

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: P270604

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7027-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270604  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-05-D-UNV-SL4-7027-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL  
LIGHT ELIMINATOR OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20135.1 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G4

Input Watts (W): 210  
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

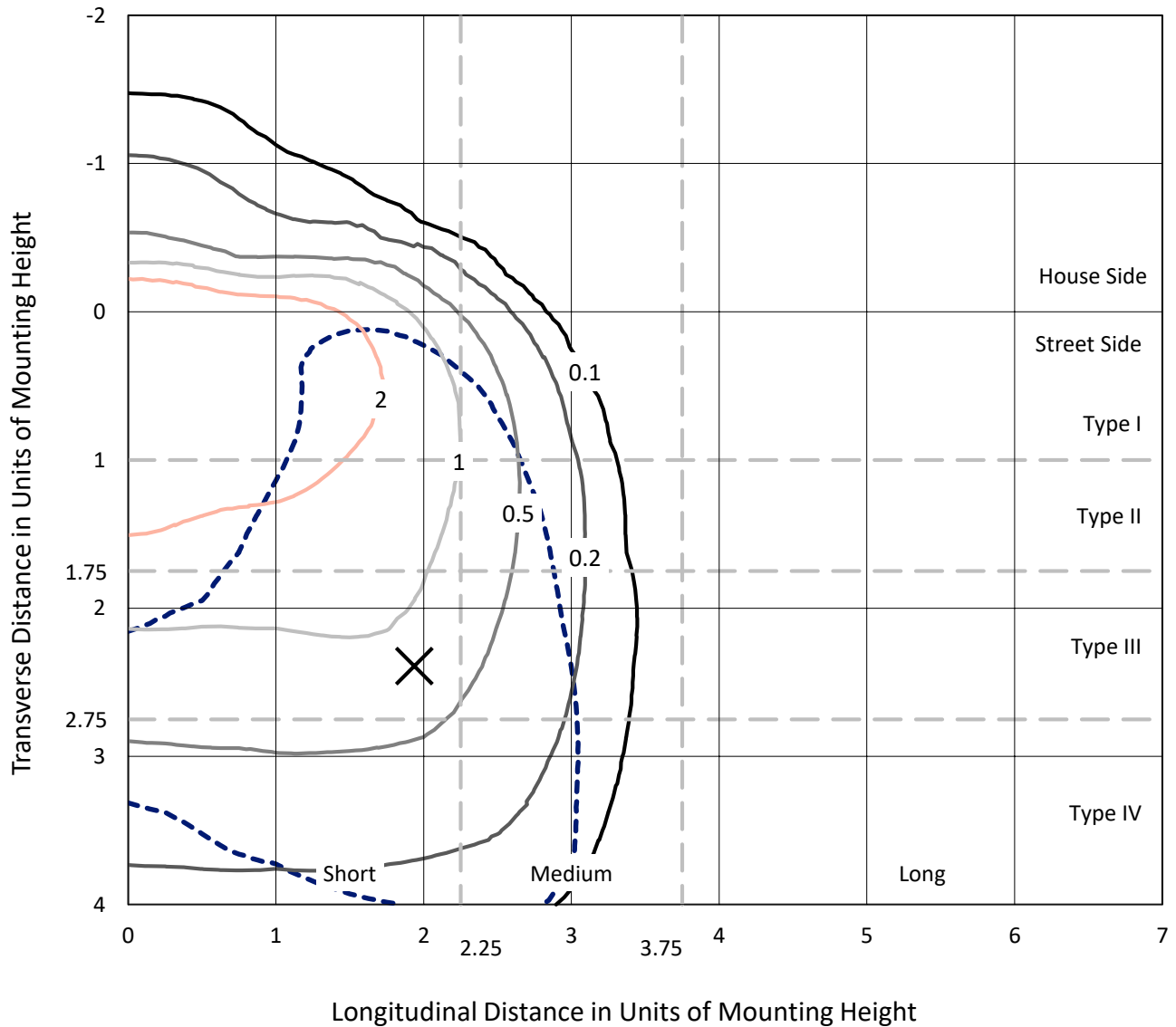


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

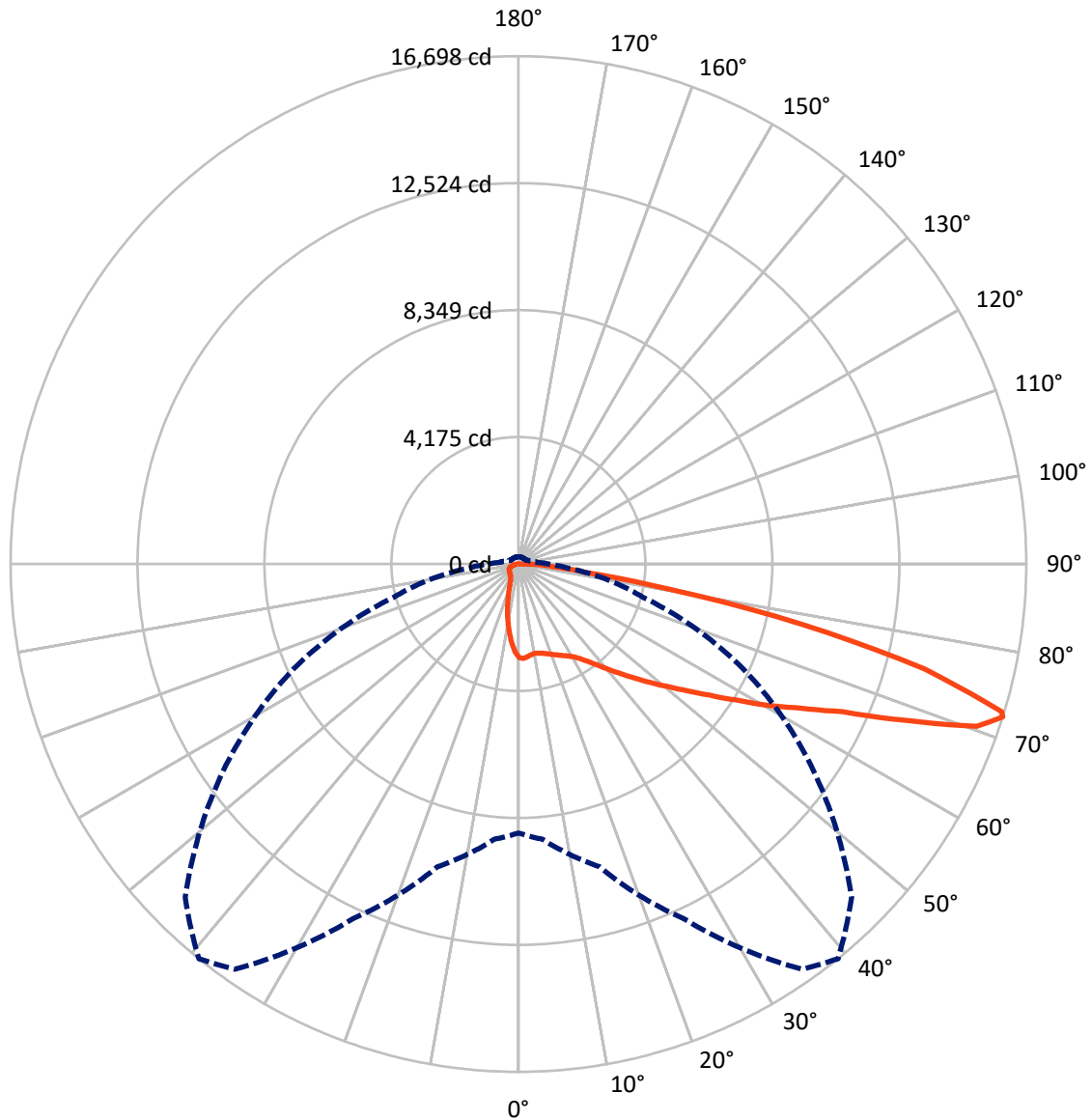


Based on 25 foot mounting height. Maximum calculated value = 4.9 fc  
 Type IV - Short - Non-Cutoff

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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    | 2308.8   | 0.0    | 2308.8  |
|                    | % Fixture | 11.5     | 0.0    | 11.5    |
| <b>Street Side</b> | Lumens    | 17826.3  | 0.0    | 17826.3 |
|                    | % Fixture | 88.5     | 0.0    | 88.5    |
| <b>Total</b>       | Lumens    | 20135.1  | 0.0    | 20135.1 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 264.3   | 1.3       |
| 10°-20°   | 664.0   | 3.3       |
| 20°-30°   | 1034.8  | 5.1       |
| 30°-40°   | 1593.2  | 7.9       |
| 40°-50°   | 2597.3  | 12.9      |
| 50°-60°   | 4036.0  | 20.0      |
| 60°-70°   | 5402.0  | 26.8      |
| 70°-80°   | 3884.9  | 19.3      |
| 80°-90°   | 658.6   | 3.3       |
| 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°    | 20135.1 | 100.0     |
| 0°-180°   | 20135.1 | 100.0     |



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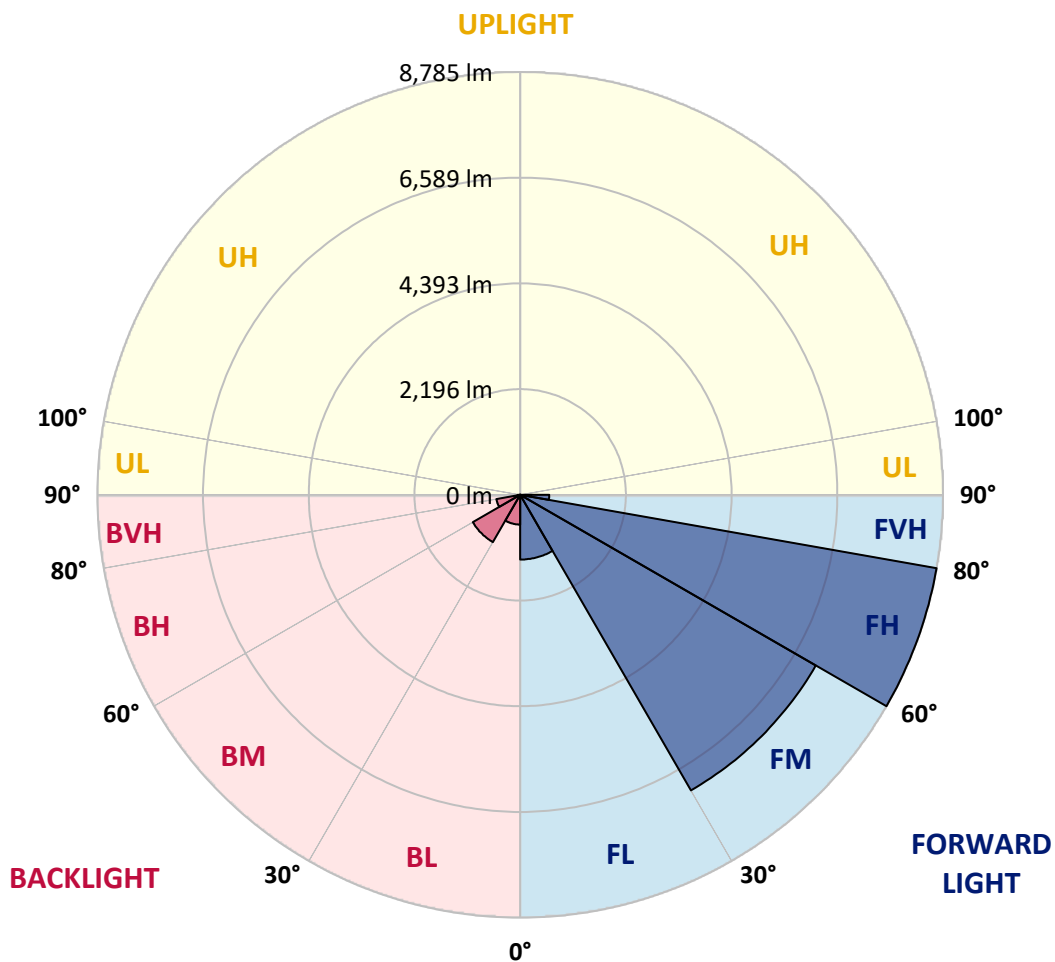
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1345.0 | 6.7       |                         |      |          |
| FM   | (30°-60°)   | 7092.0 | 35.2      |                         |      |          |
| FH   | (60°-80°)   | 8785.3 | 43.6      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 604.1  | 3.0       |                         |      | G4/750   |
| BL   | (0°-30°)    | 618.1  | 3.1       | B2/1000                 |      |          |
| BM   | (30°-60°)   | 1134.6 | 5.6       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 501.6  | 2.5       | B2/1000                 |      | G2/1000  |
| BVH  | (80°-90°)   | 54.4   | 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-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°     | 25°     | 35°     | 39°     | 45°     | 55°     | 65°     | 75°     | 85°    |
|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0°    | 3075.0 | 3075.0 | 3075.0  | 3075.0  | 3075.0  | 3075.0  | 3075.0  | 3075.0  | 3075.0  | 3075.0  | 3075.0 |
| 2.5°  | 3141.3 | 3142.6 | 3138.5  | 3126.3  | 3115.5  | 3110.1  | 3100.7  | 3084.4  | 3062.9  | 3047.9  | 3035.8 |
| 5°    | 3111.5 | 3115.5 | 3112.8  | 3092.5  | 3073.6  | 3062.9  | 3047.9  | 3025.0  | 2996.6  | 2984.3  | 2956.1 |
| 7.5°  | 3088.6 | 3091.2 | 3083.2  | 3060.2  | 3023.7  | 3010.1  | 2983.1  | 2953.4  | 2927.7  | 2910.1  | 2876.4 |
| 10°   | 3072.4 | 3075.0 | 3068.3  | 3045.3  | 3004.7  | 2988.5  | 2956.1  | 2923.7  | 2889.8  | 2868.2  | 2830.3 |
| 12.5° | 3049.2 | 3054.7 | 3054.7  | 3043.8  | 3016.9  | 3006.1  | 2973.6  | 2938.4  | 2907.4  | 2884.4  | 2837.0 |
| 15°   | 3045.3 | 3052.0 | 3064.2  | 3062.9  | 3054.7  | 3046.6  | 3020.9  | 2985.7  | 2958.7  | 2931.7  | 2873.6 |
| 17.5° | 3079.0 | 3093.9 | 3118.2  | 3126.3  | 3120.9  | 3103.4  | 3073.6  | 3041.2  | 3011.5  | 2985.7  | 2914.1 |
| 20°   | 3164.2 | 3172.4 | 3208.7  | 3225.1  | 3198.0  | 3172.4  | 3133.1  | 3091.2  | 3064.2  | 3043.8  | 2952.0 |
| 22.5° | 3292.6 | 3303.3 | 3333.2  | 3334.5  | 3277.7  | 3246.7  | 3196.7  | 3145.2  | 3119.6  | 3111.5  | 3003.4 |
| 25°   | 3498.1 | 3495.3 | 3503.5  | 3469.7  | 3366.9  | 3330.5  | 3269.7  | 3210.2  | 3192.5  | 3208.7  | 3079.0 |
| 27.5° | 3744.0 | 3737.3 | 3711.5  | 3623.8  | 3468.4  | 3421.0  | 3348.1  | 3295.3  | 3295.3  | 3333.2  | 3181.7 |
| 30°   | 4027.9 | 4021.2 | 3937.4  | 3789.9  | 3588.5  | 3534.6  | 3457.4  | 3402.2  | 3430.4  | 3503.5  | 3320.9 |
| 32.5° | 4327.9 | 4303.6 | 4186.0  | 3988.7  | 3760.2  | 3700.7  | 3626.5  | 3569.7  | 3623.8  | 3748.1  | 3521.0 |
| 35°   | 4610.5 | 4596.9 | 4452.3  | 4218.5  | 3981.9  | 3931.9  | 3880.6  | 3810.3  | 3896.8  | 4090.1  | 3803.6 |
| 37.5° | 4902.4 | 4891.6 | 4714.6  | 4465.8  | 4252.2  | 4218.5  | 4175.2  | 4126.5  | 4265.8  | 4519.9  | 4186.0 |
| 40°   | 5228.1 | 5206.5 | 4983.4  | 4734.7  | 4567.3  | 4551.1  | 4527.9  | 4514.5  | 4738.9  | 5117.4  | 4669.8 |
| 42.5° | 5597.2 | 5555.3 | 5267.3  | 5030.8  | 4910.6  | 4924.0  | 4911.9  | 4965.9  | 5309.3  | 5806.6  | 5245.7 |
| 45°   | 6018.9 | 5935.1 | 5549.9  | 5345.8  | 5290.4  | 5344.3  | 5370.1  | 5508.0  | 5983.7  | 6602.8  | 5889.1 |
| 47.5° | 6413.5 | 6305.5 | 5859.4  | 5687.7  | 5718.8  | 5812.0  | 5885.1  | 6128.3  | 6723.1  | 7389.5  | 6545.9 |
| 50°   | 6777.2 | 6655.5 | 6190.5  | 6041.8  | 6193.3  | 6325.7  | 6477.0  | 6820.4  | 7509.7  | 8199.1  | 7148.8 |
| 52.5° | 7046.1 | 6958.4 | 6521.6  | 6428.5  | 6737.9  | 6913.6  | 7155.5  | 7589.5  | 8304.6  | 8970.8  | 7686.7 |
| 55°   | 7254.3 | 7206.9 | 6844.7  | 6871.8  | 7354.3  | 7605.7  | 7898.9  | 8397.7  | 9145.3  | 9662.9  | 8119.3 |
| 57.5° | 7494.9 | 7459.7 | 7213.7  | 7407.1  | 8119.3  | 8435.7  | 8781.7  | 9335.8  | 9945.3  | 10272.5 | 8458.6 |
| 60°   | 7749.0 | 7749.0 | 7624.6  | 8051.8  | 9076.3  | 9438.5  | 9783.3  | 10214.4 | 10742.9 | 10821.3 | 8596.5 |
| 62.5° | 7940.8 | 7991.0 | 8035.5  | 8738.4  | 9984.7  | 10434.7 | 10813.2 | 11226.7 | 11568.7 | 11091.6 | 8272.0 |
| 65°   | 8219.3 | 8326.1 | 8577.6  | 9531.7  | 11109.2 | 11698.4 | 12209.5 | 12556.8 | 12237.8 | 10876.7 | 7213.7 |
| 67.5° | 8697.7 | 8856.0 | 9391.2  | 10713.1 | 12831.2 | 13713.7 | 14209.7 | 13609.7 | 12106.6 | 9523.7  | 5525.6 |
| 70°   | 9128.9 | 9352.1 | 10267.1 | 12212.1 | 15069.4 | 15985.9 | 15757.4 | 13365.1 | 10544.1 | 6981.3  | 3399.4 |
| 72°   | 8842.5 | 9085.7 | 10307.6 | 12864.9 | 16265.7 | 16698.2 | 15493.8 | 11844.4 | 8147.6  | 4260.4  | 1676.1 |
| 72.5° | 8654.6 | 8907.4 | 10176.4 | 12848.7 | 16298.0 | 16607.7 | 15127.5 | 11240.3 | 7396.1  | 3727.8  | 1355.7 |
| 75°   | 7230.0 | 7446.2 | 8750.5  | 11387.6 | 14362.6 | 13794.9 | 11805.3 | 7274.6  | 3399.4  | 1204.3  | 697.4  |
| 77.5° | 4721.3 | 4886.2 | 6033.7  | 7889.5  | 10060.3 | 9514.2  | 7185.4  | 3406.2  | 1274.5  | 731.2   | 524.4  |
| 80°   | 2372.2 | 2489.7 | 3229.0  | 4148.3  | 5429.5  | 4995.7  | 3316.9  | 1647.6  | 852.9   | 528.6   | 412.2  |
| 82.5° | 1650.4 | 1758.5 | 2223.5  | 2118.1  | 2269.4  | 2196.4  | 1559.7  | 1374.6  | 637.9   | 333.9   | 216.2  |
| 85°   | 1384.1 | 1496.2 | 1839.5  | 1509.8  | 1235.3  | 1125.9  | 1117.9  | 1298.9  | 421.8   | 164.8   | 182.4  |
| 87.5° | 1207.1 | 1377.3 | 1517.9  | 1102.9  | 847.6   | 747.5   | 823.1   | 1190.9  | 133.8   | 90.5    | 55.4   |
| 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):**

|       | 90°    | 95°    | 105°   | 115°   | 125°   | 135°   | 145°   | 155°   | 165°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 | 3075.0 |
| 2.5°  | 3015.5 | 3011.5 | 2991.1 | 2960.2 | 2937.1 | 2922.2 | 2893.9 | 2892.5 | 2895.1 | 2871.0 | 2880.3 |
| 5°    | 2930.5 | 2914.1 | 2861.5 | 2789.7 | 2731.7 | 2676.3 | 2615.4 | 2595.2 | 2577.5 | 2541.0 | 2545.2 |
| 7.5°  | 2841.2 | 2812.8 | 2720.8 | 2603.3 | 2491.1 | 2388.4 | 2286.9 | 2237.0 | 2199.1 | 2151.8 | 2151.8 |
| 10°   | 2788.5 | 2743.9 | 2603.3 | 2431.6 | 2253.2 | 2103.1 | 1951.7 | 1861.2 | 1795.1 | 1734.2 | 1730.0 |
| 12.5° | 2785.7 | 2718.1 | 2522.3 | 2285.6 | 2040.9 | 1830.1 | 1623.3 | 1484.1 | 1385.5 | 1313.9 | 1307.0 |
| 15°   | 2807.4 | 2712.7 | 2454.6 | 2149.1 | 1840.9 | 1566.6 | 1311.0 | 1134.0 | 1008.3 | 928.6  | 920.5  |
| 17.5° | 2826.2 | 2706.0 | 2381.5 | 2005.8 | 1646.4 | 1312.5 | 1028.6 | 844.8  | 725.8  | 661.0  | 654.1  |
| 20°   | 2843.9 | 2691.1 | 2288.3 | 1854.5 | 1431.4 | 1074.6 | 804.3  | 655.6  | 577.2  | 540.7  | 536.6  |
| 22.5° | 2869.5 | 2677.6 | 2191.1 | 1684.1 | 1220.5 | 874.5  | 663.7  | 556.9  | 515.0  | 497.4  | 494.6  |
| 25°   | 2911.4 | 2678.9 | 2096.5 | 1509.8 | 1027.2 | 728.5  | 574.5  | 508.3  | 485.3  | 473.0  | 473.0  |
| 27.5° | 2972.2 | 2695.2 | 2003.1 | 1332.7 | 863.7  | 628.5  | 521.7  | 482.5  | 467.7  | 458.2  | 455.5  |
| 30°   | 3061.5 | 2724.9 | 1904.4 | 1165.1 | 733.9  | 559.6  | 490.7  | 466.3  | 454.2  | 446.1  | 444.8  |
| 32.5° | 3191.1 | 2777.6 | 1800.5 | 1012.4 | 635.3  | 511.0  | 467.7  | 452.7  | 443.4  | 436.5  | 435.1  |
| 35°   | 3384.5 | 2871.0 | 1699.1 | 882.7  | 564.9  | 475.8  | 448.8  | 436.5  | 431.1  | 428.5  | 427.1  |
| 37.5° | 3668.4 | 3020.9 | 1603.0 | 781.3  | 519.0  | 452.7  | 429.7  | 423.0  | 420.3  | 420.3  | 420.3  |
| 40°   | 4025.1 | 3218.3 | 1516.6 | 709.7  | 493.3  | 435.1  | 416.4  | 411.0  | 411.0  | 412.2  | 412.2  |
| 42.5° | 4459.0 | 3465.7 | 1442.1 | 661.0  | 478.4  | 423.0  | 406.8  | 404.1  | 402.8  | 402.8  | 404.1  |
| 45°   | 4963.2 | 3757.6 | 1396.2 | 623.2  | 467.7  | 416.4  | 400.0  | 398.8  | 393.3  | 390.7  | 390.7  |
| 47.5° | 5470.0 | 4069.9 | 1393.5 | 601.4  | 454.2  | 408.2  | 393.3  | 393.3  | 382.5  | 377.1  | 378.5  |
| 50°   | 5943.1 | 4349.7 | 1423.3 | 596.0  | 446.1  | 396.1  | 386.6  | 387.9  | 373.1  | 366.2  | 364.9  |
| 52.5° | 6324.3 | 4563.1 | 1459.7 | 602.9  | 446.1  | 385.3  | 374.5  | 381.2  | 364.9  | 356.8  | 355.5  |
| 55°   | 6619.0 | 4711.8 | 1473.3 | 617.8  | 451.5  | 375.8  | 363.6  | 374.5  | 362.2  | 351.4  | 351.4  |
| 57.5° | 6829.9 | 4759.1 | 1415.2 | 624.4  | 459.6  | 374.5  | 352.8  | 373.1  | 366.2  | 352.8  | 352.8  |
| 60°   | 6752.7 | 4484.8 | 1198.9 | 598.8  | 458.2  | 371.7  | 344.7  | 375.8  | 379.9  | 364.9  | 364.9  |
| 62.5° | 6151.4 | 3752.2 | 962.4  | 540.7  | 435.1  | 362.2  | 335.2  | 373.1  | 389.2  | 383.8  | 381.2  |
| 65°   | 5007.8 | 2752.0 | 746.1  | 471.7  | 396.1  | 342.0  | 314.9  | 348.7  | 367.6  | 373.1  | 374.5  |
| 67.5° | 3529.1 | 1742.3 | 579.9  | 401.5  | 347.4  | 312.3  | 291.9  | 308.2  | 314.9  | 317.6  | 323.0  |
| 70°   | 1930.2 | 943.4  | 460.9  | 337.9  | 297.3  | 282.4  | 267.6  | 269.0  | 266.3  | 263.6  | 266.3  |
| 72°   | 969.1  | 616.3  | 389.2  | 293.2  | 263.6  | 254.1  | 247.4  | 243.4  | 243.4  | 239.3  | 240.6  |
| 72.5° | 833.9  | 573.1  | 375.8  | 282.4  | 255.5  | 247.4  | 242.0  | 238.0  | 236.6  | 233.7  | 235.1  |
| 75°   | 555.5  | 454.2  | 313.6  | 236.6  | 217.6  | 212.2  | 215.0  | 210.8  | 212.2  | 209.6  | 210.8  |
| 77.5° | 448.8  | 390.7  | 266.3  | 200.1  | 186.5  | 178.5  | 183.9  | 185.2  | 187.8  | 185.2  | 183.9  |
| 80°   | 375.8  | 332.6  | 223.0  | 164.8  | 155.4  | 148.7  | 151.4  | 160.8  | 162.2  | 154.1  | 152.7  |
| 82.5° | 243.4  | 267.6  | 175.7  | 128.4  | 118.9  | 116.2  | 123.0  | 132.5  | 135.1  | 124.3  | 121.6  |
| 85°   | 204.1  | 215.0  | 127.1  | 87.9   | 78.4   | 75.6   | 89.2   | 98.6   | 105.5  | 94.6   | 91.8   |
| 87.5° | 56.8   | 105.5  | 62.2   | 42.0   | 35.2   | 35.2   | 43.3   | 51.4   | 60.8   | 62.2   | 62.2   |
| 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)