

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: P195605

Luminaire Tested: **NAV-AF-05-D-UNV-SL2-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195605
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-05-D-UNV-SL2-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 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: 19423 lumens
Efficiency: N/A
Efficacy: 119.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G3

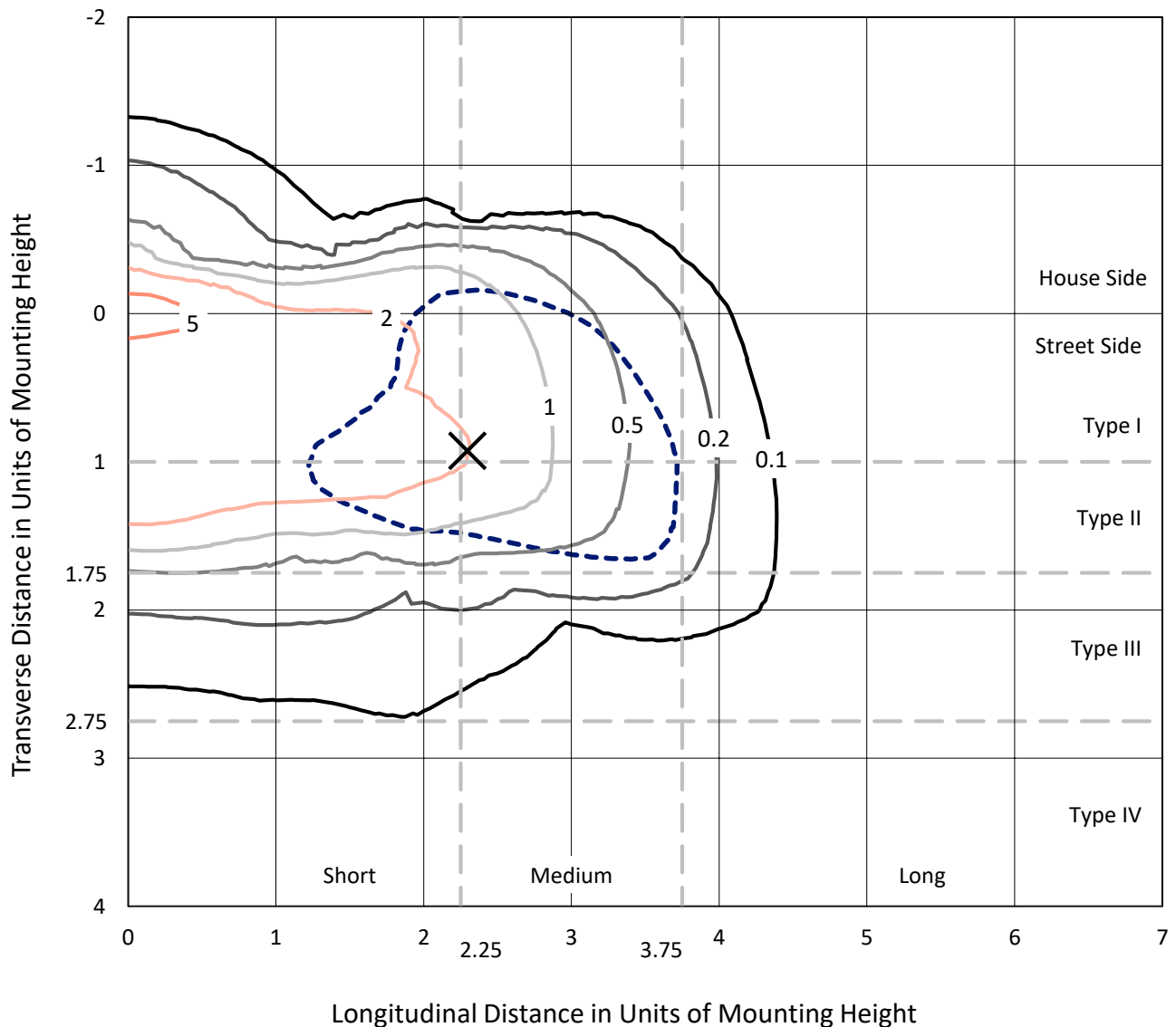
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

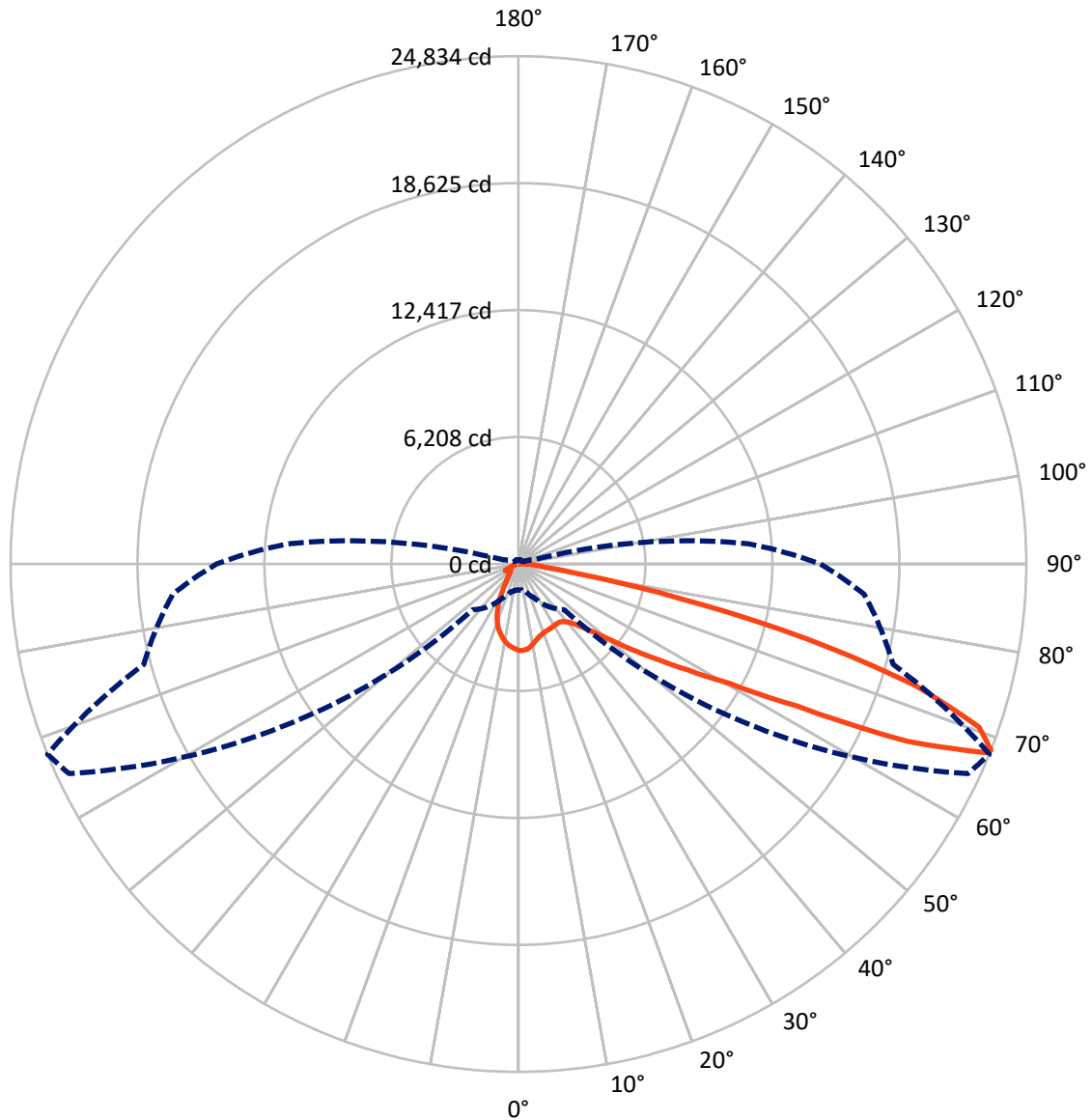
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 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 |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3177.7 | 0.0 | 3177.7 |
| | % Fixture | 16.4 | 0.0 | 16.4 |
| Street Side | Lumens | 16245.3 | 0.0 | 16245.3 |
| | % Fixture | 83.6 | 0.0 | 83.6 |
| Total | Lumens | 19423.0 | 0.0 | 19423.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 362.1 | 1.9 |
| 10°-20° | 839.9 | 4.3 |
| 20°-30° | 1135.9 | 5.8 |
| 30°-40° | 1601.6 | 8.2 |
| 40°-50° | 2633.6 | 13.6 |
| 50°-60° | 4082.4 | 21.0 |
| 60°-70° | 5293.1 | 27.3 |
| 70°-80° | 3037.4 | 15.6 |
| 80°-90° | 437.0 | 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° | 19423.0 | 100.0 |
| 0°-180° | 19423.0 | 100.0 |



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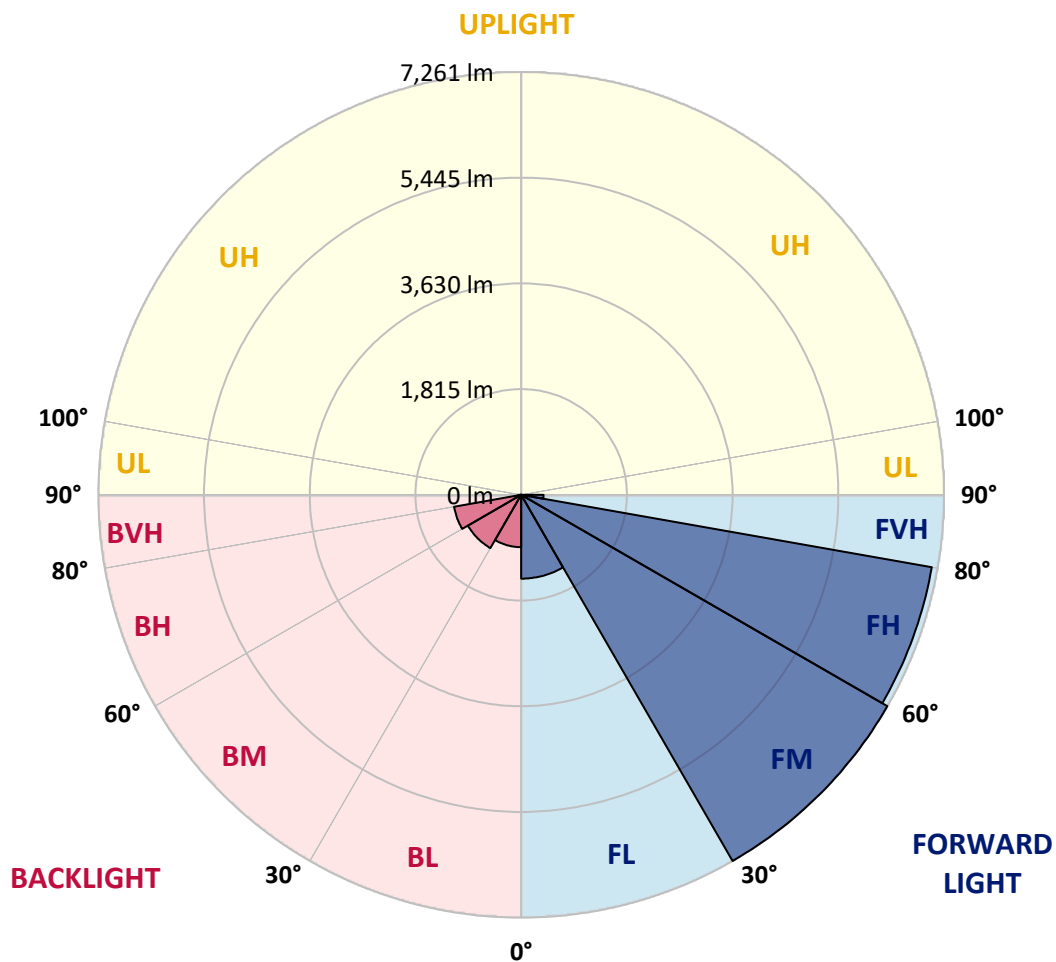
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1439.6 | 7.4 | | | |
| FM (30°-60°) | 7260.6 | 37.4 | | | |
| FH (60°-80°) | 7160.2 | 36.9 | | | G3/7500 |
| FVH (80°-90°) | 384.9 | 2.0 | | | G3/500 |
| BL (0°-30°) | 898.4 | 4.6 | B2/1000 | | |
| BM (30°-60°) | 1056.9 | 5.4 | B2/2500 | | |
| BH (60°-80°) | 1170.3 | 6.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 52.1 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 |
| 2.5° | 4113.4 | 4146.3 | 4146.3 | 4170.4 | 4192.0 | 4209.8 | 4225.0 | 4225.0 | 4225.0 | 4214.9 | 4206.0 |
| 5° | 3680.7 | 3725.1 | 3731.5 | 3792.4 | 3872.3 | 3970.0 | 4079.1 | 4175.5 | 4194.6 | 4230.1 | 4244.0 |
| 7.5° | 3380.0 | 3394.0 | 3418.1 | 3459.9 | 3541.1 | 3661.7 | 3833.0 | 4048.6 | 4100.7 | 4212.3 | 4270.7 |
| 10° | 3166.8 | 3178.3 | 3198.6 | 3240.4 | 3314.0 | 3423.1 | 3591.9 | 3872.3 | 3958.6 | 4156.5 | 4271.9 |
| 12.5° | 3010.8 | 3019.7 | 3038.7 | 3076.8 | 3151.6 | 3249.3 | 3421.9 | 3713.7 | 3820.3 | 4100.7 | 4289.7 |
| 15° | 2889.0 | 2904.2 | 2919.4 | 2956.2 | 3032.4 | 3126.2 | 3301.3 | 3598.2 | 3713.7 | 4056.3 | 4322.7 |
| 17.5° | 2840.8 | 2848.4 | 2850.9 | 2870.0 | 2938.5 | 3033.6 | 3208.7 | 3517.0 | 3636.3 | 4020.7 | 4348.1 |
| 20° | 2871.2 | 2872.5 | 2847.1 | 2834.4 | 2873.8 | 2961.3 | 3131.3 | 3456.1 | 3577.9 | 3989.0 | 4358.2 |
| 22.5° | 3004.4 | 3004.4 | 2938.5 | 2882.6 | 2856.0 | 2910.6 | 3079.3 | 3414.3 | 3546.2 | 3964.9 | 4358.2 |
| 25° | 3258.2 | 3246.8 | 3144.0 | 3033.6 | 2915.6 | 2892.8 | 3046.3 | 3387.6 | 3522.1 | 3952.2 | 4341.7 |
| 27.5° | 3591.9 | 3581.7 | 3451.1 | 3287.4 | 3074.2 | 2930.9 | 3034.9 | 3366.0 | 3498.0 | 3933.2 | 4306.2 |
| 30° | 3997.9 | 3989.0 | 3840.6 | 3626.1 | 3311.5 | 3051.4 | 3061.5 | 3350.8 | 3479.0 | 3901.5 | 4246.6 |
| 32.5° | 4402.6 | 4397.6 | 4279.6 | 4060.1 | 3638.8 | 3255.7 | 3131.3 | 3348.3 | 3468.8 | 3863.4 | 4174.3 |
| 35° | 4809.9 | 4809.9 | 4737.6 | 4552.3 | 4079.1 | 3562.7 | 3277.2 | 3395.2 | 3487.8 | 3843.1 | 4112.1 |
| 37.5° | 5411.3 | 5387.2 | 5252.7 | 5061.1 | 4633.5 | 3961.1 | 3513.2 | 3494.2 | 3561.4 | 3877.4 | 4091.8 |
| 40° | 6342.6 | 6272.8 | 5936.6 | 5614.3 | 5238.7 | 4471.1 | 3858.3 | 3685.8 | 3726.4 | 3994.1 | 4140.0 |
| 42.5° | 7317.0 | 7206.6 | 6761.3 | 6246.2 | 5864.3 | 5100.5 | 4311.3 | 3996.6 | 3995.4 | 4219.9 | 4293.5 |
| 45° | 8153.1 | 8096.0 | 7613.9 | 6960.5 | 6578.6 | 5808.4 | 4883.5 | 4458.5 | 4412.8 | 4570.1 | 4589.1 |
| 47.5° | 8639.1 | 8601.0 | 8310.4 | 7716.7 | 7426.1 | 6644.5 | 5609.2 | 5099.2 | 5012.9 | 5106.8 | 5077.6 |
| 50° | 8504.6 | 8541.4 | 8457.6 | 8154.4 | 8337.1 | 7819.4 | 6534.2 | 5977.2 | 5813.5 | 5907.4 | 5836.3 |
| 52.5° | 7796.6 | 7895.6 | 7970.4 | 8028.8 | 8861.1 | 9391.4 | 7696.4 | 7073.4 | 6937.6 | 6921.1 | 6852.6 |
| 55° | 6521.5 | 6678.8 | 6914.8 | 7343.6 | 8720.3 | 10653.9 | 9726.4 | 8399.3 | 8201.3 | 8097.3 | 8123.9 |
| 57.5° | 4438.2 | 4676.7 | 5185.5 | 6001.3 | 7988.2 | 11191.8 | 12728.3 | 10112.1 | 9777.1 | 9406.7 | 9492.9 |
| 60° | 2444.9 | 2644.1 | 3249.3 | 4071.5 | 6317.2 | 11111.9 | 15388.9 | 12895.8 | 11841.4 | 10859.4 | 11037.0 |
| 62.5° | 1582.2 | 1625.3 | 2075.7 | 2781.1 | 3877.4 | 9810.1 | 16867.0 | 17548.4 | 15314.0 | 12775.2 | 13025.2 |
| 65° | 1271.3 | 1301.8 | 1522.5 | 2243.2 | 2701.2 | 6310.9 | 16933.0 | 22374.8 | 20901.7 | 15378.8 | 15386.4 |
| 67.5° | 1242.1 | 1256.1 | 1384.2 | 1886.7 | 2533.7 | 3435.8 | 14636.5 | 24277.9 | 24619.2 | 18451.7 | 16966.0 |
| 68° | 1259.9 | 1276.4 | 1405.8 | 1828.3 | 2532.5 | 3166.8 | 13527.6 | 24248.7 | 24833.6 | 18965.6 | 16966.0 |
| 70° | 1111.4 | 1131.7 | 1433.7 | 1891.7 | 2424.6 | 2722.8 | 9263.3 | 22960.9 | 23902.4 | 20146.8 | 16098.1 |
| 72.5° | 581.1 | 564.6 | 709.2 | 1493.3 | 2729.1 | 2837.0 | 4893.6 | 19182.5 | 20281.3 | 18658.5 | 13908.3 |
| 75° | 453.0 | 412.4 | 397.1 | 590.0 | 2400.5 | 2942.3 | 2842.0 | 13634.2 | 14464.0 | 13450.2 | 9296.3 |
| 77.5° | 426.3 | 376.8 | 347.6 | 348.9 | 1056.9 | 3061.5 | 2299.0 | 8023.7 | 8023.7 | 6416.2 | 2966.4 |
| 80° | 342.6 | 296.9 | 277.9 | 317.2 | 510.0 | 2821.7 | 2399.2 | 3656.6 | 3118.6 | 1658.3 | 817.1 |
| 82.5° | 225.8 | 201.7 | 203.0 | 257.6 | 387.0 | 1884.1 | 2778.6 | 1805.5 | 1356.3 | 734.6 | 480.9 |
| 85° | 143.4 | 123.1 | 137.0 | 180.2 | 289.3 | 839.9 | 2750.7 | 1254.8 | 898.3 | 412.4 | 239.8 |
| 87.5° | 72.3 | 55.8 | 68.5 | 93.9 | 176.4 | 241.1 | 2264.8 | 1120.3 | 666.1 | 171.3 | 130.7 |
| 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° | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 | 4226.3 |
| 2.5° | 4206.0 | 4178.1 | 4164.1 | 4141.3 | 4113.4 | 4085.4 | 4066.4 | 4057.5 | 4052.5 | 4055.0 | 4053.7 |
| 5° | 4236.4 | 4199.6 | 4140.0 | 4055.0 | 3967.4 | 3874.8 | 3803.8 | 3749.2 | 3715.0 | 3704.8 | 3702.3 |
| 7.5° | 4259.3 | 4206.0 | 4094.3 | 3939.5 | 3789.8 | 3627.4 | 3489.1 | 3378.7 | 3303.9 | 3269.6 | 3268.4 |
| 10° | 4255.5 | 4186.9 | 4010.6 | 3782.2 | 3562.7 | 3324.2 | 3107.2 | 2922.0 | 2787.5 | 2722.8 | 2720.2 |
| 12.5° | 4259.3 | 4165.4 | 3907.8 | 3598.2 | 3283.6 | 2942.3 | 2620.0 | 2332.0 | 2131.5 | 2036.4 | 2032.6 |
| 15° | 4274.5 | 4142.5 | 3802.5 | 3392.7 | 2957.5 | 2475.4 | 2014.8 | 1653.2 | 1470.5 | 1408.3 | 1408.3 |
| 17.5° | 4273.2 | 4104.5 | 3680.7 | 3154.2 | 2570.5 | 1924.7 | 1375.3 | 1152.0 | 1134.3 | 1191.4 | 1200.3 |
| 20° | 4247.8 | 4043.6 | 3523.4 | 2871.2 | 2116.3 | 1332.2 | 932.5 | 900.8 | 1042.9 | 1200.3 | 1218.0 |
| 22.5° | 4208.5 | 3964.9 | 3341.9 | 2542.6 | 1587.2 | 867.8 | 719.4 | 767.6 | 960.5 | 1155.8 | 1183.8 |
| 25° | 4154.0 | 3869.7 | 3133.9 | 2160.7 | 1055.6 | 624.2 | 600.1 | 659.8 | 795.5 | 926.2 | 946.5 |
| 27.5° | 4074.0 | 3749.2 | 2906.8 | 1747.1 | 673.7 | 513.9 | 522.7 | 564.6 | 623.0 | 678.8 | 690.2 |
| 30° | 3973.8 | 3608.4 | 2659.3 | 1289.1 | 511.3 | 459.3 | 474.5 | 499.9 | 525.3 | 560.8 | 568.4 |
| 32.5° | 3872.3 | 3465.0 | 2401.8 | 885.6 | 446.6 | 430.1 | 445.3 | 459.3 | 480.9 | 505.0 | 510.0 |
| 35° | 3780.9 | 3331.8 | 2136.6 | 617.9 | 418.7 | 411.1 | 418.7 | 427.6 | 449.1 | 473.3 | 475.8 |
| 37.5° | 3715.0 | 3222.7 | 1860.0 | 488.5 | 402.2 | 394.6 | 398.4 | 402.2 | 427.6 | 463.1 | 466.9 |
| 40° | 3706.1 | 3150.4 | 1579.6 | 439.0 | 389.5 | 379.4 | 376.8 | 379.4 | 412.4 | 453.0 | 456.8 |
| 42.5° | 3792.4 | 3154.2 | 1305.6 | 418.7 | 379.4 | 367.9 | 357.8 | 362.9 | 392.0 | 423.8 | 426.3 |
| 45° | 3996.6 | 3243.0 | 1068.3 | 409.8 | 370.5 | 361.6 | 346.4 | 348.9 | 362.9 | 379.4 | 381.9 |
| 47.5° | 4357.0 | 3437.1 | 886.9 | 404.7 | 362.9 | 355.3 | 336.2 | 328.6 | 329.9 | 338.8 | 338.8 |
| 50° | 4933.0 | 3761.9 | 776.5 | 399.7 | 356.5 | 342.6 | 321.0 | 305.8 | 302.0 | 307.0 | 308.3 |
| 52.5° | 5791.9 | 4318.9 | 723.2 | 389.5 | 345.1 | 326.1 | 302.0 | 286.7 | 280.4 | 285.5 | 285.5 |
| 55° | 6952.9 | 5208.3 | 697.8 | 375.6 | 331.1 | 305.8 | 284.2 | 271.5 | 266.4 | 270.2 | 270.2 |
| 57.5° | 8276.2 | 6364.1 | 741.0 | 356.5 | 313.4 | 284.2 | 269.0 | 260.1 | 256.3 | 260.1 | 261.4 |
| 60° | 9848.2 | 7876.5 | 1037.9 | 332.4 | 294.4 | 265.2 | 256.3 | 251.2 | 248.7 | 252.5 | 252.5 |
| 62.5° | 11937.9 | 9888.8 | 1606.3 | 313.4 | 274.1 | 247.4 | 244.9 | 242.3 | 239.8 | 243.6 | 243.6 |
| 65° | 14193.7 | 11719.6 | 1653.2 | 302.0 | 256.3 | 232.2 | 233.5 | 233.5 | 230.9 | 234.7 | 234.7 |
| 67.5° | 14911.8 | 11561.0 | 923.7 | 288.0 | 234.7 | 217.0 | 222.0 | 222.0 | 220.8 | 224.6 | 223.3 |
| 68° | 14759.6 | 11309.8 | 804.4 | 284.2 | 230.9 | 213.2 | 218.2 | 219.5 | 218.2 | 222.0 | 220.8 |
| 70° | 13625.3 | 9929.4 | 529.1 | 262.6 | 214.4 | 200.5 | 208.1 | 209.3 | 208.1 | 213.2 | 211.9 |
| 72.5° | 11247.6 | 7447.7 | 390.8 | 229.6 | 194.1 | 184.0 | 191.6 | 192.9 | 194.1 | 199.2 | 197.9 |
| 75° | 7143.2 | 4113.4 | 308.3 | 195.4 | 173.8 | 164.9 | 172.6 | 176.4 | 178.9 | 186.5 | 182.7 |
| 77.5° | 1956.4 | 1248.5 | 249.9 | 166.2 | 149.7 | 145.9 | 151.0 | 156.1 | 158.6 | 167.5 | 161.1 |
| 80° | 685.1 | 551.9 | 208.1 | 140.8 | 124.3 | 123.1 | 128.1 | 133.2 | 135.8 | 143.4 | 135.8 |
| 82.5° | 416.2 | 360.3 | 166.2 | 110.4 | 97.7 | 96.4 | 102.8 | 107.8 | 110.4 | 110.4 | 105.3 |
| 85° | 217.0 | 190.3 | 121.8 | 77.4 | 67.2 | 63.4 | 74.9 | 81.2 | 82.5 | 81.2 | 77.4 |
| 87.5° | 121.8 | 107.8 | 64.7 | 36.8 | 30.5 | 31.7 | 39.3 | 48.2 | 52.0 | 50.8 | 48.2 |
| 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)