

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: P270483

Luminaire Tested: **NAV-AF-04-D-UNV-5MQ-7027-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270483
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)
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-5MQ-7027-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18237.9 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B4 - U0 - G2

Input Watts (W): 171
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

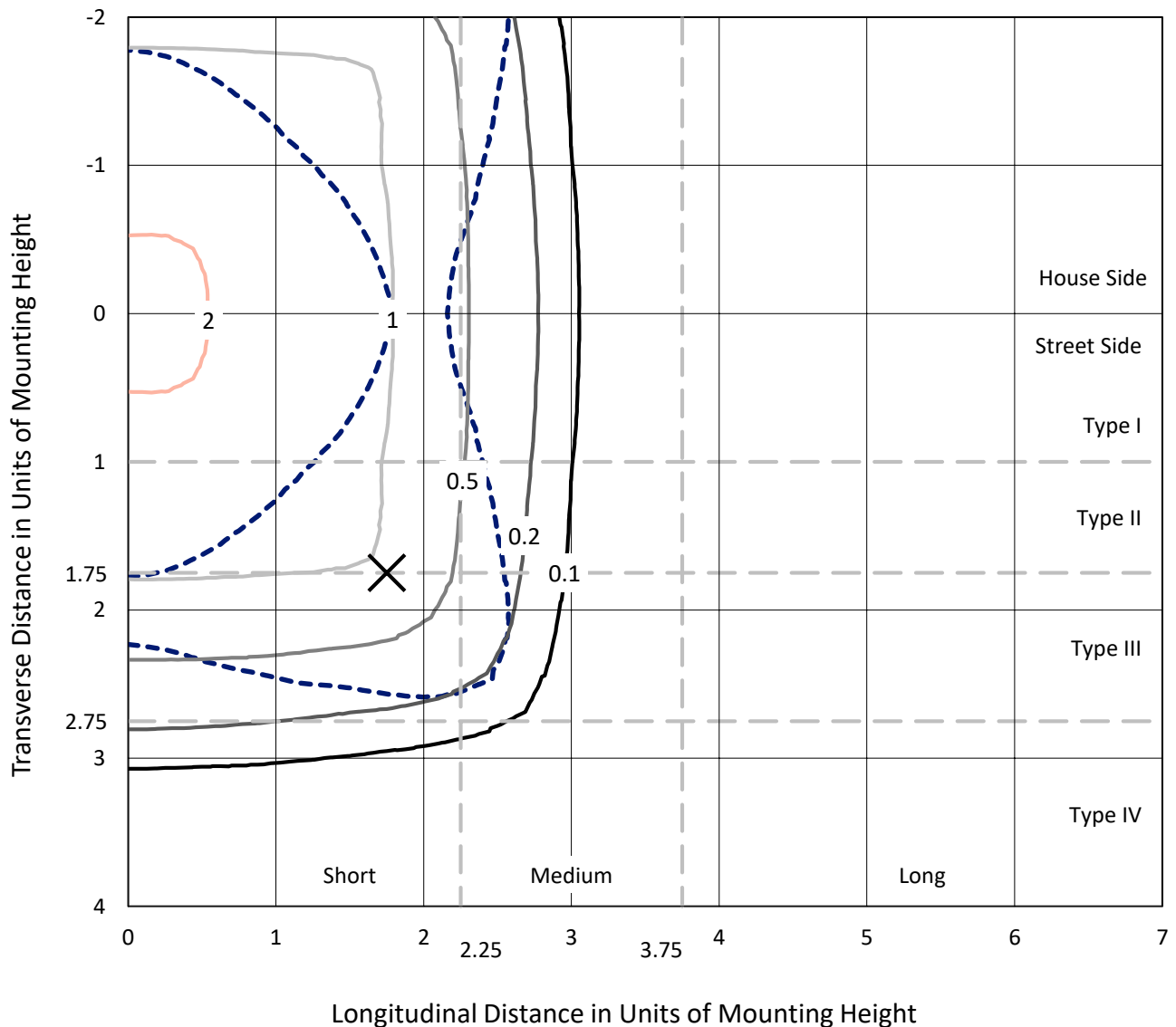


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Iso-Footcandle Lines of Horizontal Illumination

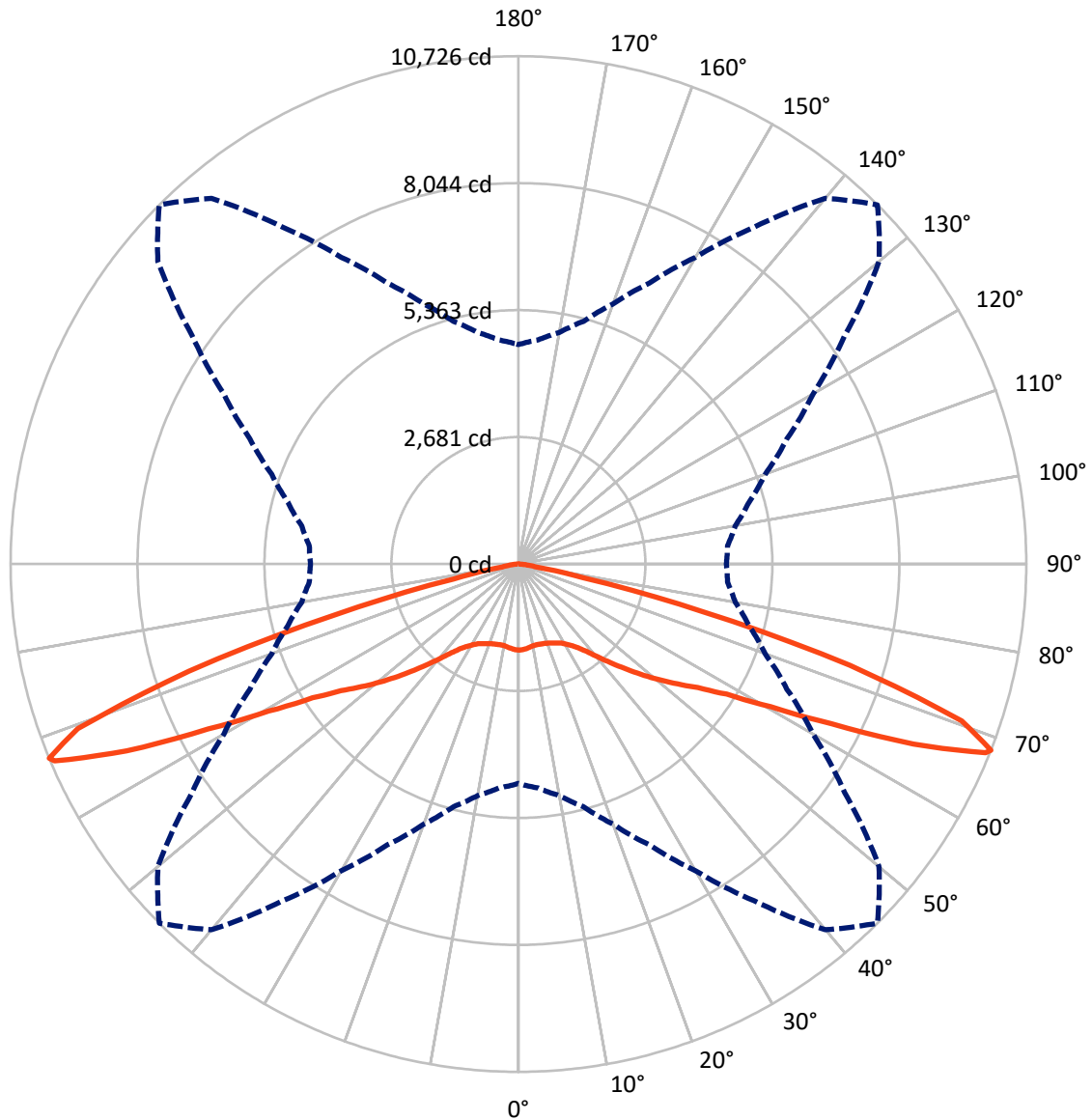
× Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9118.9 | 0.0 | 9118.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9118.9 | 0.0 | 9118.9 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 18237.9 | 0.0 | 18237.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 170.2 | 0.9 |
| 10°-20° | 493.7 | 2.7 |
| 20°-30° | 839.4 | 4.6 |
| 30°-40° | 1373.6 | 7.5 |
| 40°-50° | 2454.8 | 13.5 |
| 50°-60° | 4145.8 | 22.7 |
| 60°-70° | 6428.6 | 35.2 |
| 70°-80° | 2210.3 | 12.1 |
| 80°-90° | 121.5 | 0.7 |
| 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° | 18237.9 | 100.0 |
| 0°-180° | 18237.9 | 100.0 |



REPORT NUMBER: P270483

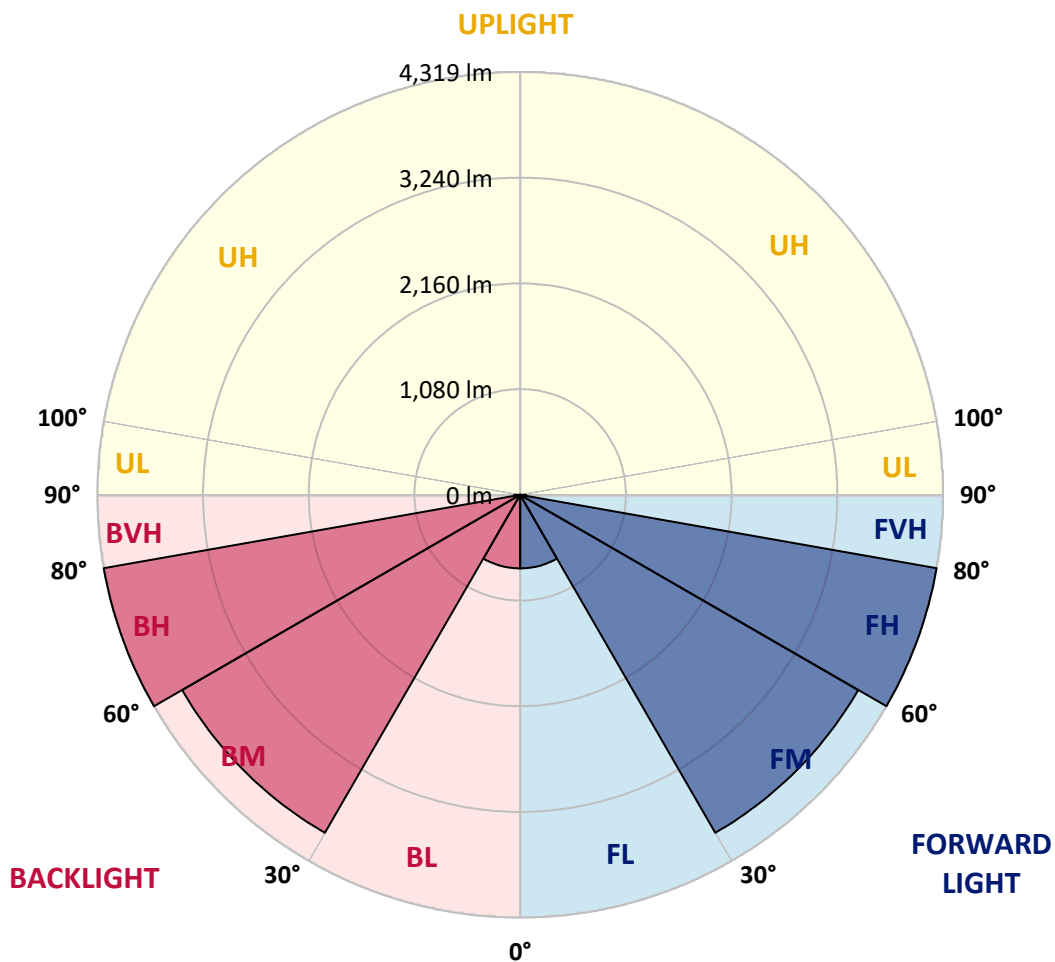
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 751.7 | 4.1 | | | |
| FM | (30°-60°) | 3987.1 | 21.9 | | | |
| FH | (60°-80°) | 4319.5 | 23.7 | | | G2/5000 |
| FVH | (80°-90°) | 60.7 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 751.7 | 4.1 | B2/1000 | | |
| BM | (30°-60°) | 3987.1 | 21.9 | B3/5000 | | |
| BH | (60°-80°) | 4319.5 | 23.7 | B4/5000 | | G2/5000 |
| BVH | (80°-90°) | 60.7 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| 0° | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 |
| 2.5° | 1827.2 | 1827.2 | 1829.4 | 1828.2 | 1824.8 | 1821.6 | 1818.2 | 1814.8 | 1812.6 | 1810.4 | 1808.1 |
| 5° | 1808.1 | 1808.1 | 1811.4 | 1809.2 | 1807.0 | 1803.6 | 1801.5 | 1798.0 | 1795.8 | 1793.6 | 1794.8 |
| 7.5° | 1783.6 | 1785.8 | 1787.9 | 1786.9 | 1782.4 | 1781.2 | 1777.9 | 1776.8 | 1774.6 | 1771.3 | 1772.4 |
| 10° | 1762.4 | 1763.5 | 1765.7 | 1764.6 | 1763.5 | 1760.0 | 1759.1 | 1757.9 | 1756.7 | 1752.2 | 1751.2 |
| 12.5° | 1741.2 | 1743.3 | 1745.5 | 1746.7 | 1745.5 | 1746.7 | 1747.8 | 1748.9 | 1747.8 | 1745.5 | 1745.5 |
| 15° | 1724.3 | 1726.6 | 1730.0 | 1733.3 | 1734.4 | 1741.2 | 1745.5 | 1750.1 | 1753.4 | 1754.5 | 1751.2 |
| 17.5° | 1715.5 | 1718.7 | 1723.3 | 1730.0 | 1735.5 | 1743.3 | 1751.2 | 1757.9 | 1763.5 | 1764.6 | 1761.1 |
| 20° | 1714.2 | 1717.6 | 1724.3 | 1732.2 | 1742.3 | 1752.2 | 1764.6 | 1774.6 | 1780.3 | 1783.6 | 1780.3 |
| 22.5° | 1722.1 | 1726.6 | 1735.5 | 1745.5 | 1757.9 | 1771.3 | 1786.9 | 1798.0 | 1809.2 | 1813.7 | 1810.4 |
| 25° | 1744.5 | 1748.9 | 1759.1 | 1771.3 | 1784.7 | 1801.5 | 1817.0 | 1831.6 | 1842.8 | 1848.4 | 1843.9 |
| 27.5° | 1791.4 | 1792.5 | 1803.6 | 1817.0 | 1832.7 | 1847.3 | 1867.2 | 1874.0 | 1882.9 | 1888.5 | 1882.9 |
| 30° | 1857.2 | 1859.5 | 1869.6 | 1890.8 | 1905.2 | 1924.3 | 1935.4 | 1942.1 | 1952.1 | 1957.8 | 1951.1 |
| 32.5° | 1957.8 | 1960.0 | 1968.9 | 1989.0 | 2002.4 | 2017.0 | 2030.3 | 2034.8 | 2044.9 | 2051.5 | 2043.7 |
| 35° | 2099.6 | 2104.1 | 2111.8 | 2125.3 | 2136.4 | 2147.6 | 2157.6 | 2154.3 | 2161.1 | 2169.9 | 2162.1 |
| 37.5° | 2293.9 | 2292.8 | 2295.0 | 2305.1 | 2316.3 | 2322.9 | 2338.6 | 2330.8 | 2337.5 | 2345.4 | 2340.9 |
| 40° | 2520.6 | 2520.6 | 2519.6 | 2537.4 | 2541.8 | 2548.5 | 2565.3 | 2555.3 | 2564.2 | 2573.1 | 2565.3 |
| 42.5° | 2778.6 | 2783.0 | 2788.7 | 2803.3 | 2815.5 | 2817.8 | 2825.4 | 2821.0 | 2832.3 | 2840.0 | 2832.3 |
| 45° | 3075.6 | 3082.4 | 3089.1 | 3122.6 | 3128.2 | 3132.7 | 3138.1 | 3123.8 | 3136.1 | 3142.7 | 3140.5 |
| 47.5° | 3383.9 | 3396.2 | 3410.8 | 3445.4 | 3467.6 | 3477.8 | 3482.2 | 3465.4 | 3466.6 | 3476.6 | 3477.8 |
| 50° | 3732.4 | 3745.8 | 3760.2 | 3799.4 | 3820.6 | 3838.5 | 3844.0 | 3825.1 | 3827.3 | 3835.1 | 3837.4 |
| 52.5° | 4054.1 | 4069.6 | 4100.9 | 4153.5 | 4183.5 | 4214.8 | 4217.1 | 4193.6 | 4203.7 | 4209.3 | 4204.7 |
| 55° | 4356.7 | 4376.8 | 4418.1 | 4488.4 | 4543.2 | 4604.6 | 4632.5 | 4606.9 | 4606.9 | 4602.3 | 4600.1 |
| 57.5° | 4709.5 | 4731.9 | 4774.3 | 4855.9 | 4931.9 | 5020.1 | 5096.1 | 5121.6 | 5168.6 | 5184.2 | 5159.7 |
| 60° | 5241.3 | 5264.6 | 5308.3 | 5415.4 | 5511.5 | 5639.9 | 5765.0 | 5866.7 | 6031.8 | 6121.2 | 6040.8 |
| 62.5° | 5727.1 | 5762.7 | 5865.6 | 6053.0 | 6260.8 | 6498.7 | 6774.6 | 6971.1 | 7271.5 | 7421.2 | 7219.0 |
| 65° | 5616.5 | 5689.1 | 5890.0 | 6184.9 | 6613.7 | 7129.7 | 7691.5 | 8230.9 | 8851.9 | 9170.1 | 8759.2 |
| 67.5° | 4906.2 | 4967.5 | 5184.2 | 5527.1 | 6062.0 | 6773.5 | 7646.8 | 8763.7 | 10044.6 | 10641.0 | 9914.0 |
| 68° | 4634.7 | 4749.8 | 4965.3 | 5306.0 | 5845.5 | 6544.5 | 7477.0 | 8683.1 | 10081.5 | 10725.9 | 9940.7 |
| 70° | 3553.7 | 3594.9 | 3801.6 | 4107.6 | 4689.5 | 5375.2 | 6316.7 | 7691.5 | 9271.8 | 9935.2 | 9127.7 |
| 72.5° | 1688.6 | 1713.2 | 1847.3 | 2148.7 | 2518.4 | 3076.9 | 3907.6 | 5204.3 | 6628.2 | 7318.4 | 6513.3 |
| 75° | 618.8 | 624.3 | 655.6 | 727.1 | 865.5 | 1075.5 | 1474.2 | 2280.5 | 3376.1 | 4026.2 | 3389.6 |
| 77.5° | 333.9 | 335.1 | 347.4 | 365.3 | 389.8 | 417.7 | 478.0 | 641.0 | 1034.2 | 1407.1 | 1092.2 |
| 80° | 209.9 | 208.9 | 221.2 | 235.6 | 252.5 | 265.8 | 271.4 | 290.3 | 327.3 | 383.0 | 351.7 |
| 82.5° | 107.2 | 117.3 | 145.2 | 160.8 | 185.4 | 189.8 | 184.3 | 183.2 | 194.4 | 209.9 | 216.6 |
| 85° | 59.2 | 52.6 | 77.1 | 102.8 | 111.7 | 115.1 | 116.2 | 109.5 | 107.2 | 105.0 | 110.6 |
| 87.5° | 30.2 | 27.8 | 33.4 | 51.4 | 54.7 | 44.6 | 45.9 | 39.0 | 26.8 | 26.8 | 27.8 |
| 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° | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 | 1819.2 |
| 2.5° | 1806.0 | 1807.0 | 1804.8 | 1804.8 | 1804.8 | 1806.0 | 1804.8 | 1803.6 |
| 5° | 1791.4 | 1793.6 | 1793.6 | 1794.8 | 1795.8 | 1795.8 | 1795.8 | 1795.8 |
| 7.5° | 1770.1 | 1771.3 | 1773.6 | 1773.6 | 1773.6 | 1773.6 | 1773.6 | 1773.6 |
| 10° | 1750.1 | 1747.8 | 1746.7 | 1744.5 | 1744.5 | 1741.2 | 1742.3 | 1743.3 |
| 12.5° | 1739.9 | 1735.5 | 1733.3 | 1730.0 | 1727.7 | 1724.3 | 1724.3 | 1725.5 |
| 15° | 1744.5 | 1737.7 | 1731.0 | 1728.8 | 1726.6 | 1724.3 | 1722.1 | 1723.3 |
| 17.5° | 1753.4 | 1745.5 | 1737.7 | 1733.3 | 1728.8 | 1725.5 | 1724.3 | 1725.5 |
| 20° | 1772.4 | 1761.1 | 1748.9 | 1741.2 | 1732.2 | 1730.0 | 1726.6 | 1730.0 |
| 22.5° | 1798.0 | 1784.7 | 1769.0 | 1754.5 | 1744.5 | 1739.9 | 1735.5 | 1738.8 |
| 25° | 1829.4 | 1814.8 | 1799.1 | 1782.4 | 1771.3 | 1768.0 | 1762.4 | 1762.4 |
| 27.5° | 1872.8 | 1860.6 | 1847.3 | 1831.6 | 1820.3 | 1817.0 | 1808.1 | 1808.1 |
| 30° | 1942.1 | 1929.9 | 1917.5 | 1904.1 | 1893.0 | 1889.7 | 1878.4 | 1878.4 |
| 32.5° | 2033.8 | 2020.3 | 2012.6 | 2001.3 | 1992.4 | 1986.8 | 1973.3 | 1972.3 |
| 35° | 2156.7 | 2144.3 | 2143.1 | 2135.4 | 2126.4 | 2127.5 | 2114.2 | 2111.8 |
| 37.5° | 2333.0 | 2322.9 | 2326.3 | 2319.7 | 2311.8 | 2318.4 | 2310.7 | 2310.7 |
| 40° | 2558.6 | 2555.3 | 2558.6 | 2554.2 | 2555.3 | 2556.3 | 2549.7 | 2551.9 |
| 42.5° | 2831.1 | 2822.1 | 2842.2 | 2840.0 | 2836.7 | 2845.7 | 2830.0 | 2818.8 |
| 45° | 3145.0 | 3141.6 | 3161.7 | 3165.1 | 3158.4 | 3163.9 | 3136.1 | 3134.8 |
| 47.5° | 3485.6 | 3485.6 | 3503.4 | 3501.2 | 3494.4 | 3495.7 | 3462.1 | 3440.9 |
| 50° | 3840.8 | 3838.5 | 3856.3 | 3851.9 | 3842.9 | 3841.8 | 3807.1 | 3785.9 |
| 52.5° | 4210.4 | 4210.4 | 4236.0 | 4223.8 | 4202.6 | 4192.5 | 4150.1 | 4122.1 |
| 55° | 4619.2 | 4613.5 | 4621.4 | 4581.1 | 4539.9 | 4509.8 | 4457.2 | 4436.0 |
| 57.5° | 5136.1 | 5071.4 | 5015.5 | 4964.3 | 4906.2 | 4870.4 | 4808.9 | 4786.7 |
| 60° | 5870.0 | 5696.8 | 5622.0 | 5519.2 | 5423.2 | 5375.2 | 5293.7 | 5250.1 |
| 62.5° | 6886.2 | 6599.2 | 6396.0 | 6169.3 | 5950.4 | 5796.3 | 5672.3 | 5617.6 |
| 65° | 8061.1 | 7435.7 | 6918.7 | 6432.9 | 6020.7 | 5693.5 | 5511.5 | 5454.5 |
| 67.5° | 8507.8 | 7359.8 | 6467.4 | 5770.5 | 5270.3 | 4880.4 | 4662.7 | 4616.8 |
| 68° | 8412.9 | 7185.5 | 6258.6 | 5545.0 | 5042.4 | 4649.3 | 4432.6 | 4391.4 |
| 70° | 7421.2 | 6062.0 | 5083.7 | 4373.4 | 3904.4 | 3530.2 | 3377.3 | 3311.3 |
| 72.5° | 5059.2 | 3893.3 | 2986.3 | 2388.9 | 2038.2 | 1801.5 | 1660.6 | 1612.6 |
| 75° | 2328.5 | 1573.7 | 1050.8 | 785.1 | 666.7 | 609.8 | 566.2 | 555.1 |
| 77.5° | 678.9 | 493.6 | 424.4 | 393.1 | 369.7 | 349.6 | 335.1 | 333.9 |
| 80° | 322.8 | 302.6 | 293.7 | 273.7 | 252.5 | 233.4 | 220.1 | 222.2 |
| 82.5° | 216.6 | 211.1 | 211.1 | 191.0 | 157.5 | 135.1 | 111.7 | 100.5 |
| 85° | 115.1 | 119.6 | 126.2 | 119.6 | 103.8 | 77.1 | 50.2 | 54.7 |
| 87.5° | 39.0 | 44.6 | 46.9 | 45.9 | 41.3 | 31.4 | 23.4 | 23.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)