

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: P270481

Luminaire Tested: **NAV-AF-04-D-UNV-5MQ-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270481
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-04-D-UNV-5MQ-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V
MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22573.1 lumens
Efficiency: N/A
Efficacy: 100.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B5 - U0 - G3

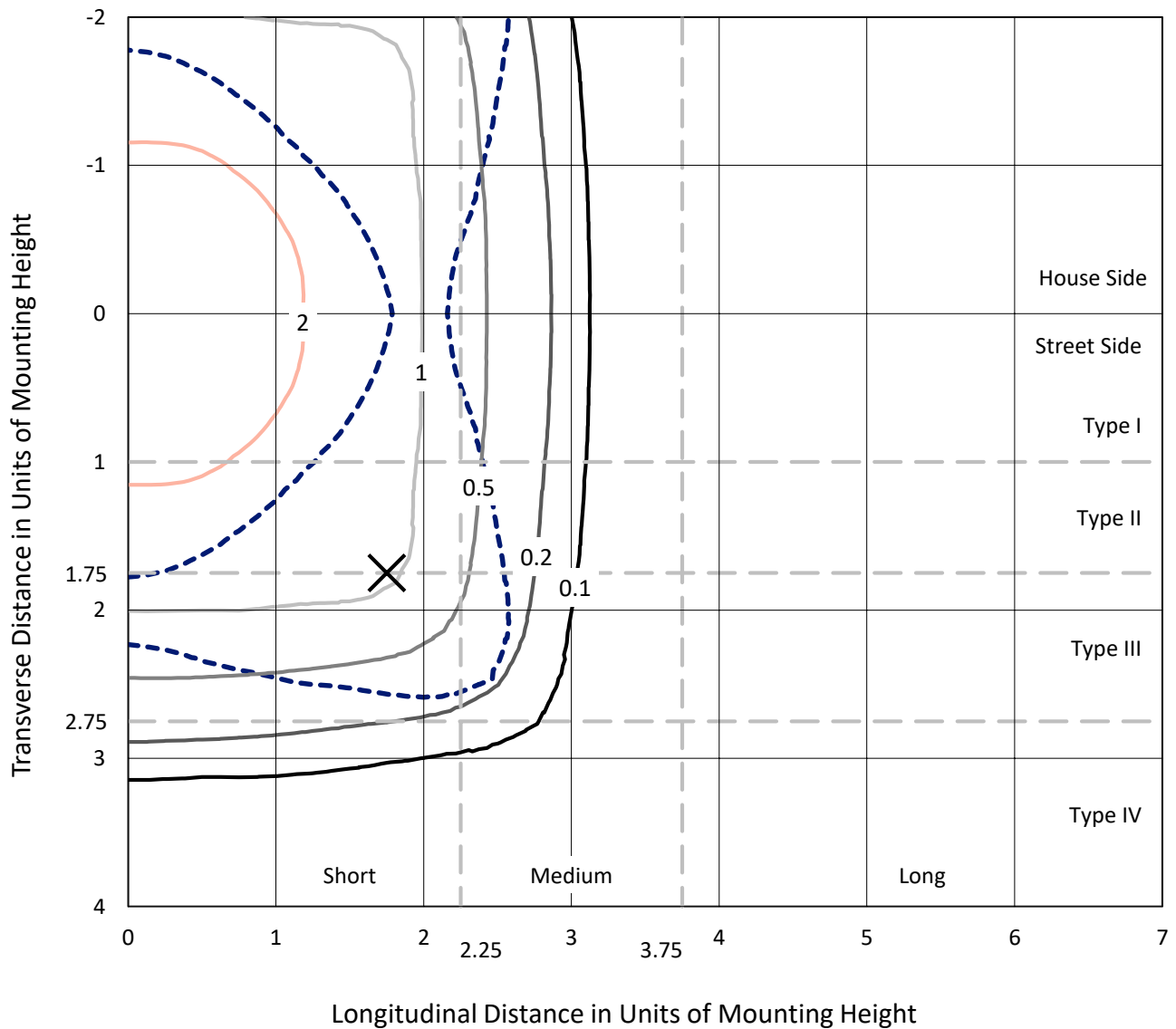
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

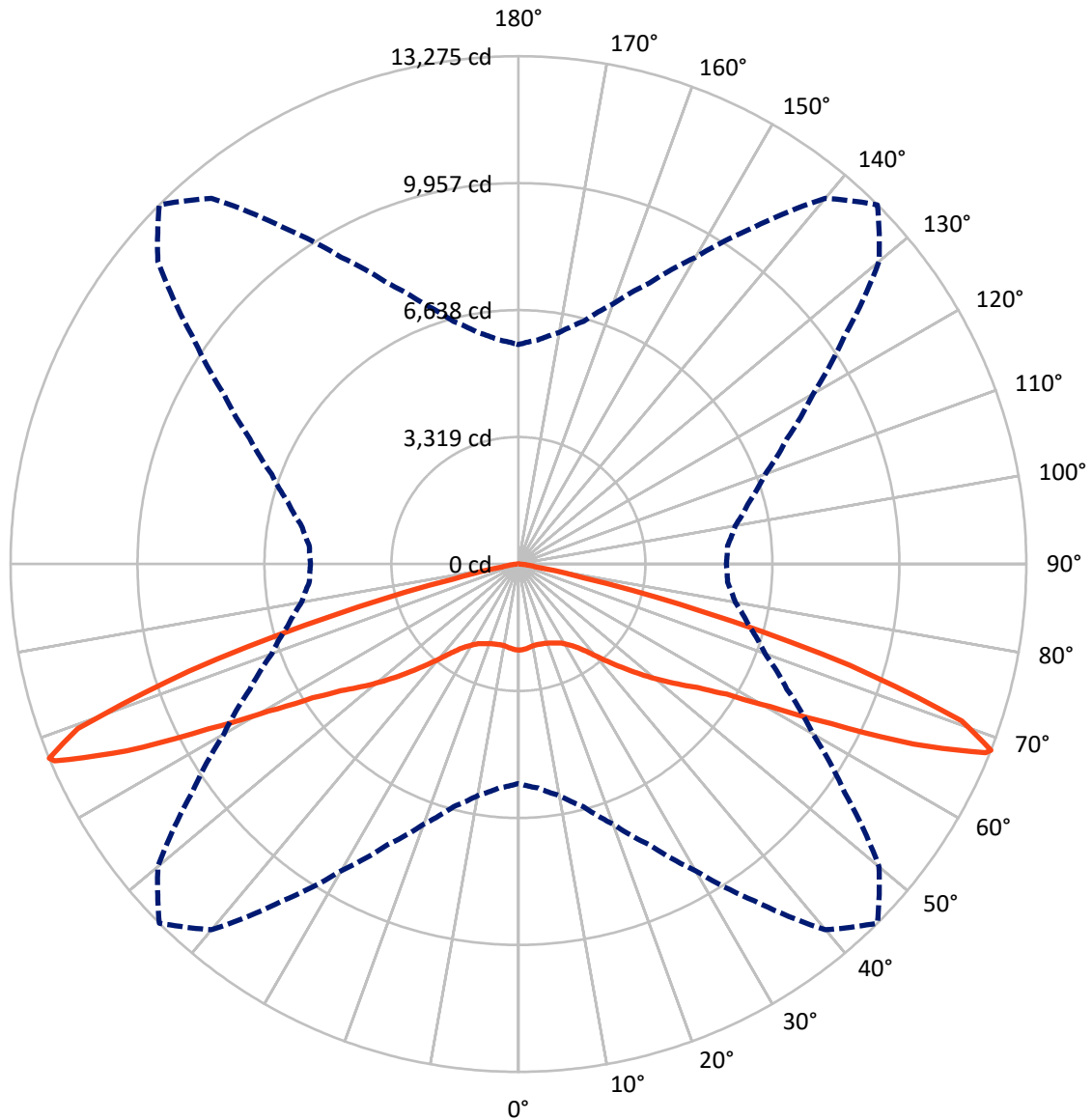
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.6 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 | 11286.6 | 0.0 | 11286.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 11286.6 | 0.0 | 11286.6 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 22573.1 | 0.0 | 22573.1 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 210.7 | 0.9 |
| 10°-20° | 611.1 | 2.7 |
| 20°-30° | 1038.9 | 4.6 |
| 30°-40° | 1700.1 | 7.5 |
| 40°-50° | 3038.3 | 13.5 |
| 50°-60° | 5131.3 | 22.7 |
| 60°-70° | 7956.7 | 35.2 |
| 70°-80° | 2735.7 | 12.1 |
| 80°-90° | 150.3 | 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° | 22573.1 | 100.0 |
| 0°-180° | 22573.1 | 100.0 |



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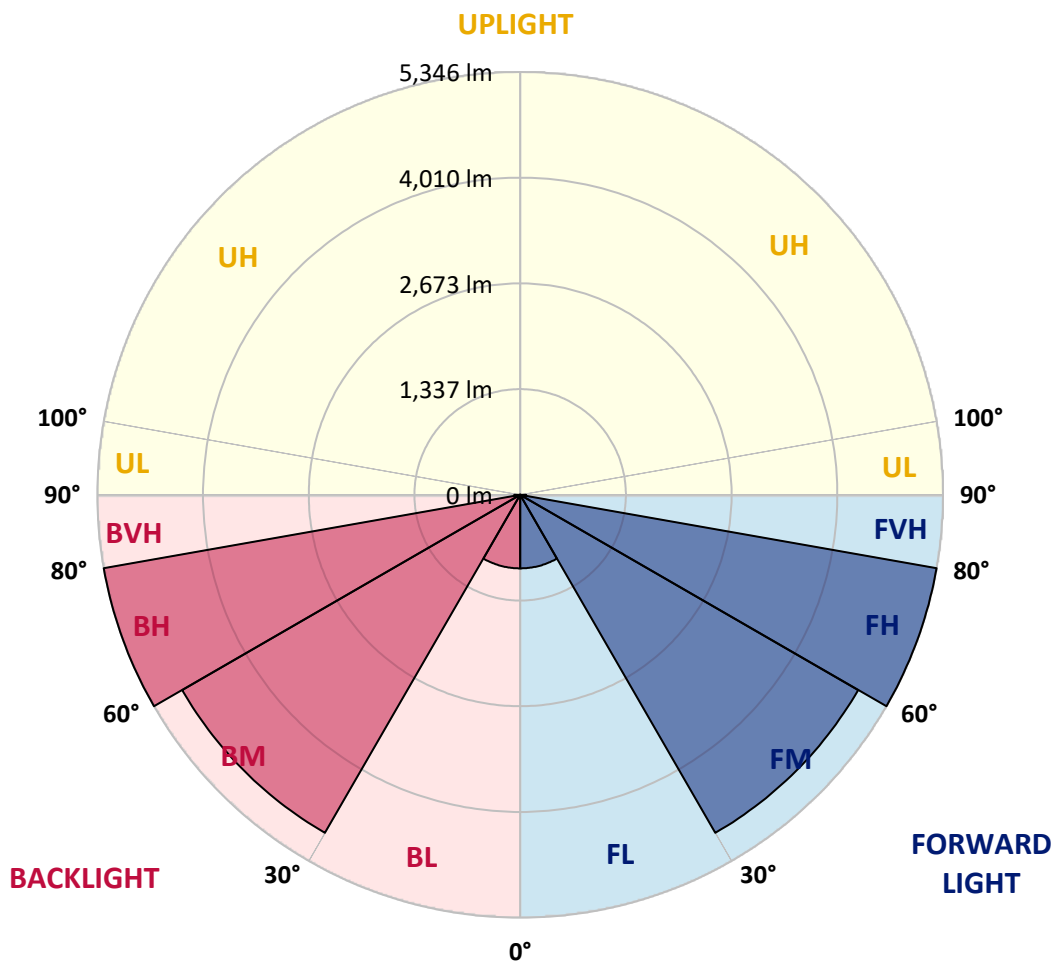
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 930.3 | 4.1 | | | |
| FM | (30°-60°) | 4934.9 | 21.9 | | | |
| FH | (60°-80°) | 5346.2 | 23.7 | | | G3/7500 |
| FVH | (80°-90°) | 75.2 | 0.3 | | | G1/100 |
| BL | (0°-30°) | 930.3 | 4.1 | B2/1000 | | |
| BM | (30°-60°) | 4934.9 | 21.9 | B3/5000 | | |
| BH | (60°-80°) | 5346.2 | 23.7 | B5 | | G3/7500 |
| BVH | (80°-90°) | 75.2 | 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° | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 |
| 2.5° | 2261.5 | 2261.5 | 2264.2 | 2262.8 | 2258.7 | 2254.4 | 2250.3 | 2246.2 | 2243.4 | 2240.7 | 2237.9 |
| 5° | 2237.9 | 2237.9 | 2242.1 | 2239.3 | 2236.5 | 2232.4 | 2229.7 | 2225.6 | 2222.6 | 2219.9 | 2221.2 |
| 7.5° | 2207.6 | 2210.3 | 2213.1 | 2211.6 | 2206.1 | 2204.7 | 2200.6 | 2199.2 | 2196.4 | 2192.4 | 2193.8 |
| 10° | 2181.3 | 2182.6 | 2185.3 | 2184.0 | 2182.6 | 2178.5 | 2177.1 | 2175.8 | 2174.3 | 2168.8 | 2167.4 |
| 12.5° | 2154.9 | 2157.8 | 2160.6 | 2162.0 | 2160.6 | 2162.0 | 2163.3 | 2164.6 | 2163.3 | 2160.6 | 2160.6 |
| 15° | 2134.3 | 2137.0 | 2141.1 | 2145.3 | 2146.7 | 2154.9 | 2160.6 | 2166.1 | 2170.1 | 2171.6 | 2167.4 |
| 17.5° | 2123.1 | 2127.4 | 2132.8 | 2141.1 | 2148.0 | 2157.8 | 2167.4 | 2175.8 | 2182.6 | 2184.0 | 2179.8 |
| 20° | 2121.7 | 2126.0 | 2134.3 | 2144.0 | 2156.3 | 2168.8 | 2184.0 | 2196.4 | 2203.4 | 2207.6 | 2203.4 |
| 22.5° | 2131.5 | 2137.0 | 2148.0 | 2160.6 | 2175.8 | 2192.4 | 2211.6 | 2225.6 | 2239.3 | 2244.9 | 2240.7 |
| 25° | 2159.2 | 2164.6 | 2177.1 | 2192.4 | 2208.9 | 2229.7 | 2248.9 | 2267.0 | 2280.7 | 2287.7 | 2282.1 |
| 27.5° | 2217.1 | 2218.5 | 2232.4 | 2248.9 | 2268.3 | 2286.2 | 2311.2 | 2319.5 | 2330.6 | 2337.4 | 2330.6 |
| 30° | 2298.8 | 2301.5 | 2313.9 | 2340.3 | 2358.2 | 2381.6 | 2395.5 | 2403.8 | 2416.3 | 2423.2 | 2414.9 |
| 32.5° | 2423.2 | 2426.0 | 2436.9 | 2461.8 | 2478.5 | 2496.4 | 2513.0 | 2518.5 | 2531.0 | 2539.2 | 2529.5 |
| 35° | 2598.6 | 2604.2 | 2613.9 | 2630.4 | 2644.3 | 2658.2 | 2670.7 | 2666.3 | 2674.8 | 2685.8 | 2676.1 |
| 37.5° | 2839.3 | 2837.8 | 2840.6 | 2853.0 | 2866.9 | 2875.1 | 2894.5 | 2884.7 | 2893.1 | 2902.9 | 2897.3 |
| 40° | 3119.9 | 3119.9 | 3118.5 | 3140.6 | 3146.0 | 3154.4 | 3175.1 | 3162.7 | 3173.7 | 3184.9 | 3175.1 |
| 42.5° | 3439.2 | 3444.6 | 3451.6 | 3469.6 | 3484.7 | 3487.5 | 3497.2 | 3491.6 | 3505.5 | 3515.2 | 3505.5 |
| 45° | 3806.7 | 3815.1 | 3823.4 | 3864.9 | 3871.8 | 3877.4 | 3884.2 | 3866.2 | 3881.4 | 3889.8 | 3887.0 |
| 47.5° | 4188.3 | 4203.4 | 4221.4 | 4264.3 | 4292.0 | 4304.4 | 4310.0 | 4289.1 | 4290.6 | 4303.1 | 4304.4 |
| 50° | 4619.5 | 4636.2 | 4654.1 | 4702.4 | 4728.8 | 4750.9 | 4757.9 | 4734.2 | 4737.1 | 4746.7 | 4749.5 |
| 52.5° | 5017.7 | 5037.1 | 5075.8 | 5140.7 | 5178.0 | 5216.7 | 5219.5 | 5190.4 | 5203.0 | 5209.8 | 5204.3 |
| 55° | 5392.3 | 5417.1 | 5468.3 | 5555.4 | 5623.1 | 5699.1 | 5733.7 | 5701.9 | 5701.9 | 5696.4 | 5693.5 |
| 57.5° | 5829.1 | 5856.7 | 5909.2 | 6010.2 | 6104.2 | 6213.3 | 6307.3 | 6339.1 | 6397.2 | 6416.6 | 6386.1 |
| 60° | 6487.0 | 6516.0 | 6569.9 | 6702.7 | 6821.5 | 6980.5 | 7135.3 | 7261.1 | 7465.8 | 7576.2 | 7476.8 |
| 62.5° | 7088.3 | 7132.5 | 7259.7 | 7492.0 | 7749.0 | 8043.5 | 8384.9 | 8628.2 | 8999.9 | 9185.3 | 8935.0 |
| 65° | 6951.4 | 7041.4 | 7290.1 | 7655.0 | 8185.9 | 8824.5 | 9519.8 | 10187.4 | 10956.0 | 11349.8 | 10841.3 |
| 67.5° | 6072.4 | 6148.4 | 6416.6 | 6841.0 | 7503.1 | 8383.5 | 9464.5 | 10846.8 | 12432.3 | 13170.4 | 12270.5 |
| 68° | 5736.4 | 5878.9 | 6145.7 | 6567.1 | 7234.9 | 8100.1 | 9254.3 | 10747.2 | 12477.8 | 13275.4 | 12303.6 |
| 70° | 4398.5 | 4449.6 | 4705.3 | 5084.0 | 5804.2 | 6652.8 | 7818.2 | 9519.8 | 11475.7 | 12296.8 | 11297.4 |
| 72.5° | 2089.9 | 2120.4 | 2286.2 | 2659.5 | 3117.1 | 3808.2 | 4836.7 | 6441.4 | 8203.9 | 9058.1 | 8061.5 |
| 75° | 765.7 | 772.7 | 811.3 | 899.8 | 1071.3 | 1331.2 | 1824.5 | 2822.7 | 4178.6 | 4983.1 | 4195.3 |
| 77.5° | 413.3 | 414.7 | 429.8 | 451.9 | 482.4 | 517.0 | 591.7 | 793.5 | 1279.9 | 1741.6 | 1351.9 |
| 80° | 259.9 | 258.5 | 273.8 | 291.7 | 312.4 | 329.0 | 335.8 | 359.4 | 405.0 | 474.1 | 435.4 |
| 82.5° | 132.7 | 145.2 | 179.8 | 199.1 | 229.4 | 234.9 | 228.1 | 226.7 | 240.6 | 259.9 | 268.1 |
| 85° | 73.2 | 64.9 | 95.4 | 127.2 | 138.2 | 142.4 | 143.8 | 135.5 | 132.7 | 130.0 | 136.8 |
| 87.5° | 37.3 | 34.6 | 41.5 | 63.6 | 67.7 | 55.2 | 56.7 | 48.4 | 33.1 | 33.1 | 34.6 |
| 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° | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 | 2251.7 |
| 2.5° | 2235.2 | 2236.5 | 2233.7 | 2233.7 | 2233.7 | 2235.2 | 2233.7 | 2232.4 |
| 5° | 2217.1 | 2219.9 | 2219.9 | 2221.2 | 2222.6 | 2222.6 | 2222.6 | 2222.6 |
| 7.5° | 2191.0 | 2192.4 | 2195.1 | 2195.1 | 2195.1 | 2195.1 | 2195.1 | 2195.1 |
| 10° | 2166.1 | 2163.3 | 2162.0 | 2159.2 | 2159.2 | 2154.9 | 2156.3 | 2157.8 |
| 12.5° | 2153.5 | 2148.0 | 2145.3 | 2141.1 | 2138.3 | 2134.3 | 2134.3 | 2135.6 |
| 15° | 2159.2 | 2150.8 | 2142.5 | 2139.8 | 2137.0 | 2134.3 | 2131.5 | 2132.8 |
| 17.5° | 2170.1 | 2160.6 | 2150.8 | 2145.3 | 2139.8 | 2135.6 | 2134.3 | 2135.6 |
| 20° | 2193.8 | 2179.8 | 2164.6 | 2154.9 | 2144.0 | 2141.1 | 2137.0 | 2141.1 |
| 22.5° | 2225.6 | 2208.9 | 2189.4 | 2171.6 | 2159.2 | 2153.5 | 2148.0 | 2152.2 |
| 25° | 2264.2 | 2246.2 | 2226.9 | 2206.1 | 2192.4 | 2188.1 | 2181.3 | 2181.3 |
| 27.5° | 2318.0 | 2302.8 | 2286.2 | 2267.0 | 2253.0 | 2248.9 | 2237.9 | 2237.9 |
| 30° | 2403.8 | 2388.6 | 2373.4 | 2356.9 | 2343.0 | 2338.7 | 2325.1 | 2325.1 |
| 32.5° | 2517.1 | 2500.5 | 2490.9 | 2477.0 | 2465.9 | 2459.1 | 2442.5 | 2441.1 |
| 35° | 2669.1 | 2654.0 | 2652.5 | 2643.0 | 2631.9 | 2633.2 | 2616.7 | 2613.9 |
| 37.5° | 2887.6 | 2875.1 | 2879.2 | 2871.1 | 2861.3 | 2869.6 | 2859.9 | 2859.9 |
| 40° | 3166.9 | 3162.7 | 3166.9 | 3161.2 | 3162.7 | 3164.0 | 3155.7 | 3158.5 |
| 42.5° | 3504.1 | 3493.0 | 3517.9 | 3515.2 | 3510.9 | 3522.1 | 3502.8 | 3488.8 |
| 45° | 3892.4 | 3888.4 | 3913.2 | 3917.4 | 3909.1 | 3916.0 | 3881.4 | 3880.0 |
| 47.5° | 4314.1 | 4314.1 | 4336.2 | 4333.5 | 4325.2 | 4326.5 | 4285.1 | 4258.9 |
| 50° | 4753.7 | 4750.9 | 4773.1 | 4767.5 | 4756.4 | 4755.1 | 4712.1 | 4685.9 |
| 52.5° | 5211.2 | 5211.2 | 5243.0 | 5227.7 | 5201.5 | 5189.1 | 5136.6 | 5102.1 |
| 55° | 5717.2 | 5710.2 | 5719.9 | 5670.1 | 5619.0 | 5581.7 | 5516.8 | 5490.4 |
| 57.5° | 6357.0 | 6276.9 | 6207.7 | 6144.2 | 6072.4 | 6028.2 | 5952.1 | 5924.4 |
| 60° | 7265.2 | 7050.9 | 6958.5 | 6831.3 | 6712.3 | 6652.8 | 6552.0 | 6498.1 |
| 62.5° | 8523.1 | 8167.8 | 7916.4 | 7635.8 | 7364.8 | 7174.0 | 7020.7 | 6952.9 |
| 65° | 9977.3 | 9203.2 | 8563.3 | 7961.9 | 7451.9 | 7046.8 | 6821.5 | 6751.0 |
| 67.5° | 10530.2 | 9109.3 | 8004.7 | 7142.2 | 6523.0 | 6040.6 | 5771.0 | 5714.4 |
| 68° | 10412.8 | 8893.6 | 7746.4 | 6863.1 | 6241.0 | 5754.5 | 5486.3 | 5435.1 |
| 70° | 9185.3 | 7503.1 | 6292.2 | 5412.9 | 4832.4 | 4369.4 | 4180.1 | 4098.4 |
| 72.5° | 6261.7 | 4818.6 | 3696.3 | 2956.7 | 2522.7 | 2229.7 | 2055.4 | 1996.0 |
| 75° | 2882.0 | 1947.6 | 1300.7 | 971.7 | 825.3 | 754.8 | 700.8 | 687.1 |
| 77.5° | 840.5 | 610.9 | 525.2 | 486.5 | 457.5 | 432.7 | 414.7 | 413.3 |
| 80° | 399.4 | 374.7 | 363.5 | 338.7 | 312.4 | 288.9 | 272.2 | 275.2 |
| 82.5° | 268.1 | 261.2 | 261.2 | 236.3 | 194.9 | 167.3 | 138.2 | 124.4 |
| 85° | 142.4 | 148.0 | 156.1 | 148.0 | 128.5 | 95.4 | 62.3 | 67.7 |
| 87.5° | 48.4 | 55.2 | 58.1 | 56.7 | 51.2 | 38.6 | 29.0 | 29.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)