12.8 |
| 87.5° | 16.3 | 13.7 | 11.1 | 10.3 | 8.6 | 8.6 | 8.6 | 8.6 | 10.3 | 11.1 | 12.0 |
| 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)