

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: P194973

Luminaire Tested: **NAV-AF-03-D-UNV-5MQ-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P194973
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-03-D-UNV-5MQ-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V
MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21162 lumens
Efficiency: N/A
Efficacy: 110.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B5 - U0 - G3

Input Watts (W): 191
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

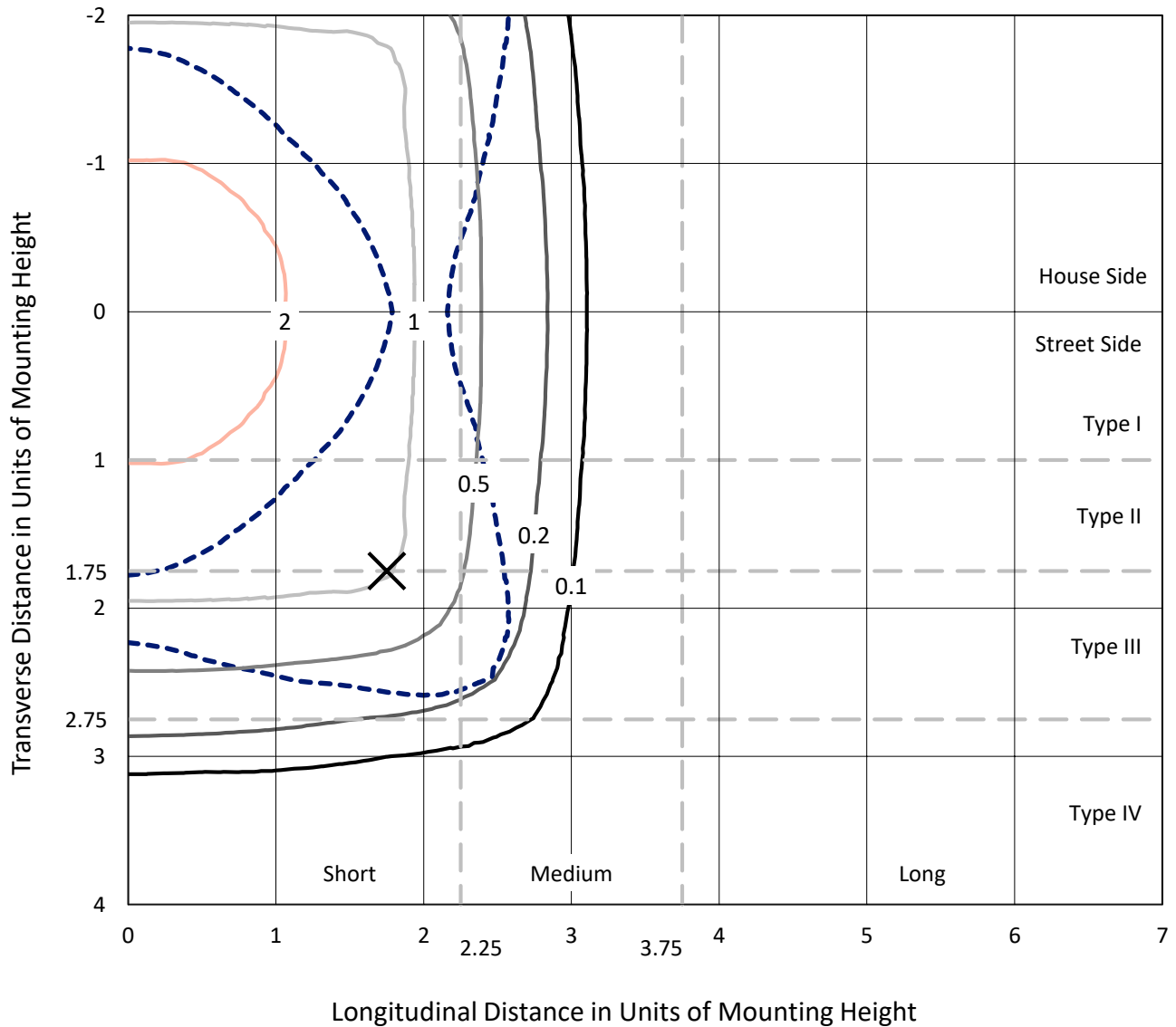


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Iso-Footcandle Lines of Horizontal Illumination

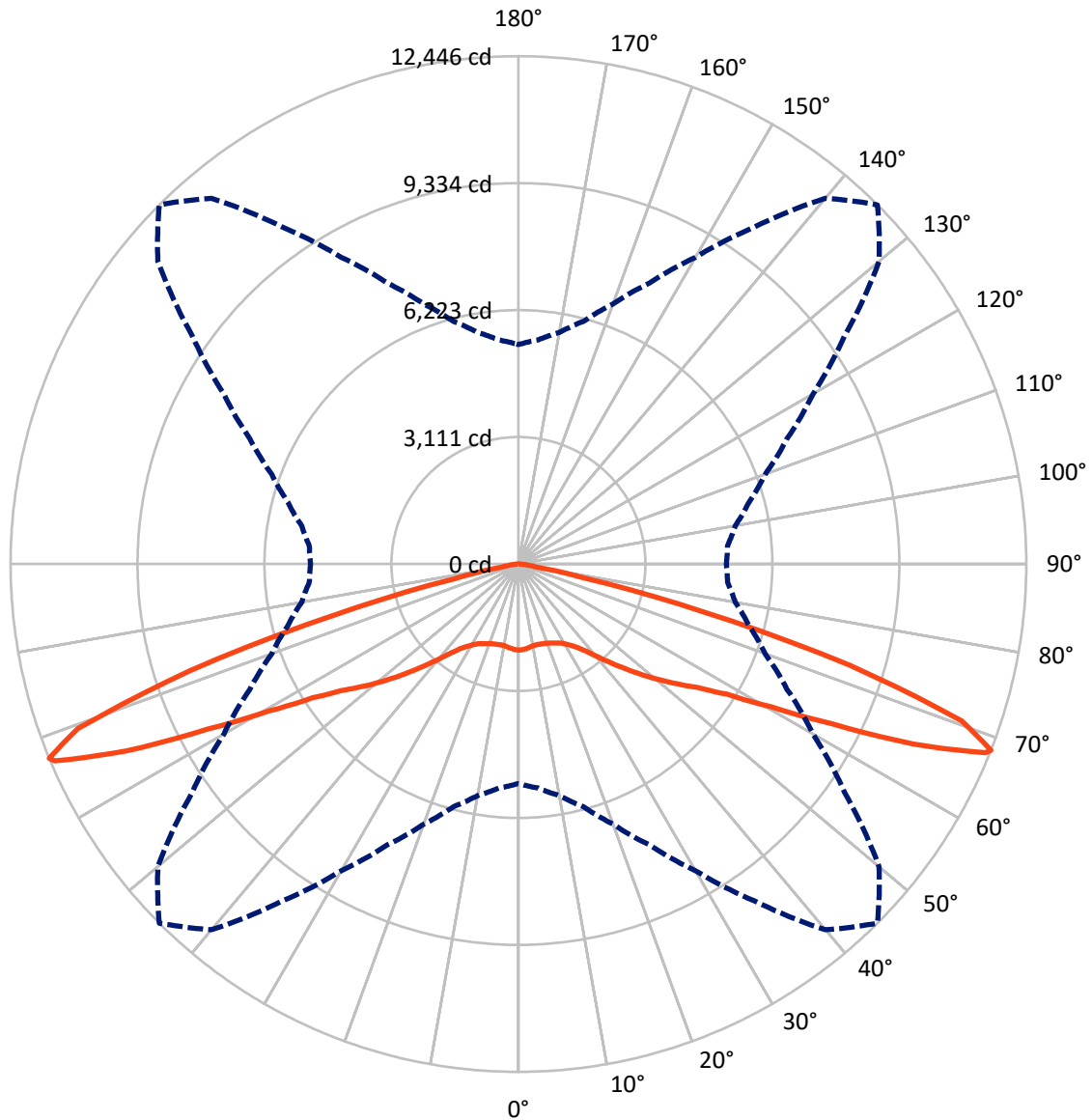
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.4 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 | 10581.0 | 0.0 | 10581.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 10581.0 | 0.0 | 10581.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 21162.0 | 0.0 | 21162.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 197.5 | 0.9 |
| 10°-20° | 572.9 | 2.7 |
| 20°-30° | 973.9 | 4.6 |
| 30°-40° | 1593.8 | 7.5 |
| 40°-50° | 2848.4 | 13.5 |
| 50°-60° | 4810.5 | 22.7 |
| 60°-70° | 7459.3 | 35.2 |
| 70°-80° | 2564.7 | 12.1 |
| 80°-90° | 140.9 | 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° | 21162.0 | 100.0 |
| 0°-180° | 21162.0 | 100.0 |



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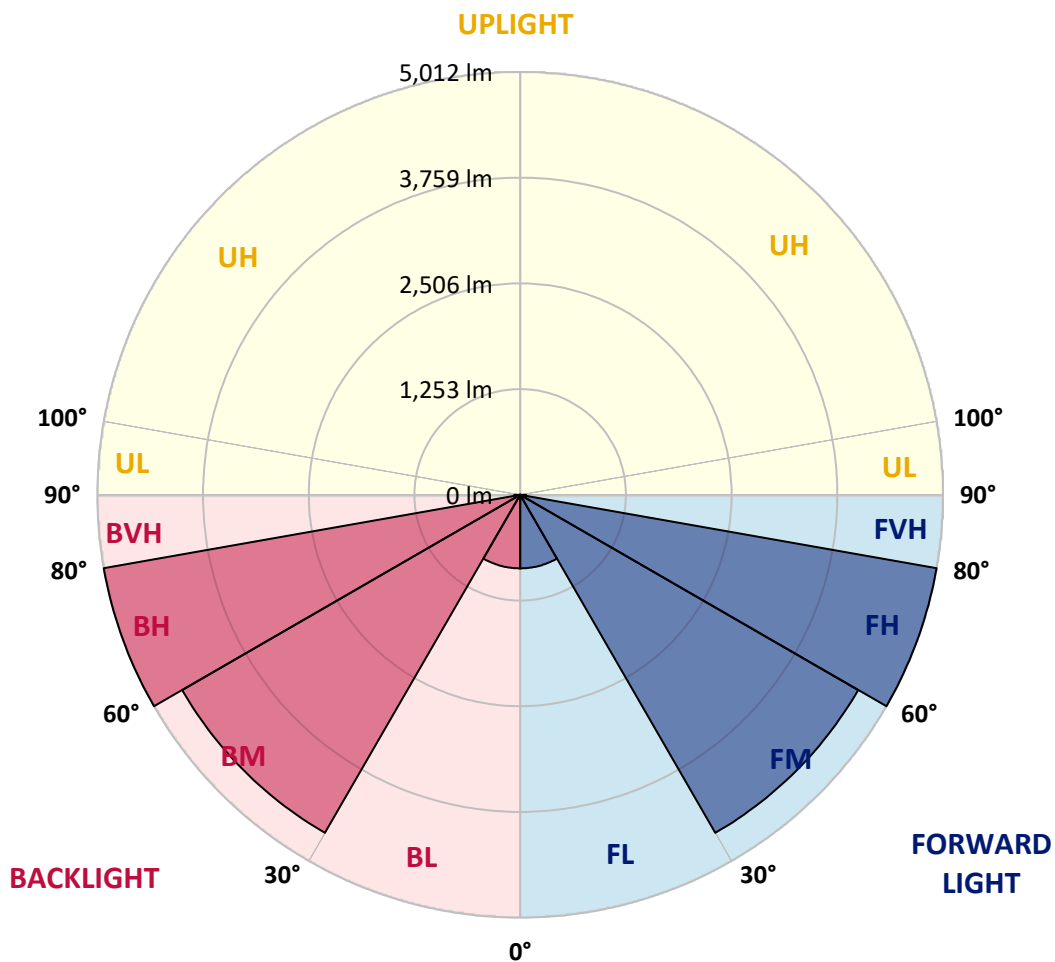
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 872.2 | 4.1 | | | |
| FM | (30°-60°) | 4626.4 | 21.9 | | | |
| FH | (60°-80°) | 5012.0 | 23.7 | | | G3/7500 |
| FVH | (80°-90°) | 70.5 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 872.2 | 4.1 | B2/1000 | | |
| BM | (30°-60°) | 4626.4 | 21.9 | B3/5000 | | |
| BH | (60°-80°) | 5012.0 | 23.7 | B5 | | G3/7500 |
| BVH | (80°-90°) | 70.5 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G3

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0° | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 |
| 2.5° | 2120.0 | 2120.0 | 2122.6 | 2121.3 | 2117.5 | 2113.6 | 2109.7 | 2105.8 | 2103.2 | 2100.6 | 2098.0 |
| 5° | 2098.0 | 2098.0 | 2101.9 | 2099.3 | 2096.7 | 2092.8 | 2090.2 | 2086.4 | 2083.8 | 2081.2 | 2082.5 |
| 7.5° | 2069.5 | 2072.1 | 2074.7 | 2073.4 | 2068.2 | 2066.9 | 2063.0 | 2061.7 | 2059.1 | 2055.3 | 2056.5 |
| 10° | 2044.9 | 2046.2 | 2048.8 | 2047.5 | 2046.2 | 2042.3 | 2041.0 | 2039.7 | 2038.4 | 2033.2 | 2031.9 |
| 12.5° | 2020.3 | 2022.9 | 2025.4 | 2026.7 | 2025.4 | 2026.7 | 2028.0 | 2029.3 | 2028.0 | 2025.4 | 2025.4 |
| 15° | 2000.8 | 2003.4 | 2007.3 | 2011.2 | 2012.5 | 2020.3 | 2025.4 | 2030.6 | 2034.5 | 2035.8 | 2031.9 |
| 17.5° | 1990.5 | 1994.3 | 1999.5 | 2007.3 | 2013.8 | 2022.9 | 2031.9 | 2039.7 | 2046.2 | 2047.5 | 2043.6 |
| 20° | 1989.2 | 1993.0 | 2000.8 | 2009.9 | 2021.6 | 2033.2 | 2047.5 | 2059.1 | 2065.6 | 2069.5 | 2065.6 |
| 22.5° | 1998.2 | 2003.4 | 2013.8 | 2025.4 | 2039.7 | 2055.3 | 2073.4 | 2086.4 | 2099.3 | 2104.5 | 2100.6 |
| 25° | 2024.1 | 2029.3 | 2041.0 | 2055.3 | 2070.8 | 2090.2 | 2108.4 | 2125.2 | 2138.2 | 2144.7 | 2139.5 |
| 27.5° | 2078.6 | 2079.9 | 2092.8 | 2108.4 | 2126.5 | 2143.4 | 2166.7 | 2174.5 | 2184.8 | 2191.3 | 2184.8 |
| 30° | 2155.0 | 2157.6 | 2169.3 | 2193.9 | 2210.8 | 2232.8 | 2245.7 | 2253.5 | 2265.2 | 2271.7 | 2263.9 |
| 32.5° | 2271.7 | 2274.3 | 2284.6 | 2307.9 | 2323.5 | 2340.3 | 2355.9 | 2361.1 | 2372.7 | 2380.5 | 2371.4 |
| 35° | 2436.2 | 2441.4 | 2450.5 | 2466.0 | 2479.0 | 2492.0 | 2503.6 | 2499.7 | 2507.5 | 2517.9 | 2508.8 |
| 37.5° | 2661.7 | 2660.4 | 2663.0 | 2674.7 | 2687.6 | 2695.4 | 2713.6 | 2704.5 | 2712.3 | 2721.3 | 2716.1 |
| 40° | 2924.8 | 2924.8 | 2923.5 | 2944.2 | 2949.4 | 2957.2 | 2976.6 | 2965.0 | 2975.3 | 2985.7 | 2976.6 |
| 42.5° | 3224.1 | 3229.3 | 3235.8 | 3252.6 | 3266.9 | 3269.5 | 3278.6 | 3273.4 | 3286.3 | 3295.4 | 3286.3 |
| 45° | 3568.8 | 3576.6 | 3584.4 | 3623.3 | 3629.7 | 3634.9 | 3641.4 | 3624.5 | 3638.8 | 3646.6 | 3644.0 |
| 47.5° | 3926.5 | 3940.7 | 3957.6 | 3997.8 | 4023.7 | 4035.3 | 4040.5 | 4021.1 | 4022.4 | 4034.0 | 4035.3 |
| 50° | 4330.8 | 4346.3 | 4363.2 | 4408.6 | 4433.2 | 4453.9 | 4460.4 | 4438.4 | 4440.9 | 4450.0 | 4452.6 |
| 52.5° | 4704.0 | 4722.2 | 4758.4 | 4819.3 | 4854.3 | 4890.6 | 4893.2 | 4866.0 | 4877.7 | 4884.1 | 4879.0 |
| 55° | 5055.2 | 5078.5 | 5126.5 | 5208.1 | 5271.6 | 5342.9 | 5375.3 | 5345.5 | 5345.5 | 5340.3 | 5337.7 |
| 57.5° | 5464.7 | 5490.6 | 5539.8 | 5634.4 | 5722.6 | 5824.9 | 5913.1 | 5942.9 | 5997.3 | 6015.4 | 5986.9 |
| 60° | 6081.5 | 6108.7 | 6159.3 | 6283.7 | 6395.1 | 6544.1 | 6689.3 | 6807.2 | 6999.0 | 7102.7 | 7009.4 |
| 62.5° | 6645.2 | 6686.7 | 6805.9 | 7023.6 | 7264.6 | 7540.7 | 7860.7 | 8088.8 | 8437.4 | 8611.1 | 8376.5 |
| 65° | 6516.9 | 6601.2 | 6834.4 | 7176.5 | 7674.1 | 8272.8 | 8924.7 | 9550.6 | 10271.1 | 10640.4 | 10163.5 |
| 67.5° | 5692.8 | 5764.0 | 6015.4 | 6413.3 | 7034.0 | 7859.5 | 8872.8 | 10168.7 | 11655.1 | 12347.1 | 11503.4 |
| 68° | 5377.9 | 5511.3 | 5761.4 | 6156.7 | 6782.6 | 7593.8 | 8675.9 | 10075.4 | 11697.8 | 12445.5 | 11534.5 |
| 70° | 4123.5 | 4171.4 | 4411.1 | 4766.2 | 5441.4 | 6237.0 | 7329.4 | 8924.7 | 10758.3 | 11528.1 | 10591.1 |
| 72.5° | 1959.4 | 1987.9 | 2143.4 | 2493.3 | 2922.2 | 3570.1 | 4534.2 | 6038.8 | 7691.0 | 8491.8 | 7557.5 |
| 75° | 717.9 | 724.4 | 760.7 | 843.6 | 1004.3 | 1247.9 | 1710.5 | 2646.2 | 3917.4 | 4671.6 | 3933.0 |
| 77.5° | 387.5 | 388.8 | 403.0 | 423.7 | 452.3 | 484.7 | 554.6 | 743.8 | 1200.0 | 1632.8 | 1267.4 |
| 80° | 243.6 | 242.3 | 256.6 | 273.4 | 292.9 | 308.4 | 314.9 | 336.9 | 379.7 | 444.5 | 408.2 |
| 82.5° | 124.4 | 136.1 | 168.5 | 186.6 | 215.1 | 220.3 | 213.8 | 212.5 | 225.5 | 243.6 | 251.4 |
| 85° | 68.7 | 60.9 | 89.4 | 119.2 | 129.6 | 133.5 | 134.8 | 127.0 | 124.4 | 121.8 | 128.3 |
| 87.5° | 35.0 | 32.4 | 38.9 | 59.6 | 63.5 | 51.8 | 53.1 | 45.4 | 31.1 | 31.1 | 32.4 |
| 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° | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 | 2111.0 |
| 2.5° | 2095.4 | 2096.7 | 2094.1 | 2094.1 | 2094.1 | 2095.4 | 2094.1 | 2092.8 |
| 5° | 2078.6 | 2081.2 | 2081.2 | 2082.5 | 2083.8 | 2083.8 | 2083.8 | 2083.8 |
| 7.5° | 2054.0 | 2055.3 | 2057.8 | 2057.8 | 2057.8 | 2057.8 | 2057.8 | 2057.8 |
| 10° | 2030.6 | 2028.0 | 2026.7 | 2024.1 | 2024.1 | 2020.3 | 2021.6 | 2022.9 |
| 12.5° | 2019.0 | 2013.8 | 2011.2 | 2007.3 | 2004.7 | 2000.8 | 2000.8 | 2002.1 |
| 15° | 2024.1 | 2016.4 | 2008.6 | 2006.0 | 2003.4 | 2000.8 | 1998.2 | 1999.5 |
| 17.5° | 2034.5 | 2025.4 | 2016.4 | 2011.2 | 2006.0 | 2002.1 | 2000.8 | 2002.1 |
| 20° | 2056.5 | 2043.6 | 2029.3 | 2020.3 | 2009.9 | 2007.3 | 2003.4 | 2007.3 |
| 22.5° | 2086.4 | 2070.8 | 2052.7 | 2035.8 | 2024.1 | 2019.0 | 2013.8 | 2017.7 |
| 25° | 2122.6 | 2105.8 | 2087.6 | 2068.2 | 2055.3 | 2051.4 | 2044.9 | 2044.9 |
| 27.5° | 2173.2 | 2158.9 | 2143.4 | 2125.2 | 2112.3 | 2108.4 | 2098.0 | 2098.0 |
| 30° | 2253.5 | 2239.3 | 2225.0 | 2209.5 | 2196.5 | 2192.6 | 2179.7 | 2179.7 |
| 32.5° | 2359.8 | 2344.2 | 2335.2 | 2322.2 | 2311.8 | 2305.4 | 2289.8 | 2288.5 |
| 35° | 2502.3 | 2488.1 | 2486.8 | 2477.7 | 2467.3 | 2468.6 | 2453.1 | 2450.5 |
| 37.5° | 2707.1 | 2695.4 | 2699.3 | 2691.5 | 2682.5 | 2690.2 | 2681.2 | 2681.2 |
| 40° | 2968.8 | 2965.0 | 2968.8 | 2963.7 | 2965.0 | 2966.2 | 2958.5 | 2961.1 |
| 42.5° | 3285.0 | 3274.7 | 3298.0 | 3295.4 | 3291.5 | 3301.9 | 3283.7 | 3270.8 |
| 45° | 3649.2 | 3645.3 | 3668.6 | 3672.5 | 3664.7 | 3671.2 | 3638.8 | 3637.5 |
| 47.5° | 4044.4 | 4044.4 | 4065.1 | 4062.6 | 4054.8 | 4056.1 | 4017.2 | 3992.6 |
| 50° | 4456.5 | 4453.9 | 4474.6 | 4469.5 | 4459.1 | 4457.8 | 4417.6 | 4393.0 |
| 52.5° | 4885.4 | 4885.4 | 4915.2 | 4901.0 | 4876.4 | 4864.7 | 4815.5 | 4783.1 |
| 55° | 5359.7 | 5353.2 | 5362.3 | 5315.7 | 5267.7 | 5232.7 | 5171.8 | 5147.2 |
| 57.5° | 5959.7 | 5884.5 | 5819.8 | 5760.1 | 5692.8 | 5651.3 | 5580.0 | 5554.1 |
| 60° | 6811.1 | 6610.2 | 6523.4 | 6404.2 | 6292.7 | 6237.0 | 6142.4 | 6091.9 |
| 62.5° | 7990.3 | 7657.3 | 7421.4 | 7158.4 | 6904.4 | 6725.6 | 6581.7 | 6518.2 |
| 65° | 9353.6 | 8627.9 | 8027.9 | 7464.2 | 6986.0 | 6606.3 | 6395.1 | 6329.0 |
| 67.5° | 9871.9 | 8539.8 | 7504.4 | 6695.8 | 6115.2 | 5663.0 | 5410.3 | 5357.1 |
| 68° | 9761.8 | 8337.6 | 7262.1 | 6434.0 | 5850.9 | 5394.7 | 5143.3 | 5095.4 |
| 70° | 8611.1 | 7034.0 | 5898.8 | 5074.6 | 4530.4 | 4096.2 | 3918.7 | 3842.3 |
| 72.5° | 5870.3 | 4517.4 | 3465.2 | 2771.9 | 2365.0 | 2090.2 | 1927.0 | 1871.2 |
| 75° | 2701.9 | 1825.9 | 1219.4 | 911.0 | 773.6 | 707.5 | 657.0 | 644.0 |
| 77.5° | 787.9 | 572.8 | 492.4 | 456.1 | 428.9 | 405.6 | 388.8 | 387.5 |
| 80° | 374.5 | 351.2 | 340.8 | 317.5 | 292.9 | 270.8 | 255.3 | 257.9 |
| 82.5° | 251.4 | 244.9 | 244.9 | 221.6 | 182.7 | 156.8 | 129.6 | 116.6 |
| 85° | 133.5 | 138.7 | 146.4 | 138.7 | 120.5 | 89.4 | 58.3 | 63.5 |
| 87.5° | 45.4 | 51.8 | 54.4 | 53.1 | 47.9 | 36.3 | 27.2 | 27.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)