

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: P196425

Luminaire Tested: **NAV-AF-03-D-UNV-5NQ-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196425
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24130)
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-5NQ-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V NARROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14551.1 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B3 - U0 - G2

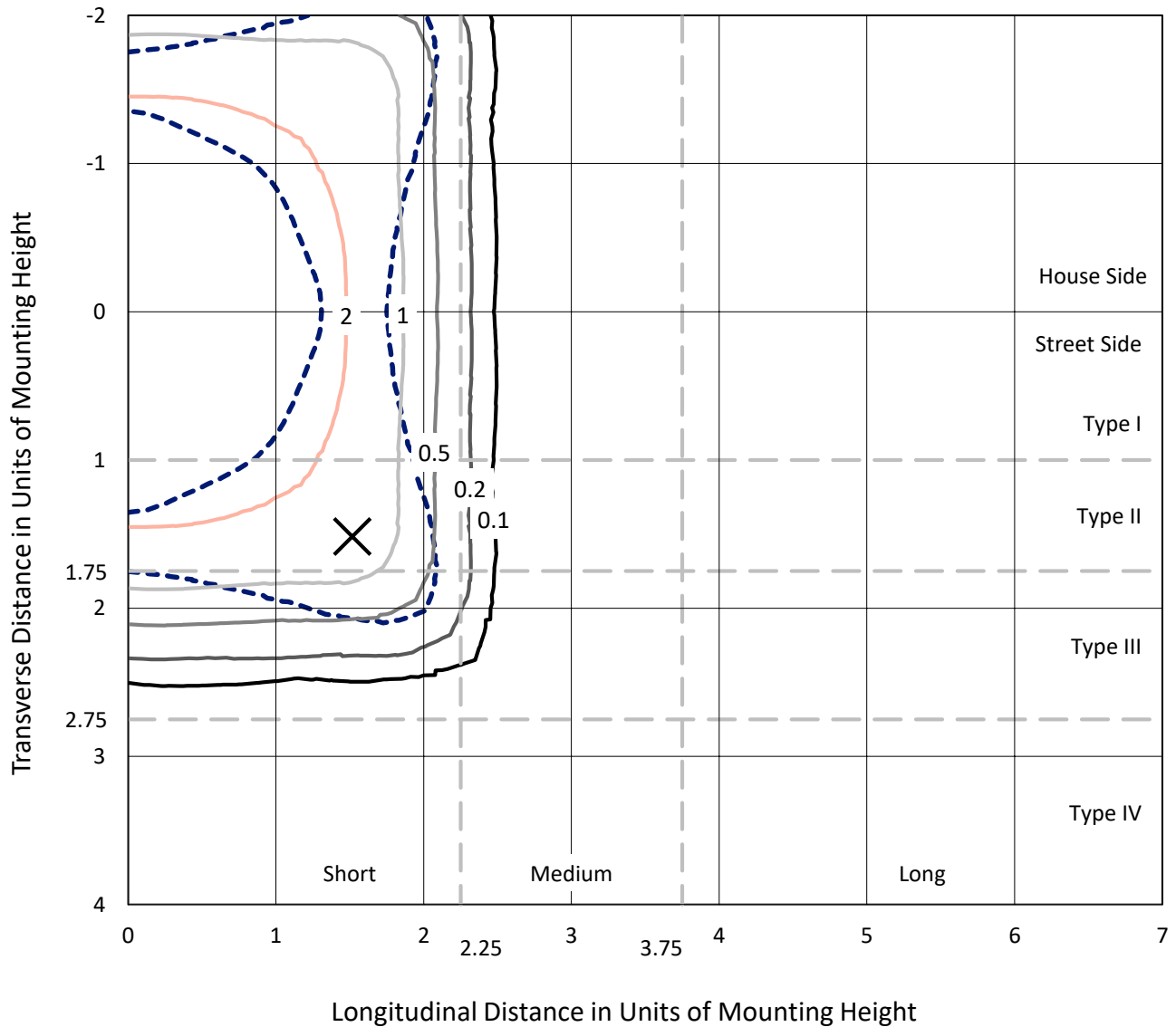
Input Watts (W): 124
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

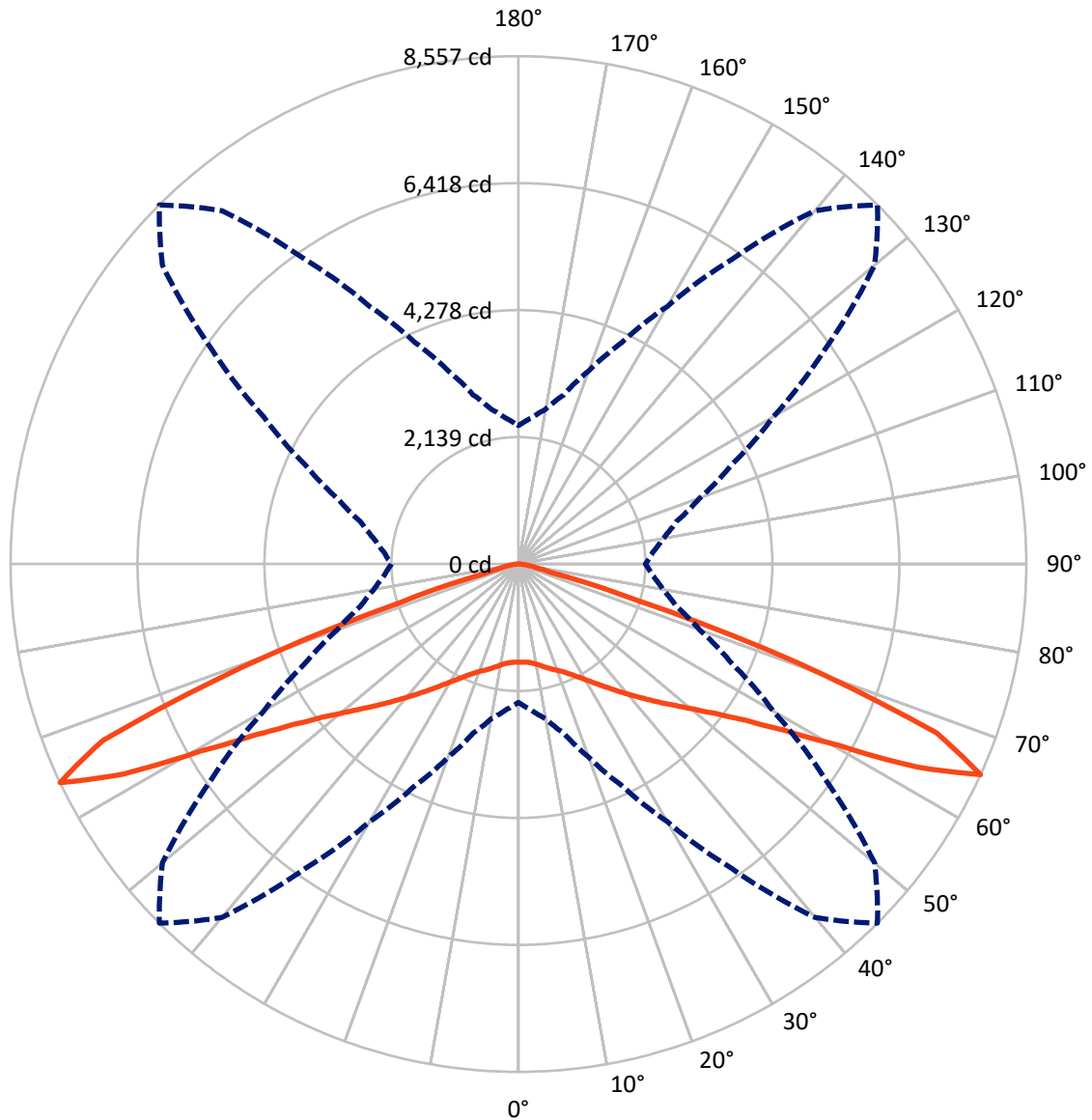
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.1 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7275.6 | 0.0 | 7275.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 7275.6 | 0.0 | 7275.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 14551.1 | 0.0 | 14551.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 161.2 | 1.1 |
| 10°-20° | 516.6 | 3.6 |
| 20°-30° | 963.7 | 6.6 |
| 30°-40° | 1624.9 | 11.2 |
| 40°-50° | 2639.4 | 18.1 |
| 50°-60° | 4135.4 | 28.4 |
| 60°-70° | 3903.7 | 26.8 |
| 70°-80° | 526.1 | 3.6 |
| 80°-90° | 80.1 | 0.6 |
| 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° | 14551.1 | 100.0 |
| 0°-180° | 14551.1 | 100.0 |



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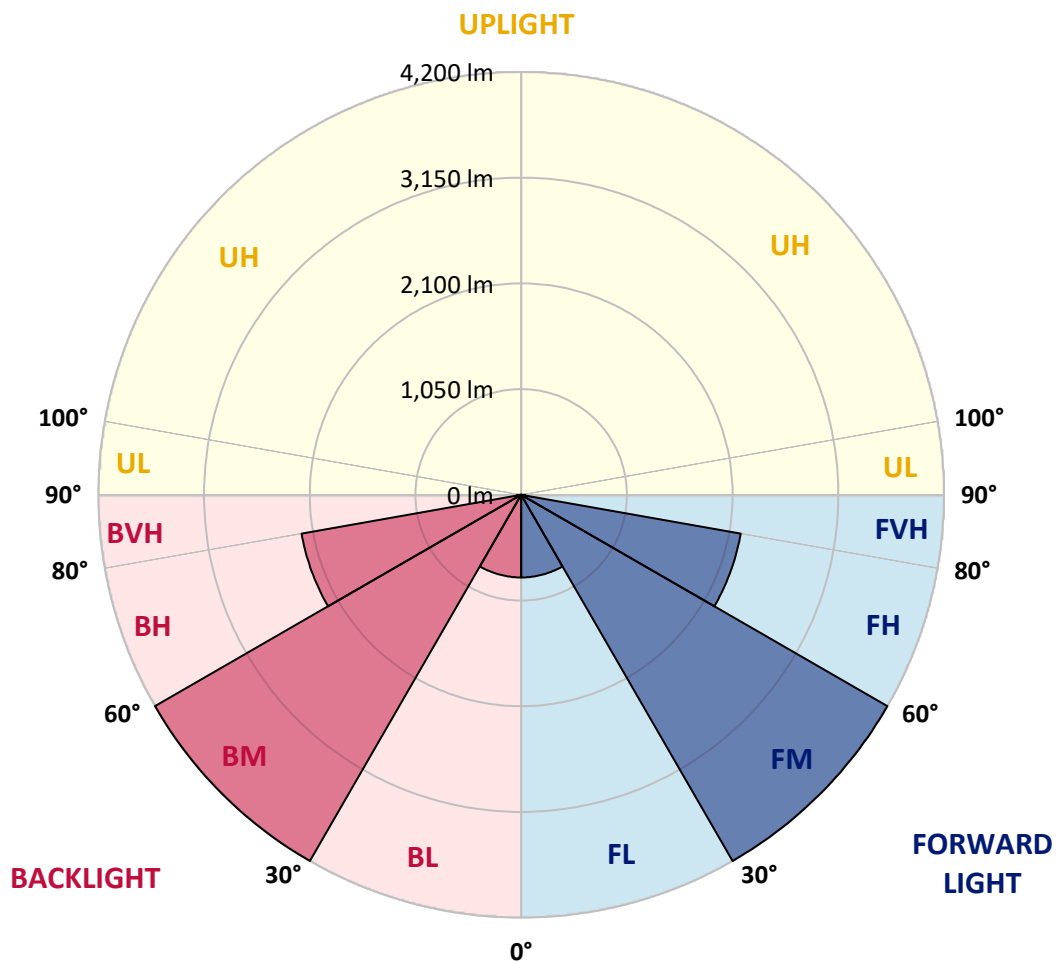
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 820.7 | 5.6 | | | |
| FM (30°-60°) | 4199.9 | 28.9 | | | |
| FH (60°-80°) | 2214.9 | 15.2 | | | G2/5000 |
| FVH (80°-90°) | 40.1 | 0.3 | | | G1/100 |
| BL (0°-30°) | 820.7 | 5.6 | B2/1000 | | |
| BM (30°-60°) | 4199.9 | 28.9 | B3/5000 | | |
| BH (60°-80°) | 2214.9 | 15.2 | B3/2500 | | G2/5000 |
| BVH (80°-90°) | 40.1 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 |
| 2.5° | 1668.8 | 1668.8 | 1671.4 | 1670.6 | 1667.0 | 1664.2 | 1661.5 | 1657.9 | 1656.1 | 1654.3 | 1653.3 |
| 5° | 1677.7 | 1677.7 | 1680.5 | 1679.7 | 1676.9 | 1673.3 | 1671.4 | 1668.8 | 1666.1 | 1664.2 | 1665.1 |
| 7.5° | 1700.5 | 1701.3 | 1702.3 | 1701.3 | 1698.7 | 1695.9 | 1692.3 | 1691.5 | 1687.8 | 1685.1 | 1686.9 |
| 10° | 1734.9 | 1734.9 | 1735.8 | 1736.7 | 1734.9 | 1728.6 | 1728.6 | 1726.8 | 1723.1 | 1719.5 | 1720.4 |
| 12.5° | 1773.1 | 1773.1 | 1774.0 | 1774.0 | 1774.0 | 1770.3 | 1771.2 | 1770.3 | 1765.7 | 1764.0 | 1765.7 |
| 15° | 1810.2 | 1811.1 | 1811.1 | 1812.9 | 1812.9 | 1813.8 | 1817.4 | 1817.4 | 1815.7 | 1814.7 | 1814.7 |
| 17.5° | 1853.7 | 1855.5 | 1856.5 | 1859.1 | 1860.0 | 1861.9 | 1865.5 | 1866.3 | 1867.2 | 1864.6 | 1865.5 |
| 20° | 1911.7 | 1912.6 | 1915.4 | 1916.2 | 1919.9 | 1919.9 | 1921.7 | 1920.8 | 1918.9 | 1915.4 | 1915.4 |
| 22.5° | 1976.9 | 1978.8 | 1984.2 | 1984.2 | 1988.7 | 1986.0 | 1987.0 | 1984.2 | 1979.7 | 1977.9 | 1976.1 |
| 25° | 2062.2 | 2064.9 | 2069.4 | 2067.6 | 2069.4 | 2064.9 | 2064.9 | 2064.9 | 2062.2 | 2059.4 | 2058.6 |
| 27.5° | 2170.0 | 2165.5 | 2170.0 | 2166.4 | 2165.5 | 2161.9 | 2162.8 | 2160.9 | 2158.3 | 2157.4 | 2153.7 |
| 30° | 2282.4 | 2277.0 | 2279.7 | 2280.7 | 2278.8 | 2277.9 | 2274.2 | 2271.6 | 2267.0 | 2267.9 | 2265.2 |
| 32.5° | 2411.2 | 2405.7 | 2408.4 | 2409.3 | 2407.5 | 2409.3 | 2408.4 | 2402.1 | 2396.6 | 2400.3 | 2400.3 |
| 35° | 2564.4 | 2560.7 | 2567.9 | 2570.7 | 2565.3 | 2562.5 | 2558.9 | 2551.6 | 2543.4 | 2548.9 | 2549.9 |
| 37.5° | 2748.3 | 2743.8 | 2749.3 | 2756.5 | 2746.6 | 2741.1 | 2726.6 | 2715.7 | 2710.2 | 2713.0 | 2716.6 |
| 40° | 2939.6 | 2940.5 | 2955.9 | 2957.7 | 2946.8 | 2940.5 | 2926.0 | 2909.7 | 2894.3 | 2894.3 | 2898.8 |
| 42.5° | 3140.8 | 3143.6 | 3161.8 | 3168.1 | 3164.3 | 3152.6 | 3132.7 | 3112.8 | 3092.8 | 3096.4 | 3101.9 |
| 45° | 3368.4 | 3364.7 | 3383.8 | 3399.2 | 3396.5 | 3392.8 | 3373.8 | 3337.6 | 3319.4 | 3318.5 | 3327.6 |
| 47.5° | 3607.6 | 3615.0 | 3634.8 | 3661.2 | 3660.3 | 3651.2 | 3626.8 | 3593.2 | 3559.6 | 3562.4 | 3573.3 |
| 50° | 3886.9 | 3896.8 | 3930.4 | 3956.6 | 3960.3 | 3957.6 | 3928.5 | 3889.5 | 3842.4 | 3845.2 | 3859.7 |
| 52.5° | 4137.0 | 4151.6 | 4190.5 | 4244.9 | 4278.5 | 4293.9 | 4274.8 | 4238.6 | 4190.5 | 4193.3 | 4208.6 |
| 55° | 4363.6 | 4386.3 | 4444.3 | 4518.6 | 4585.7 | 4648.2 | 4676.4 | 4675.4 | 4640.1 | 4648.2 | 4668.2 |
| 57.5° | 4506.0 | 4537.6 | 4625.6 | 4745.2 | 4878.5 | 5004.5 | 5113.3 | 5215.7 | 5238.3 | 5280.9 | 5280.9 |
| 60° | 4314.6 | 4389.1 | 4506.0 | 4710.8 | 4972.8 | 5255.6 | 5562.0 | 5860.2 | 6052.3 | 6203.7 | 6122.2 |
| 62.5° | 3603.2 | 3712.8 | 3876.8 | 4147.1 | 4554.9 | 5059.8 | 5675.3 | 6368.7 | 7092.0 | 7534.4 | 7209.9 |
| 65° | 2331.4 | 2469.2 | 2647.8 | 2951.4 | 3465.3 | 4115.2 | 5011.7 | 6258.2 | 7771.9 | 8556.8 | 7831.7 |
| 67.5° | 923.7 | 1016.9 | 1125.8 | 1341.6 | 1787.5 | 2425.7 | 3431.9 | 4969.1 | 6862.7 | 7603.3 | 6790.3 |
| 70° | 441.4 | 456.8 | 477.7 | 523.9 | 635.5 | 857.4 | 1378.8 | 2448.3 | 4208.6 | 4989.1 | 4108.0 |
| 72.5° | 319.0 | 321.8 | 331.7 | 347.1 | 379.7 | 425.1 | 516.7 | 748.8 | 1451.2 | 2110.3 | 1453.0 |
| 75° | 242.0 | 245.7 | 251.1 | 259.3 | 276.4 | 298.2 | 332.7 | 398.8 | 496.7 | 572.8 | 495.8 |
| 77.5° | 184.0 | 187.6 | 192.2 | 200.3 | 209.3 | 224.7 | 237.5 | 263.8 | 305.5 | 321.8 | 320.0 |
| 80° | 134.2 | 140.5 | 147.7 | 155.0 | 161.3 | 168.6 | 169.5 | 182.3 | 205.7 | 221.1 | 216.7 |
| 82.5° | 85.2 | 90.6 | 109.7 | 117.9 | 118.8 | 120.5 | 119.6 | 120.5 | 133.3 | 144.1 | 140.5 |
| 85° | 54.4 | 58.0 | 68.0 | 77.0 | 75.3 | 78.8 | 78.8 | 77.0 | 71.6 | 61.6 | 73.4 |
| 87.5° | 27.2 | 28.1 | 32.7 | 40.8 | 39.0 | 34.4 | 33.6 | 33.6 | 24.5 | 20.9 | 22.6 |
| 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° | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 | 1655.2 |
| 2.5° | 1650.7 | 1652.4 | 1649.7 | 1649.7 | 1648.8 | 1650.7 | 1647.9 | 1647.9 |
| 5° | 1663.4 | 1666.1 | 1665.1 | 1665.1 | 1667.0 | 1668.8 | 1667.9 | 1667.0 |
| 7.5° | 1686.0 | 1687.8 | 1689.5 | 1690.6 | 1692.3 | 1691.5 | 1693.3 | 1692.3 |
| 10° | 1720.4 | 1718.6 | 1721.4 | 1718.6 | 1719.5 | 1717.8 | 1718.6 | 1718.6 |
| 12.5° | 1764.0 | 1761.3 | 1759.4 | 1757.7 | 1757.7 | 1753.9 | 1753.9 | 1754.9 |
| 15° | 1813.8 | 1809.3 | 1805.6 | 1803.9 | 1802.0 | 1802.0 | 1799.3 | 1801.1 |
| 17.5° | 1862.8 | 1858.2 | 1851.8 | 1851.8 | 1849.1 | 1847.3 | 1845.5 | 1850.1 |
| 20° | 1914.4 | 1909.9 | 1906.2 | 1905.4 | 1899.9 | 1898.1 | 1899.0 | 1904.5 |
| 22.5° | 1974.2 | 1971.5 | 1971.5 | 1969.7 | 1966.1 | 1963.4 | 1963.4 | 1969.7 |
| 25° | 2054.9 | 2049.4 | 2050.4 | 2051.4 | 2049.4 | 2049.4 | 2047.6 | 2052.2 |
| 27.5° | 2153.7 | 2149.2 | 2151.9 | 2153.7 | 2151.9 | 2154.6 | 2151.9 | 2155.5 |
| 30° | 2269.8 | 2267.0 | 2269.8 | 2272.5 | 2267.9 | 2267.9 | 2266.1 | 2268.9 |
| 32.5° | 2408.4 | 2404.8 | 2406.7 | 2406.7 | 2400.3 | 2394.9 | 2387.6 | 2393.0 |
| 35° | 2560.7 | 2556.2 | 2559.8 | 2562.5 | 2555.2 | 2549.9 | 2538.9 | 2543.4 |
| 37.5° | 2728.4 | 2730.2 | 2734.8 | 2746.6 | 2744.7 | 2735.7 | 2727.5 | 2731.2 |
| 40° | 2916.0 | 2925.1 | 2945.1 | 2953.2 | 2951.4 | 2942.4 | 2931.4 | 2933.3 |
| 42.5° | 3128.2 | 3139.9 | 3160.8 | 3174.4 | 3168.1 | 3155.3 | 3141.7 | 3147.2 |
| 45° | 3359.2 | 3377.4 | 3404.6 | 3418.1 | 3410.1 | 3396.5 | 3377.4 | 3387.4 |
| 47.5° | 3604.0 | 3640.3 | 3676.6 | 3694.7 | 3692.0 | 3673.0 | 3648.5 | 3651.2 |
| 50° | 3896.8 | 3945.0 | 3991.1 | 4009.3 | 3995.6 | 3966.6 | 3932.1 | 3931.2 |
| 52.5° | 4261.2 | 4312.9 | 4350.9 | 4346.5 | 4312.9 | 4267.5 | 4228.6 | 4226.8 |
| 55° | 4716.2 | 4733.4 | 4728.0 | 4689.1 | 4630.2 | 4559.4 | 4509.5 | 4501.4 |
| 57.5° | 5266.6 | 5208.5 | 5123.2 | 5005.3 | 4873.1 | 4738.9 | 4648.2 | 4614.8 |
| 60° | 5939.0 | 5677.1 | 5372.5 | 5051.6 | 4758.9 | 4539.5 | 4400.9 | 4316.5 |
| 62.5° | 6494.7 | 5736.0 | 5055.3 | 4497.7 | 4041.8 | 3770.9 | 3581.4 | 3464.5 |
| 65° | 6304.4 | 4955.6 | 3969.4 | 3250.6 | 2752.9 | 2472.7 | 2272.5 | 2139.2 |
| 67.5° | 4870.3 | 3311.2 | 2304.2 | 1597.2 | 1211.0 | 1025.2 | 895.6 | 811.2 |
| 70° | 2455.6 | 1269.9 | 769.6 | 542.9 | 464.2 | 431.5 | 409.7 | 397.0 |
| 72.5° | 720.7 | 481.3 | 399.8 | 353.6 | 325.4 | 305.5 | 292.9 | 286.5 |
| 75° | 398.8 | 325.4 | 287.4 | 261.0 | 242.9 | 229.3 | 221.1 | 215.8 |
| 77.5° | 274.7 | 236.5 | 217.5 | 200.3 | 185.8 | 175.8 | 169.5 | 164.1 |
| 80° | 192.2 | 173.1 | 165.0 | 155.9 | 145.0 | 136.9 | 127.9 | 124.2 |
| 82.5° | 127.9 | 119.6 | 117.9 | 110.6 | 104.3 | 95.2 | 78.8 | 73.4 |
| 85° | 75.3 | 74.3 | 74.3 | 71.6 | 67.0 | 58.9 | 47.1 | 47.1 |
| 87.5° | 26.3 | 27.2 | 28.1 | 29.9 | 29.0 | 24.5 | 20.0 | 19.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)