

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: P196809

Luminaire Tested: **NAV-AF-03-D-UNV-T3R-7030-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196809  
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-7030-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 3000K, 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: 14397.1 lumens  
Efficiency: N/A  
Efficacy: 116.1 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 - G3

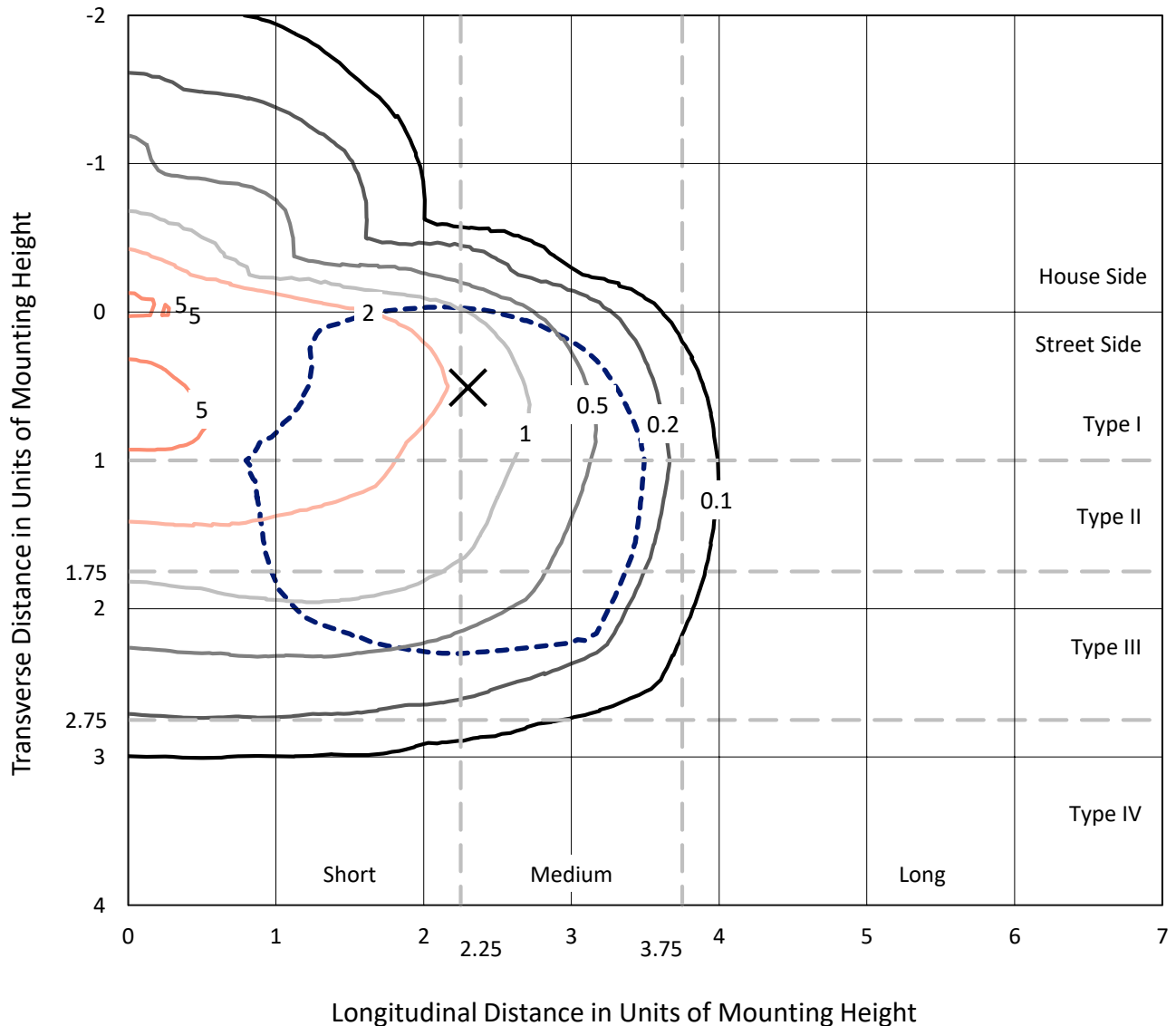
Input Watts (W): 124  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

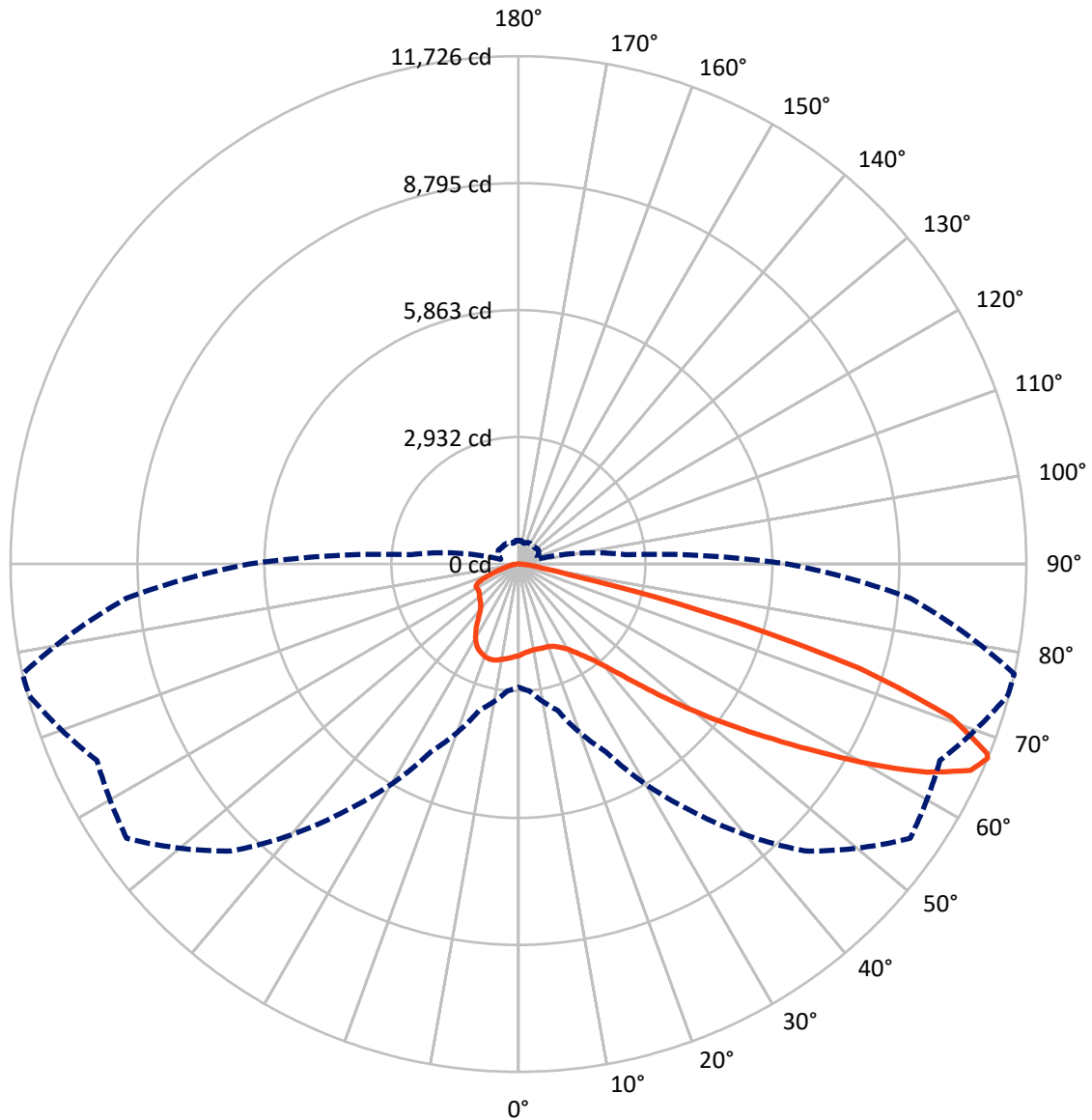
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.4 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   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2474.1   | 0.0    | 2474.1  |
|                    | % Fixture | 17.2     | 0.0    | 17.2    |
| <b>Street Side</b> | Lumens    | 11923.0  | 0.0    | 11923.0 |
|                    | % Fixture | 82.8     | 0.0    | 82.8    |
| <b>Total</b>       | Lumens    | 14397.1  | 0.0    | 14397.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 188.7   | 1.3       |
| 10°-20°   | 522.6   | 3.6       |
| 20°-30°   | 888.0   | 6.2       |
| 30°-40°   | 1420.6  | 9.9       |
| 40°-50°   | 2187.0  | 15.2      |
| 50°-60°   | 3034.2  | 21.1      |
| 60°-70°   | 4047.4  | 28.1      |
| 70°-80°   | 1926.2  | 13.4      |
| 80°-90°   | 182.4   | 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°    | 14397.1 | 100.0     |
| 0°-180°   | 14397.1 | 100.0     |



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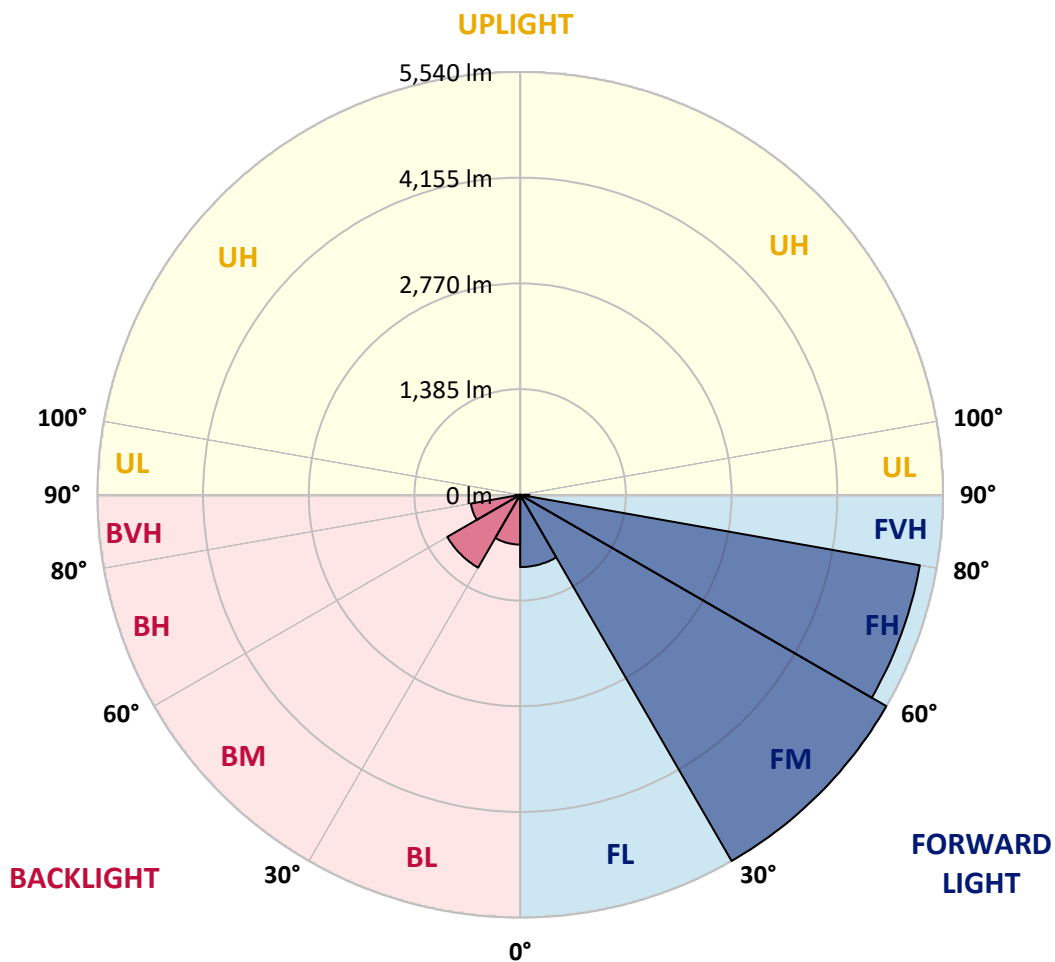
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 946.7  | 6.6       |                         |      |         |
| FM   | (30°-60°)   | 5540.1 | 38.5      |                         |      |         |
| FH   | (60°-80°)   | 5317.6 | 36.9      |                         |      | G3/7500 |
| FVH  | (80°-90°)   | 118.5  | 0.8       |                         |      | G2/225  |
| BL   | (0°-30°)    | 652.6  | 4.5       | B2/1000                 |      |         |
| BM   | (30°-60°)   | 1101.6 | 7.7       | B2/2500                 |      |         |
| BH   | (60°-80°)   | 656.0  | 4.6       | B2/1000                 |      | G2/1000 |
| BVH  | (80°-90°)   | 63.9   | 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-G3**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 65°     | 75°     | 77.5°   | 85°    |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|--------|
| 0°    | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9  | 2118.9  | 2118.9  | 2118.9  | 2118.9 |
| 2.5°  | 1899.9 | 1908.9 | 1909.8 | 1935.5 | 1947.1 | 1976.5 | 2008.5  | 2037.0  | 2061.9  | 2070.8  | 2086.9 |
| 5°    | 1709.5 | 1709.5 | 1712.2 | 1729.1 | 1762.1 | 1809.3 | 1876.0  | 1948.8  | 2025.4  | 2044.1  | 2091.3 |
| 7.5°  | 1609.8 | 1611.6 | 1613.4 | 1630.3 | 1656.2 | 1698.0 | 1764.6  | 1864.4  | 1991.6  | 2022.7  | 2105.5 |
| 10°   | 1618.7 | 1616.1 | 1607.2 | 1603.6 | 1614.3 | 1641.0 | 1698.9  | 1801.1  | 1963.2  | 2011.3  | 2131.3 |
| 12.5° | 1758.4 | 1753.2 | 1723.8 | 1681.1 | 1641.8 | 1632.2 | 1672.1  | 1769.1  | 1949.8  | 2011.3  | 2175.0 |
| 15°   | 1997.8 | 2001.4 | 1943.6 | 1854.5 | 1752.2 | 1682.8 | 1677.4  | 1757.6  | 1945.4  | 2016.5  | 2225.6 |
| 17.5° | 2309.3 | 2311.1 | 2231.0 | 2101.9 | 1932.0 | 1788.7 | 1714.0  | 1757.6  | 1945.4  | 2021.9  | 2274.6 |
| 20°   | 2640.4 | 2627.9 | 2537.1 | 2375.2 | 2154.5 | 1935.5 | 1780.7  | 1768.3  | 1950.8  | 2029.9  | 2320.8 |
| 22.5° | 2924.3 | 2912.7 | 2817.5 | 2647.5 | 2394.8 | 2109.0 | 1870.6  | 1803.9  | 1980.0  | 2062.9  | 2385.9 |
| 25°   | 3172.6 | 3179.7 | 3087.1 | 2895.8 | 2634.1 | 2304.9 | 2005.0  | 1885.7  | 2041.4  | 2122.5  | 2466.0 |
| 27.5° | 3474.2 | 3460.9 | 3354.0 | 3171.7 | 2880.6 | 2507.7 | 2173.1  | 1988.9  | 2114.3  | 2194.5  | 2563.9 |
| 30°   | 3823.1 | 3816.9 | 3672.6 | 3485.0 | 3152.0 | 2734.6 | 2339.6  | 2100.2  | 2209.7  | 2293.3  | 2686.6 |
| 32.5° | 4246.7 | 4245.7 | 4090.8 | 3860.4 | 3457.3 | 2991.0 | 2536.2  | 2252.4  | 2348.4  | 2432.9  | 2849.5 |
| 35°   | 4726.3 | 4725.5 | 4565.2 | 4260.9 | 3808.8 | 3274.8 | 2767.6  | 2437.5  | 2520.2  | 2609.2  | 3043.5 |
| 37.5° | 5059.1 | 5053.8 | 4970.1 | 4674.6 | 4197.7 | 3605.0 | 3056.8  | 2686.6  | 2715.1  | 2814.7  | 3277.6 |
| 40°   | 5123.1 | 5155.3 | 5227.3 | 5052.9 | 4622.2 | 3971.7 | 3346.9  | 2954.5  | 2981.2  | 3109.3  | 3572.1 |
| 42.5° | 5053.8 | 5095.7 | 5335.0 | 5384.0 | 5046.6 | 4415.7 | 3710.0  | 3325.7  | 3359.4  | 3518.7  | 3918.2 |
| 45°   | 4993.2 | 5029.8 | 5329.6 | 5567.3 | 5465.8 | 4899.8 | 4163.0  | 3778.5  | 3842.6  | 4040.2  | 4313.3 |
| 47.5° | 4890.0 | 4923.9 | 5224.7 | 5600.2 | 5705.2 | 5366.2 | 4708.5  | 4323.2  | 4433.5  | 4672.9  | 4763.7 |
| 50°   | 4884.8 | 4899.8 | 5081.4 | 5489.8 | 5788.0 | 5720.4 | 5312.7  | 4960.4  | 5129.4  | 5405.3  | 5262.0 |
| 52.5° | 4749.4 | 4855.4 | 5020.0 | 5313.6 | 5789.7 | 5926.8 | 5908.0  | 5659.0  | 5919.6  | 6224.9  | 5808.4 |
| 55°   | 3921.9 | 4043.8 | 4815.3 | 5227.3 | 5779.0 | 6103.9 | 6451.9  | 6402.0  | 6809.6  | 7130.8  | 6420.7 |
| 57.5° | 3662.0 | 3713.6 | 4224.4 | 5253.1 | 5868.1 | 6396.7 | 6995.6  | 7200.3  | 7827.7  | 8178.3  | 7154.9 |
| 60°   | 3590.8 | 3645.1 | 4106.1 | 5265.6 | 6109.2 | 6929.8 | 7733.3  | 8101.7  | 9024.6  | 9396.6  | 7988.7 |
| 62.5° | 3511.6 | 3581.8 | 4114.9 | 5277.1 | 6532.8 | 7718.2 | 8712.3  | 9079.8  | 10253.6 | 10585.5 | 8770.0 |
| 65°   | 3280.2 | 3373.6 | 3950.3 | 5204.2 | 6996.4 | 8707.8 | 10006.2 | 10099.6 | 11268.9 | 11479.9 | 9241.7 |
| 67°   | 2841.5 | 2943.8 | 3498.3 | 4782.4 | 6953.7 | 9374.3 | 11041.0 | 10737.7 | 11700.6 | 11726.4 | 9088.6 |
| 67.5° | 2702.6 | 2808.5 | 3345.2 | 4607.0 | 6831.9 | 9461.6 | 11224.4 | 10825.7 | 11697.0 | 11668.5 | 8946.2 |
| 70°   | 1819.8 | 1939.2 | 2369.0 | 3382.5 | 5480.0 | 8805.6 | 11180.0 | 10554.3 | 10929.9 | 10603.3 | 7686.2 |
| 72.5° | 903.2  | 906.9  | 1181.7 | 1852.8 | 3320.3 | 6315.7 | 9326.3  | 9028.9  | 8860.0  | 8243.3  | 5640.3 |
| 75°   | 435.2  | 443.1  | 558.0  | 818.7  | 1399.8 | 3260.7 | 6360.2  | 6092.3  | 5187.3  | 4491.3  | 2822.8 |
| 77.5° | 331.9  | 339.9  | 433.4  | 533.0  | 583.8  | 1063.4 | 3150.3  | 2546.1  | 1503.1  | 1200.5  | 795.6  |
| 80°   | 256.3  | 271.4  | 365.8  | 409.4  | 386.2  | 426.2  | 990.4   | 779.6   | 584.6   | 536.6   | 394.2  |
| 82.5° | 200.3  | 209.1  | 310.7  | 310.7  | 266.9  | 285.7  | 461.0   | 450.2   | 363.1   | 327.4   | 211.8  |
| 85°   | 141.5  | 159.3  | 250.1  | 231.4  | 175.4  | 177.1  | 275.9   | 264.3   | 186.9   | 150.3   | 82.7   |
| 87.5° | 63.2   | 81.0   | 178.0  | 151.4  | 93.4   | 72.1   | 113.0   | 97.0    | 73.9    | 57.0    | 38.2   |
| 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°    | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 | 2118.9 |
| 2.5°  | 2104.7 | 2118.9 | 2141.2 | 2154.5 | 2172.3 | 2179.4 | 2186.5 | 2199.0 | 2208.7 | 2206.1 | 2201.7 |
| 5°    | 2124.2 | 2148.2 | 2175.8 | 2184.7 | 2184.7 | 2175.8 | 2170.4 | 2171.4 | 2168.7 | 2166.9 | 2161.5 |
| 7.5°  | 2152.7 | 2185.6 | 2205.2 | 2196.3 | 2168.7 | 2134.1 | 2101.0 | 2081.5 | 2062.9 | 2051.3 | 2054.8 |
| 10°   | 2192.8 | 2229.2 | 2230.1 | 2190.9 | 2125.1 | 2049.4 | 1984.4 | 1942.6 | 1902.6 | 1884.8 | 1890.1 |
| 12.5° | 2250.6 | 2287.1 | 2255.8 | 2171.4 | 2055.7 | 1937.3 | 1818.1 | 1731.8 | 1654.3 | 1635.6 | 1630.3 |
| 15°   | 2312.9 | 2341.3 | 2271.9 | 2129.6 | 1956.1 | 1761.2 | 1560.9 | 1431.9 | 1345.5 | 1330.4 | 1325.1 |
| 17.5° | 2367.2 | 2383.2 | 2264.0 | 2054.8 | 1798.5 | 1491.5 | 1258.3 | 1171.1 | 1153.3 | 1162.2 | 1162.2 |
| 20°   | 2415.1 | 2409.8 | 2229.2 | 1939.2 | 1550.2 | 1192.4 | 1057.2 | 1056.3 | 1080.3 | 1102.7 | 1104.4 |
| 22.5° | 2475.7 | 2433.9 | 2174.0 | 1767.4 | 1253.9 | 995.0  | 971.8  | 995.0  | 1021.6 | 1046.4 | 1049.2 |
| 25°   | 2547.8 | 2460.6 | 2100.2 | 1522.6 | 1008.3 | 903.2  | 913.1  | 932.6  | 949.6  | 969.1  | 970.0  |
| 27.5° | 2619.9 | 2481.1 | 1996.0 | 1235.1 | 874.7  | 844.6  | 855.2  | 863.2  | 867.6  | 880.1  | 880.1  |
| 30°   | 2703.5 | 2497.1 | 1845.7 | 989.6  | 813.3  | 792.9  | 786.6  | 783.2  | 786.6  | 803.6  | 804.4  |
| 32.5° | 2808.5 | 2525.5 | 1640.1 | 849.0  | 784.9  | 756.4  | 724.4  | 706.6  | 719.0  | 749.3  | 754.7  |
| 35°   | 2927.8 | 2559.4 | 1393.6 | 792.9  | 775.0  | 738.6  | 679.9  | 652.3  | 656.7  | 684.3  | 688.8  |
| 37.5° | 3077.3 | 2603.0 | 1150.6 | 779.6  | 784.9  | 736.9  | 659.4  | 620.3  | 600.7  | 601.6  | 600.7  |
| 40°   | 3268.6 | 2646.6 | 958.4  | 783.2  | 806.3  | 741.4  | 649.6  | 588.3  | 547.3  | 549.0  | 552.7  |
| 42.5° | 3468.9 | 2675.1 | 836.5  | 793.8  | 832.1  | 747.6  | 646.0  | 557.1  | 521.5  | 551.8  | 579.3  |
| 45°   | 3702.9 | 2667.0 | 773.3  | 803.6  | 851.6  | 750.2  | 632.7  | 553.5  | 524.1  | 614.9  | 666.6  |
| 47.5° | 3971.7 | 2632.4 | 737.7  | 808.1  | 857.0  | 749.3  | 622.9  | 565.1  | 546.4  | 703.9  | 762.6  |
| 50°   | 4263.6 | 2578.1 | 709.3  | 800.9  | 854.3  | 745.7  | 633.6  | 579.3  | 555.2  | 723.6  | 768.8  |
| 52.5° | 4583.0 | 2528.3 | 679.9  | 784.9  | 841.0  | 735.1  | 647.0  | 573.1  | 530.4  | 666.6  | 701.2  |
| 55°   | 4961.3 | 2516.7 | 647.0  | 757.2  | 818.7  | 723.6  | 639.8  | 553.5  | 502.8  | 590.9  | 612.3  |
| 57.5° | 5393.7 | 2588.8 | 604.2  | 723.6  | 788.5  | 700.4  | 622.9  | 542.8  | 493.0  | 537.5  | 549.0  |
| 60°   | 5942.8 | 2748.1 | 558.9  | 687.9  | 751.0  | 665.6  | 607.8  | 545.5  | 495.7  | 529.5  | 532.2  |
| 62.5° | 6371.8 | 2891.3 | 517.9  | 644.3  | 701.2  | 623.9  | 591.7  | 548.2  | 503.6  | 540.2  | 535.7  |
| 65°   | 6527.4 | 2821.0 | 467.2  | 579.3  | 631.0  | 577.6  | 569.6  | 550.0  | 503.6  | 546.4  | 536.6  |
| 67°   | 6208.0 | 2485.5 | 419.1  | 514.4  | 564.3  | 536.6  | 548.2  | 542.8  | 494.8  | 545.5  | 528.6  |
| 67.5° | 6055.8 | 2367.2 | 406.7  | 503.6  | 546.4  | 524.1  | 542.8  | 539.3  | 492.1  | 543.8  | 524.1  |
| 70°   | 4994.1 | 1698.0 | 343.5  | 422.8  | 457.4  | 461.8  | 509.9  | 516.1  | 470.8  | 510.8  | 475.2  |
| 72.5° | 3553.4 | 1062.5 | 296.3  | 327.4  | 369.3  | 395.1  | 465.5  | 485.0  | 442.3  | 444.0  | 414.7  |
| 75°   | 1758.4 | 570.5  | 264.3  | 252.7  | 287.5  | 329.3  | 405.8  | 442.3  | 400.4  | 370.2  | 360.4  |
| 77.5° | 593.6  | 323.1  | 223.3  | 203.8  | 223.3  | 264.3  | 336.4  | 386.2  | 353.4  | 313.2  | 307.0  |
| 80°   | 307.0  | 234.9  | 174.4  | 163.8  | 176.2  | 204.7  | 263.5  | 321.2  | 301.7  | 303.4  | 250.1  |
| 82.5° | 191.3  | 143.2  | 125.4  | 124.5  | 133.6  | 156.7  | 194.1  | 260.7  | 259.0  | 221.6  | 161.0  |
| 85°   | 88.9   | 82.7   | 80.1   | 82.7   | 85.4   | 88.9   | 126.4  | 186.0  | 196.6  | 119.2  | 105.9  |
| 87.5° | 37.3   | 36.5   | 32.0   | 34.8   | 38.2   | 37.3   | 50.7   | 79.2   | 110.4  | 74.8   | 68.5   |
| 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)