

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: P196564

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-7030-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196564  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)  
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-SL2-7030-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL  
LIGHT ELIMINATOR OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15241.7 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B2 - U0 - G3

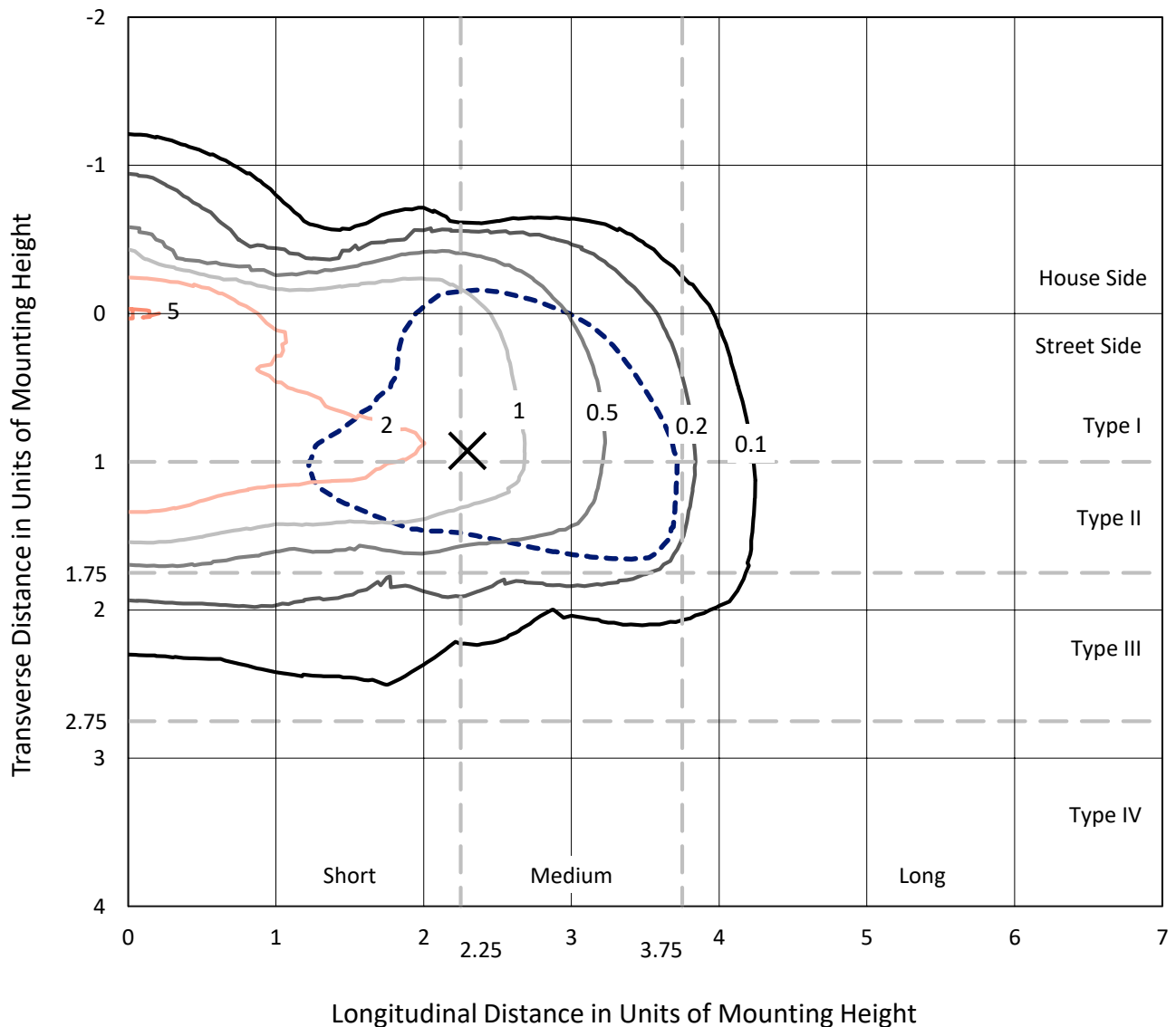
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

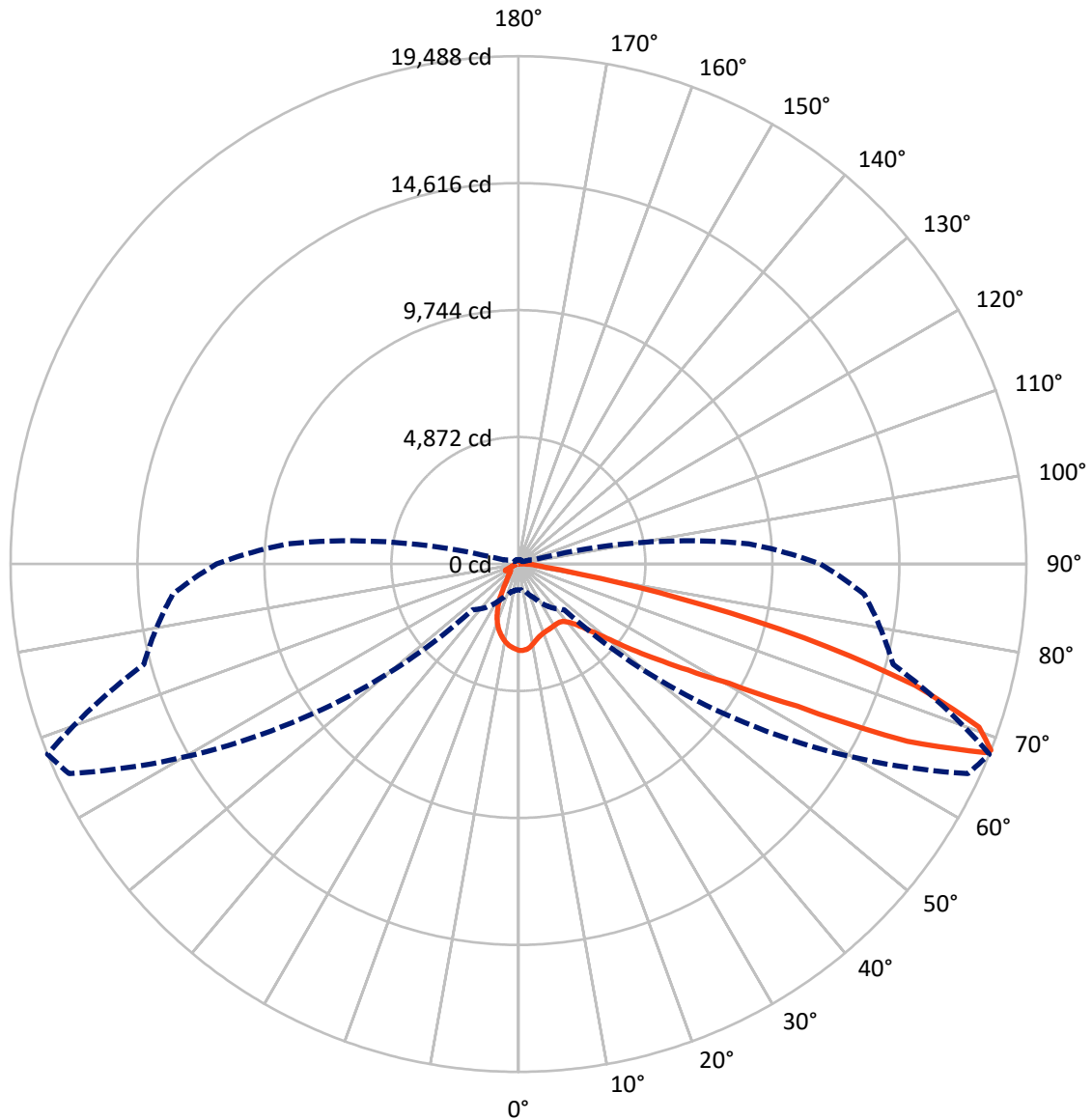
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 fc  
 Type II - Medium - Semi-Cutoff

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### Luminous Intensity Polar Plot



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

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2493.6   | 0.0    | 2493.6  |
|                    | % Fixture | 16.4     | 0.0    | 16.4    |
| <b>Street Side</b> | Lumens    | 12748.1  | 0.0    | 12748.1 |
|                    | % Fixture | 83.6     | 0.0    | 83.6    |
| <b>Total</b>       | Lumens    | 15241.7  | 0.0    | 15241.7 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 284.2   | 1.9       |
| 10°-20°   | 659.1   | 4.3       |
| 20°-30°   | 891.4   | 5.8       |
| 30°-40°   | 1256.8  | 8.2       |
| 40°-50°   | 2066.7  | 13.6      |
| 50°-60°   | 3203.5  | 21.0      |
| 60°-70°   | 4153.6  | 27.3      |
| 70°-80°   | 2383.5  | 15.6      |
| 80°-90°   | 342.9   | 2.3       |
| 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°    | 15241.7 | 100.0     |
| 0°-180°   | 15241.7 | 100.0     |

**Coefficient of Utilization**



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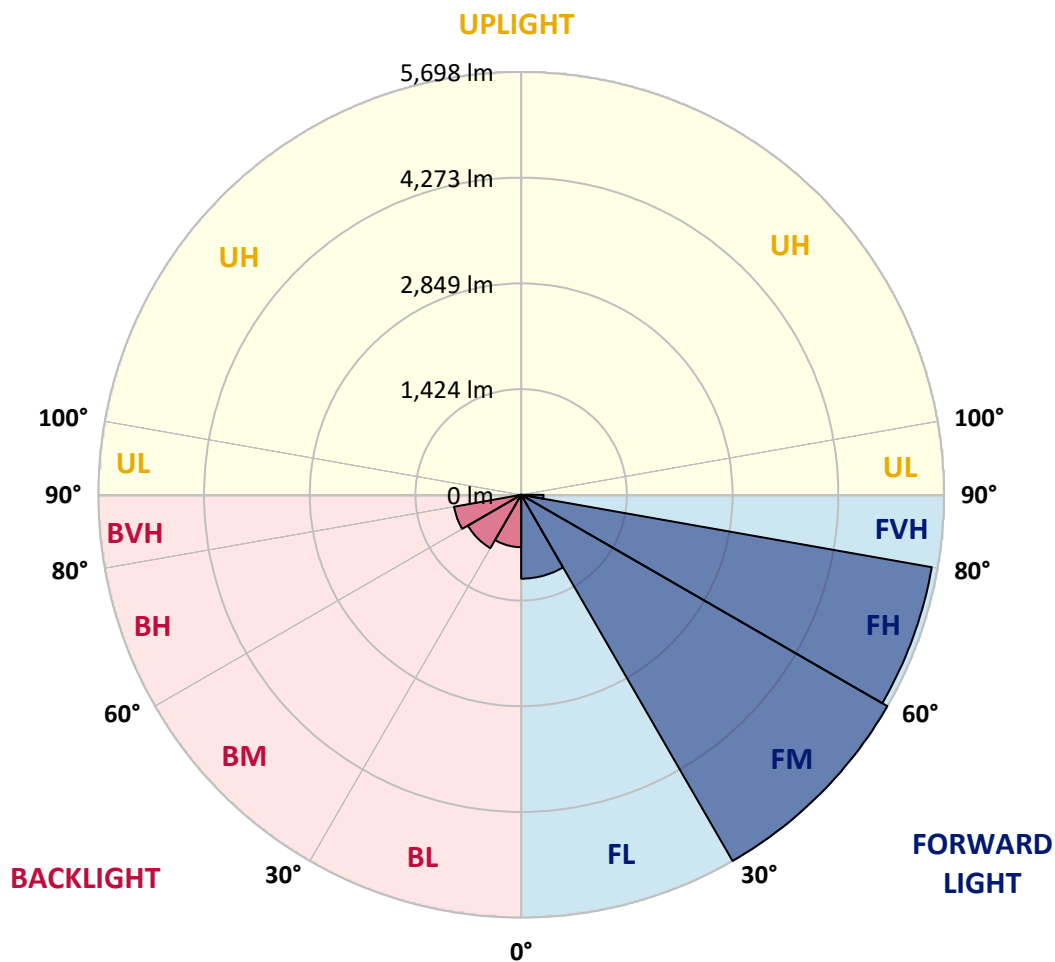
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 1129.7 | 7.4       |                         |      |         |
| FM (30°-60°)   | 5697.6 | 37.4      |                         |      |         |
| FH (60°-80°)   | 5618.8 | 36.9      |                         |      | G3/7500 |
| FVH (80°-90°)  | 302.1  | 2.0       |                         |      | G3/500  |
| BL (0°-30°)    | 705.0  | 4.6       | B2/1000                 |      |         |
| BM (30°-60°)   | 829.4  | 5.4       | B1/1000                 |      |         |
| BH (60°-80°)   | 918.4  | 6.0       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 40.9   | 0.3       |                         |      | 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 II Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 65°     | 68°     | 75°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0°    | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4  | 3316.4  | 3316.4  | 3316.4  | 3316.4  |
| 2.5°  | 3227.8 | 3253.7 | 3253.7 | 3272.7 | 3289.6 | 3303.5 | 3315.5  | 3315.5  | 3315.5  | 3307.5  | 3300.5  |
| 5°    | 2888.4 | 2923.1 | 2928.1 | 2975.9 | 3038.7 | 3115.3 | 3201.0  | 3276.5  | 3291.6  | 3319.4  | 3330.4  |
| 7.5°  | 2652.4 | 2663.3 | 2682.2 | 2715.1 | 2778.8 | 2873.4 | 3007.8  | 3177.0  | 3217.9  | 3305.5  | 3351.3  |
| 10°   | 2485.1 | 2494.1 | 2510.0 | 2542.8 | 2600.6 | 2686.2 | 2818.7  | 3038.7  | 3106.3  | 3261.7  | 3352.3  |
| 12.5° | 2362.6 | 2369.7 | 2384.6 | 2414.4 | 2473.2 | 2549.8 | 2685.3  | 2914.2  | 2997.8  | 3217.9  | 3366.3  |
| 15°   | 2267.0 | 2279.0 | 2290.9 | 2319.8 | 2379.5 | 2453.2 | 2590.6  | 2823.6  | 2914.2  | 3183.0  | 3392.2  |
| 17.5° | 2229.2 | 2235.2 | 2237.2 | 2252.2 | 2305.9 | 2380.5 | 2518.0  | 2759.9  | 2853.6  | 3155.2  | 3412.0  |
| 20°   | 2253.2 | 2254.1 | 2234.3 | 2224.2 | 2255.1 | 2323.8 | 2457.2  | 2712.2  | 2807.6  | 3130.3  | 3420.1  |
| 22.5° | 2357.7 | 2357.7 | 2305.9 | 2262.1 | 2241.1 | 2283.9 | 2416.4  | 2679.2  | 2782.9  | 3111.3  | 3420.1  |
| 25°   | 2556.7 | 2547.8 | 2467.2 | 2380.5 | 2288.0 | 2270.1 | 2390.5  | 2658.4  | 2763.8  | 3101.5  | 3407.0  |
| 27.5° | 2818.7 | 2810.7 | 2708.1 | 2579.7 | 2412.5 | 2299.9 | 2381.6  | 2641.5  | 2744.9  | 3086.5  | 3379.2  |
| 30°   | 3137.3 | 3130.3 | 3013.8 | 2845.5 | 2598.6 | 2394.5 | 2402.5  | 2629.5  | 2730.1  | 3061.6  | 3332.4  |
| 32.5° | 3454.9 | 3450.9 | 3358.3 | 3186.0 | 2855.5 | 2554.8 | 2457.2  | 2627.4  | 2722.0  | 3031.7  | 3275.6  |
| 35°   | 3774.5 | 3774.5 | 3717.6 | 3572.3 | 3201.0 | 2795.7 | 2571.8  | 2664.3  | 2737.0  | 3015.8  | 3226.9  |
| 37.5° | 4246.4 | 4227.5 | 4122.0 | 3971.6 | 3636.0 | 3108.3 | 2756.9  | 2742.0  | 2794.8  | 3042.7  | 3210.9  |
| 40°   | 4977.2 | 4922.4 | 4658.6 | 4405.7 | 4111.0 | 3508.7 | 3027.7  | 2892.3  | 2924.3  | 3134.2  | 3248.8  |
| 42.5° | 5741.8 | 5655.2 | 5305.7 | 4901.5 | 4601.8 | 4002.5 | 3383.1  | 3136.3  | 3135.2  | 3311.4  | 3369.2  |
| 45°   | 6397.9 | 6353.1 | 5974.9 | 5462.1 | 5162.4 | 4558.0 | 3832.2  | 3498.7  | 3462.9  | 3586.2  | 3601.1  |
| 47.5° | 6779.2 | 6749.4 | 6521.3 | 6055.4 | 5827.5 | 5214.2 | 4401.7  | 4001.4  | 3933.8  | 4007.4  | 3984.4  |
| 50°   | 6673.8 | 6702.6 | 6636.9 | 6398.9 | 6542.3 | 6136.1 | 5127.5  | 4690.4  | 4562.0  | 4635.7  | 4579.9  |
| 52.5° | 6118.2 | 6195.8 | 6254.5 | 6300.3 | 6953.5 | 7369.6 | 6039.6  | 5550.7  | 5444.2  | 5431.2  | 5377.4  |
| 55°   | 5117.6 | 5241.0 | 5426.2 | 5762.8 | 6843.0 | 8360.3 | 7632.6  | 6591.1  | 6435.8  | 6354.1  | 6375.1  |
| 57.5° | 3482.7 | 3669.9 | 4069.2 | 4709.3 | 6268.5 | 8782.5 | 9988.2  | 7935.2  | 7672.3  | 7381.7  | 7449.3  |
| 60°   | 1918.6 | 2075.0 | 2549.8 | 3195.0 | 4957.2 | 8719.8 | 12076.0 | 10119.6 | 9292.3  | 8521.5  | 8661.0  |
| 62.5° | 1241.5 | 1275.4 | 1628.8 | 2182.5 | 3042.7 | 7698.2 | 13235.8 | 13770.6 | 12017.3 | 10025.0 | 10221.2 |
| 65°   | 997.6  | 1021.5 | 1194.8 | 1760.2 | 2119.7 | 4952.2 | 13287.7 | 17558.0 | 16402.0 | 12068.0 | 12074.0 |
| 67.5° | 974.7  | 985.6  | 1086.2 | 1480.5 | 1988.3 | 2696.2 | 11485.7 | 19051.4 | 19319.2 | 14479.5 | 13313.6 |
| 68°   | 988.7  | 1001.6 | 1103.2 | 1434.7 | 1987.3 | 2485.1 | 10615.4 | 19028.5 | 19487.5 | 14882.7 | 13313.6 |
| 70°   | 872.2  | 888.1  | 1125.1 | 1484.5 | 1902.6 | 2136.7 | 7269.1  | 18018.0 | 18756.7 | 15809.6 | 12632.5 |
| 72.5° | 456.0  | 443.0  | 556.5  | 1171.8 | 2141.6 | 2226.2 | 3840.1  | 15052.9 | 15915.1 | 14641.8 | 10914.1 |
| 75°   | 355.4  | 323.6  | 311.6  | 462.9  | 1883.7 | 2308.8 | 2230.2  | 10699.1 | 11350.2 | 10554.7 | 7295.0  |
| 77.5° | 334.6  | 295.6  | 272.8  | 273.8  | 829.4  | 2402.5 | 1804.1  | 6296.4  | 6296.4  | 5034.8  | 2327.8  |
| 80°   | 268.8  | 232.9  | 218.1  | 248.9  | 400.2  | 2214.2 | 1882.7  | 2869.3  | 2447.3  | 1301.3  | 641.2   |
| 82.5° | 177.2  | 158.3  | 159.3  | 202.1  | 303.6  | 1478.5 | 2180.5  | 1416.8  | 1064.3  | 576.5   | 377.4   |
| 85°   | 112.5  | 96.5   | 107.5  | 141.4  | 227.0  | 659.2  | 2158.5  | 984.7   | 704.9   | 323.6   | 188.2   |
| 87.5° | 56.7   | 43.8   | 53.7   | 73.6   | 138.4  | 189.1  | 1777.2  | 879.1   | 522.7   | 134.4   | 102.6   |
| 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):**

|       | 90°     | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3316.4  | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 | 3316.4 |
| 2.5°  | 3300.5  | 3278.7 | 3267.6 | 3249.7 | 3227.8 | 3205.8 | 3191.0 | 3184.1 | 3180.1 | 3182.0 | 3181.1 |
| 5°    | 3324.4  | 3295.6 | 3248.8 | 3182.0 | 3113.4 | 3040.6 | 2984.9 | 2942.2 | 2915.2 | 2907.3 | 2905.2 |
| 7.5°  | 3342.3  | 3300.5 | 3212.9 | 3091.5 | 2973.9 | 2846.5 | 2738.0 | 2651.4 | 2592.6 | 2565.7 | 2564.8 |
| 10°   | 3339.4  | 3285.5 | 3147.2 | 2968.0 | 2795.7 | 2608.6 | 2438.3 | 2293.0 | 2187.4 | 2136.7 | 2134.6 |
| 12.5° | 3342.3  | 3268.7 | 3066.6 | 2823.6 | 2576.7 | 2308.8 | 2055.9 | 1830.0 | 1672.6 | 1598.0 | 1594.9 |
| 15°   | 3354.3  | 3250.8 | 2983.9 | 2662.3 | 2320.7 | 1942.5 | 1581.1 | 1297.4 | 1153.9 | 1105.1 | 1105.1 |
| 17.5° | 3353.2  | 3220.9 | 2888.4 | 2475.2 | 2017.2 | 1510.4 | 1079.3 | 904.0  | 890.1  | 934.9  | 941.9  |
| 20°   | 3333.4  | 3173.1 | 2765.0 | 2253.2 | 1660.7 | 1045.4 | 731.8  | 706.9  | 818.5  | 941.9  | 955.8  |
| 22.5° | 3302.5  | 3111.3 | 2622.4 | 1995.3 | 1245.5 | 681.0  | 564.6  | 602.3  | 753.7  | 907.1  | 928.9  |
| 25°   | 3259.7  | 3036.7 | 2459.2 | 1695.6 | 828.4  | 489.8  | 470.9  | 517.8  | 624.3  | 726.8  | 742.8  |
| 27.5° | 3196.9  | 2942.2 | 2281.0 | 1370.9 | 528.7  | 403.2  | 410.2  | 443.0  | 488.8  | 532.6  | 541.6  |
| 30°   | 3118.4  | 2831.6 | 2086.9 | 1011.5 | 401.2  | 360.4  | 372.3  | 392.2  | 412.2  | 440.1  | 446.0  |
| 32.5° | 3038.7  | 2719.0 | 1884.7 | 695.0  | 350.5  | 337.5  | 349.5  | 360.4  | 377.4  | 396.3  | 400.2  |
| 35°   | 2966.9  | 2614.6 | 1676.7 | 484.9  | 328.6  | 322.6  | 328.6  | 335.5  | 352.5  | 371.4  | 373.3  |
| 37.5° | 2915.2  | 2529.0 | 1459.6 | 383.3  | 315.6  | 309.6  | 312.6  | 315.6  | 335.5  | 363.4  | 366.3  |
| 40°   | 2908.3  | 2472.2 | 1239.5 | 344.5  | 305.7  | 297.7  | 295.6  | 297.7  | 323.6  | 355.4  | 358.5  |
| 42.5° | 2975.9  | 2475.2 | 1024.6 | 328.6  | 297.7  | 288.8  | 280.8  | 284.7  | 307.7  | 332.5  | 334.6  |
| 45°   | 3136.3  | 2544.8 | 838.3  | 321.6  | 290.7  | 283.7  | 271.8  | 273.8  | 284.7  | 297.7  | 299.7  |
| 47.5° | 3419.0  | 2697.2 | 696.0  | 317.6  | 284.7  | 278.8  | 263.9  | 257.9  | 258.8  | 265.8  | 265.8  |
| 50°   | 3871.0  | 2952.0 | 609.3  | 313.6  | 279.8  | 268.8  | 251.9  | 240.0  | 237.0  | 240.9  | 241.9  |
| 52.5° | 4545.0  | 3389.1 | 567.5  | 305.7  | 270.9  | 255.8  | 237.0  | 225.0  | 220.0  | 224.0  | 224.0  |
| 55°   | 5456.1  | 4087.1 | 547.6  | 294.7  | 259.8  | 240.0  | 223.0  | 213.0  | 209.1  | 212.1  | 212.1  |
| 57.5° | 6494.5  | 4994.1 | 581.5  | 279.8  | 246.0  | 223.0  | 211.1  | 204.1  | 201.1  | 204.1  | 205.1  |
| 60°   | 7728.1  | 6180.9 | 814.4  | 260.8  | 231.0  | 208.1  | 201.1  | 197.1  | 195.1  | 198.1  | 198.1  |
| 62.5° | 9367.9  | 7759.9 | 1260.6 | 246.0  | 215.0  | 194.2  | 192.2  | 190.2  | 188.2  | 191.2  | 191.2  |
| 65°   | 11138.1 | 9196.7 | 1297.4 | 237.0  | 201.1  | 182.3  | 183.2  | 183.2  | 181.2  | 184.2  | 184.2  |
| 67.5° | 11701.6 | 9072.3 | 724.8  | 226.0  | 184.2  | 170.2  | 174.3  | 174.3  | 173.2  | 176.2  | 175.3  |
| 68°   | 11582.1 | 8875.0 | 631.2  | 223.0  | 181.2  | 167.2  | 171.2  | 172.2  | 171.2  | 174.3  | 173.2  |
| 70°   | 10692.1 | 7791.9 | 415.1  | 206.1  | 168.3  | 157.4  | 163.3  | 164.3  | 163.3  | 167.2  | 166.3  |
| 72.5° | 8826.3  | 5844.4 | 306.7  | 180.2  | 152.3  | 144.3  | 150.3  | 151.4  | 152.3  | 156.3  | 155.3  |
| 75°   | 5605.4  | 3227.8 | 241.9  | 153.3  | 136.3  | 129.5  | 135.4  | 138.4  | 140.4  | 146.4  | 143.3  |
| 77.5° | 1535.3  | 979.7  | 196.1  | 130.4  | 117.5  | 114.5  | 118.4  | 122.5  | 124.4  | 131.4  | 126.4  |
| 80°   | 537.7   | 433.1  | 163.3  | 110.5  | 97.6   | 96.5   | 100.5  | 104.6  | 106.5  | 112.5  | 106.5  |
| 82.5° | 326.5   | 282.8  | 130.4  | 86.7   | 76.7   | 75.7   | 80.7   | 84.6   | 86.7   | 86.7   | 82.6   |
| 85°   | 170.2   | 149.3  | 95.6   | 60.7   | 52.8   | 49.8   | 58.8   | 63.7   | 64.7   | 63.7   | 60.7   |
| 87.5° | 95.6    | 84.6   | 50.8   | 28.9   | 23.9   | 24.9   | 30.8   | 37.8   | 40.9   | 39.9   | 37.8   |
| 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)