

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: P195503

Luminaire Tested: **NAV-AF-05-D-UNV-5WQ-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195503
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24131)
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-5WQ-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34318 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type V - Short - Semi-Cutoff
BUG Rating: B5 - U0 - G4

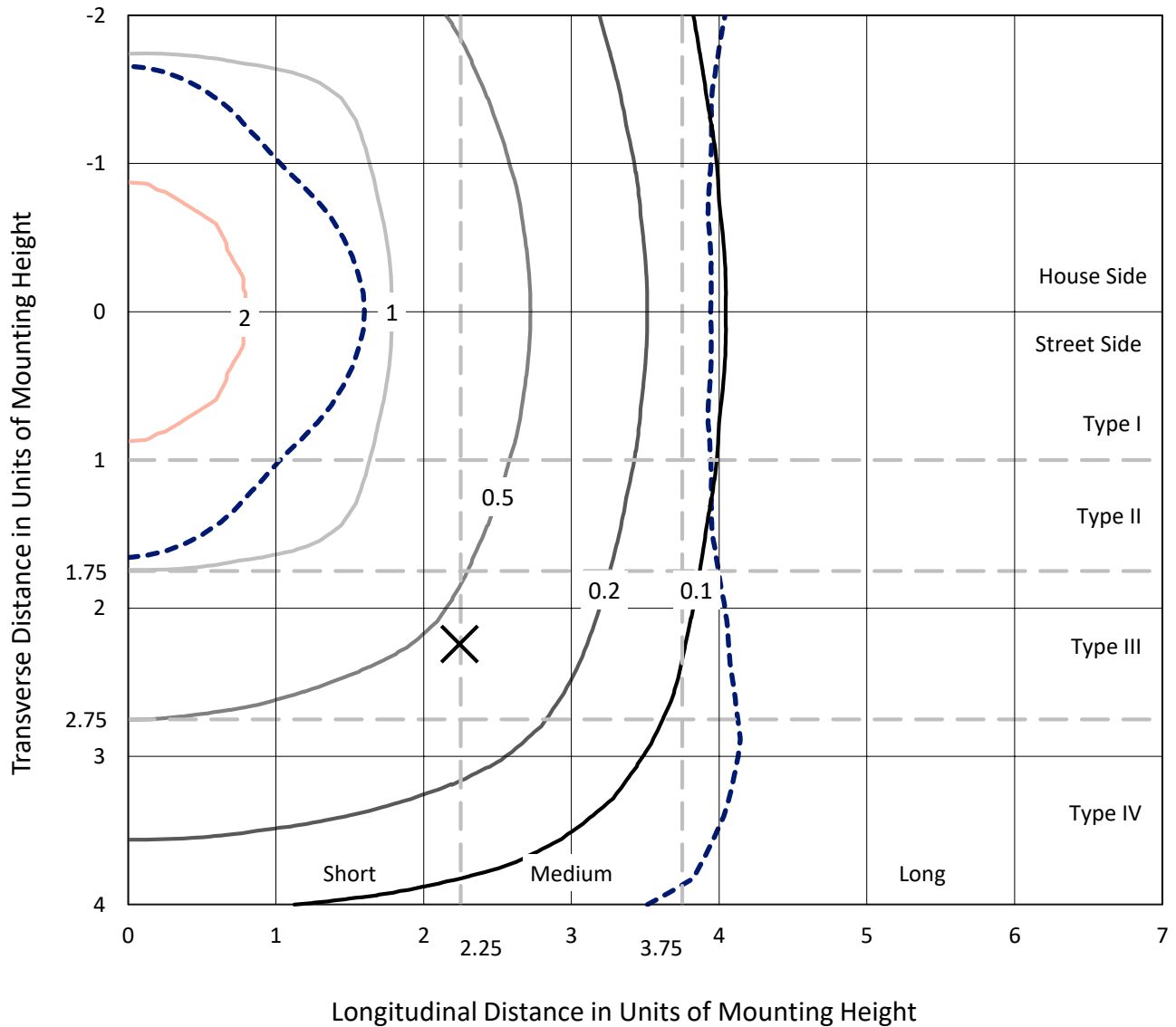
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

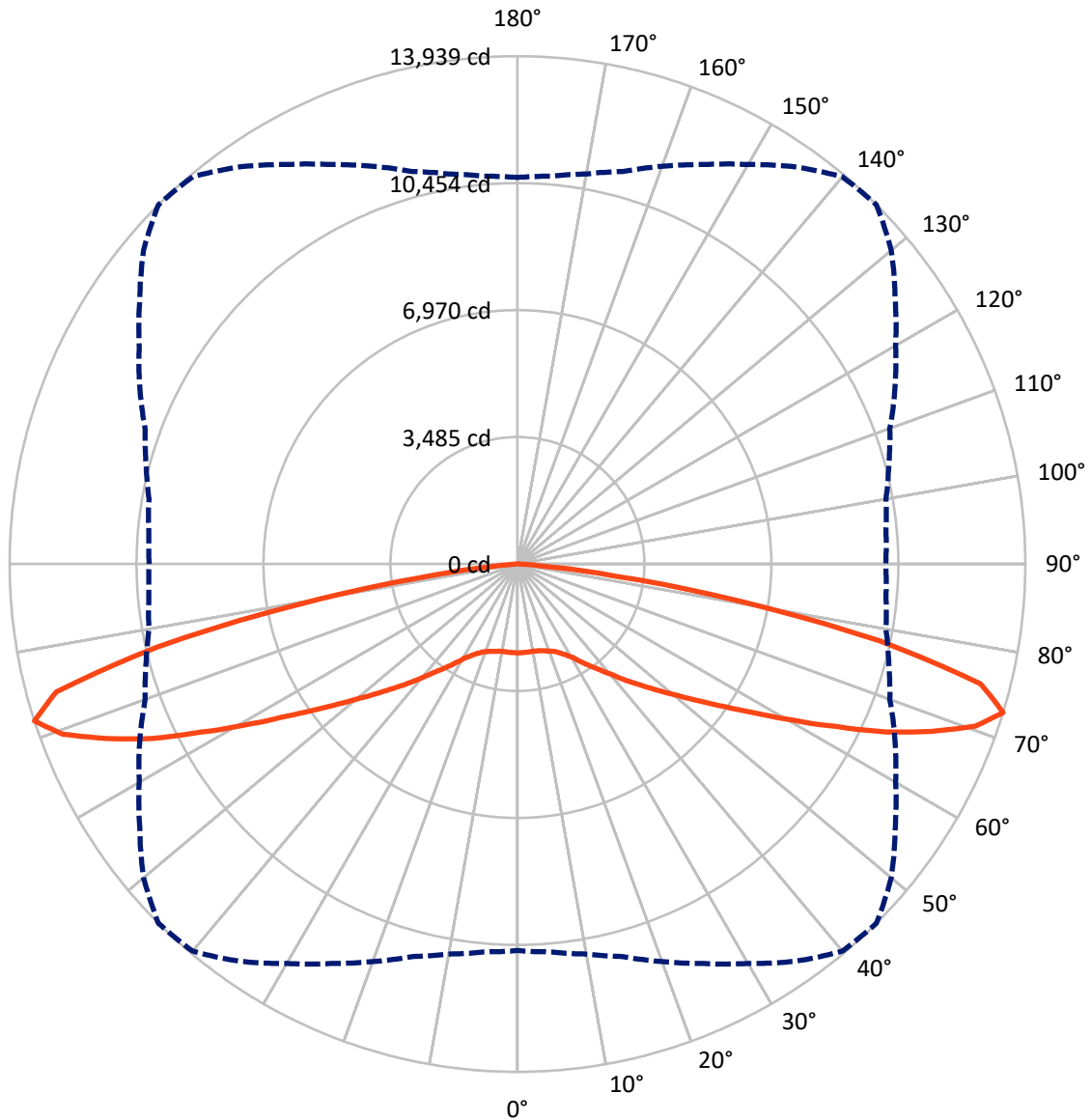
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 2.7 fc
 Type V - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 17159.0 | 0.0 | 17159.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 17159.0 | 0.0 | 17159.0 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 34318.0 | 0.0 | 34318.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 232.9 | 0.7 |
| 10°-20° | 704.8 | 2.1 |
| 20°-30° | 1272.3 | 3.7 |
| 30°-40° | 2170.2 | 6.3 |
| 40°-50° | 3694.8 | 10.8 |
| 50°-60° | 5946.2 | 17.3 |
| 60°-70° | 9888.7 | 28.8 |
| 70°-80° | 9566.2 | 27.9 |
| 80°-90° | 841.9 | 2.5 |
| 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° | 34318.0 | 100.0 |
| 0°-180° | 34318.0 | 100.0 |

Coefficient of Utilization



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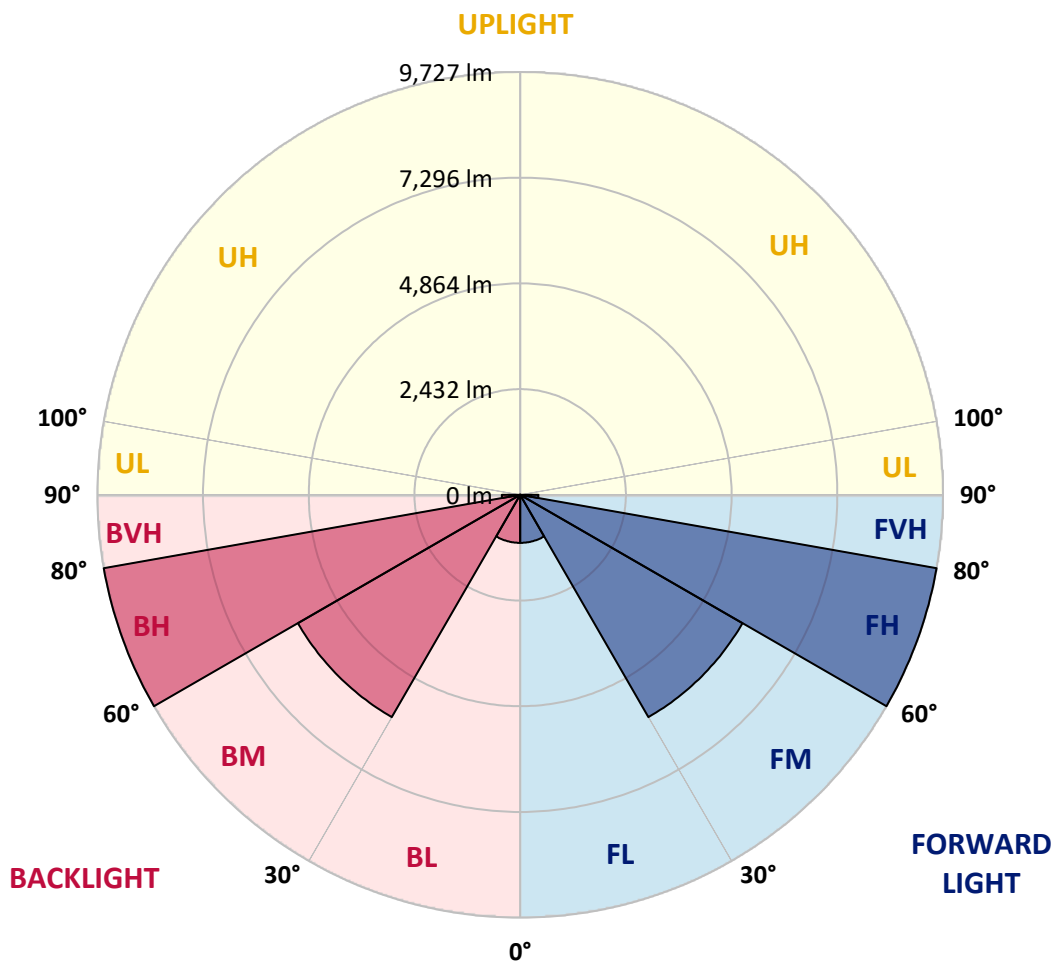
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1105.0 | 3.2 | | | |
| FM | (30°-60°) | 5905.6 | 17.2 | | | |
| FH | (60°-80°) | 9727.4 | 28.3 | | | G4/12000 |
| FVH | (80°-90°) | 421.0 | 1.2 | | | G3/500 |
| BL | (0°-30°) | 1105.0 | 3.2 | B3/2500 | | |
| BM | (30°-60°) | 5905.6 | 17.2 | B4/8500 | | |
| BH | (60°-80°) | 9727.4 | 28.3 | B5 | | G4/12000 |
| BVH | (80°-90°) | 421.0 | 1.2 | | | G3/500 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B5-U0-G4

Type V Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 |
| 2.5° | 2458.8 | 2458.8 | 2460.9 | 2458.8 | 2454.5 | 2452.4 | 2446.1 | 2441.9 | 2437.6 | 2435.5 | 2431.3 |
| 5° | 2460.9 | 2460.9 | 2463.0 | 2460.9 | 2456.7 | 2452.4 | 2448.2 | 2441.9 | 2437.6 | 2433.4 | 2431.3 |
| 7.5° | 2469.3 | 2471.4 | 2473.5 | 2471.4 | 2463.0 | 2458.8 | 2452.4 | 2446.1 | 2437.6 | 2433.4 | 2429.2 |
| 10° | 2486.2 | 2486.2 | 2486.2 | 2484.1 | 2477.8 | 2469.3 | 2460.9 | 2454.5 | 2444.0 | 2433.4 | 2427.1 |
| 12.5° | 2498.9 | 2501.0 | 2501.0 | 2496.8 | 2488.3 | 2477.8 | 2469.3 | 2463.0 | 2454.5 | 2446.1 | 2439.8 |
| 15° | 2517.9 | 2517.9 | 2515.8 | 2507.3 | 2494.7 | 2486.2 | 2482.0 | 2479.9 | 2477.8 | 2473.5 | 2467.2 |
| 17.5° | 2555.9 | 2553.8 | 2547.5 | 2534.8 | 2520.0 | 2513.7 | 2509.5 | 2509.5 | 2509.5 | 2507.3 | 2503.1 |
| 20° | 2610.9 | 2610.9 | 2602.4 | 2581.3 | 2568.6 | 2562.3 | 2555.9 | 2555.9 | 2555.9 | 2549.6 | 2543.3 |
| 22.5° | 2699.6 | 2701.7 | 2689.0 | 2663.7 | 2646.8 | 2634.1 | 2625.6 | 2619.3 | 2613.0 | 2608.7 | 2598.2 |
| 25° | 2820.0 | 2817.9 | 2803.1 | 2771.4 | 2758.7 | 2746.0 | 2729.1 | 2718.6 | 2710.1 | 2703.8 | 2691.1 |
| 27.5° | 2946.7 | 2944.6 | 2927.7 | 2900.2 | 2891.8 | 2872.8 | 2860.1 | 2845.3 | 2834.8 | 2824.2 | 2811.5 |
| 30° | 3109.4 | 3098.8 | 3086.1 | 3065.0 | 3060.8 | 3046.0 | 3029.1 | 3008.0 | 2991.1 | 2974.2 | 2959.4 |
| 32.5° | 3255.1 | 3255.1 | 3236.1 | 3225.5 | 3234.0 | 3227.7 | 3229.8 | 3217.1 | 3206.5 | 3200.2 | 3185.4 |
| 35° | 3457.9 | 3457.9 | 3449.5 | 3436.8 | 3438.9 | 3424.1 | 3422.0 | 3424.1 | 3432.6 | 3432.6 | 3415.7 |
| 37.5° | 3728.3 | 3732.5 | 3705.0 | 3700.8 | 3690.3 | 3669.1 | 3658.6 | 3662.8 | 3681.8 | 3692.4 | 3669.1 |
| 40° | 4064.1 | 4072.6 | 4064.1 | 4036.7 | 4024.0 | 3988.1 | 3967.0 | 3967.0 | 3981.8 | 3992.3 | 3983.9 |
| 42.5° | 4395.8 | 4410.6 | 4395.8 | 4374.7 | 4364.1 | 4336.6 | 4326.1 | 4334.5 | 4353.5 | 4366.2 | 4353.5 |
| 45° | 4765.4 | 4776.0 | 4757.0 | 4731.6 | 4719.0 | 4704.2 | 4697.8 | 4704.2 | 4725.3 | 4738.0 | 4733.8 |
| 47.5° | 5128.8 | 5143.5 | 5120.3 | 5109.7 | 5109.7 | 5095.0 | 5111.9 | 5128.8 | 5147.8 | 5177.3 | 5164.7 |
| 50° | 5483.6 | 5502.6 | 5487.9 | 5490.0 | 5506.9 | 5534.3 | 5566.0 | 5599.8 | 5633.6 | 5665.3 | 5669.5 |
| 52.5° | 5800.5 | 5830.1 | 5832.2 | 5870.2 | 5923.0 | 5965.2 | 6054.0 | 6127.9 | 6208.2 | 6235.6 | 6223.0 |
| 55° | 6134.2 | 6174.4 | 6227.2 | 6286.3 | 6370.8 | 6457.4 | 6607.4 | 6740.5 | 6846.1 | 6911.6 | 6901.0 |
| 57.5° | 6611.6 | 6651.8 | 6706.7 | 6803.8 | 6930.6 | 7048.9 | 7253.8 | 7460.8 | 7621.3 | 7720.6 | 7672.0 |
| 60° | 7230.5 | 7272.8 | 7344.6 | 7448.1 | 7612.9 | 7773.4 | 8054.4 | 8352.2 | 8601.4 | 8715.5 | 8626.8 |
| 62.5° | 8050.1 | 8090.3 | 8136.7 | 8274.0 | 8457.8 | 8664.8 | 9017.6 | 9399.9 | 9716.8 | 9826.6 | 9702.0 |
| 65° | 9218.2 | 9266.8 | 9281.6 | 9393.6 | 9573.1 | 9765.3 | 10145.6 | 10576.5 | 10937.7 | 11117.2 | 10868.0 |
| 67.5° | 10534.2 | 10553.2 | 10612.4 | 10743.4 | 10927.1 | 11100.3 | 11400.3 | 11808.0 | 12154.4 | 12253.7 | 11987.5 |
| 70° | 11305.2 | 11343.3 | 11446.8 | 11628.4 | 11848.1 | 12120.6 | 12448.0 | 12887.4 | 13280.3 | 13326.8 | 12988.8 |
| 72.5° | 10608.2 | 10686.3 | 10870.1 | 11153.2 | 11613.6 | 12097.4 | 12661.4 | 13309.9 | 13873.8 | 13939.3 | 13396.5 |
| 75° | 8508.5 | 8597.2 | 8816.9 | 9127.4 | 9672.4 | 10390.6 | 11206.0 | 12179.7 | 13024.7 | 13132.4 | 12414.2 |
| 77.5° | 4535.2 | 4645.0 | 4964.0 | 5382.2 | 6159.6 | 7110.1 | 8092.4 | 9203.5 | 9921.7 | 10164.6 | 9647.1 |
| 80° | 1142.8 | 1201.9 | 1356.1 | 1601.2 | 2127.1 | 2893.9 | 3741.0 | 4936.5 | 5827.9 | 6206.1 | 5827.9 |
| 82.5° | 443.6 | 488.0 | 530.2 | 559.8 | 610.5 | 716.1 | 988.6 | 1611.7 | 2171.5 | 2674.2 | 2315.1 |
| 85° | 171.1 | 181.7 | 261.9 | 297.8 | 297.8 | 327.4 | 376.0 | 443.6 | 549.2 | 599.9 | 502.7 |
| 87.5° | 67.6 | 73.9 | 90.8 | 139.4 | 143.6 | 126.7 | 135.2 | 152.1 | 116.2 | 97.2 | 109.8 |
| 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° | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 | 2439.8 |
| 2.5° | 2429.2 | 2427.1 | 2422.9 | 2425.0 | 2422.9 | 2422.9 | 2422.9 | 2422.9 |
| 5° | 2427.1 | 2427.1 | 2422.9 | 2422.9 | 2422.9 | 2425.0 | 2422.9 | 2422.9 |
| 7.5° | 2425.0 | 2422.9 | 2418.6 | 2416.5 | 2416.5 | 2414.4 | 2414.4 | 2414.4 |
| 10° | 2420.7 | 2416.5 | 2412.3 | 2410.2 | 2410.2 | 2406.0 | 2406.0 | 2406.0 |
| 12.5° | 2431.3 | 2425.0 | 2420.7 | 2418.6 | 2418.6 | 2418.6 | 2420.7 | 2420.7 |
| 15° | 2460.9 | 2448.2 | 2441.9 | 2439.8 | 2441.9 | 2446.1 | 2448.2 | 2450.3 |
| 17.5° | 2492.6 | 2479.9 | 2469.3 | 2465.1 | 2467.2 | 2473.5 | 2479.9 | 2484.1 |
| 20° | 2532.7 | 2522.1 | 2509.5 | 2505.2 | 2505.2 | 2513.7 | 2517.9 | 2524.2 |
| 22.5° | 2589.7 | 2581.3 | 2570.7 | 2564.4 | 2560.2 | 2570.7 | 2577.1 | 2581.3 |
| 25° | 2680.6 | 2672.1 | 2663.7 | 2657.3 | 2655.2 | 2665.8 | 2670.0 | 2672.1 |
| 27.5° | 2801.0 | 2792.5 | 2788.3 | 2786.2 | 2779.8 | 2784.1 | 2790.4 | 2788.3 |
| 30° | 2957.3 | 2963.6 | 2957.3 | 2957.3 | 2946.7 | 2950.9 | 2946.7 | 2942.5 |
| 32.5° | 3166.4 | 3160.1 | 3141.0 | 3128.4 | 3113.6 | 3113.6 | 3107.3 | 3100.9 |
| 35° | 3375.5 | 3354.4 | 3343.8 | 3350.2 | 3343.8 | 3348.1 | 3337.5 | 3326.9 |
| 37.5° | 3622.7 | 3610.0 | 3607.9 | 3626.9 | 3622.7 | 3626.9 | 3626.9 | 3612.1 |
| 40° | 3950.1 | 3941.6 | 3956.4 | 3988.1 | 4000.8 | 3998.7 | 4002.9 | 3983.9 |
| 42.5° | 4326.1 | 4311.3 | 4317.6 | 4345.1 | 4359.9 | 4364.1 | 4362.0 | 4345.1 |
| 45° | 4702.1 | 4706.3 | 4706.3 | 4735.9 | 4750.7 | 4759.1 | 4744.3 | 4738.0 |
| 47.5° | 5126.6 | 5133.0 | 5118.2 | 5137.2 | 5141.4 | 5156.2 | 5143.5 | 5133.0 |
| 50° | 5616.7 | 5593.5 | 5559.7 | 5566.0 | 5566.0 | 5561.8 | 5547.0 | 5534.3 |
| 52.5° | 6163.8 | 6111.0 | 6047.6 | 6026.5 | 6003.3 | 5980.0 | 5950.5 | 5927.2 |
| 55° | 6786.9 | 6696.1 | 6582.1 | 6529.2 | 6484.9 | 6432.1 | 6364.5 | 6341.2 |
| 57.5° | 7509.4 | 7353.1 | 7201.0 | 7105.9 | 6991.8 | 6922.1 | 6835.5 | 6831.3 |
| 60° | 8367.0 | 8155.7 | 7887.5 | 7745.9 | 7631.9 | 7549.5 | 7484.0 | 7458.7 |
| 62.5° | 9357.7 | 8994.3 | 8705.0 | 8552.9 | 8419.8 | 8369.1 | 8286.7 | 8297.3 |
| 65° | 10373.7 | 10004.0 | 9723.1 | 9600.6 | 9476.0 | 9442.2 | 9366.1 | 9393.6 |
| 67.5° | 11474.2 | 11170.1 | 10861.6 | 10747.6 | 10633.5 | 10599.7 | 10521.6 | 10544.8 |
| 70° | 12460.7 | 12074.1 | 11723.5 | 11499.6 | 11305.2 | 11148.9 | 11049.6 | 11009.5 |
| 72.5° | 12657.1 | 11987.5 | 11436.2 | 10876.4 | 10553.2 | 10270.2 | 10154.0 | 10109.7 |
| 75° | 11372.8 | 10333.6 | 9547.8 | 8890.8 | 8527.5 | 8115.6 | 8071.2 | 8010.0 |
| 77.5° | 8846.5 | 7663.6 | 6713.0 | 5868.1 | 5380.1 | 4877.4 | 4704.2 | 4573.2 |
| 80° | 5276.6 | 4055.7 | 3143.2 | 2203.2 | 1797.6 | 1447.0 | 1360.3 | 1269.5 |
| 82.5° | 1888.4 | 1210.4 | 815.4 | 635.8 | 568.2 | 523.9 | 490.1 | 445.7 |
| 85° | 456.3 | 384.4 | 363.3 | 329.5 | 325.3 | 276.7 | 196.4 | 175.3 |
| 87.5° | 145.8 | 133.1 | 135.2 | 128.9 | 135.2 | 101.4 | 82.4 | 73.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)