

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: P195198

Luminaire Tested: **NAV-AF-06-D-UNV-SL4-7060-600-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195198  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-06-D-UNV-SL4-7060-600-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(6) 70 CRI, 5700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 19334 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G4

Input Watts (W): 193  
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

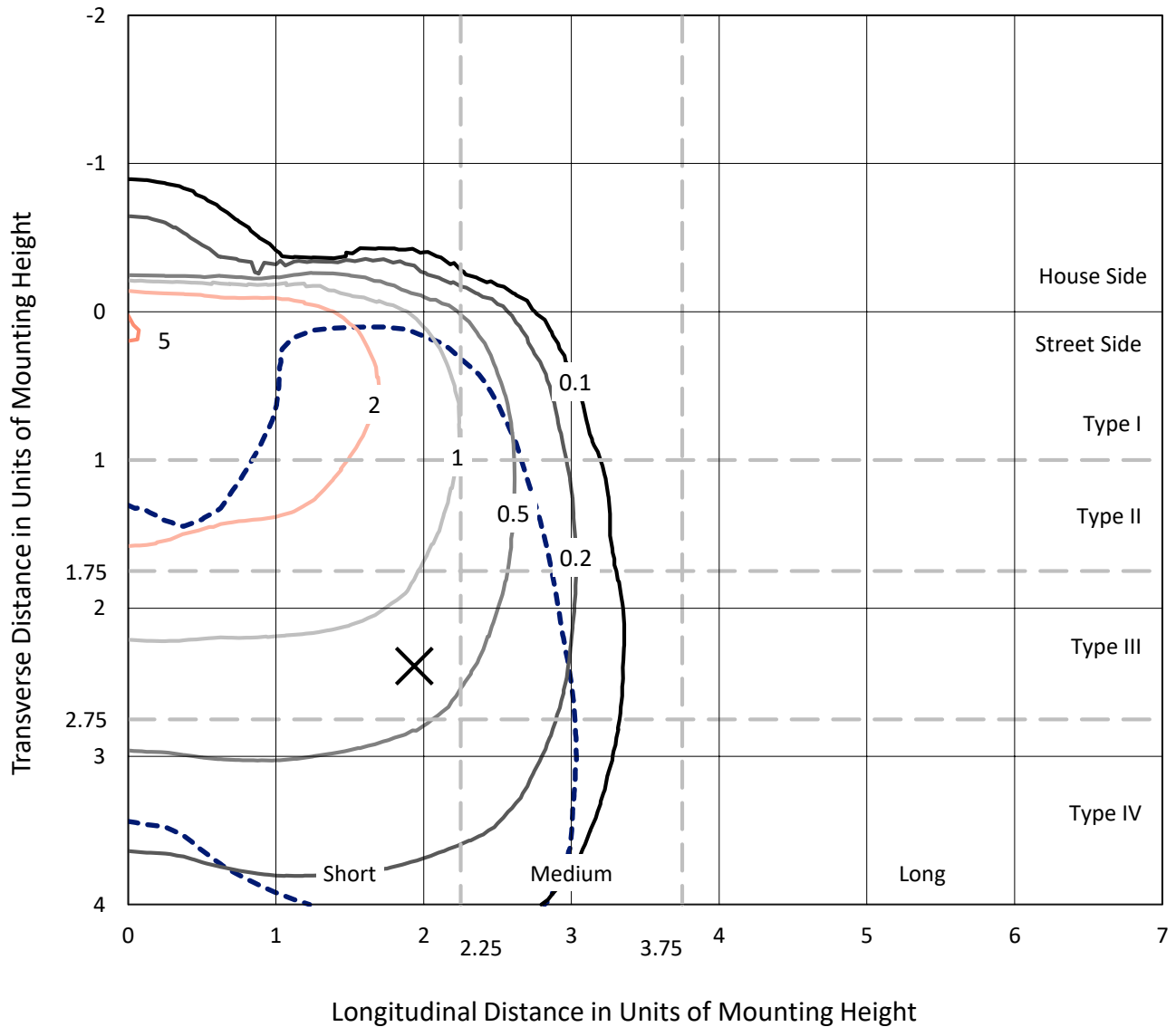


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

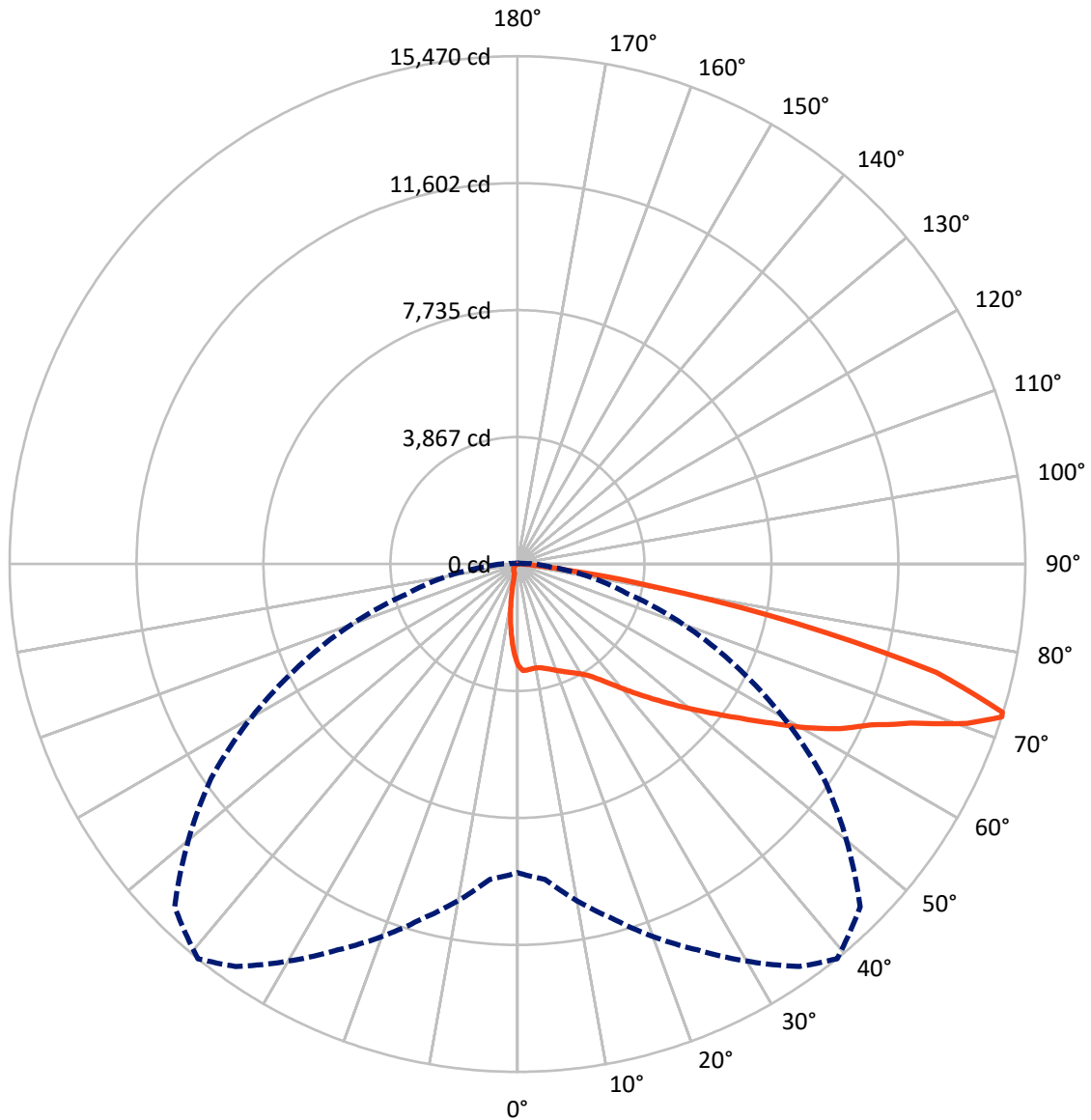


Based on 25 foot mounting height. Maximum calculated value = 5.2 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral      - - - Horizontal Cone Through 72-Deg Vertical

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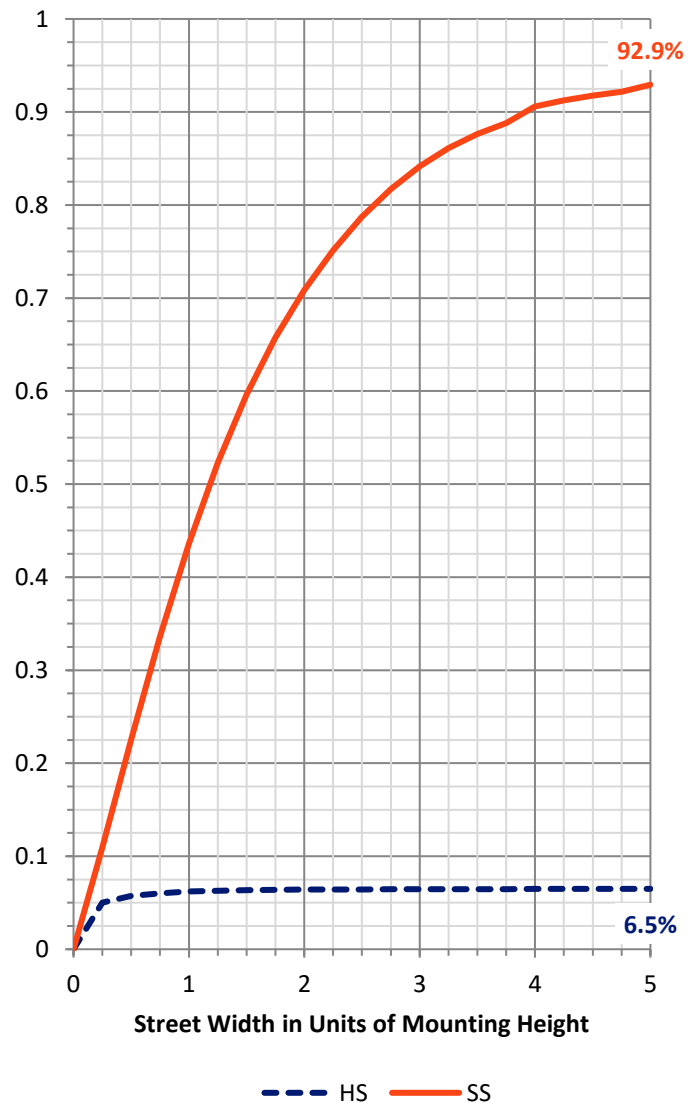
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1267.1   | 0.0    | 1267.1  |
|                    | % Fixture | 6.6      | 0.0    | 6.6     |
| <b>Street Side</b> | Lumens    | 18066.9  | 0.0    | 18066.9 |
|                    | % Fixture | 93.4     | 0.0    | 93.4    |
| <b>Total</b>       | Lumens    | 19334.0  | 0.0    | 19334.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 251.7   | 1.3       |
| 10°-20°   | 609.4   | 3.2       |
| 20°-30°   | 1012.1  | 5.2       |
| 30°-40°   | 1613.0  | 8.3       |
| 40°-50°   | 2662.5  | 13.8      |
| 50°-60°   | 4020.8  | 20.8      |
| 60°-70°   | 5237.8  | 27.1      |
| 70°-80°   | 3539.2  | 18.3      |
| 80°-90°   | 387.6   | 2.0       |
| 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°    | 19334.0 | 100.0     |
| 0°-180°   | 19334.0 | 100.0     |

**Coefficient of Utilization**



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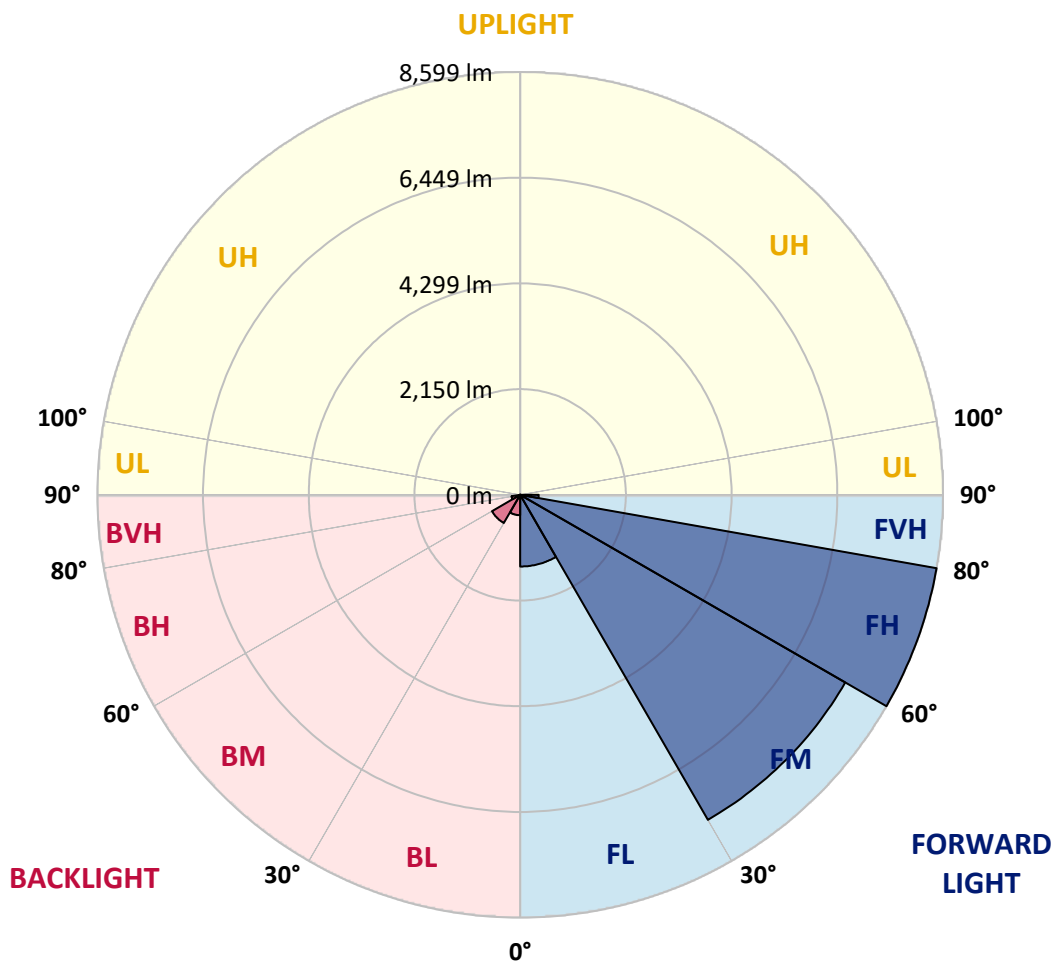
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1458.2 | 7.5       |                         |      |          |
| FM   | (30°-60°)   | 7633.3 | 39.5      |                         |      |          |
| FH   | (60°-80°)   | 8598.9 | 44.5      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 376.5  | 1.9       |                         |      | G3/500   |
| BL   | (0°-30°)    | 414.9  | 2.1       | B1/500                  |      |          |
| BM   | (30°-60°)   | 663.0  | 3.4       | B1/1000                 |      |          |
| BH   | (60°-80°)   | 178.1  | 0.9       | B1/500                  |      | G1/500   |
| BVH  | (80°-90°)   | 11.1   | 0.1       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |          |

**BUG Rating: B1-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°     | 25°     | 35°     | 39°     | 45°     | 55°     | 65°     | 75°     | 85°    |
|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 3094.5 | 3094.5 | 3094.5  | 3094.5  | 3094.5  | 3094.5  | 3094.5  | 3094.5  | 3094.5  | 3094.5  | 3094.5 |
| 2.5°  | 3295.2 | 3301.2 | 3293.6  | 3280.0  | 3260.2  | 3248.0  | 3231.3  | 3194.8  | 3149.2  | 3109.7  | 3064.1 |
| 5°    | 3321.0 | 3324.0 | 3314.9  | 3289.1  | 3258.7  | 3242.0  | 3220.7  | 3181.2  | 3134.0  | 3079.3  | 2997.3 |
| 7.5°  | 3328.6 | 3327.1 | 3316.4  | 3284.5  | 3237.4  | 3216.1  | 3179.6  | 3131.0  | 3082.4  | 3032.2  | 2939.5 |
| 10°   | 3325.6 | 3325.6 | 3318.0  | 3287.6  | 3234.4  | 3214.6  | 3173.6  | 3121.9  | 3061.1  | 3010.9  | 2912.1 |
| 12.5° | 3314.9 | 3321.0 | 3316.4  | 3299.7  | 3260.2  | 3245.0  | 3208.5  | 3156.8  | 3099.1  | 3047.4  | 2942.5 |
| 15°   | 3328.6 | 3337.7 | 3346.8  | 3340.8  | 3318.0  | 3304.3  | 3270.8  | 3217.6  | 3170.5  | 3115.8  | 3003.3 |
| 17.5° | 3383.3 | 3403.1 | 3424.4  | 3425.9  | 3401.6  | 3377.2  | 3339.2  | 3284.5  | 3238.9  | 3188.8  | 3067.2 |
| 20°   | 3486.7 | 3501.9 | 3541.4  | 3549.0  | 3500.3  | 3465.4  | 3412.2  | 3348.4  | 3302.8  | 3260.2  | 3126.4 |
| 22.5° | 3640.2 | 3656.9 | 3688.8  | 3678.2  | 3596.1  | 3555.1  | 3488.2  | 3415.2  | 3368.1  | 3343.8  | 3194.8 |
| 25°   | 3872.7 | 3877.3 | 3884.9  | 3837.8  | 3702.5  | 3656.9  | 3574.8  | 3492.7  | 3454.7  | 3451.7  | 3292.1 |
| 27.5° | 4146.3 | 4152.4 | 4118.9  | 4014.1  | 3821.0  | 3761.8  | 3669.1  | 3594.6  | 3576.3  | 3599.1  | 3415.2 |
| 30°   | 4459.4 | 4460.9 | 4368.2  | 4198.0  | 3957.8  | 3892.5  | 3796.7  | 3714.7  | 3731.4  | 3787.6  | 3573.3 |
| 32.5° | 4780.1 | 4764.9 | 4637.2  | 4415.3  | 4144.8  | 4065.8  | 3983.7  | 3901.6  | 3950.2  | 4064.2  | 3804.3 |
| 35°   | 5073.5 | 5067.4 | 4916.9  | 4658.5  | 4388.0  | 4318.1  | 4258.8  | 4172.1  | 4251.2  | 4436.6  | 4118.9 |
| 37.5° | 5366.8 | 5362.2 | 5190.5  | 4921.5  | 4687.4  | 4637.2  | 4593.2  | 4526.3  | 4655.5  | 4927.5  | 4540.0 |
| 40°   | 5690.5 | 5682.9 | 5471.7  | 5213.3  | 5035.5  | 5008.1  | 4982.3  | 4953.4  | 5173.8  | 5552.2  | 5064.3 |
| 42.5° | 6090.3 | 6056.8 | 5769.6  | 5530.9  | 5418.5  | 5426.1  | 5427.6  | 5456.5  | 5801.5  | 6295.5  | 5682.9 |
| 45°   | 6549.3 | 6474.8 | 6069.0  | 5871.4  | 5839.5  | 5885.1  | 5930.7  | 6050.8  | 6532.6  | 7151.2  | 6366.9 |
| 47.5° | 6994.6 | 6874.5 | 6414.0  | 6237.7  | 6303.1  | 6397.3  | 6506.7  | 6740.8  | 7353.3  | 8046.4  | 6987.0 |
| 50°   | 7377.6 | 7254.5 | 6756.0  | 6610.1  | 6818.3  | 6958.1  | 7152.7  | 7506.8  | 8219.7  | 8803.3  | 7377.6 |
| 52.5° | 7678.6 | 7581.3 | 7117.7  | 7020.5  | 7389.8  | 7581.3  | 7886.8  | 8351.9  | 9037.4  | 9301.8  | 7651.2 |
| 55°   | 7900.5 | 7851.8 | 7464.3  | 7477.9  | 8025.1  | 8301.7  | 8681.7  | 9207.6  | 9727.4  | 9689.4  | 7856.4 |
| 57.5° | 8151.3 | 8113.3 | 7827.5  | 8017.5  | 8789.6  | 9146.8  | 9586.1  | 10008.6 | 10229.0 | 10001.0 | 8057.0 |
| 60°   | 8408.1 | 8420.3 | 8268.3  | 8671.1  | 9735.0  | 10130.2 | 10513.2 | 10618.1 | 10659.1 | 10317.1 | 8268.3 |
| 62.5° | 8602.7 | 8654.4 | 8668.0  | 9376.3  | 10704.7 | 11042.1 | 11207.8 | 11133.3 | 11124.2 | 10741.2 | 8251.6 |
| 65°   | 8826.1 | 8961.4 | 9186.3  | 10149.9 | 11586.3 | 11808.2 | 11926.7 | 12034.6 | 11806.6 | 10867.3 | 7439.9 |
| 67.5° | 9212.2 | 9424.9 | 9931.1  | 11098.4 | 12604.6 | 12932.9 | 13268.8 | 13154.8 | 11908.5 | 9586.1  | 5667.7 |
| 70°   | 9732.0 | 9991.9 | 10885.6 | 12337.1 | 13986.2 | 14536.4 | 14817.6 | 13065.1 | 10110.4 | 6623.8  | 2989.7 |
| 72°   | 9403.7 | 9639.3 | 11180.4 | 12969.4 | 14965.0 | 15469.6 | 14765.9 | 11396.3 | 7329.0  | 3433.5  | 1001.6 |
| 72.5° | 9084.5 | 9327.7 | 11086.2 | 12961.8 | 15062.3 | 15448.3 | 14430.0 | 10738.1 | 6485.4  | 2672.0  | 690.0  |
| 75°   | 6303.1 | 6610.1 | 9504.0  | 11651.6 | 13601.7 | 13177.6 | 11040.6 | 6502.2  | 2349.8  | 459.0   | 228.0  |
| 77.5° | 3258.7 | 3495.8 | 5765.0  | 8233.3  | 9479.7  | 8681.7  | 6525.0  | 2820.9  | 650.5   | 243.2   | 150.5  |
| 80°   | 2020.0 | 2137.0 | 2696.3  | 4056.6  | 4924.5  | 4307.4  | 2878.7  | 1139.9  | 416.5   | 144.4   | 120.1  |
| 82.5° | 1045.7 | 1135.4 | 1697.7  | 1636.9  | 1819.3  | 1512.3  | 1062.4  | 954.5   | 256.9   | 89.7    | 123.1  |
| 85°   | 343.5  | 364.8  | 1042.7  | 1088.3  | 778.2   | 522.8   | 471.2   | 910.4   | 74.5    | 57.8    | 104.9  |
| 87.5° | 45.6   | 53.2   | 366.3   | 623.2   | 383.0   | 237.1   | 282.7   | 320.7   | 25.8    | 31.9    | 28.9   |
| 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°    | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 | 3094.5 |
| 2.5°  | 3033.7 | 3014.0 | 2951.7 | 2889.3 | 2817.9 | 2752.6 | 2700.9 | 2667.4 | 2682.6 | 2632.5 | 2640.1 |
| 5°    | 2947.1 | 2896.9 | 2760.2 | 2612.7 | 2453.1 | 2304.2 | 2185.6 | 2097.5 | 2080.8 | 2004.8 | 2007.8 |
| 7.5°  | 2863.5 | 2781.4 | 2559.5 | 2316.3 | 2051.9 | 1837.6 | 1643.0 | 1472.8 | 1412.0 | 1349.7 | 1313.2 |
| 10°   | 2817.9 | 2705.4 | 2390.8 | 2036.7 | 1664.3 | 1349.7 | 1076.1 | 861.8  | 772.1  | 706.8  | 674.8  |
| 12.5° | 2831.6 | 2682.6 | 2264.7 | 1782.9 | 1293.4 | 893.7  | 608.0  | 451.4  | 396.7  | 366.3  | 355.7  |
| 15°   | 2877.2 | 2687.2 | 2150.7 | 1535.1 | 940.8  | 541.1  | 357.2  | 305.5  | 300.9  | 299.4  | 297.9  |
| 17.5° | 2919.7 | 2691.8 | 2030.6 | 1276.7 | 629.2  | 345.0  | 287.3  | 282.7  | 282.7  | 282.7  | 282.7  |
| 20°   | 2963.8 | 2693.3 | 1898.4 | 1006.2 | 413.4  | 282.7  | 270.5  | 267.5  | 270.5  | 270.5  | 270.5  |
| 22.5° | 3015.5 | 2703.9 | 1770.7 | 743.2  | 305.5  | 266.0  | 258.4  | 256.9  | 258.4  | 258.4  | 256.9  |
| 25°   | 3079.3 | 2726.7 | 1632.4 | 532.0  | 276.6  | 255.3  | 247.7  | 246.2  | 247.7  | 246.2  | 246.2  |
| 27.5° | 3164.4 | 2757.1 | 1471.3 | 381.5  | 264.5  | 244.7  | 237.1  | 237.1  | 237.1  | 235.6  | 235.6  |
| 30°   | 3273.9 | 2793.6 | 1255.4 | 300.9  | 252.3  | 234.1  | 228.0  | 228.0  | 226.5  | 224.9  | 224.9  |
| 32.5° | 3430.4 | 2852.9 | 1019.9 | 272.1  | 238.6  | 220.4  | 214.3  | 215.8  | 214.3  | 212.8  | 211.3  |
| 35°   | 3652.3 | 2945.6 | 787.3  | 256.9  | 224.9  | 206.7  | 200.6  | 200.6  | 200.6  | 197.6  | 197.6  |
| 37.5° | 3967.0 | 3086.9 | 589.7  | 241.7  | 211.3  | 193.0  | 185.4  | 185.4  | 183.9  | 180.9  | 182.4  |
| 40°   | 4356.1 | 3264.8 | 427.1  | 228.0  | 197.6  | 177.8  | 171.7  | 168.7  | 165.7  | 162.6  | 162.6  |
| 42.5° | 4824.2 | 3438.0 | 320.7  | 214.3  | 183.9  | 165.7  | 158.1  | 155.0  | 149.0  | 145.9  | 144.4  |
| 45°   | 5348.6 | 3621.9 | 266.0  | 197.6  | 168.7  | 152.0  | 145.9  | 139.8  | 132.2  | 127.7  | 126.2  |
| 47.5° | 5790.8 | 3734.4 | 237.1  | 180.9  | 153.5  | 138.3  | 132.2  | 123.1  | 114.0  | 111.0  | 111.0  |
| 50°   | 6056.8 | 3687.3 | 212.8  | 164.2  | 138.3  | 124.6  | 117.0  | 104.9  | 98.8   | 95.8   | 94.2   |
| 52.5° | 6205.8 | 3547.5 | 193.0  | 150.5  | 124.6  | 109.4  | 98.8   | 88.2   | 85.1   | 82.1   | 82.1   |
| 55°   | 6307.6 | 3345.3 | 171.7  | 136.8  | 112.5  | 95.8   | 83.6   | 76.0   | 73.0   | 71.4   | 69.9   |
| 57.5° | 6404.9 | 3099.1 | 152.0  | 124.6  | 100.3  | 85.1   | 71.4   | 68.4   | 62.3   | 60.8   | 60.8   |
| 60°   | 6433.8 | 2760.2 | 133.8  | 111.0  | 89.7   | 74.5   | 62.3   | 57.8   | 51.7   | 50.2   | 50.2   |
| 62.5° | 6066.0 | 2196.3 | 118.6  | 94.2   | 79.0   | 63.8   | 54.7   | 48.6   | 42.6   | 42.6   | 42.6   |
| 65°   | 5068.9 | 1491.0 | 101.8  | 82.1   | 69.9   | 54.7   | 47.1   | 39.5   | 36.5   | 36.5   | 36.5   |
| 67.5° | 3530.7 | 831.4  | 86.6   | 69.9   | 59.3   | 45.6   | 39.5   | 33.4   | 31.9   | 33.4   | 33.4   |
| 70°   | 1591.3 | 329.8  | 73.0   | 57.8   | 48.6   | 38.0   | 33.4   | 28.9   | 31.9   | 31.9   | 31.9   |
| 72°   | 477.3  | 176.3  | 60.8   | 47.1   | 39.5   | 33.4   | 28.9   | 27.4   | 30.4   | 31.9   | 31.9   |
| 72.5° | 354.1  | 158.1  | 57.8   | 45.6   | 39.5   | 31.9   | 27.4   | 27.4   | 30.4   | 31.9   | 31.9   |
| 75°   | 182.4  | 107.9  | 44.1   | 33.4   | 28.9   | 25.8   | 22.8   | 25.8   | 30.4   | 30.4   | 30.4   |
| 77.5° | 142.9  | 88.2   | 36.5   | 25.8   | 24.3   | 22.8   | 21.3   | 24.3   | 27.4   | 27.4   | 27.4   |
| 80°   | 133.8  | 57.8   | 28.9   | 24.3   | 21.3   | 19.8   | 19.8   | 21.3   | 24.3   | 25.8   | 25.8   |
| 82.5° | 135.3  | 47.1   | 25.8   | 22.8   | 19.8   | 18.2   | 18.2   | 19.8   | 22.8   | 24.3   | 24.3   |
| 85°   | 86.6   | 31.9   | 22.8   | 19.8   | 18.2   | 16.7   | 16.7   | 18.2   | 21.3   | 22.8   | 22.8   |
| 87.5° | 28.9   | 24.3   | 19.8   | 18.2   | 15.2   | 15.2   | 15.2   | 15.2   | 18.2   | 19.8   | 21.3   |
| 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)