

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: P195443

Luminaire Tested: **NAV-AF-05-D-UNV-5MQ-7050-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195443
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)
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-5MQ-7050-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25873 lumens
Efficiency: N/A
Efficacy: 123.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B5 - U0 - G3

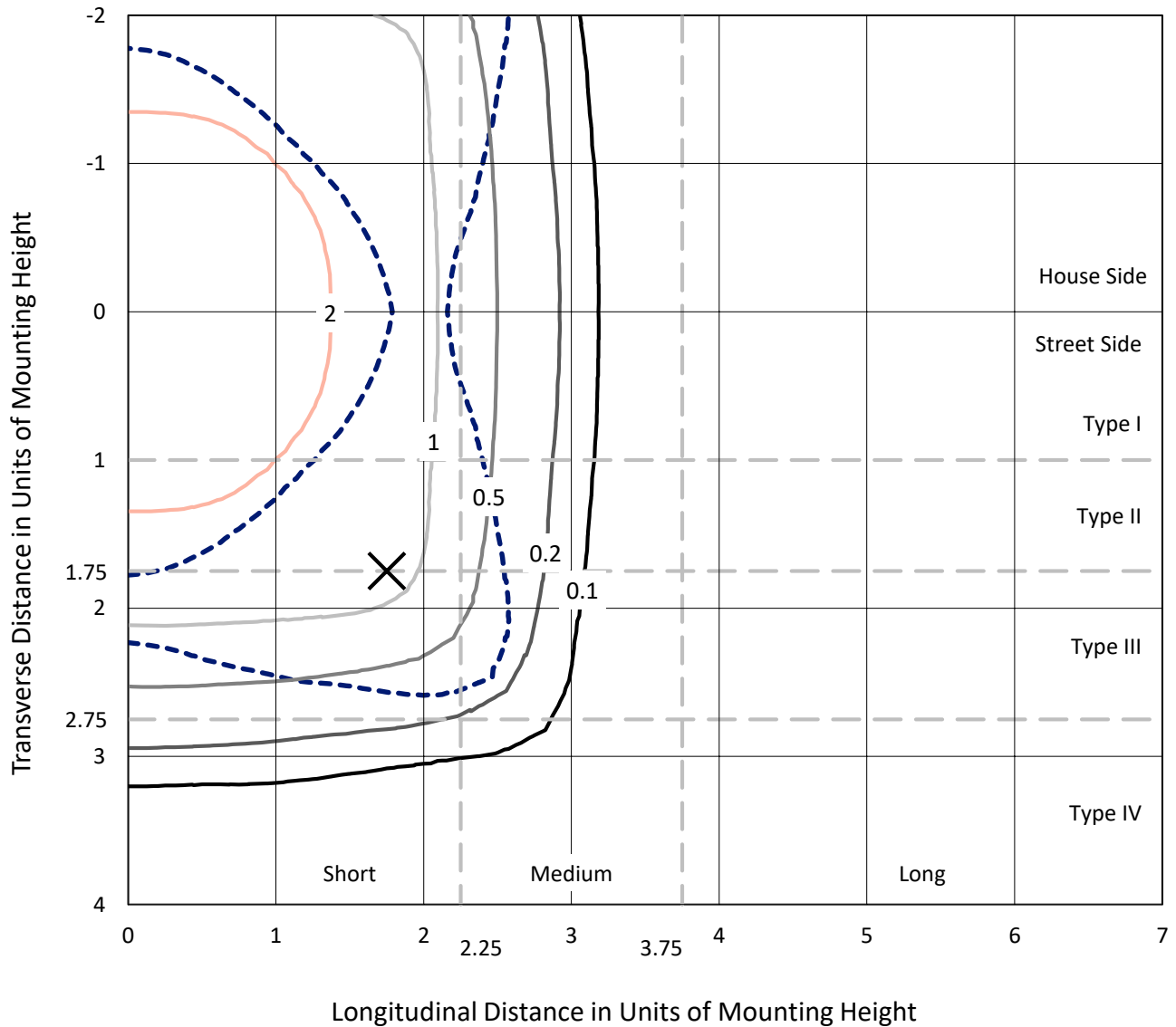
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

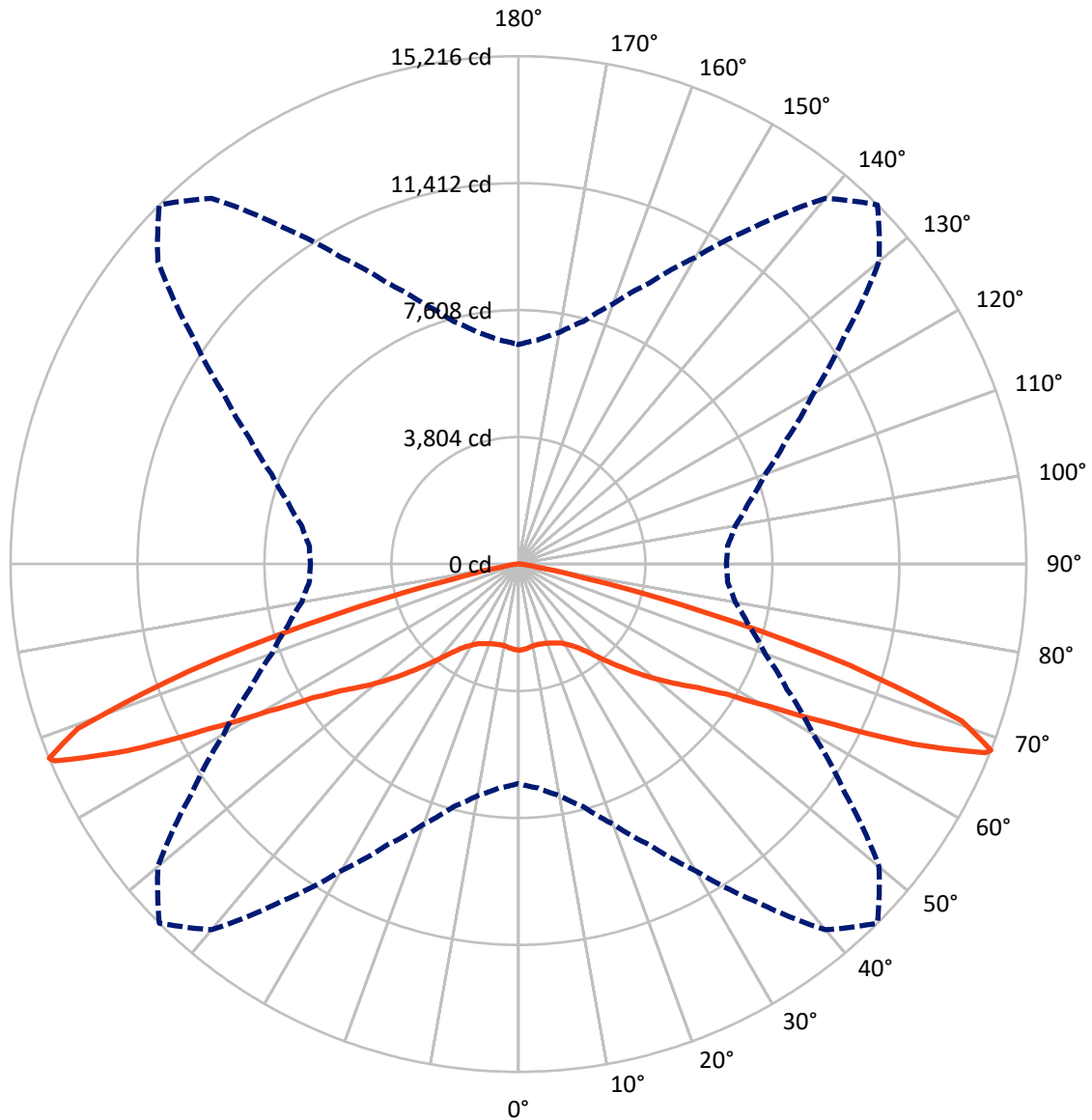
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 12936.5 | 0.0 | 12936.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 12936.5 | 0.0 | 12936.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 25873.0 | 0.0 | 25873.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 241.5 | 0.9 |
| 10°-20° | 700.4 | 2.7 |
| 20°-30° | 1190.8 | 4.6 |
| 30°-40° | 1948.6 | 7.5 |
| 40°-50° | 3482.5 | 13.5 |
| 50°-60° | 5881.4 | 22.7 |
| 60°-70° | 9119.9 | 35.2 |
| 70°-80° | 3135.6 | 12.1 |
| 80°-90° | 172.3 | 0.7 |
| 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° | 25873.0 | 100.0 |
| 0°-180° | 25873.0 | 100.0 |



REPORT NUMBER: P195443

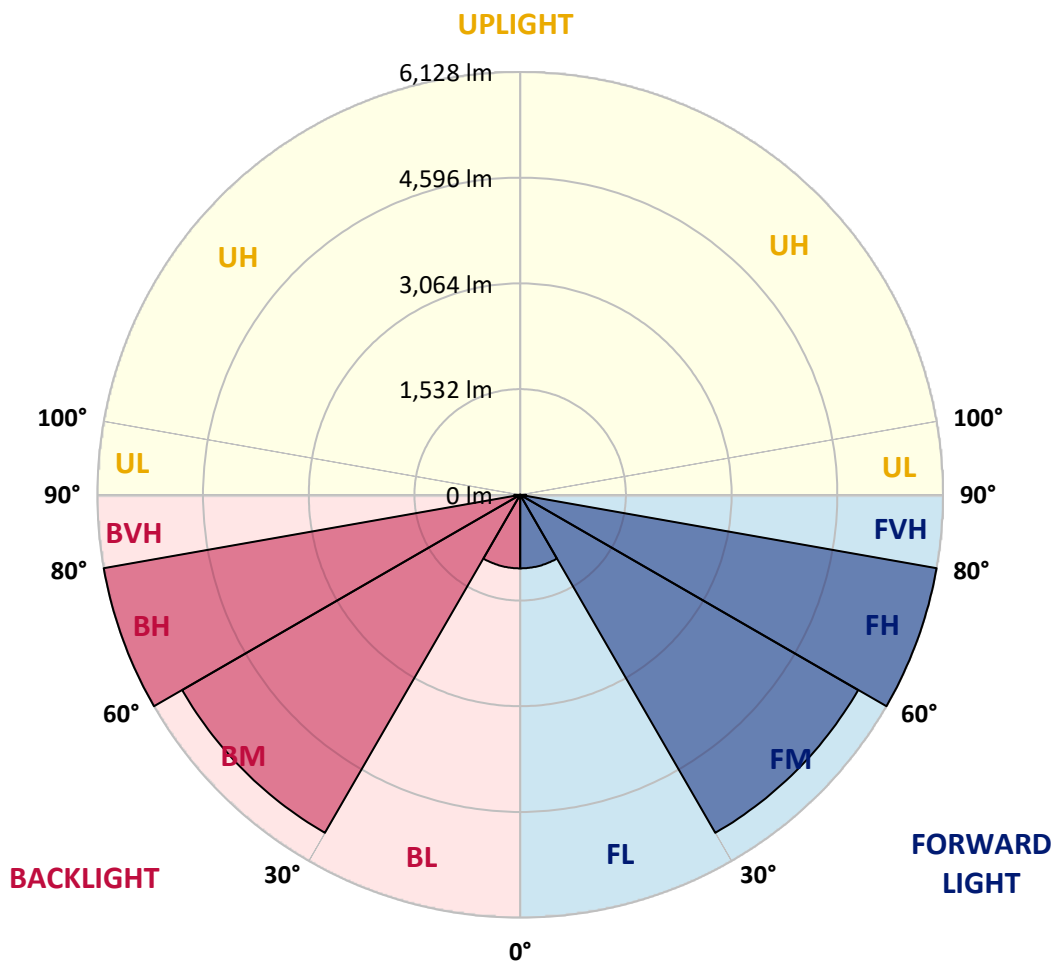
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1066.3 | 4.1 | | | |
| FM | (30°-60°) | 5656.3 | 21.9 | | | |
| FH | (60°-80°) | 6127.7 | 23.7 | | | G3/7500 |
| FVH | (80°-90°) | 86.2 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 1066.3 | 4.1 | B3/2500 | | |
| BM | (30°-60°) | 5656.3 | 21.9 | B4/8500 | | |
| BH | (60°-80°) | 6127.7 | 23.7 | B5 | | G3/7500 |
| BVH | (80°-90°) | 86.2 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G3

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 |
| 2.5° | 2592.0 | 2592.0 | 2595.2 | 2593.6 | 2588.8 | 2584.1 | 2579.3 | 2574.6 | 2571.4 | 2568.2 | 2565.1 |
| 5° | 2565.1 | 2565.1 | 2569.8 | 2566.6 | 2563.5 | 2558.7 | 2555.6 | 2550.8 | 2547.6 | 2544.5 | 2546.1 |
| 7.5° | 2530.2 | 2533.4 | 2536.5 | 2535.0 | 2528.6 | 2527.0 | 2522.3 | 2520.7 | 2517.5 | 2512.8 | 2514.4 |
| 10° | 2500.1 | 2501.7 | 2504.9 | 2503.3 | 2501.7 | 2496.9 | 2495.4 | 2493.8 | 2492.2 | 2485.8 | 2484.3 |
| 12.5° | 2470.0 | 2473.2 | 2476.3 | 2477.9 | 2476.3 | 2477.9 | 2479.5 | 2481.1 | 2479.5 | 2476.3 | 2476.3 |
| 15° | 2446.2 | 2449.4 | 2454.2 | 2458.9 | 2460.5 | 2470.0 | 2476.3 | 2482.7 | 2487.4 | 2489.0 | 2484.3 |
| 17.5° | 2433.6 | 2438.3 | 2444.7 | 2454.2 | 2462.1 | 2473.2 | 2484.3 | 2493.8 | 2501.7 | 2503.3 | 2498.5 |
| 20° | 2432.0 | 2436.7 | 2446.2 | 2457.3 | 2471.6 | 2485.8 | 2503.3 | 2517.5 | 2525.5 | 2530.2 | 2525.5 |
| 22.5° | 2443.1 | 2449.4 | 2462.1 | 2476.3 | 2493.8 | 2512.8 | 2535.0 | 2550.8 | 2566.6 | 2573.0 | 2568.2 |
| 25° | 2474.8 | 2481.1 | 2495.4 | 2512.8 | 2531.8 | 2555.6 | 2577.7 | 2598.3 | 2614.2 | 2622.1 | 2615.8 |
| 27.5° | 2541.3 | 2542.9 | 2558.7 | 2577.7 | 2599.9 | 2620.5 | 2649.0 | 2658.5 | 2671.2 | 2679.1 | 2671.2 |
| 30° | 2634.8 | 2637.9 | 2652.2 | 2682.3 | 2702.9 | 2729.8 | 2745.7 | 2755.2 | 2769.4 | 2777.4 | 2767.9 |
| 32.5° | 2777.4 | 2780.5 | 2793.2 | 2821.7 | 2840.7 | 2861.3 | 2880.4 | 2886.7 | 2900.9 | 2910.5 | 2899.4 |
| 35° | 2978.6 | 2984.9 | 2996.0 | 3015.0 | 3030.9 | 3046.7 | 3061.0 | 3056.2 | 3065.7 | 3078.4 | 3067.3 |
| 37.5° | 3254.3 | 3252.7 | 3255.8 | 3270.1 | 3285.9 | 3295.5 | 3317.6 | 3306.5 | 3316.0 | 3327.1 | 3320.8 |
| 40° | 3575.9 | 3575.9 | 3574.3 | 3599.6 | 3606.0 | 3615.5 | 3639.3 | 3625.0 | 3637.7 | 3650.3 | 3639.3 |
| 42.5° | 3941.9 | 3948.2 | 3956.1 | 3976.7 | 3994.2 | 3997.3 | 4008.4 | 4002.1 | 4017.9 | 4029.0 | 4017.9 |
| 45° | 4363.3 | 4372.8 | 4382.3 | 4429.8 | 4437.8 | 4444.1 | 4452.0 | 4431.4 | 4448.9 | 4458.4 | 4455.2 |
| 47.5° | 4800.6 | 4818.0 | 4838.6 | 4887.7 | 4919.4 | 4933.7 | 4940.0 | 4916.2 | 4917.8 | 4932.1 | 4933.7 |
| 50° | 5294.9 | 5313.9 | 5334.5 | 5390.0 | 5420.1 | 5445.4 | 5453.3 | 5426.4 | 5429.6 | 5440.7 | 5443.8 |
| 52.5° | 5751.2 | 5773.4 | 5817.7 | 5892.2 | 5935.0 | 5979.3 | 5982.5 | 5949.2 | 5963.5 | 5971.4 | 5965.1 |
| 55° | 6180.6 | 6209.1 | 6267.7 | 6367.5 | 6445.1 | 6532.3 | 6571.9 | 6535.5 | 6535.5 | 6529.1 | 6525.9 |
| 57.5° | 6681.2 | 6712.9 | 6773.1 | 6888.8 | 6996.5 | 7121.7 | 7229.4 | 7265.8 | 7332.4 | 7354.6 | 7319.7 |
| 60° | 7435.4 | 7468.6 | 7530.4 | 7682.5 | 7818.8 | 8001.0 | 8178.4 | 8322.6 | 8557.1 | 8683.8 | 8569.8 |
| 62.5° | 8124.6 | 8175.3 | 8321.0 | 8587.2 | 8881.9 | 9219.3 | 9610.7 | 9889.5 | 10315.7 | 10528.0 | 10241.2 |
| 65° | 7967.7 | 8070.7 | 8355.9 | 8774.1 | 9382.5 | 10114.5 | 10911.4 | 11676.7 | 12557.6 | 13009.1 | 12426.1 |
| 67.5° | 6960.1 | 7047.2 | 7354.6 | 7841.0 | 8599.9 | 9609.1 | 10848.1 | 12432.4 | 14249.7 | 15095.7 | 14064.3 |
| 68° | 6575.1 | 6738.2 | 7044.0 | 7527.3 | 8292.5 | 9284.3 | 10607.2 | 12318.3 | 14301.9 | 15216.1 | 14102.3 |
| 70° | 5041.4 | 5100.0 | 5393.1 | 5827.2 | 6652.7 | 7625.5 | 8961.1 | 10911.4 | 13153.3 | 14094.4 | 12948.9 |
| 72.5° | 2395.5 | 2430.4 | 2620.5 | 3048.3 | 3572.7 | 4364.9 | 5543.6 | 7383.1 | 9403.1 | 10382.3 | 9239.9 |
| 75° | 877.7 | 885.7 | 930.0 | 1031.4 | 1227.9 | 1525.7 | 2091.3 | 3235.2 | 4789.5 | 5711.6 | 4808.5 |
| 77.5° | 473.7 | 475.3 | 492.7 | 518.1 | 552.9 | 592.5 | 678.1 | 909.4 | 1467.1 | 1996.3 | 1549.5 |
| 80° | 297.9 | 296.3 | 313.7 | 334.3 | 358.1 | 377.1 | 385.0 | 411.9 | 464.2 | 543.4 | 499.1 |
| 82.5° | 152.1 | 166.4 | 206.0 | 228.1 | 263.0 | 269.3 | 261.4 | 259.8 | 275.7 | 297.9 | 307.4 |
| 85° | 84.0 | 74.5 | 109.3 | 145.8 | 158.4 | 163.2 | 164.8 | 155.3 | 152.1 | 148.9 | 156.9 |
| 87.5° | 42.8 | 39.6 | 47.5 | 72.9 | 77.6 | 63.4 | 65.0 | 55.5 | 38.0 | 38.0 | 39.6 |
| 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):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|
| 0° | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 | 2580.9 |
| 2.5° | 2561.9 | 2563.5 | 2560.3 | 2560.3 | 2560.3 | 2561.9 | 2560.3 | 2558.7 |
| 5° | 2541.3 | 2544.5 | 2544.5 | 2546.1 | 2547.6 | 2547.6 | 2547.6 | 2547.6 |
| 7.5° | 2511.2 | 2512.8 | 2516.0 | 2516.0 | 2516.0 | 2516.0 | 2516.0 | 2516.0 |
| 10° | 2482.7 | 2479.5 | 2477.9 | 2474.8 | 2474.8 | 2470.0 | 2471.6 | 2473.2 |
| 12.5° | 2468.4 | 2462.1 | 2458.9 | 2454.2 | 2451.0 | 2446.2 | 2446.2 | 2447.8 |
| 15° | 2474.8 | 2465.3 | 2455.7 | 2452.6 | 2449.4 | 2446.2 | 2443.1 | 2444.7 |
| 17.5° | 2487.4 | 2476.3 | 2465.3 | 2458.9 | 2452.6 | 2447.8 | 2446.2 | 2447.8 |
| 20° | 2514.4 | 2498.5 | 2481.1 | 2470.0 | 2457.3 | 2454.2 | 2449.4 | 2454.2 |
| 22.5° | 2550.8 | 2531.8 | 2509.6 | 2489.0 | 2474.8 | 2468.4 | 2462.1 | 2466.8 |
| 25° | 2595.2 | 2574.6 | 2552.4 | 2528.6 | 2512.8 | 2508.0 | 2500.1 | 2500.1 |
| 27.5° | 2657.0 | 2639.5 | 2620.5 | 2598.3 | 2582.5 | 2577.7 | 2565.1 | 2565.1 |
| 30° | 2755.2 | 2737.8 | 2720.3 | 2701.3 | 2685.5 | 2680.7 | 2664.9 | 2664.9 |
| 32.5° | 2885.1 | 2866.1 | 2855.0 | 2839.2 | 2826.5 | 2818.6 | 2799.5 | 2798.0 |
| 35° | 3059.4 | 3042.0 | 3040.4 | 3029.3 | 3016.6 | 3018.2 | 2999.2 | 2996.0 |
| 37.5° | 3309.7 | 3295.5 | 3300.2 | 3290.7 | 3279.6 | 3289.1 | 3278.0 | 3278.0 |
| 40° | 3629.7 | 3625.0 | 3629.7 | 3623.4 | 3625.0 | 3626.6 | 3617.1 | 3620.2 |
| 42.5° | 4016.3 | 4003.7 | 4032.2 | 4029.0 | 4024.3 | 4036.9 | 4014.7 | 3998.9 |
| 45° | 4461.5 | 4456.8 | 4485.3 | 4490.1 | 4480.5 | 4488.5 | 4448.9 | 4447.3 |
| 47.5° | 4944.8 | 4944.8 | 4970.1 | 4966.9 | 4957.4 | 4959.0 | 4911.5 | 4881.4 |
| 50° | 5448.6 | 5445.4 | 5470.8 | 5464.4 | 5451.8 | 5450.2 | 5401.1 | 5371.0 |
| 52.5° | 5973.0 | 5973.0 | 6009.4 | 5992.0 | 5961.9 | 5947.7 | 5887.5 | 5847.8 |
| 55° | 6552.9 | 6545.0 | 6556.0 | 6499.0 | 6440.4 | 6397.6 | 6323.1 | 6293.0 |
| 57.5° | 7286.4 | 7194.5 | 7115.3 | 7042.4 | 6960.1 | 6909.4 | 6822.2 | 6790.5 |
| 60° | 8327.4 | 8081.8 | 7975.6 | 7829.9 | 7693.6 | 7625.5 | 7509.8 | 7448.0 |
| 62.5° | 9769.1 | 9361.9 | 9073.6 | 8752.0 | 8441.4 | 8222.8 | 8046.9 | 7969.3 |
| 65° | 11435.8 | 10548.6 | 9815.1 | 9125.9 | 8541.2 | 8077.0 | 7818.8 | 7738.0 |
| 67.5° | 12069.6 | 10440.9 | 9175.0 | 8186.3 | 7476.6 | 6923.6 | 6614.7 | 6549.7 |
| 68° | 11934.9 | 10193.7 | 8878.7 | 7866.3 | 7153.3 | 6595.7 | 6288.3 | 6229.7 |
| 70° | 10528.0 | 8599.9 | 7212.0 | 6204.3 | 5538.9 | 5008.1 | 4791.1 | 4697.6 |
| 72.5° | 7177.1 | 5523.0 | 4236.6 | 3388.9 | 2891.4 | 2555.6 | 2355.9 | 2287.8 |
| 75° | 3303.4 | 2232.4 | 1490.9 | 1113.8 | 945.9 | 865.1 | 803.3 | 787.4 |
| 77.5° | 963.3 | 700.3 | 602.1 | 557.7 | 524.4 | 495.9 | 475.3 | 473.7 |
| 80° | 457.9 | 429.4 | 416.7 | 388.2 | 358.1 | 331.1 | 312.1 | 315.3 |
| 82.5° | 307.4 | 299.4 | 299.4 | 270.9 | 223.4 | 191.7 | 158.4 | 142.6 |
| 85° | 163.2 | 169.5 | 179.0 | 169.5 | 147.3 | 109.3 | 71.3 | 77.6 |
| 87.5° | 55.5 | 63.4 | 66.5 | 65.0 | 58.6 | 44.4 | 33.3 | 33.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)