

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: P196516

Luminaire Tested: **NAV-AF-04-D-UNV-RW-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196516
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24161)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-RW-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15886.3 lumens
Efficiency: N/A
Efficacy: 123.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B4 - U0 - G4

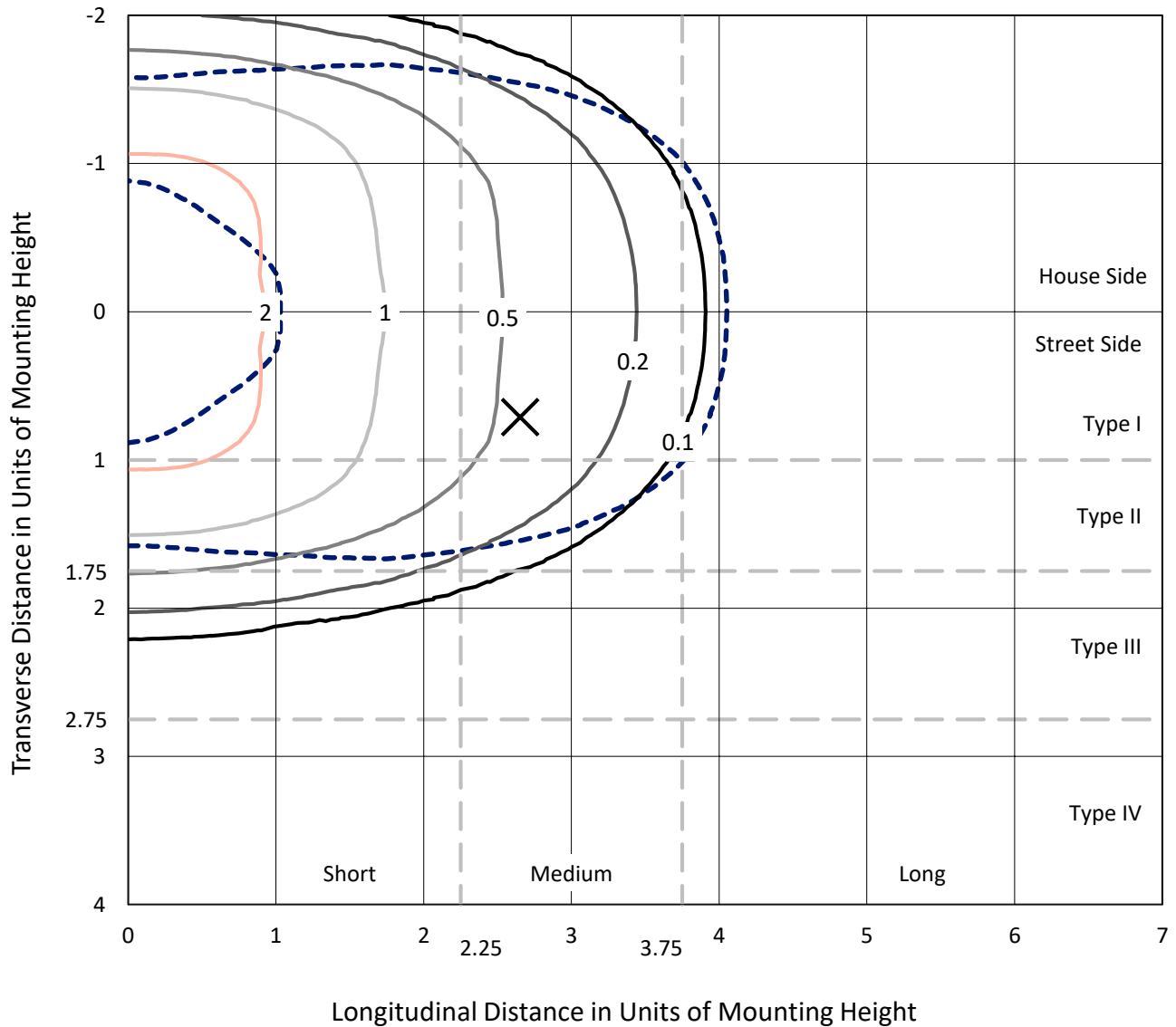
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

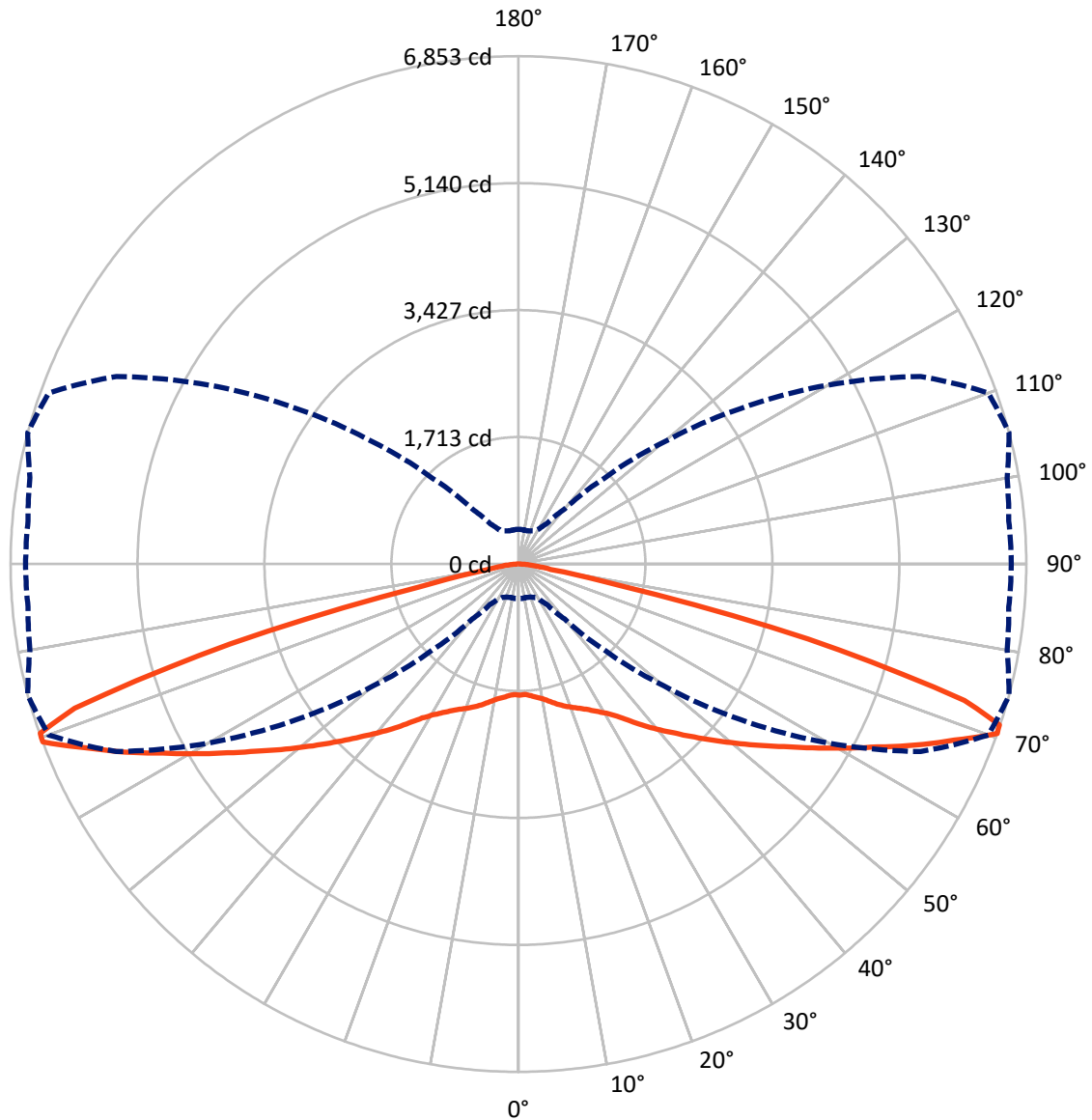
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.9 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7943.2 | 0.0 | 7943.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 7943.2 | 0.0 | 7943.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 15886.3 | 0.0 | 15886.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 169.7 | 1.1 |
| 10°-20° | 526.3 | 3.3 |
| 20°-30° | 988.4 | 6.2 |
| 30°-40° | 1741.1 | 11.0 |
| 40°-50° | 2885.6 | 18.2 |
| 50°-60° | 4014.2 | 25.3 |
| 60°-70° | 3789.5 | 23.9 |
| 70°-80° | 1618.5 | 10.2 |
| 80°-90° | 152.9 | 1.0 |
| 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° | 15886.3 | 100.0 |
| 0°-180° | 15886.3 | 100.0 |



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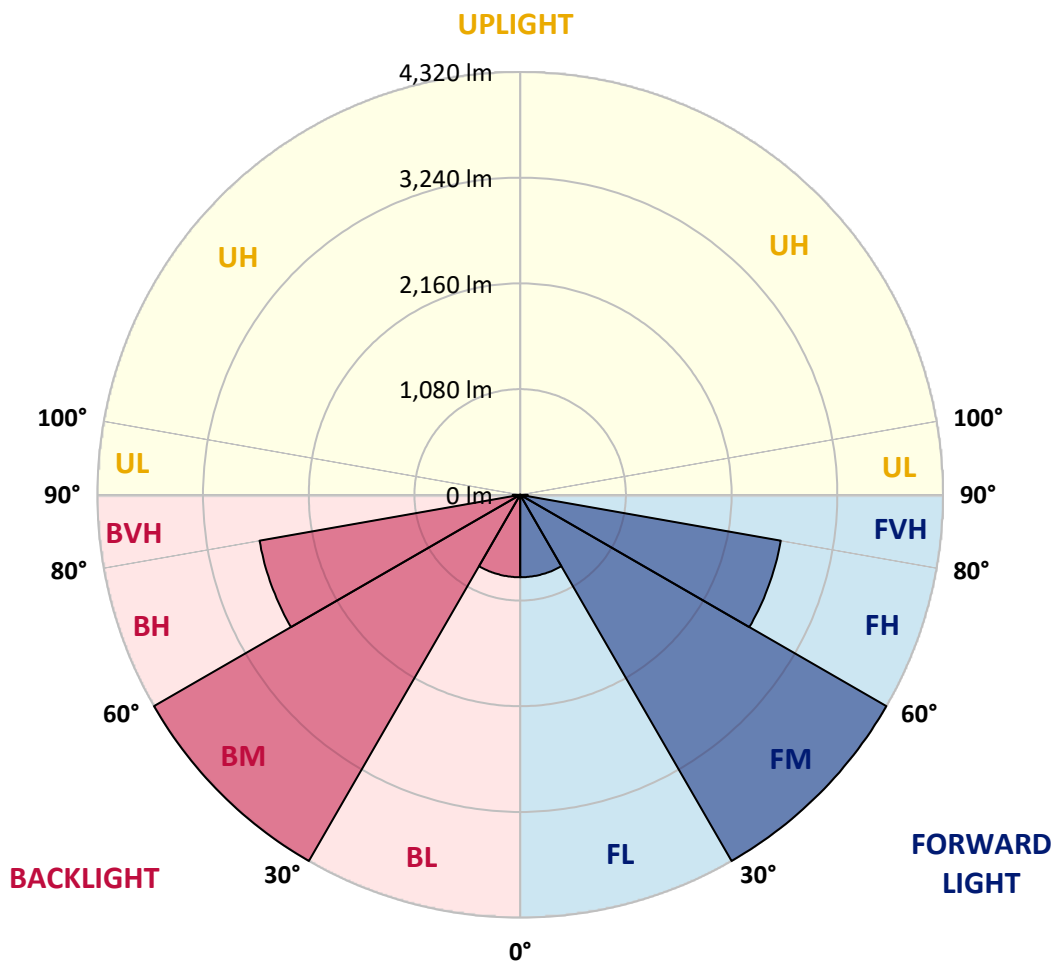
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 842.2 | 5.3 | | | |
| FM | (30°-60°) | 4320.5 | 27.2 | | | |
| FH | (60°-80°) | 2704.0 | 17.0 | | | G2/5000 |
| FVH | (80°-90°) | 76.5 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 842.2 | 5.3 | B2/1000 | | |
| BM | (30°-60°) | 4320.5 | 27.2 | B3/5000 | | |
| BH | (60°-80°) | 2704.0 | 17.0 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 76.5 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 |
| 2.5° | 1780.1 | 1779.1 | 1780.1 | 1777.1 | 1778.0 | 1777.1 | 1777.1 | 1773.1 | 1773.1 | 1771.1 | 1768.2 |
| 5° | 1760.1 | 1762.2 | 1762.2 | 1762.2 | 1765.1 | 1765.1 | 1769.1 | 1770.1 | 1773.1 | 1776.0 | 1778.0 |
| 7.5° | 1727.3 | 1728.3 | 1731.2 | 1733.3 | 1739.2 | 1747.2 | 1755.1 | 1764.1 | 1772.0 | 1782.0 | 1793.0 |
| 10° | 1699.4 | 1701.3 | 1706.4 | 1711.3 | 1722.3 | 1732.3 | 1746.2 | 1760.1 | 1774.1 | 1791.0 | 1807.9 |
| 12.5° | 1684.4 | 1687.5 | 1695.3 | 1703.4 | 1720.3 | 1733.3 | 1752.2 | 1774.1 | 1793.0 | 1808.9 | 1827.8 |
| 15° | 1686.4 | 1687.5 | 1698.4 | 1709.4 | 1733.3 | 1751.2 | 1778.0 | 1804.0 | 1826.9 | 1844.8 | 1866.7 |
| 17.5° | 1715.4 | 1717.3 | 1728.3 | 1744.3 | 1767.0 | 1790.0 | 1818.8 | 1845.7 | 1876.6 | 1897.5 | 1923.4 |
| 20° | 1772.0 | 1775.0 | 1787.1 | 1804.0 | 1828.8 | 1852.7 | 1882.5 | 1910.5 | 1942.3 | 1967.2 | 1993.1 |
| 22.5° | 1845.7 | 1850.8 | 1863.6 | 1884.6 | 1909.5 | 1938.4 | 1969.2 | 1998.1 | 2028.0 | 2052.9 | 2074.8 |
| 25° | 1944.3 | 1950.3 | 1964.3 | 1985.1 | 2010.1 | 2040.9 | 2072.7 | 2102.5 | 2133.5 | 2152.4 | 2170.3 |
| 27.5° | 2076.7 | 2086.7 | 2101.6 | 2118.5 | 2140.4 | 2173.2 | 2203.1 | 2228.1 | 2258.0 | 2278.8 | 2290.7 |
| 30° | 2254.9 | 2268.9 | 2280.8 | 2298.7 | 2314.6 | 2349.5 | 2373.4 | 2393.4 | 2416.2 | 2428.2 | 2431.1 |
| 32.5° | 2473.0 | 2485.8 | 2497.8 | 2510.8 | 2532.6 | 2564.6 | 2587.5 | 2598.4 | 2610.3 | 2608.3 | 2597.4 |
| 35° | 2718.8 | 2728.9 | 2735.8 | 2758.7 | 2794.6 | 2815.4 | 2832.3 | 2836.4 | 2838.3 | 2817.4 | 2796.5 |
| 37.5° | 2977.7 | 2989.7 | 2995.6 | 3031.4 | 3065.3 | 3089.2 | 3097.2 | 3106.1 | 3100.1 | 3065.3 | 3027.5 |
| 40° | 3257.4 | 3270.3 | 3288.2 | 3319.2 | 3358.9 | 3381.9 | 3391.9 | 3390.9 | 3385.8 | 3345.1 | 3283.3 |
| 42.5° | 3532.3 | 3548.2 | 3563.1 | 3616.8 | 3649.7 | 3688.5 | 3693.5 | 3692.5 | 3681.6 | 3634.7 | 3563.1 |
| 45° | 3765.2 | 3784.0 | 3815.0 | 3874.7 | 3927.5 | 3974.2 | 3993.2 | 4000.1 | 3989.2 | 3939.4 | 3857.7 |
| 47.5° | 3957.3 | 3970.3 | 4009.0 | 4081.7 | 4149.4 | 4218.2 | 4255.9 | 4282.9 | 4281.9 | 4246.1 | 4159.4 |
| 50° | 4088.7 | 4103.7 | 4151.5 | 4233.0 | 4317.7 | 4398.3 | 4473.0 | 4533.7 | 4562.5 | 4536.8 | 4456.1 |
| 52.5° | 4126.6 | 4145.6 | 4208.2 | 4305.8 | 4404.3 | 4512.9 | 4624.3 | 4731.8 | 4796.6 | 4812.6 | 4749.8 |
| 55° | 3967.3 | 3988.2 | 4079.7 | 4215.1 | 4377.5 | 4537.7 | 4707.0 | 4860.3 | 4993.7 | 5055.4 | 5030.6 |
| 57.5° | 3503.4 | 3518.2 | 3634.7 | 3810.0 | 4041.9 | 4323.7 | 4608.4 | 4889.2 | 5118.1 | 5278.5 | 5306.2 |
| 60° | 2770.6 | 2789.5 | 2917.0 | 3102.1 | 3366.0 | 3722.4 | 4120.6 | 4580.4 | 5029.5 | 5396.9 | 5579.1 |
| 62.5° | 1869.7 | 1882.5 | 2005.0 | 2174.3 | 2463.0 | 2806.5 | 3250.5 | 3833.0 | 4473.0 | 5129.0 | 5642.8 |
| 65° | 981.5 | 981.5 | 1064.3 | 1182.7 | 1412.7 | 1720.3 | 2175.3 | 2772.6 | 3534.2 | 4353.6 | 5212.8 |
| 67.5° | 569.5 | 568.4 | 587.4 | 614.2 | 686.9 | 811.4 | 1062.2 | 1501.3 | 2222.2 | 3175.8 | 4153.5 |
| 70° | 470.0 | 466.9 | 464.0 | 464.0 | 474.8 | 493.8 | 541.6 | 662.0 | 968.7 | 1637.7 | 2555.6 |
| 71° | 448.9 | 447.0 | 439.0 | 436.1 | 441.1 | 451.0 | 471.9 | 527.6 | 687.9 | 1116.9 | 1908.4 |
| 72.5° | 424.2 | 419.1 | 407.2 | 402.2 | 403.1 | 407.2 | 413.1 | 435.1 | 483.8 | 635.2 | 1088.1 |
| 75° | 386.2 | 374.3 | 359.4 | 352.5 | 349.4 | 348.4 | 348.4 | 354.4 | 365.4 | 383.3 | 446.0 |
| 77.5° | 342.4 | 325.6 | 309.6 | 302.6 | 297.6 | 294.7 | 292.7 | 288.7 | 286.7 | 294.7 | 317.6 |
| 80° | 289.7 | 271.8 | 258.8 | 254.9 | 251.9 | 246.0 | 237.9 | 230.0 | 225.0 | 229.0 | 242.9 |
| 82.5° | 224.0 | 206.1 | 208.0 | 209.0 | 204.1 | 194.2 | 186.2 | 177.2 | 168.3 | 166.3 | 173.1 |
| 85° | 178.2 | 169.3 | 163.3 | 176.2 | 165.3 | 153.3 | 142.4 | 127.4 | 106.5 | 87.6 | 95.6 |
| 87.5° | 76.7 | 77.7 | 111.6 | 168.3 | 147.4 | 118.4 | 98.6 | 79.6 | 50.8 | 37.8 | 38.8 |
| 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):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 | 1769.1 |
| 2.5° | 1767.0 | 1767.0 | 1764.1 | 1762.2 | 1762.2 | 1762.2 | 1760.1 | 1761.2 |
| 5° | 1779.1 | 1781.0 | 1783.0 | 1782.0 | 1785.0 | 1788.0 | 1787.1 | 1786.1 |
| 7.5° | 1799.0 | 1805.0 | 1810.9 | 1813.9 | 1817.8 | 1821.9 | 1822.9 | 1819.8 |
| 10° | 1818.8 | 1830.8 | 1839.8 | 1847.8 | 1852.7 | 1856.8 | 1859.7 | 1858.7 |
| 12.5° | 1843.7 | 1860.6 | 1876.6 | 1892.6 | 1903.6 | 1909.5 | 1915.5 | 1913.4 |
| 15° | 1884.6 | 1903.6 | 1923.4 | 1944.3 | 1961.2 | 1970.2 | 1979.1 | 1977.1 |
| 17.5° | 1940.3 | 1957.3 | 1973.2 | 1994.1 | 2015.0 | 2024.9 | 2035.0 | 2033.9 |
| 20° | 2010.1 | 2022.9 | 2031.9 | 2043.9 | 2063.8 | 2074.8 | 2083.7 | 2080.8 |
| 22.5° | 2089.7 | 2093.6 | 2094.6 | 2098.7 | 2114.6 | 2127.5 | 2139.4 | 2142.5 |
| 25° | 2176.2 | 2173.2 | 2167.2 | 2164.3 | 2175.3 | 2189.2 | 2204.2 | 2208.1 |
| 27.5° | 2283.8 | 2273.8 | 2258.9 | 2246.9 | 2249.9 | 2267.9 | 2284.8 | 2288.8 |
| 30° | 2419.2 | 2396.3 | 2364.5 | 2341.5 | 2337.6 | 2356.5 | 2374.4 | 2380.3 |
| 32.5° | 2573.5 | 2542.7 | 2498.9 | 2464.1 | 2449.0 | 2466.0 | 2482.0 | 2490.9 |
| 35° | 2756.7 | 2722.8 | 2670.1 | 2625.3 | 2601.4 | 2612.3 | 2640.2 | 2650.2 |
| 37.5° | 2973.7 | 2926.9 | 2868.2 | 2811.5 | 2771.6 | 2773.6 | 2803.5 | 2815.4 |
| 40° | 3213.7 | 3145.9 | 3071.3 | 3000.6 | 2942.9 | 2938.8 | 2965.8 | 2974.7 |
| 42.5° | 3463.5 | 3376.8 | 3289.2 | 3196.7 | 3125.1 | 3112.1 | 3146.8 | 3148.0 |
| 45° | 3732.3 | 3620.9 | 3512.3 | 3404.7 | 3330.1 | 3307.2 | 3341.0 | 3345.1 |
| 47.5° | 4019.0 | 3879.7 | 3751.2 | 3634.7 | 3554.1 | 3518.2 | 3551.2 | 3557.2 |
| 50° | 4317.7 | 4173.3 | 4024.0 | 3894.5 | 3800.0 | 3756.3 | 3795.0 | 3799.1 |
| 52.5° | 4613.4 | 4477.0 | 4328.7 | 4180.4 | 4065.9 | 4016.1 | 4061.8 | 4075.8 |
| 55° | 4911.1 | 4779.6 | 4640.2 | 4491.9 | 4347.5 | 4303.7 | 4353.6 | 4368.5 |
| 57.5° | 5220.6 | 5094.2 | 4967.8 | 4818.5 | 4678.1 | 4611.4 | 4665.2 | 4686.0 |
| 60° | 5562.2 | 5450.6 | 5331.2 | 5180.8 | 5042.5 | 4964.8 | 5010.6 | 5034.4 |
| 62.5° | 5897.6 | 5874.8 | 5766.2 | 5609.9 | 5434.7 | 5357.1 | 5395.9 | 5412.8 |
| 65° | 5925.5 | 6296.8 | 6291.9 | 6136.5 | 5891.7 | 5761.2 | 5772.1 | 5780.2 |
| 67.5° | 5171.9 | 6024.1 | 6568.6 | 6617.4 | 6344.6 | 6140.6 | 6116.7 | 6121.7 |
| 70° | 3661.6 | 4831.5 | 5987.2 | 6745.8 | 6853.4 | 6695.1 | 6643.3 | 6651.2 |
| 71° | 2933.9 | 4145.6 | 5417.8 | 6438.2 | 6845.4 | 6799.6 | 6770.8 | 6791.7 |
| 72.5° | 1872.6 | 3054.4 | 4292.8 | 5513.3 | 6294.9 | 6518.9 | 6551.7 | 6564.7 |
| 75° | 679.9 | 1314.2 | 2224.1 | 3186.8 | 4039.0 | 4625.4 | 4948.0 | 4973.8 |
| 77.5° | 365.4 | 470.9 | 727.7 | 1087.1 | 1365.8 | 1515.2 | 1533.1 | 1540.1 |
| 80° | 268.8 | 311.6 | 356.4 | 407.2 | 439.0 | 445.0 | 434.1 | 411.2 |
| 82.5° | 190.1 | 215.0 | 232.9 | 250.9 | 263.9 | 252.8 | 210.1 | 160.3 |
| 85° | 110.5 | 121.5 | 131.4 | 140.4 | 142.4 | 134.4 | 88.6 | 72.6 |
| 87.5° | 43.8 | 47.7 | 46.8 | 52.8 | 50.8 | 46.8 | 34.9 | 29.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)