

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: P195012

Luminaire Tested: **NAV-AF-06-D-UNV-5WQ-7060-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195012
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-06-D-UNV-5WQ-7060-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 30279 lumens
Efficiency: N/A
Efficacy: 121.6 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): 249
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

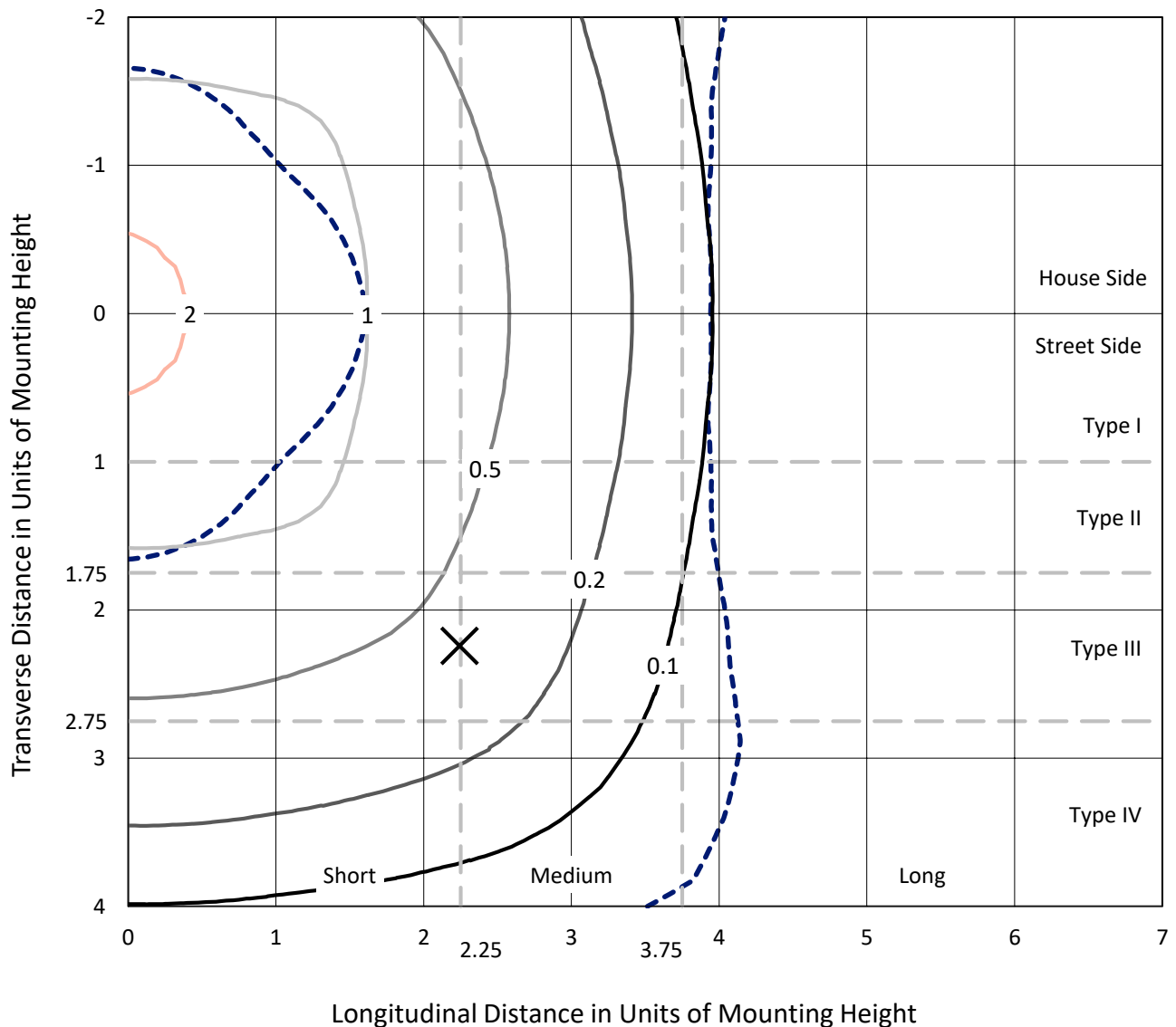


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Iso-Footcandle Lines of Horizontal Illumination

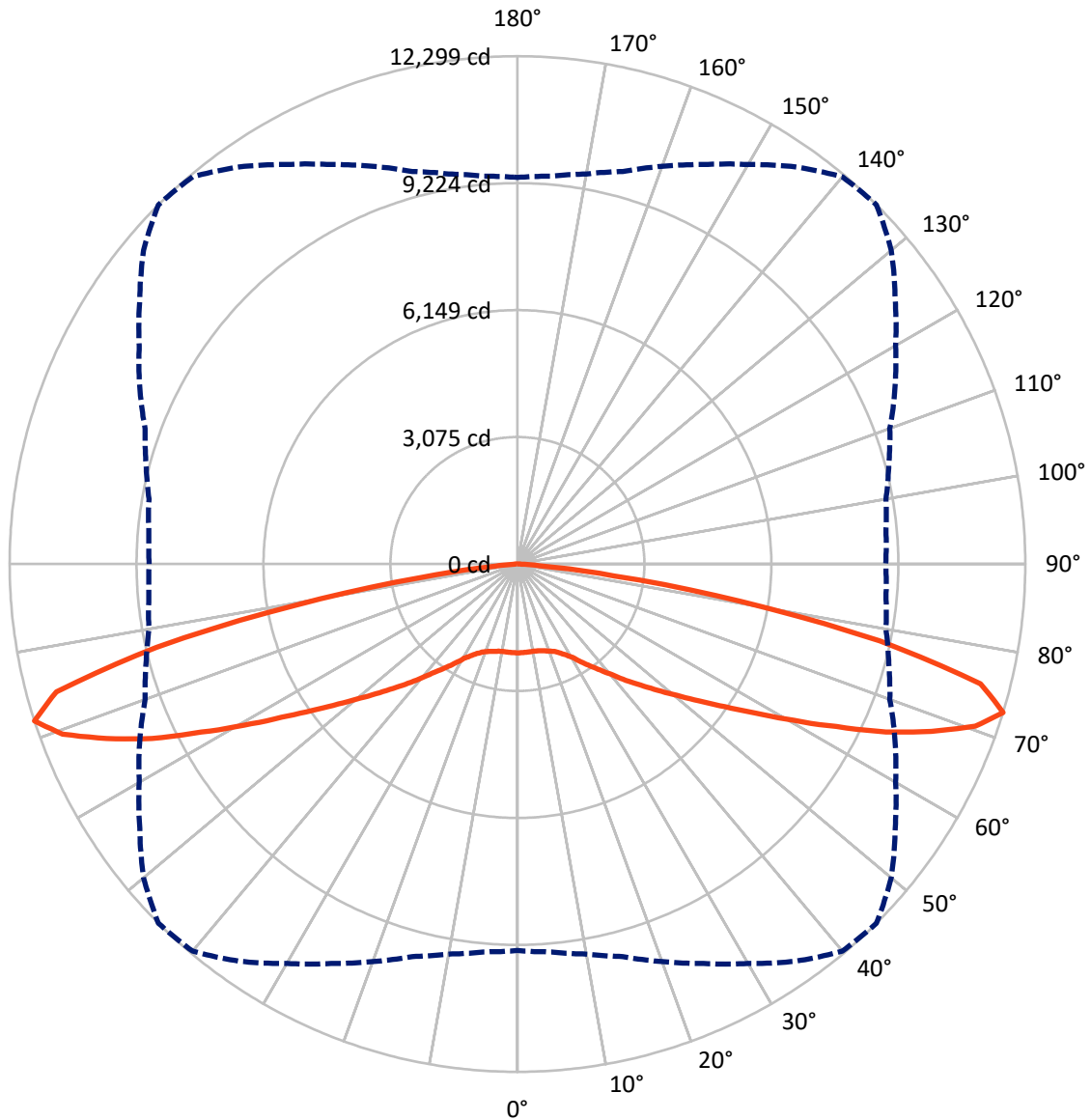
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 2.4 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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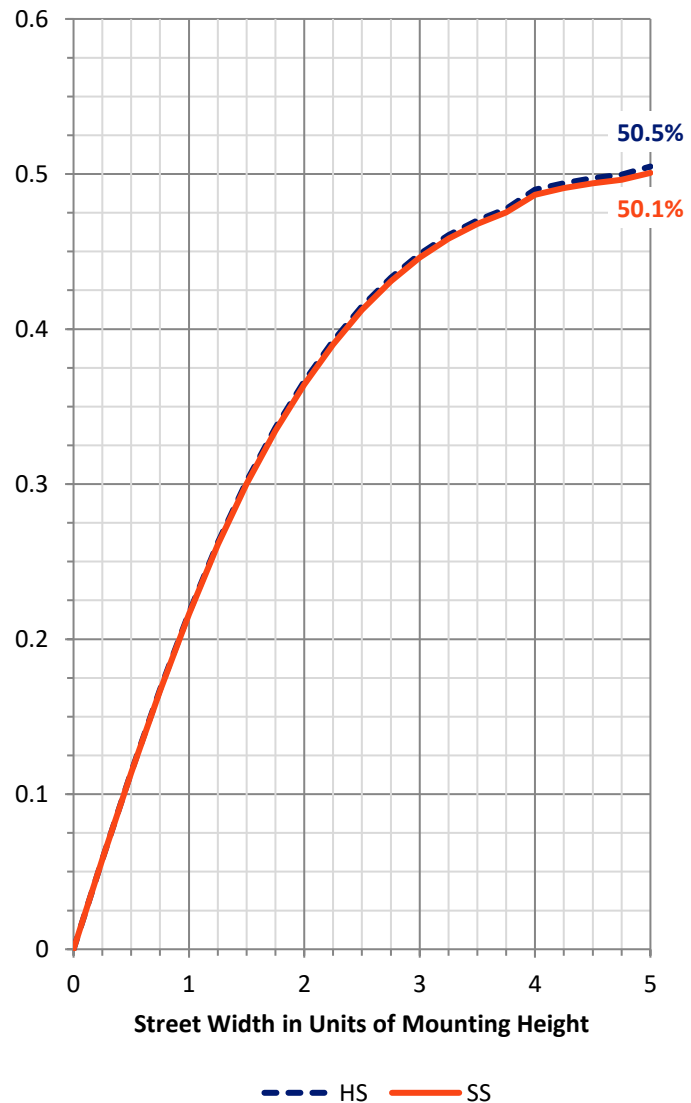
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 15139.5 | 0.0 | 15139.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 15139.5 | 0.0 | 15139.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 30279.0 | 0.0 | 30279.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 205.5 | 0.7 |
| 10°-20° | 621.8 | 2.1 |
| 20°-30° | 1122.6 | 3.7 |
| 30°-40° | 1914.8 | 6.3 |
| 40°-50° | 3259.9 | 10.8 |
| 50°-60° | 5246.4 | 17.3 |
| 60°-70° | 8724.9 | 28.8 |
| 70°-80° | 8440.3 | 27.9 |
| 80°-90° | 742.9 | 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° | 30279.0 | 100.0 |
| 0°-180° | 30279.0 | 100.0 |



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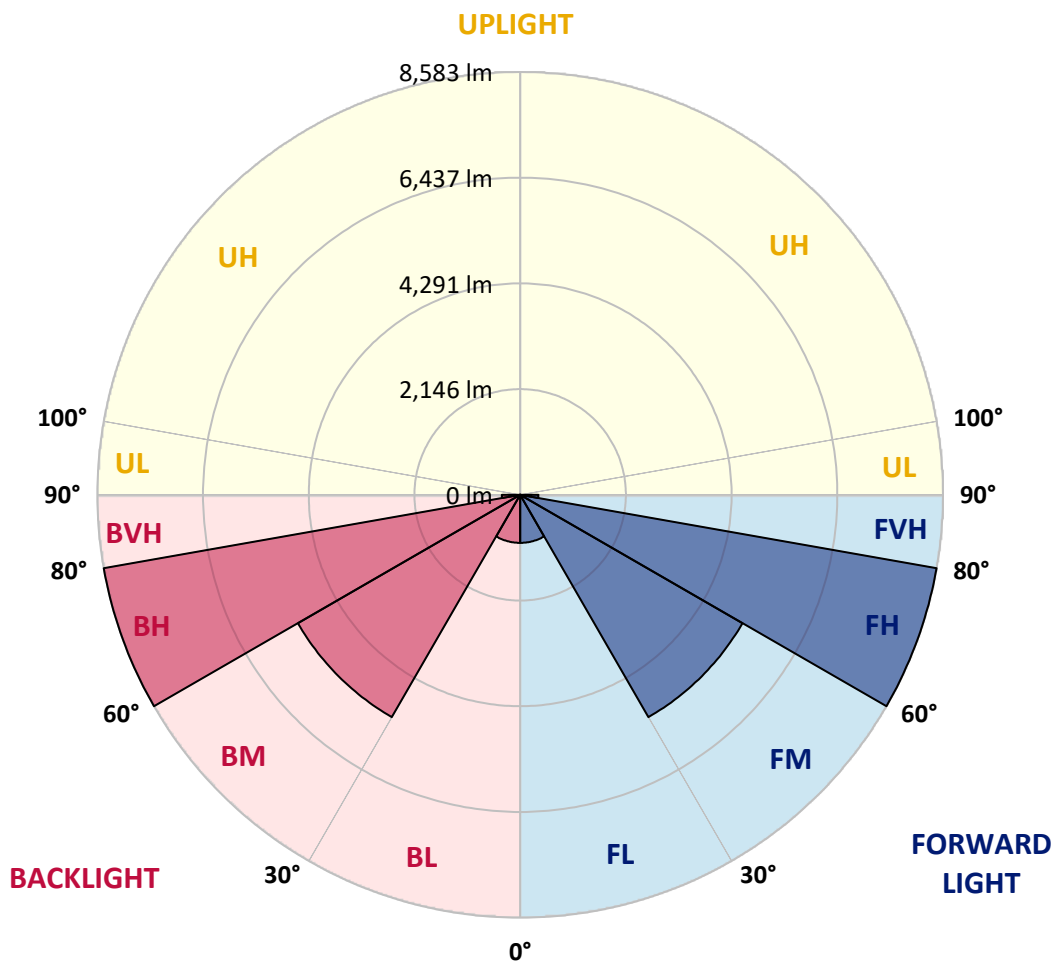
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 974.9 | 3.2 | | | |
| FM | (30°-60°) | 5210.6 | 17.2 | | | |
| FH | (60°-80°) | 8582.6 | 28.3 | | | G4/12000 |
| FVH | (80°-90°) | 371.4 | 1.2 | | | G3/500 |
| BL | (0°-30°) | 974.9 | 3.2 | B2/1000 | | |
| BM | (30°-60°) | 5210.6 | 17.2 | B4/8500 | | |
| BH | (60°-80°) | 8582.6 | 28.3 | B5 | | G4/12000 |
| BVH | (80°-90°) | 371.4 | 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° | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 |
| 2.5° | 2169.4 | 2169.4 | 2171.2 | 2169.4 | 2165.7 | 2163.8 | 2158.2 | 2154.5 | 2150.7 | 2148.9 | 2145.2 |
| 5° | 2171.2 | 2171.2 | 2173.1 | 2171.2 | 2167.5 | 2163.8 | 2160.1 | 2154.5 | 2150.7 | 2147.0 | 2145.2 |
| 7.5° | 2178.7 | 2180.6 | 2182.4 | 2180.6 | 2173.1 | 2169.4 | 2163.8 | 2158.2 | 2150.7 | 2147.0 | 2143.3 |
| 10° | 2193.6 | 2193.6 | 2193.6 | 2191.7 | 2186.2 | 2178.7 | 2171.2 | 2165.7 | 2156.3 | 2147.0 | 2141.4 |
| 12.5° | 2204.8 | 2206.7 | 2206.7 | 2202.9 | 2195.5 | 2186.2 | 2178.7 | 2173.1 | 2165.7 | 2158.2 | 2152.6 |
| 15° | 2221.6 | 2221.6 | 2219.7 | 2212.2 | 2201.1 | 2193.6 | 2189.9 | 2188.0 | 2186.2 | 2182.4 | 2176.8 |
| 17.5° | 2255.1 | 2253.3 | 2247.7 | 2236.5 | 2223.4 | 2217.8 | 2214.1 | 2214.1 | 2214.1 | 2212.2 | 2208.5 |
| 20° | 2303.6 | 2303.6 | 2296.1 | 2277.5 | 2266.3 | 2260.7 | 2255.1 | 2255.1 | 2255.1 | 2249.5 | 2243.9 |
| 22.5° | 2381.8 | 2383.7 | 2372.5 | 2350.2 | 2335.3 | 2324.1 | 2316.6 | 2311.0 | 2305.4 | 2301.7 | 2292.4 |
| 25° | 2488.1 | 2486.2 | 2473.2 | 2445.2 | 2434.0 | 2422.9 | 2407.9 | 2398.6 | 2391.2 | 2385.6 | 2374.4 |
| 27.5° | 2599.9 | 2598.0 | 2583.1 | 2558.9 | 2551.4 | 2534.7 | 2523.5 | 2510.4 | 2501.1 | 2491.8 | 2480.6 |
| 30° | 2743.4 | 2734.1 | 2722.9 | 2704.3 | 2700.5 | 2687.5 | 2672.6 | 2654.0 | 2639.0 | 2624.1 | 2611.1 |
| 32.5° | 2872.0 | 2872.0 | 2855.2 | 2845.9 | 2853.4 | 2847.8 | 2849.6 | 2838.5 | 2829.1 | 2823.6 | 2810.5 |
| 35° | 3050.9 | 3050.9 | 3043.5 | 3032.3 | 3034.2 | 3021.1 | 3019.2 | 3021.1 | 3028.6 | 3028.6 | 3013.7 |
| 37.5° | 3289.5 | 3293.2 | 3269.0 | 3265.3 | 3255.9 | 3237.3 | 3228.0 | 3231.7 | 3248.5 | 3257.8 | 3237.3 |
| 40° | 3585.8 | 3593.3 | 3585.8 | 3561.6 | 3550.4 | 3518.7 | 3500.1 | 3500.1 | 3513.1 | 3522.5 | 3515.0 |
| 42.5° | 3878.4 | 3891.5 | 3878.4 | 3859.8 | 3850.5 | 3826.2 | 3816.9 | 3824.4 | 3841.2 | 3852.3 | 3841.2 |
| 45° | 4204.6 | 4213.9 | 4197.1 | 4174.8 | 4163.6 | 4150.5 | 4144.9 | 4150.5 | 4169.2 | 4180.3 | 4176.6 |
| 47.5° | 4525.1 | 4538.2 | 4517.7 | 4508.4 | 4508.4 | 4495.3 | 4510.2 | 4525.1 | 4541.9 | 4568.0 | 4556.8 |
| 50° | 4838.2 | 4855.0 | 4842.0 | 4843.8 | 4858.7 | 4883.0 | 4910.9 | 4940.8 | 4970.6 | 4998.5 | 5002.3 |
| 52.5° | 5117.8 | 5143.9 | 5145.8 | 5179.3 | 5225.9 | 5263.2 | 5341.5 | 5406.7 | 5477.5 | 5501.7 | 5490.6 |
| 55° | 5412.3 | 5447.7 | 5494.3 | 5546.5 | 5621.0 | 5697.4 | 5829.8 | 5947.2 | 6040.4 | 6098.1 | 6088.8 |
| 57.5° | 5833.5 | 5868.9 | 5917.3 | 6003.1 | 6114.9 | 6219.3 | 6400.1 | 6582.7 | 6724.3 | 6811.9 | 6769.1 |
| 60° | 6379.6 | 6416.8 | 6480.2 | 6571.5 | 6716.9 | 6858.5 | 7106.4 | 7369.2 | 7589.1 | 7689.8 | 7611.5 |
| 62.5° | 7102.7 | 7138.1 | 7179.1 | 7300.2 | 7462.4 | 7645.0 | 7956.3 | 8293.6 | 8573.2 | 8670.1 | 8560.1 |
| 65° | 8133.3 | 8176.2 | 8189.2 | 8288.0 | 8446.4 | 8616.0 | 8951.5 | 9331.7 | 9650.4 | 9808.8 | 9588.9 |
| 67.5° | 9294.4 | 9311.2 | 9363.4 | 9478.9 | 9641.1 | 9793.9 | 10058.6 | 10418.3 | 10723.9 | 10811.5 | 10576.7 |
| 70° | 9974.7 | 10008.2 | 10099.6 | 10259.8 | 10453.7 | 10694.1 | 10983.0 | 11370.6 | 11717.3 | 11758.3 | 11460.1 |
| 72.5° | 9359.7 | 9428.6 | 9590.8 | 9840.5 | 10246.8 | 10673.6 | 11171.2 | 11743.4 | 12241.0 | 12298.8 | 11819.8 |
| 75° | 7507.1 | 7585.4 | 7779.2 | 8053.2 | 8534.0 | 9167.7 | 9887.1 | 10746.3 | 11491.8 | 11586.8 | 10953.1 |
| 77.5° | 4001.4 | 4098.3 | 4379.8 | 4748.8 | 5434.6 | 6273.3 | 7140.0 | 8120.3 | 8753.9 | 8968.3 | 8511.7 |
| 80° | 1008.3 | 1060.5 | 1196.5 | 1412.7 | 1876.8 | 2553.3 | 3300.7 | 4355.5 | 5142.0 | 5475.6 | 5142.0 |
| 82.5° | 391.4 | 430.5 | 467.8 | 493.9 | 538.6 | 631.8 | 872.2 | 1422.0 | 1915.9 | 2359.5 | 2042.6 |
| 85° | 151.0 | 160.3 | 231.1 | 262.8 | 262.8 | 288.9 | 331.7 | 391.4 | 484.6 | 529.3 | 443.6 |
| 87.5° | 59.6 | 65.2 | 80.1 | 123.0 | 126.7 | 111.8 | 119.3 | 134.2 | 102.5 | 85.7 | 96.9 |
| 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° | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 | 2152.6 |
| 2.5° | 2143.3 | 2141.4 | 2137.7 | 2139.6 | 2137.7 | 2137.7 | 2137.7 | 2137.7 |
| 5° | 2141.4 | 2141.4 | 2137.7 | 2137.7 | 2137.7 | 2139.6 | 2137.7 | 2137.7 |
| 7.5° | 2139.6 | 2137.7 | 2134.0 | 2132.1 | 2132.1 | 2130.2 | 2130.2 | 2130.2 |
| 10° | 2135.8 | 2132.1 | 2128.4 | 2126.5 | 2126.5 | 2122.8 | 2122.8 | 2122.8 |
| 12.5° | 2145.2 | 2139.6 | 2135.8 | 2134.0 | 2134.0 | 2134.0 | 2135.8 | 2135.8 |
| 15° | 2171.2 | 2160.1 | 2154.5 | 2152.6 | 2154.5 | 2158.2 | 2160.1 | 2161.9 |
| 17.5° | 2199.2 | 2188.0 | 2178.7 | 2175.0 | 2176.8 | 2182.4 | 2188.0 | 2191.7 |
| 20° | 2234.6 | 2225.3 | 2214.1 | 2210.4 | 2210.4 | 2217.8 | 2221.6 | 2227.2 |
| 22.5° | 2284.9 | 2277.5 | 2268.2 | 2262.6 | 2258.8 | 2268.2 | 2273.8 | 2277.5 |
| 25° | 2365.1 | 2357.6 | 2350.2 | 2344.6 | 2342.7 | 2352.0 | 2355.8 | 2357.6 |
| 27.5° | 2471.3 | 2463.9 | 2460.1 | 2458.3 | 2452.7 | 2456.4 | 2462.0 | 2460.1 |
| 30° | 2609.2 | 2614.8 | 2609.2 | 2609.2 | 2599.9 | 2603.6 | 2599.9 | 2596.2 |
| 32.5° | 2793.7 | 2788.1 | 2771.4 | 2760.2 | 2747.1 | 2747.1 | 2741.5 | 2736.0 |
| 35° | 2978.2 | 2959.6 | 2950.3 | 2955.9 | 2950.3 | 2954.0 | 2944.7 | 2935.4 |
| 37.5° | 3196.3 | 3185.1 | 3183.3 | 3200.0 | 3196.3 | 3200.0 | 3200.0 | 3187.0 |
| 40° | 3485.2 | 3477.7 | 3490.8 | 3518.7 | 3529.9 | 3528.0 | 3531.8 | 3515.0 |
| 42.5° | 3816.9 | 3803.9 | 3809.5 | 3833.7 | 3846.7 | 3850.5 | 3848.6 | 3833.7 |
| 45° | 4148.7 | 4152.4 | 4152.4 | 4178.5 | 4191.5 | 4199.0 | 4185.9 | 4180.3 |
| 47.5° | 4523.3 | 4528.9 | 4515.8 | 4532.6 | 4536.3 | 4549.4 | 4538.2 | 4528.9 |
| 50° | 4955.7 | 4935.2 | 4905.3 | 4910.9 | 4910.9 | 4907.2 | 4894.2 | 4883.0 |
| 52.5° | 5438.4 | 5391.8 | 5335.9 | 5317.2 | 5296.7 | 5276.2 | 5250.1 | 5229.6 |
| 55° | 5988.2 | 5908.0 | 5807.4 | 5760.8 | 5721.7 | 5675.1 | 5615.4 | 5594.9 |
| 57.5° | 6625.6 | 6487.6 | 6353.5 | 6269.6 | 6169.0 | 6107.4 | 6031.0 | 6027.3 |
| 60° | 7382.2 | 7195.9 | 6959.2 | 6834.3 | 6733.7 | 6661.0 | 6603.2 | 6580.8 |
| 62.5° | 8256.3 | 7935.8 | 7680.4 | 7546.2 | 7428.8 | 7384.1 | 7311.4 | 7320.7 |
| 65° | 9152.8 | 8826.6 | 8578.8 | 8470.7 | 8360.7 | 8330.9 | 8263.8 | 8288.0 |
| 67.5° | 10123.8 | 9855.4 | 9583.3 | 9482.7 | 9382.0 | 9352.2 | 9283.2 | 9303.7 |
| 70° | 10994.2 | 10653.1 | 10343.7 | 10146.2 | 9974.7 | 9836.8 | 9749.2 | 9713.8 |
| 72.5° | 11167.5 | 10576.7 | 10090.2 | 9596.4 | 9311.2 | 9061.5 | 8959.0 | 8919.8 |
| 75° | 10034.3 | 9117.4 | 8424.1 | 7844.4 | 7523.9 | 7160.5 | 7121.3 | 7067.3 |
| 77.5° | 7805.3 | 6761.6 | 5922.9 | 5177.4 | 4746.9 | 4303.4 | 4150.5 | 4035.0 |
| 80° | 4655.6 | 3578.4 | 2773.2 | 1943.9 | 1586.0 | 1276.7 | 1200.2 | 1120.1 |
| 82.5° | 1666.2 | 1067.9 | 719.4 | 561.0 | 501.3 | 462.2 | 432.4 | 393.2 |
| 85° | 402.6 | 339.2 | 320.6 | 290.7 | 287.0 | 244.1 | 173.3 | 154.7 |
| 87.5° | 128.6 | 117.4 | 119.3 | 113.7 | 119.3 | 89.5 | 72.7 | 65.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)