

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: P270471

Luminaire Tested: **NAV-AF-03-D-UNV-T3R-7027-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270471
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-T3R-7027-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12933 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

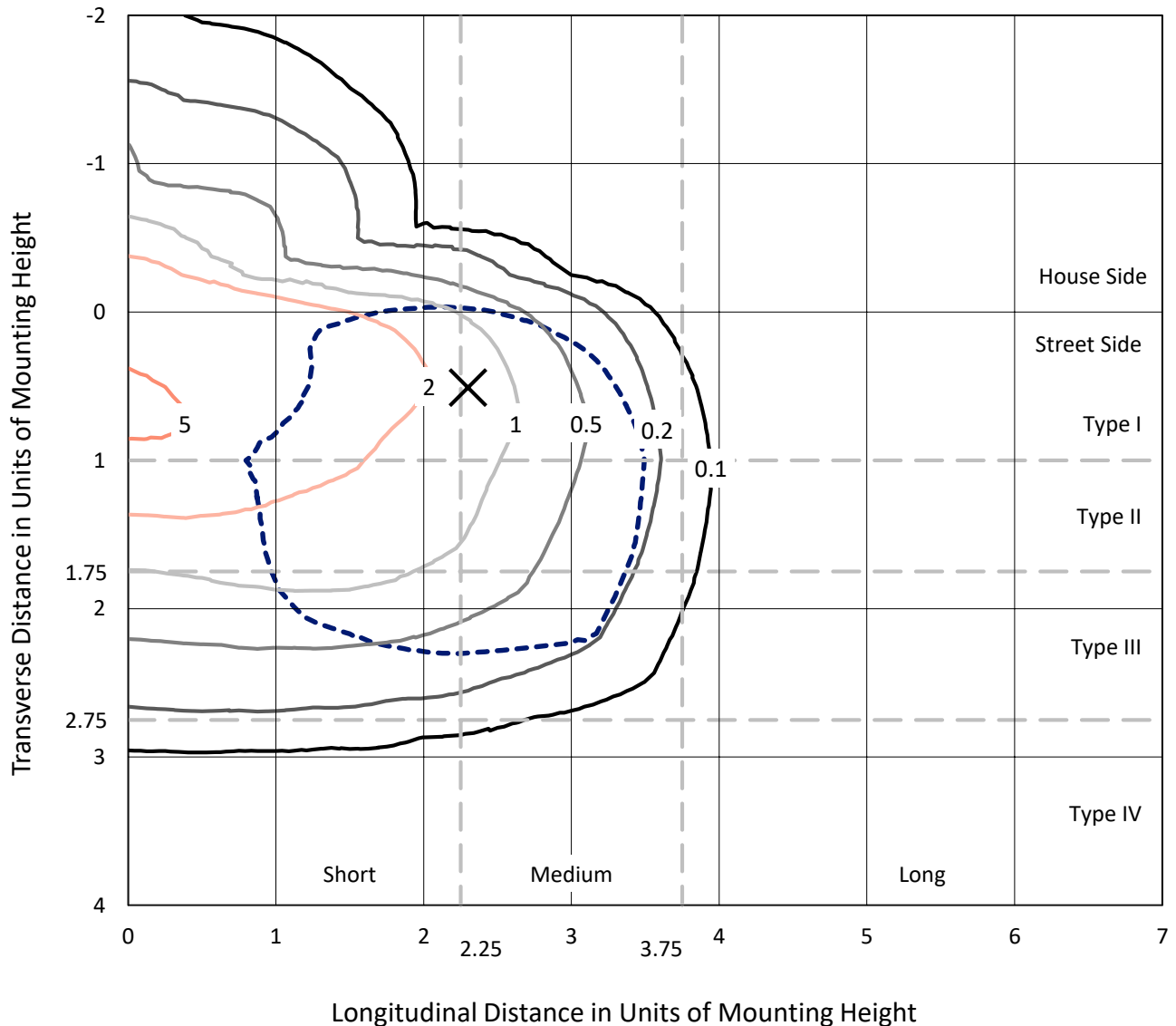
Input Watts (W): 124
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

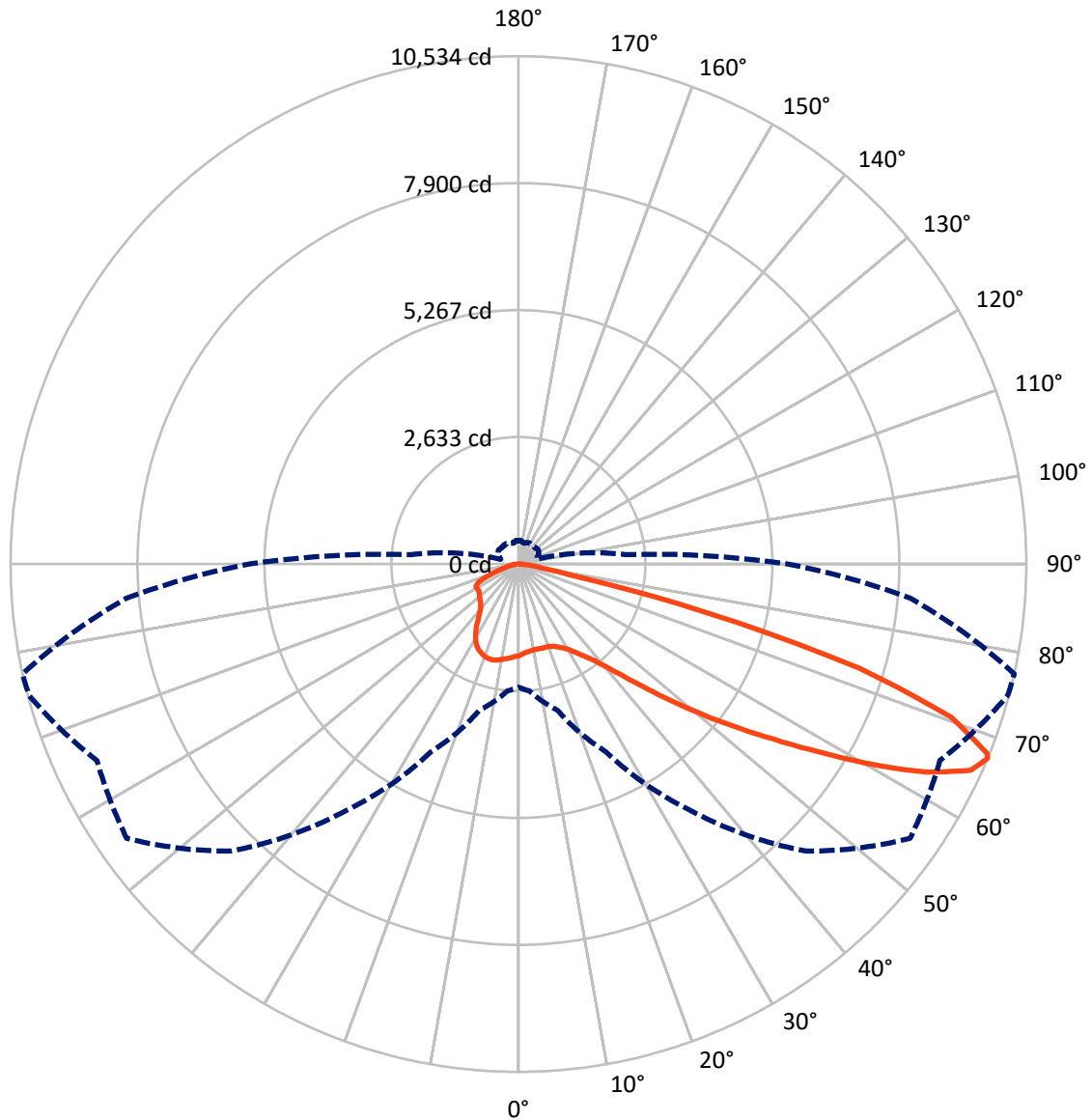
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.7 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2222.5 | 0.0 | 2222.5 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 10710.5 | 0.0 | 10710.5 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 12933.0 | 0.0 | 12933.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 169.5 | 1.3 |
| 10°-20° | 469.5 | 3.6 |
| 20°-30° | 797.7 | 6.2 |
| 30°-40° | 1276.1 | 9.9 |
| 40°-50° | 1964.6 | 15.2 |
| 50°-60° | 2725.7 | 21.1 |
| 60°-70° | 3635.8 | 28.1 |
| 70°-80° | 1730.3 | 13.4 |
| 80°-90° | 163.8 | 1.3 |
| 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° | 12933.0 | 100.0 |
| 0°-180° | 12933.0 | 100.0 |



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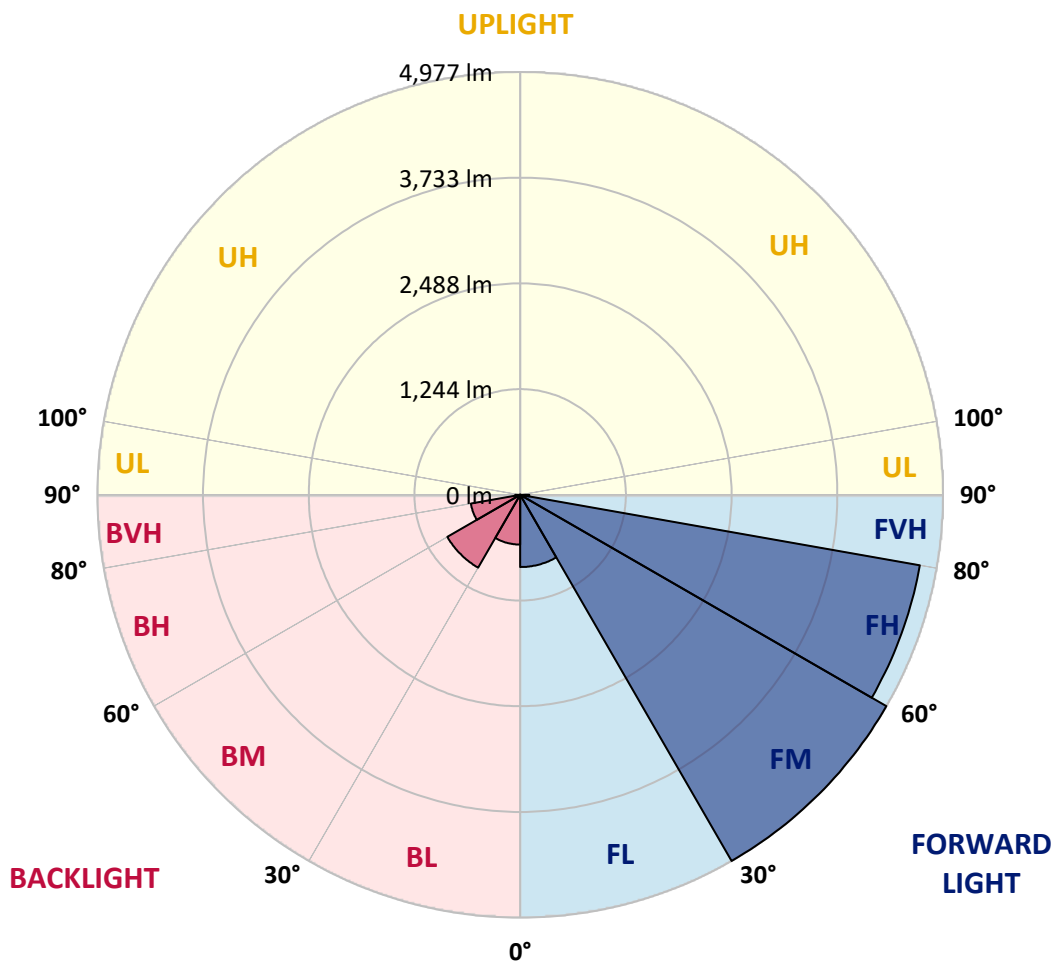
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 850.5 | 6.6 | | | |
| FM | (30°-60°) | 4976.7 | 38.5 | | | |
| FH | (60°-80°) | 4776.8 | 36.9 | | | G2/5000 |
| FVH | (80°-90°) | 106.4 | 0.8 | | | G2/225 |
| BL | (0°-30°) | 586.2 | 4.5 | B2/1000 | | |
| BM | (30°-60°) | 989.6 | 7.7 | B1/1000 | | |
| BH | (60°-80°) | 589.3 | 4.6 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 57.4 | 0.4 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77.5° | 85° |
|-------|--------|--------|--------|--------|--------|--------|---------|--------|---------|---------|--------|
| 0° | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 |
| 2.5° | 1706.7 | 1714.8 | 1715.6 | 1738.7 | 1749.1 | 1775.5 | 1804.2 | 1829.8 | 1852.2 | 1860.2 | 1874.7 |
| 5° | 1535.7 | 1535.7 | 1538.1 | 1553.3 | 1582.9 | 1625.3 | 1685.2 | 1750.6 | 1819.4 | 1836.2 | 1878.6 |
| 7.5° | 1446.1 | 1447.7 | 1449.3 | 1464.5 | 1487.8 | 1525.3 | 1585.1 | 1674.8 | 1789.1 | 1817.0 | 1891.4 |
| 10° | 1454.1 | 1451.8 | 1443.8 | 1440.5 | 1450.1 | 1474.1 | 1526.1 | 1617.9 | 1763.6 | 1806.8 | 1914.6 |
| 12.5° | 1579.6 | 1574.9 | 1548.5 | 1510.1 | 1474.8 | 1466.2 | 1502.1 | 1589.2 | 1751.5 | 1806.8 | 1953.8 |
| 15° | 1794.6 | 1797.9 | 1745.9 | 1665.9 | 1574.0 | 1511.7 | 1506.8 | 1578.9 | 1747.6 | 1811.4 | 1999.3 |
| 17.5° | 2074.5 | 2076.1 | 2004.1 | 1888.1 | 1735.5 | 1606.8 | 1539.7 | 1578.9 | 1747.6 | 1816.3 | 2043.3 |
| 20° | 2371.9 | 2360.7 | 2279.1 | 2133.7 | 1935.4 | 1738.7 | 1599.6 | 1588.5 | 1752.4 | 1823.5 | 2084.8 |
| 22.5° | 2626.9 | 2616.5 | 2531.0 | 2378.3 | 2151.3 | 1894.5 | 1680.4 | 1620.5 | 1778.6 | 1853.1 | 2143.3 |
| 25° | 2850.0 | 2856.3 | 2773.2 | 2601.3 | 2366.2 | 2070.5 | 1801.1 | 1693.9 | 1833.8 | 1906.7 | 2215.2 |
| 27.5° | 3120.9 | 3108.9 | 3012.9 | 2849.2 | 2587.7 | 2252.7 | 1952.1 | 1786.6 | 1899.3 | 1971.3 | 2303.2 |
| 30° | 3434.3 | 3428.7 | 3299.1 | 3130.6 | 2831.5 | 2456.5 | 2101.7 | 1886.6 | 1985.0 | 2060.1 | 2413.4 |
| 32.5° | 3814.8 | 3813.9 | 3674.8 | 3467.8 | 3105.7 | 2686.8 | 2278.3 | 2023.3 | 2109.6 | 2185.5 | 2559.7 |
| 35° | 4245.7 | 4244.9 | 4100.9 | 3827.6 | 3421.5 | 2941.8 | 2486.1 | 2189.6 | 2263.9 | 2343.9 | 2734.0 |
| 37.5° | 4544.6 | 4539.9 | 4464.7 | 4199.2 | 3770.8 | 3238.4 | 2745.9 | 2413.4 | 2439.0 | 2528.5 | 2944.3 |
| 40° | 4602.1 | 4631.0 | 4695.7 | 4539.0 | 4152.1 | 3567.8 | 3006.5 | 2654.0 | 2678.0 | 2793.1 | 3208.8 |
| 42.5° | 4539.9 | 4577.5 | 4792.5 | 4836.5 | 4533.4 | 3966.6 | 3332.7 | 2987.5 | 3017.8 | 3160.9 | 3519.7 |
| 45° | 4485.4 | 4518.3 | 4787.6 | 5001.1 | 4910.0 | 4401.5 | 3739.6 | 3394.2 | 3451.8 | 3629.3 | 3874.7 |
| 47.5° | 4392.7 | 4423.2 | 4693.4 | 5030.7 | 5125.0 | 4820.5 | 4229.7 | 3883.6 | 3982.6 | 4197.7 | 4279.3 |
| 50° | 4388.0 | 4401.5 | 4564.6 | 4931.5 | 5199.4 | 5138.7 | 4772.4 | 4456.0 | 4607.8 | 4855.6 | 4726.9 |
| 52.5° | 4266.4 | 4361.6 | 4509.5 | 4773.2 | 5200.9 | 5324.1 | 5307.2 | 5083.5 | 5317.6 | 5591.9 | 5217.7 |
| 55° | 3523.1 | 3632.6 | 4325.6 | 4695.7 | 5191.3 | 5483.2 | 5795.8 | 5750.9 | 6117.1 | 6405.6 | 5767.7 |
| 57.5° | 3289.6 | 3335.9 | 3794.8 | 4718.9 | 5271.3 | 5746.2 | 6284.2 | 6468.1 | 7031.7 | 7346.6 | 6427.3 |
| 60° | 3225.6 | 3274.4 | 3688.5 | 4730.1 | 5487.9 | 6225.1 | 6946.9 | 7277.8 | 8106.8 | 8441.0 | 7176.3 |
| 62.5° | 3154.5 | 3217.5 | 3696.4 | 4740.4 | 5868.4 | 6933.3 | 7826.3 | 8156.4 | 9210.9 | 9509.0 | 7878.1 |
| 65° | 2946.6 | 3030.5 | 3548.6 | 4675.0 | 6284.9 | 7822.3 | 8988.6 | 9072.5 | 10122.9 | 10312.5 | 8301.9 |
| 67° | 2552.5 | 2644.4 | 3142.5 | 4296.1 | 6246.5 | 8421.0 | 9918.2 | 9645.7 | 10510.7 | 10533.9 | 8164.3 |
| 67.5° | 2427.8 | 2522.9 | 3005.0 | 4138.5 | 6137.1 | 8499.4 | 10082.9 | 9724.8 | 10507.5 | 10481.9 | 8036.4 |
| 70° | 1634.7 | 1742.0 | 2128.1 | 3038.5 | 4922.7 | 7910.1 | 10043.1 | 9481.0 | 9818.4 | 9525.0 | 6904.6 |
| 72.5° | 811.3 | 814.7 | 1061.5 | 1664.4 | 2982.6 | 5673.4 | 8377.9 | 8110.7 | 7959.0 | 7405.0 | 5066.7 |
| 75° | 390.9 | 398.0 | 501.3 | 735.4 | 1257.4 | 2929.1 | 5713.4 | 5472.7 | 4659.8 | 4034.6 | 2535.7 |
| 77.5° | 298.1 | 305.3 | 389.3 | 478.8 | 524.4 | 955.3 | 2829.9 | 2287.2 | 1350.2 | 1078.4 | 714.7 |
| 80° | 230.2 | 243.8 | 328.6 | 367.8 | 346.9 | 382.9 | 889.7 | 700.3 | 525.1 | 482.0 | 354.1 |
| 82.5° | 179.9 | 187.8 | 279.1 | 279.1 | 239.8 | 256.6 | 414.1 | 404.4 | 326.2 | 294.1 | 190.3 |
| 85° | 127.1 | 143.1 | 224.7 | 207.9 | 157.6 | 159.1 | 247.8 | 237.4 | 167.9 | 135.0 | 74.3 |
| 87.5° | 56.8 | 72.8 | 159.9 | 136.0 | 83.9 | 64.8 | 101.5 | 87.1 | 66.4 | 51.2 | 34.3 |
| 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° | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 | 1903.4 |
| 2.5° | 1890.7 | 1903.4 | 1923.5 | 1935.4 | 1951.4 | 1957.8 | 1964.1 | 1975.4 | 1984.1 | 1981.8 | 1977.8 |
| 5° | 1908.2 | 1929.7 | 1954.5 | 1962.5 | 1962.5 | 1954.5 | 1949.7 | 1950.6 | 1948.2 | 1946.5 | 1941.7 |
| 7.5° | 1933.8 | 1963.3 | 1980.9 | 1972.9 | 1948.2 | 1917.1 | 1887.3 | 1869.8 | 1853.1 | 1842.7 | 1845.8 |
| 10° | 1969.8 | 2002.5 | 2003.3 | 1968.1 | 1909.0 | 1841.0 | 1782.6 | 1745.0 | 1709.1 | 1693.1 | 1697.9 |
| 12.5° | 2021.7 | 2054.5 | 2026.4 | 1950.6 | 1846.6 | 1740.3 | 1633.2 | 1555.7 | 1486.1 | 1469.3 | 1464.5 |
| 15° | 2077.7 | 2103.2 | 2040.9 | 1913.0 | 1757.2 | 1582.1 | 1402.2 | 1286.3 | 1208.7 | 1195.1 | 1190.3 |
| 17.5° | 2126.5 | 2140.8 | 2033.8 | 1845.8 | 1615.6 | 1339.8 | 1130.3 | 1052.0 | 1036.0 | 1044.0 | 1044.0 |
| 20° | 2169.5 | 2164.7 | 2002.5 | 1742.0 | 1392.6 | 1071.1 | 949.7 | 948.9 | 970.4 | 990.6 | 992.1 |
| 22.5° | 2223.9 | 2186.4 | 1952.9 | 1587.7 | 1126.4 | 893.8 | 873.0 | 893.8 | 917.7 | 940.0 | 942.5 |
| 25° | 2288.7 | 2210.4 | 1886.6 | 1367.8 | 905.8 | 811.3 | 820.2 | 837.8 | 853.0 | 870.5 | 871.4 |
| 27.5° | 2353.5 | 2228.8 | 1793.0 | 1109.5 | 785.7 | 758.7 | 768.2 | 775.4 | 779.4 | 790.6 | 790.6 |
| 30° | 2428.6 | 2243.2 | 1658.0 | 889.0 | 730.6 | 712.3 | 706.6 | 703.6 | 706.6 | 721.9 | 722.6 |
| 32.5° | 2522.9 | 2268.7 | 1473.3 | 762.7 | 705.1 | 679.5 | 650.7 | 634.7 | 645.9 | 673.1 | 678.0 |
| 35° | 2630.1 | 2299.1 | 1251.9 | 712.3 | 696.2 | 663.5 | 610.8 | 586.0 | 589.9 | 614.7 | 618.8 |
| 37.5° | 2764.4 | 2338.3 | 1033.6 | 700.3 | 705.1 | 662.0 | 592.3 | 557.2 | 539.6 | 540.4 | 539.6 |
| 40° | 2936.2 | 2377.5 | 860.9 | 703.6 | 724.3 | 666.0 | 583.5 | 528.5 | 491.6 | 493.2 | 496.5 |
| 42.5° | 3116.1 | 2403.1 | 751.4 | 713.1 | 747.5 | 671.6 | 580.3 | 500.4 | 468.5 | 495.7 | 520.4 |
| 45° | 3326.3 | 2395.8 | 694.7 | 721.9 | 765.0 | 673.9 | 568.4 | 497.2 | 470.8 | 552.4 | 598.8 |
| 47.5° | 3567.8 | 2364.7 | 662.7 | 725.9 | 769.8 | 673.1 | 559.6 | 507.6 | 490.8 | 632.3 | 685.0 |
| 50° | 3830.0 | 2315.9 | 637.2 | 719.5 | 767.4 | 669.9 | 569.2 | 520.4 | 498.7 | 650.0 | 690.6 |
| 52.5° | 4116.9 | 2271.2 | 610.8 | 705.1 | 755.5 | 660.3 | 581.2 | 514.8 | 476.5 | 598.8 | 629.9 |
| 55° | 4456.8 | 2260.8 | 581.2 | 680.2 | 735.4 | 650.0 | 574.7 | 497.2 | 451.7 | 530.8 | 550.0 |
| 57.5° | 4845.2 | 2325.5 | 542.8 | 650.0 | 708.3 | 629.2 | 559.6 | 487.6 | 442.9 | 482.8 | 493.2 |
| 60° | 5338.4 | 2468.6 | 502.1 | 617.9 | 674.6 | 597.9 | 546.0 | 490.0 | 445.3 | 475.7 | 478.1 |
| 62.5° | 5723.8 | 2597.3 | 465.2 | 578.8 | 629.9 | 560.5 | 531.5 | 492.5 | 452.4 | 485.3 | 481.2 |
| 65° | 5863.6 | 2534.1 | 419.7 | 520.4 | 566.8 | 518.9 | 511.7 | 494.1 | 452.4 | 490.8 | 482.0 |
| 67° | 5576.7 | 2232.7 | 376.5 | 462.1 | 506.9 | 482.0 | 492.5 | 487.6 | 444.5 | 490.0 | 474.8 |
| 67.5° | 5440.0 | 2126.5 | 365.3 | 452.4 | 490.8 | 470.8 | 487.6 | 484.5 | 442.1 | 488.5 | 470.8 |
| 70° | 4486.2 | 1525.3 | 308.6 | 379.8 | 410.9 | 414.8 | 458.0 | 463.6 | 422.9 | 458.9 | 426.9 |
| 72.5° | 3192.0 | 954.4 | 266.2 | 294.1 | 331.7 | 354.9 | 418.2 | 435.7 | 397.3 | 398.8 | 372.5 |
| 75° | 1579.6 | 512.5 | 237.4 | 227.0 | 258.3 | 295.8 | 364.5 | 397.3 | 359.7 | 332.6 | 323.7 |
| 77.5° | 533.2 | 290.2 | 200.6 | 183.1 | 200.6 | 237.4 | 302.2 | 346.9 | 317.5 | 281.3 | 275.8 |
| 80° | 275.8 | 211.0 | 156.7 | 147.1 | 158.3 | 183.9 | 236.7 | 288.5 | 271.0 | 272.5 | 224.7 |
| 82.5° | 171.8 | 128.6 | 112.6 | 111.8 | 120.0 | 140.8 | 174.4 | 234.2 | 232.7 | 199.1 | 144.6 |
| 85° | 79.9 | 74.3 | 72.0 | 74.3 | 76.7 | 79.9 | 113.5 | 167.1 | 176.6 | 107.1 | 95.1 |
| 87.5° | 33.5 | 32.8 | 28.7 | 31.3 | 34.3 | 33.5 | 45.5 | 71.1 | 99.2 | 67.2 | 61.5 |
| 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)