

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: P195056

Luminaire Tested: **NAV-AF-02-D-UNV-AFL-7060-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195056
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-AFL-7060-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10083 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B1 - U0 - G1

Input Watts (W): 85
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

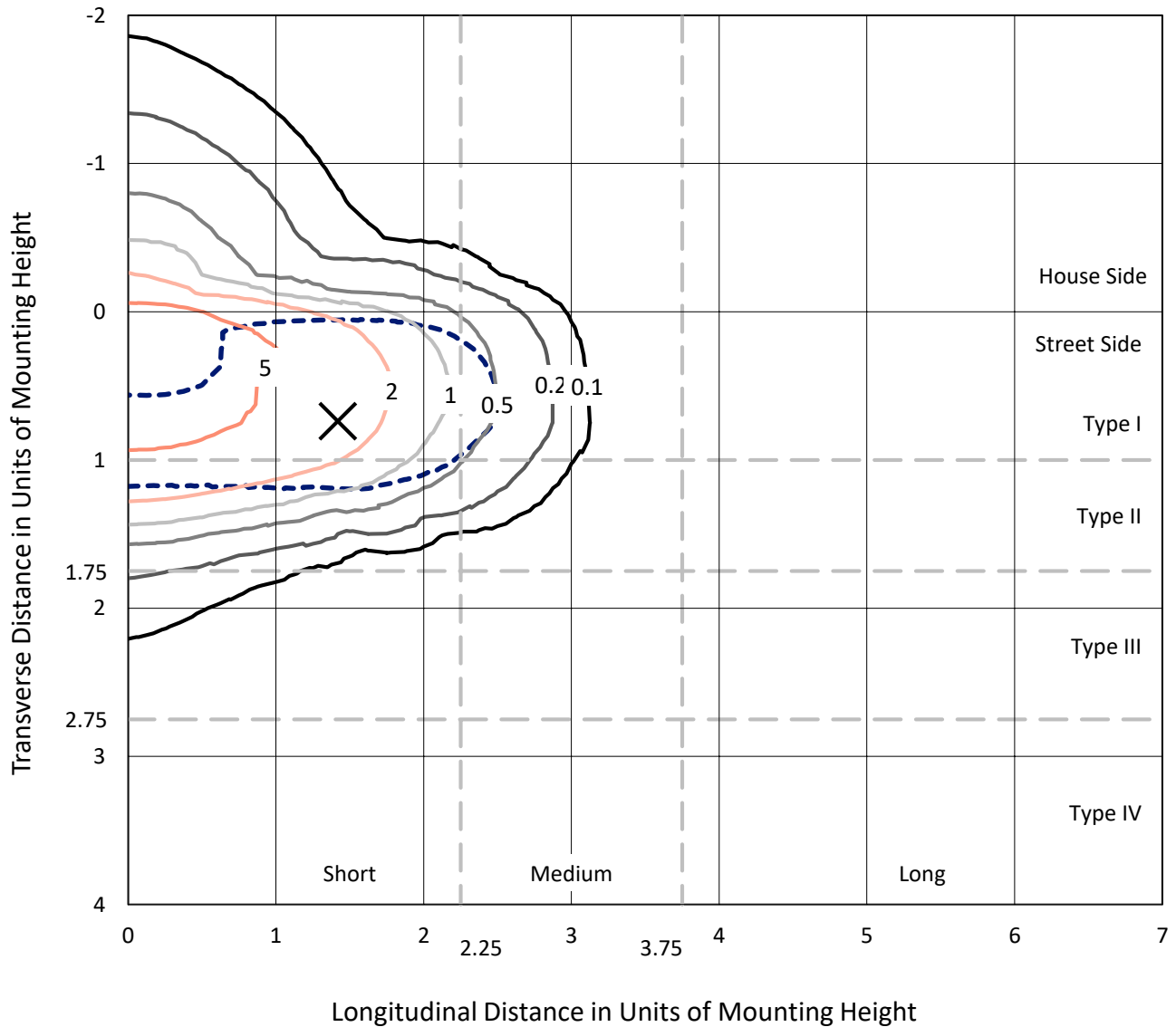


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Iso-Footcandle Lines of Horizontal Illumination

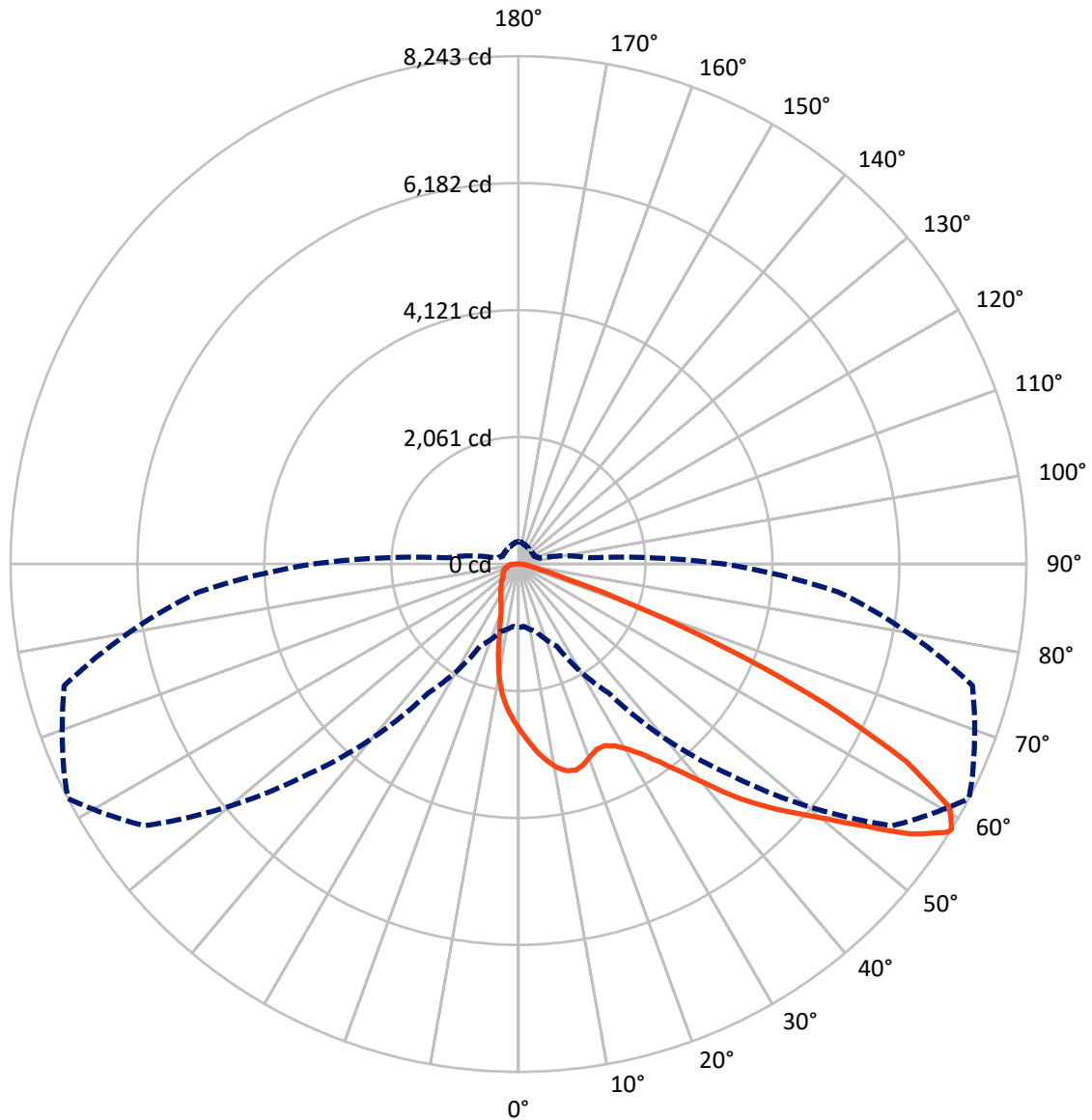
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.9 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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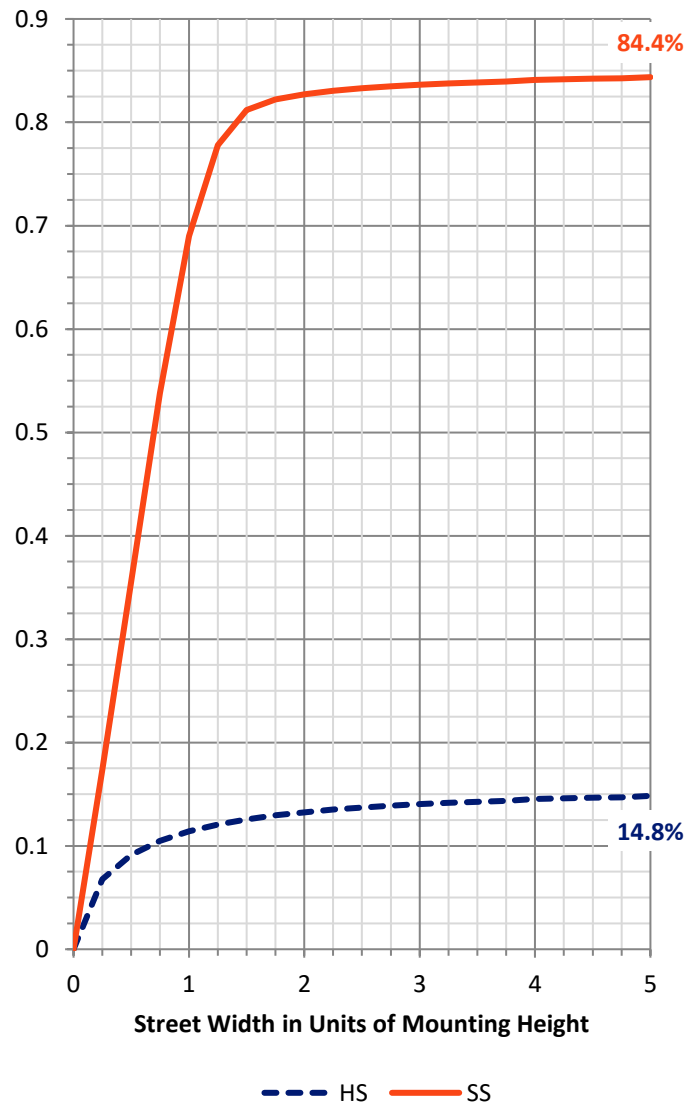
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1548.1 | 0.0 | 1548.1 |
| | % Fixture | 15.4 | 0.0 | 15.4 |
| Street Side | Lumens | 8534.9 | 0.0 | 8534.9 |
| | % Fixture | 84.6 | 0.0 | 84.6 |
| Total | Lumens | 10083.0 | 0.0 | 10083.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 240.6 | 2.4 |
| 10°-20° | 607.3 | 6.0 |
| 20°-30° | 984.2 | 9.8 |
| 30°-40° | 1571.3 | 15.6 |
| 40°-50° | 2285.5 | 22.7 |
| 50°-60° | 2391.6 | 23.7 |
| 60°-70° | 1458.0 | 14.5 |
| 70°-80° | 407.7 | 4.0 |
| 80°-90° | 136.7 | 1.4 |
| 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° | 10083.0 | 100.0 |
| 0°-180° | 10083.0 | 100.0 |



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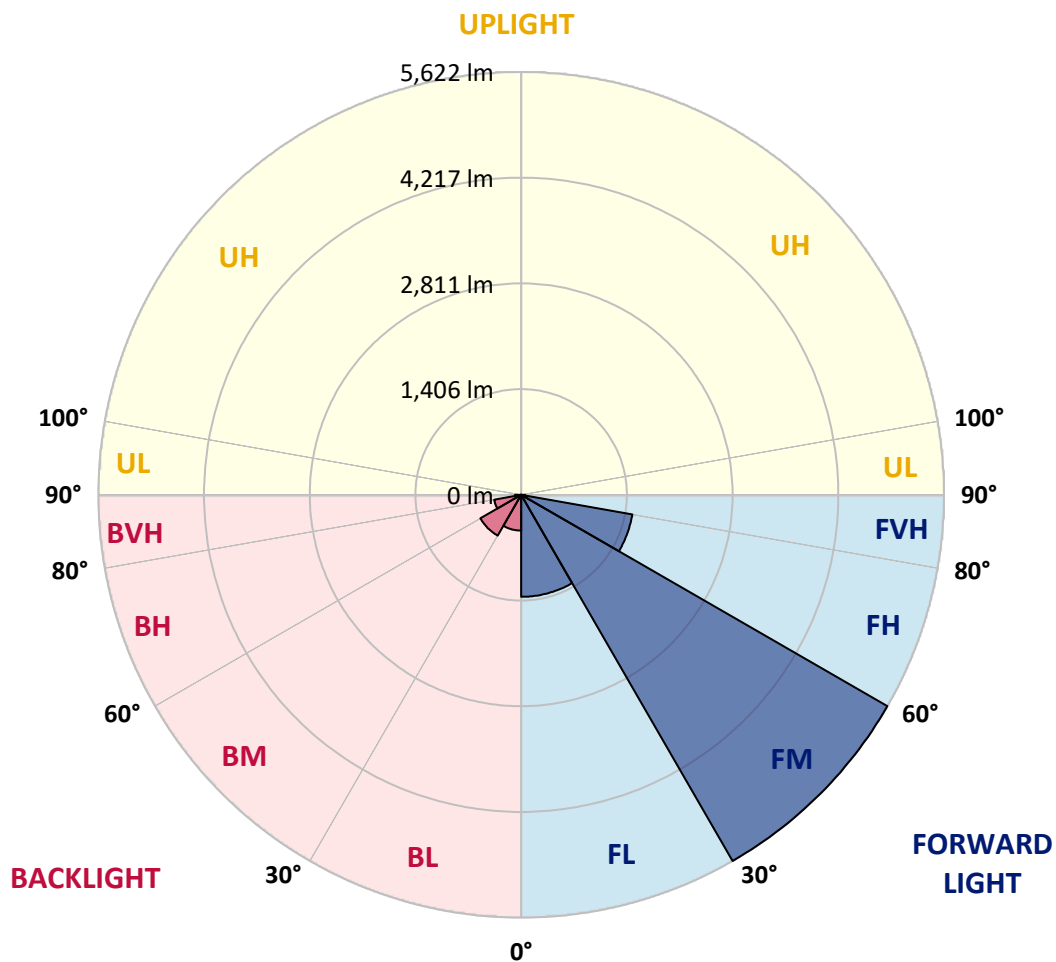
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1356.2 | 13.5 | | | |
| FM | (30°-60°) | 5622.4 | 55.8 | | | |
| FH | (60°-80°) | 1501.3 | 14.9 | | | G1/1800 |
| FVH | (80°-90°) | 55.0 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 475.9 | 4.7 | B1/500 | | |
| BM | (30°-60°) | 626.1 | 6.2 | B1/1000 | | |
| BH | (60°-80°) | 364.4 | 3.6 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 81.7 | 0.8 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 62.5° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 |
| 2.5° | 3055.7 | 3053.8 | 3028.0 | 3011.0 | 2990.8 | 2944.2 | 2897.5 | 2862.9 | 2845.2 | 2777.8 | 2712.3 |
| 5° | 3308.4 | 3300.8 | 3286.3 | 3268.1 | 3241.6 | 3183.0 | 3109.3 | 3045.6 | 3020.4 | 2900.7 | 2780.3 |
| 7.5° | 3174.8 | 3186.8 | 3231.5 | 3281.9 | 3334.9 | 3338.7 | 3286.3 | 3210.7 | 3183.0 | 3022.9 | 2846.5 |
| 10° | 2804.9 | 2799.9 | 2855.9 | 2954.2 | 3128.8 | 3301.5 | 3387.8 | 3350.6 | 3321.6 | 3138.9 | 2912.7 |
| 12.5° | 2692.7 | 2691.5 | 2700.9 | 2726.1 | 2835.8 | 3072.7 | 3362.0 | 3442.6 | 3432.5 | 3261.8 | 2983.2 |
| 15° | 2726.8 | 2728.0 | 2727.4 | 2730.5 | 2760.8 | 2873.6 | 3217.7 | 3473.5 | 3505.0 | 3383.4 | 3055.1 |
| 17.5° | 2835.8 | 2831.4 | 2817.5 | 2802.4 | 2806.8 | 2847.1 | 3062.0 | 3420.6 | 3515.1 | 3491.8 | 3115.6 |
| 20° | 3004.0 | 3004.0 | 2966.8 | 2924.6 | 2896.9 | 2905.7 | 2997.1 | 3329.8 | 3468.5 | 3583.8 | 3160.9 |
| 22.5° | 3215.1 | 3218.3 | 3163.5 | 3086.6 | 3023.6 | 2999.6 | 3034.3 | 3262.4 | 3411.8 | 3668.9 | 3201.3 |
| 25° | 3477.3 | 3476.7 | 3396.6 | 3286.3 | 3186.8 | 3129.4 | 3128.8 | 3265.6 | 3394.1 | 3768.4 | 3243.5 |
| 27.5° | 3801.8 | 3772.2 | 3678.9 | 3522.0 | 3381.5 | 3293.9 | 3254.2 | 3345.0 | 3431.3 | 3890.7 | 3300.2 |
| 30° | 4168.0 | 4137.7 | 4015.5 | 3813.8 | 3623.5 | 3495.6 | 3430.0 | 3482.3 | 3544.7 | 4046.3 | 3385.9 |
| 32.5° | 4530.3 | 4537.2 | 4393.6 | 4166.1 | 3921.6 | 3741.3 | 3644.3 | 3676.4 | 3719.9 | 4236.6 | 3501.9 |
| 35° | 5060.9 | 5060.3 | 4872.5 | 4588.3 | 4297.8 | 4048.2 | 3925.3 | 3942.4 | 3982.1 | 4505.1 | 3664.5 |
| 37.5° | 5456.7 | 5450.4 | 5329.4 | 5077.9 | 4750.9 | 4451.5 | 4273.8 | 4276.3 | 4310.4 | 4842.2 | 3878.7 |
| 40° | 5497.0 | 5495.7 | 5495.1 | 5459.2 | 5235.5 | 4953.2 | 4730.7 | 4684.7 | 4698.6 | 5200.2 | 4106.2 |
| 42.5° | 5188.8 | 5234.8 | 5367.2 | 5570.1 | 5632.5 | 5484.4 | 5273.9 | 5171.2 | 5140.9 | 5611.1 | 4346.9 |
| 45° | 4749.6 | 4772.9 | 5004.8 | 5461.1 | 5832.2 | 5983.5 | 5825.3 | 5608.5 | 5556.9 | 6010.6 | 4542.9 |
| 47.5° | 4545.4 | 4535.3 | 4669.6 | 5166.8 | 5812.7 | 6380.5 | 6391.8 | 6036.4 | 5948.8 | 6355.3 | 4709.9 |
| 50° | 4107.5 | 4094.2 | 4263.7 | 4733.9 | 5599.7 | 6577.7 | 6973.5 | 6502.7 | 6340.8 | 6683.0 | 4861.1 |
| 52.5° | 3234.7 | 3222.1 | 3449.6 | 4055.2 | 5123.3 | 6504.0 | 7463.8 | 7074.9 | 6798.9 | 6998.7 | 5002.3 |
| 55° | 2104.8 | 2106.0 | 2322.8 | 2947.3 | 4145.9 | 6074.2 | 7693.8 | 7736.0 | 7426.6 | 7314.4 | 5116.4 |
| 57.5° | 1158.9 | 1148.2 | 1302.6 | 1686.3 | 2852.2 | 5098.1 | 7502.2 | 8212.4 | 8051.1 | 7585.4 | 5198.9 |
| 58° | 1030.3 | 1017.7 | 1136.8 | 1467.7 | 2557.2 | 4822.7 | 7405.8 | 8242.6 | 8131.1 | 7630.1 | 5210.9 |
| 60° | 734.2 | 712.7 | 694.4 | 827.4 | 1473.3 | 3477.3 | 6763.0 | 8046.7 | 8154.4 | 7719.6 | 5199.5 |
| 62.5° | 618.8 | 594.3 | 528.7 | 523.7 | 693.8 | 1700.8 | 5348.3 | 7066.7 | 7368.6 | 7513.5 | 5016.8 |
| 65° | 574.7 | 550.1 | 463.8 | 432.9 | 470.7 | 734.2 | 3307.1 | 5456.7 | 5860.0 | 6797.0 | 4556.8 |
| 67.5° | 543.2 | 514.2 | 421.6 | 381.3 | 388.8 | 439.2 | 1403.4 | 3568.7 | 4036.3 | 5300.4 | 3655.6 |
| 70° | 514.9 | 482.7 | 388.2 | 341.6 | 335.3 | 334.0 | 548.2 | 1863.4 | 2314.0 | 3468.5 | 2448.8 |
| 72.5° | 482.7 | 451.2 | 358.6 | 308.8 | 294.9 | 271.0 | 329.6 | 770.1 | 1055.5 | 1700.2 | 1122.3 |
| 75° | 436.1 | 410.2 | 325.8 | 281.7 | 257.7 | 219.9 | 243.2 | 369.3 | 455.0 | 651.0 | 521.2 |
| 77.5° | 383.8 | 363.0 | 292.4 | 259.0 | 226.9 | 179.6 | 185.9 | 250.2 | 281.1 | 366.8 | 301.9 |
| 80° | 271.6 | 279.2 | 255.2 | 228.1 | 199.8 | 144.9 | 143.0 | 183.4 | 201.7 | 246.4 | 202.9 |
| 82.5° | 187.2 | 192.8 | 208.0 | 180.2 | 161.3 | 112.8 | 105.2 | 127.3 | 136.7 | 148.7 | 98.3 |
| 85° | 133.6 | 129.8 | 144.3 | 129.2 | 118.5 | 71.8 | 67.4 | 80.7 | 86.3 | 90.7 | 47.3 |
| 87.5° | 81.3 | 80.7 | 83.2 | 66.8 | 61.8 | 36.5 | 33.4 | 38.4 | 41.0 | 39.7 | 22.7 |
| 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° | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 | 2692.1 |
| 2.5° | 2687.7 | 2656.8 | 2589.4 | 2535.2 | 2476.6 | 2431.8 | 2387.1 | 2361.9 | 2334.2 | 2318.4 | 2316.5 |
| 5° | 2717.3 | 2654.3 | 2510.6 | 2377.0 | 2239.6 | 2116.1 | 1995.1 | 1905.6 | 1832.5 | 1790.9 | 1788.4 |
| 7.5° | 2750.1 | 2651.1 | 2429.3 | 2198.0 | 1953.5 | 1710.3 | 1495.4 | 1343.5 | 1245.9 | 1200.5 | 1197.3 |
| 10° | 2775.3 | 2637.9 | 2330.4 | 1970.5 | 1583.0 | 1261.6 | 1066.3 | 976.8 | 947.1 | 939.6 | 938.3 |
| 12.5° | 2805.5 | 2628.4 | 2205.6 | 1678.8 | 1209.9 | 960.4 | 901.1 | 895.5 | 901.8 | 905.6 | 906.2 |
| 15° | 2833.9 | 2610.2 | 2037.3 | 1355.5 | 947.1 | 858.3 | 859.6 | 871.5 | 884.1 | 889.8 | 890.4 |
| 17.5° | 2847.1 | 2565.4 | 1816.2 | 1068.1 | 828.7 | 812.3 | 826.8 | 842.5 | 853.9 | 858.3 | 858.3 |
| 20° | 2847.1 | 2493.6 | 1559.7 | 865.2 | 766.9 | 770.1 | 787.7 | 799.7 | 802.2 | 798.4 | 796.5 |
| 22.5° | 2835.1 | 2404.7 | 1310.1 | 754.9 | 716.5 | 728.5 | 742.3 | 734.2 | 704.5 | 681.8 | 677.4 |
| 25° | 2824.4 | 2299.5 | 1070.0 | 687.5 | 672.4 | 688.1 | 682.5 | 626.4 | 581.0 | 557.7 | 553.9 |
| 27.5° | 2806.8 | 2172.2 | 869.6 | 632.1 | 629.5 | 642.1 | 586.1 | 531.9 | 509.2 | 496.6 | 494.1 |
| 30° | 2802.4 | 2034.2 | 727.8 | 582.9 | 587.3 | 569.7 | 505.4 | 487.8 | 482.7 | 475.8 | 472.6 |
| 32.5° | 2816.9 | 1896.2 | 639.0 | 542.6 | 547.0 | 489.0 | 464.4 | 467.0 | 466.3 | 457.5 | 454.4 |
| 35° | 2856.6 | 1762.0 | 582.3 | 506.0 | 493.4 | 438.0 | 441.1 | 448.7 | 448.7 | 438.0 | 434.2 |
| 37.5° | 2925.9 | 1637.2 | 546.4 | 475.1 | 431.7 | 411.5 | 419.7 | 429.8 | 429.8 | 422.2 | 419.1 |
| 40° | 2999.6 | 1515.6 | 519.3 | 450.6 | 392.6 | 393.2 | 401.4 | 409.0 | 412.1 | 413.4 | 410.9 |
| 42.5° | 3066.4 | 1389.5 | 490.3 | 424.1 | 375.0 | 379.4 | 383.1 | 388.8 | 402.0 | 410.9 | 409.6 |
| 45° | 3105.5 | 1262.9 | 458.8 | 391.3 | 363.0 | 364.9 | 363.6 | 373.7 | 389.4 | 402.7 | 402.7 |
| 47.5° | 3141.4 | 1158.9 | 432.9 | 358.6 | 351.0 | 351.0 | 347.2 | 357.3 | 371.8 | 387.6 | 388.8 |
| 50° | 3175.4 | 1091.5 | 414.7 | 333.4 | 335.9 | 334.0 | 332.7 | 342.2 | 361.7 | 380.6 | 383.8 |
| 52.5° | 3210.1 | 1068.8 | 398.3 | 315.1 | 320.1 | 317.6 | 318.9 | 332.1 | 354.2 | 373.7 | 376.8 |
| 55° | 3258.6 | 1083.3 | 381.3 | 302.5 | 305.0 | 304.4 | 309.4 | 324.5 | 344.1 | 363.6 | 364.9 |
| 57.5° | 3318.5 | 1136.2 | 366.8 | 293.0 | 290.5 | 294.3 | 302.5 | 317.0 | 335.9 | 359.2 | 361.1 |
| 58° | 3330.5 | 1148.8 | 364.2 | 290.5 | 287.4 | 293.0 | 301.2 | 315.1 | 334.6 | 359.2 | 361.1 |
| 60° | 3348.7 | 1193.5 | 357.9 | 285.5 | 276.6 | 286.7 | 296.8 | 310.7 | 332.1 | 362.3 | 366.1 |
| 62.5° | 3260.5 | 1202.4 | 356.0 | 279.8 | 265.3 | 277.9 | 289.9 | 305.6 | 329.6 | 373.1 | 381.3 |
| 65° | 2954.9 | 1111.6 | 342.8 | 270.3 | 255.8 | 271.0 | 283.6 | 301.9 | 337.1 | 405.2 | 409.0 |
| 67.5° | 2372.0 | 923.2 | 310.7 | 255.8 | 245.1 | 262.8 | 278.5 | 301.9 | 340.3 | 410.2 | 412.8 |
| 70° | 1630.9 | 693.8 | 270.3 | 240.1 | 232.5 | 252.7 | 276.6 | 308.8 | 329.6 | 388.2 | 380.6 |
| 72.5° | 852.0 | 482.7 | 236.9 | 221.8 | 217.4 | 243.9 | 294.9 | 301.9 | 317.0 | 362.3 | 354.8 |
| 75° | 429.1 | 328.3 | 208.6 | 201.0 | 200.4 | 240.7 | 330.2 | 290.5 | 303.7 | 340.9 | 357.3 |
| 77.5° | 253.3 | 257.1 | 185.9 | 181.5 | 184.6 | 235.1 | 330.8 | 279.2 | 288.6 | 313.8 | 331.5 |
| 80° | 173.3 | 212.4 | 168.3 | 167.0 | 169.5 | 216.1 | 305.0 | 265.3 | 271.0 | 296.8 | 315.7 |
| 82.5° | 97.7 | 117.2 | 147.5 | 155.7 | 154.4 | 177.1 | 263.4 | 241.4 | 248.3 | 351.0 | 371.2 |
| 85° | 47.3 | 70.6 | 123.5 | 145.6 | 131.7 | 117.8 | 214.3 | 214.3 | 216.1 | 251.4 | 254.6 |
| 87.5° | 17.6 | 31.5 | 83.2 | 115.3 | 92.0 | 70.6 | 145.6 | 151.9 | 168.9 | 173.9 | 177.7 |
| 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)