

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: P196517

Luminaire Tested: **NAV-AF-05-D-UNV-RW-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196517
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24161)
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-RW-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19580.3 lumens
Efficiency: N/A
Efficacy: 120.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B4 - U0 - G4

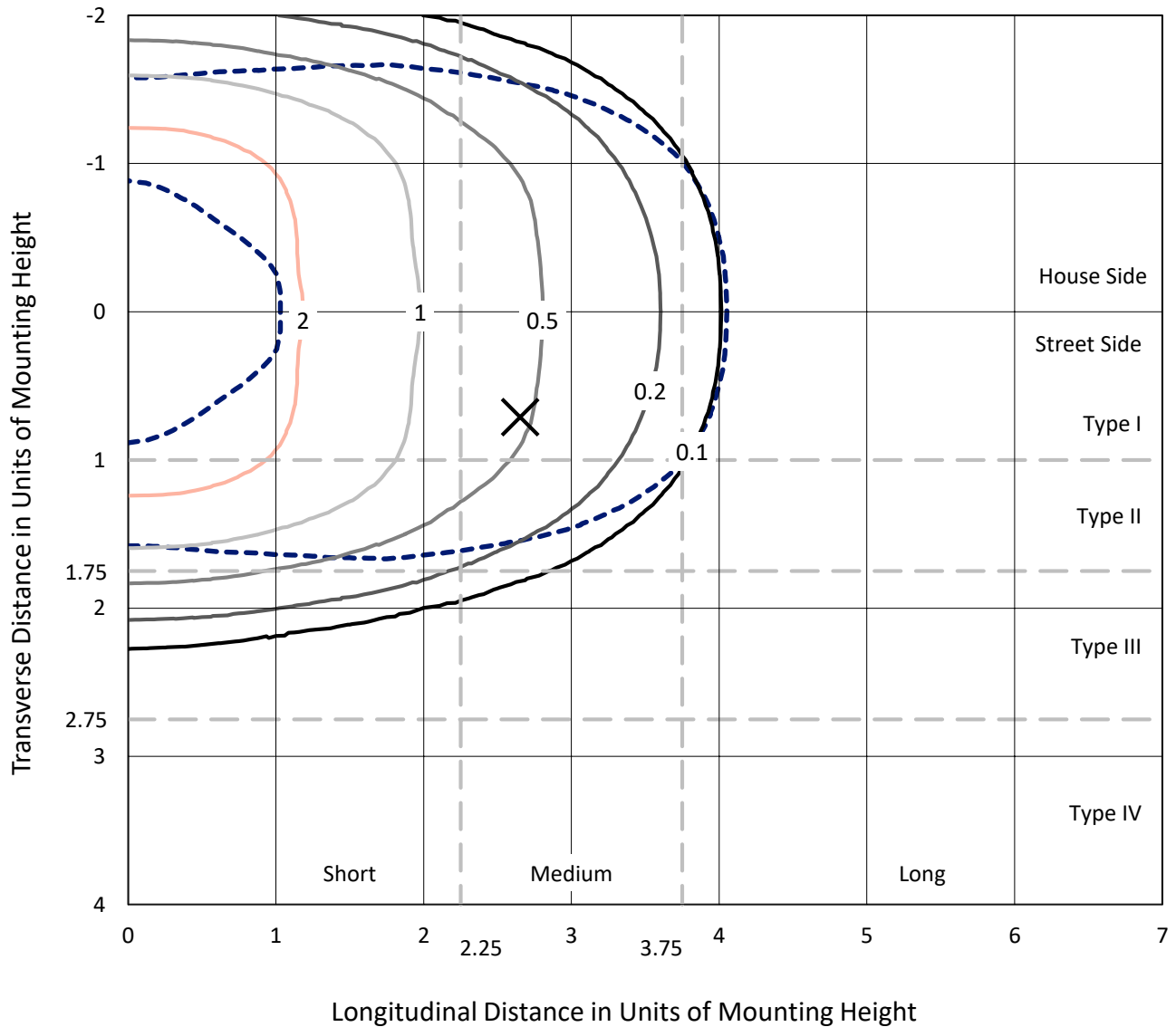
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

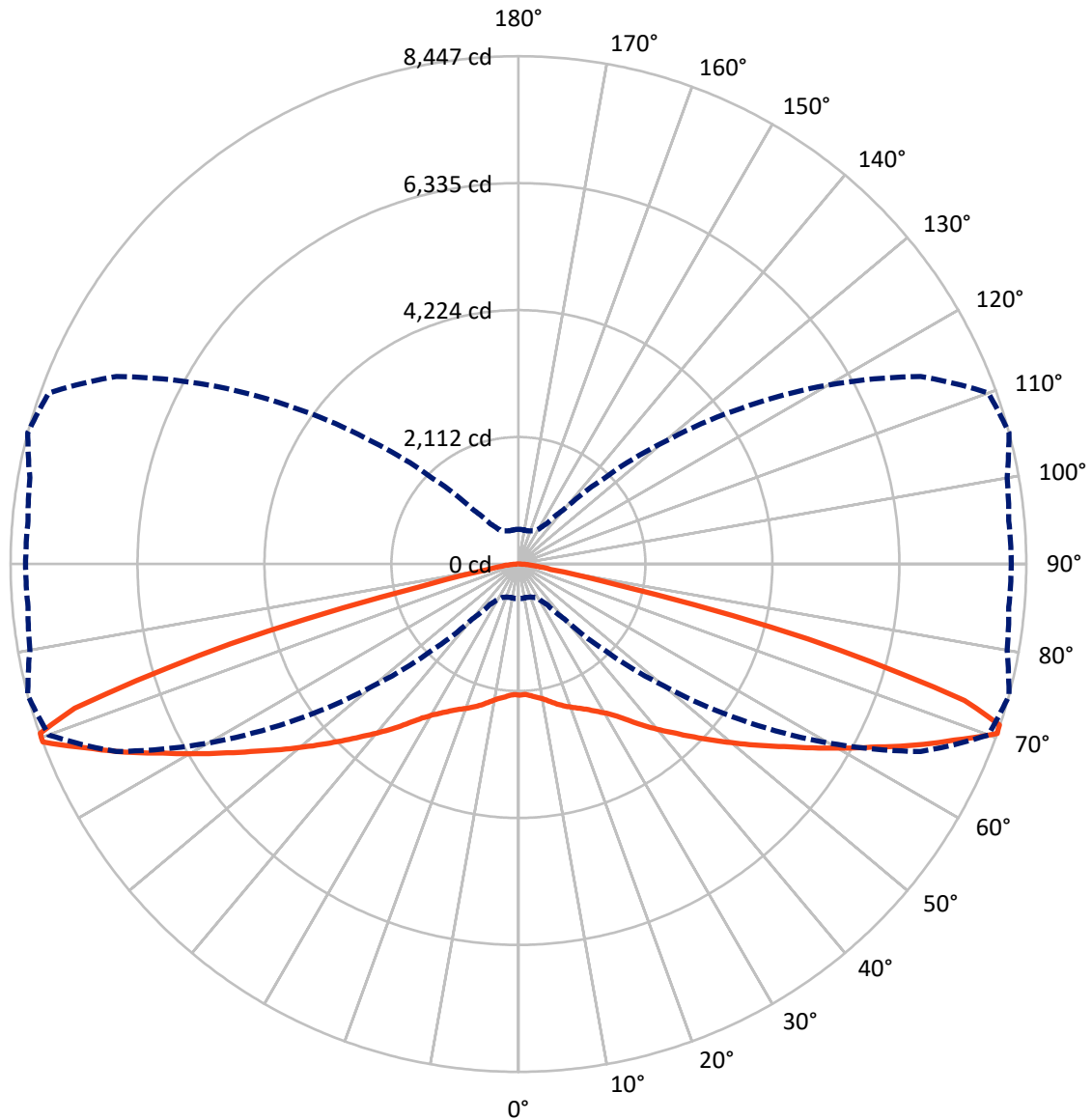
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.5 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 9790.2 | 0.0 | 9790.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 9790.2 | 0.0 | 9790.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 19580.3 | 0.0 | 19580.3 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 209.1 | 1.1 |
| 10°-20° | 648.6 | 3.3 |
| 20°-30° | 1218.2 | 6.2 |
| 30°-40° | 2146.0 | 11.0 |
| 40°-50° | 3556.6 | 18.2 |
| 50°-60° | 4947.7 | 25.3 |
| 60°-70° | 4670.7 | 23.9 |
| 70°-80° | 1994.9 | 10.2 |
| 80°-90° | 188.5 | 1.0 |
| 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° | 19580.3 | 100.0 |
| 0°-180° | 19580.3 | 100.0 |



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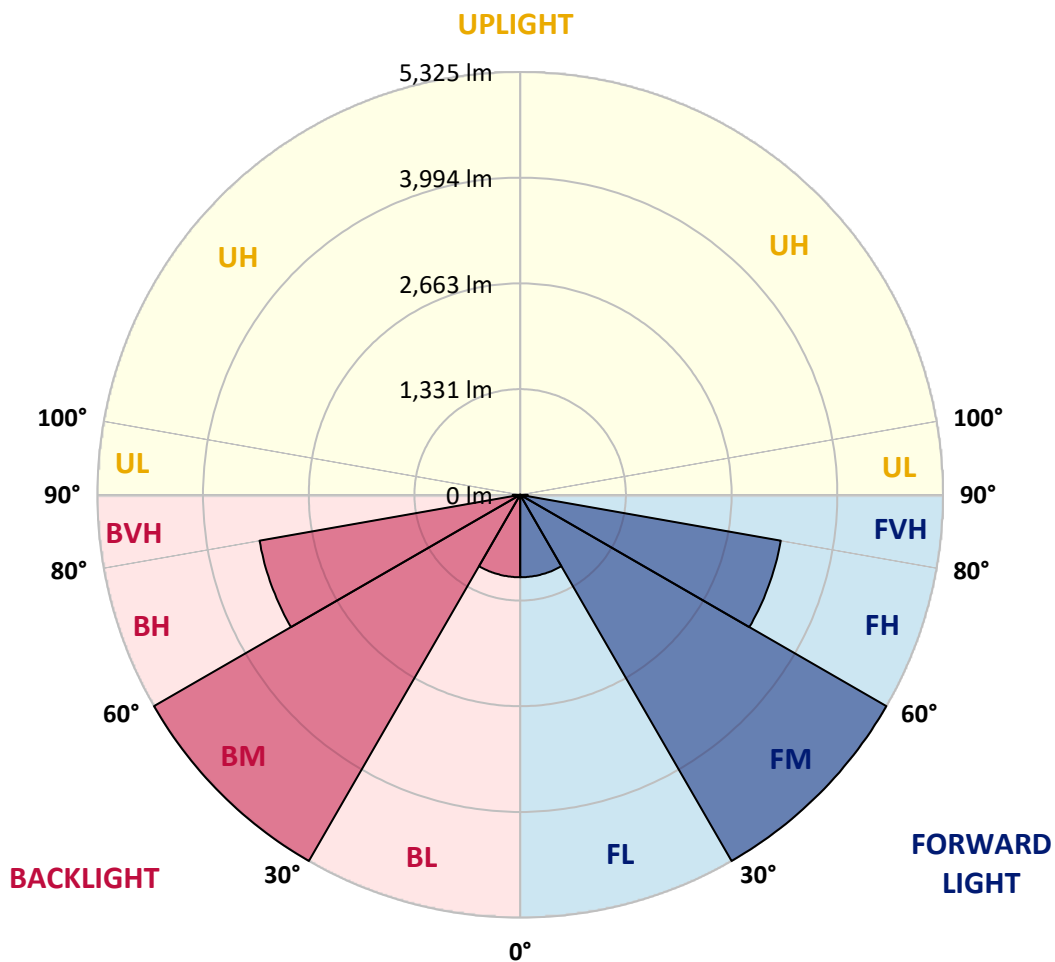
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1038.0 | 5.3 | | | |
| FM | (30°-60°) | 5325.1 | 27.2 | | | |
| FH | (60°-80°) | 3332.8 | 17.0 | | | G2/5000 |
| FVH | (80°-90°) | 94.3 | 0.5 | | | G1/100 |
| BL | (0°-30°) | 1038.0 | 5.3 | B3/2500 | | |
| BM | (30°-60°) | 5325.1 | 27.2 | B4/8500 | | |
| BH | (60°-80°) | 3332.8 | 17.0 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 94.3 | 0.5 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G4

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 |
| 2.5° | 2193.9 | 2192.8 | 2193.9 | 2190.3 | 2191.5 | 2190.3 | 2190.3 | 2185.4 | 2185.4 | 2182.9 | 2179.2 |
| 5° | 2169.5 | 2171.8 | 2171.8 | 2171.8 | 2175.6 | 2175.6 | 2180.5 | 2181.7 | 2185.4 | 2189.0 | 2191.5 |
| 7.5° | 2128.9 | 2130.1 | 2133.9 | 2136.2 | 2143.6 | 2153.5 | 2163.4 | 2174.4 | 2184.1 | 2196.4 | 2209.9 |
| 10° | 2094.6 | 2097.0 | 2103.1 | 2109.2 | 2122.8 | 2135.0 | 2152.2 | 2169.5 | 2186.6 | 2207.5 | 2228.4 |
| 12.5° | 2076.2 | 2079.9 | 2089.7 | 2099.5 | 2120.2 | 2136.2 | 2159.6 | 2186.6 | 2209.9 | 2229.6 | 2252.8 |
| 15° | 2078.6 | 2079.9 | 2093.3 | 2106.8 | 2136.2 | 2158.4 | 2191.5 | 2223.4 | 2251.7 | 2273.6 | 2300.7 |
| 17.5° | 2114.1 | 2116.7 | 2130.1 | 2149.7 | 2178.0 | 2206.3 | 2241.8 | 2275.0 | 2313.0 | 2338.8 | 2370.7 |
| 20° | 2184.1 | 2187.8 | 2202.5 | 2223.4 | 2254.1 | 2283.5 | 2320.3 | 2354.7 | 2394.0 | 2424.7 | 2456.5 |
| 22.5° | 2275.0 | 2281.2 | 2297.0 | 2322.9 | 2353.5 | 2389.1 | 2427.0 | 2462.7 | 2499.6 | 2530.2 | 2557.2 |
| 25° | 2396.4 | 2403.8 | 2420.9 | 2446.8 | 2477.5 | 2515.4 | 2554.7 | 2591.5 | 2629.6 | 2653.0 | 2675.0 |
| 27.5° | 2559.6 | 2571.9 | 2590.3 | 2611.2 | 2638.2 | 2678.6 | 2715.4 | 2746.1 | 2783.0 | 2808.7 | 2823.5 |
| 30° | 2779.2 | 2796.5 | 2811.1 | 2833.2 | 2852.9 | 2895.8 | 2925.3 | 2949.8 | 2978.1 | 2992.7 | 2996.4 |
| 32.5° | 3048.0 | 3063.9 | 3078.7 | 3094.7 | 3121.6 | 3160.9 | 3189.1 | 3202.6 | 3217.3 | 3214.9 | 3201.4 |
| 35° | 3351.1 | 3363.3 | 3372.0 | 3400.1 | 3444.3 | 3470.1 | 3491.0 | 3495.9 | 3498.3 | 3472.6 | 3446.8 |
| 37.5° | 3670.1 | 3684.9 | 3692.2 | 3736.3 | 3778.0 | 3807.5 | 3817.3 | 3828.3 | 3821.1 | 3778.0 | 3731.4 |
| 40° | 4015.0 | 4030.9 | 4053.0 | 4091.0 | 4140.1 | 4168.2 | 4180.6 | 4179.2 | 4173.1 | 4122.9 | 4046.9 |
| 42.5° | 4353.6 | 4373.2 | 4391.5 | 4457.9 | 4498.3 | 4546.2 | 4552.4 | 4551.0 | 4537.6 | 4479.9 | 4391.5 |
| 45° | 4640.7 | 4664.1 | 4702.1 | 4775.7 | 4840.7 | 4898.4 | 4921.7 | 4930.4 | 4916.7 | 4855.4 | 4754.9 |
| 47.5° | 4877.6 | 4893.5 | 4941.4 | 5030.9 | 5114.3 | 5199.0 | 5245.6 | 5278.8 | 5277.6 | 5233.4 | 5126.6 |
| 50° | 5039.5 | 5057.9 | 5116.8 | 5217.4 | 5321.7 | 5421.1 | 5513.1 | 5587.9 | 5623.6 | 5591.7 | 5492.3 |
| 52.5° | 5086.1 | 5109.4 | 5186.7 | 5306.9 | 5428.4 | 5562.2 | 5699.6 | 5832.2 | 5911.9 | 5931.5 | 5854.2 |
| 55° | 4889.8 | 4915.6 | 5028.4 | 5195.3 | 5395.3 | 5592.9 | 5801.4 | 5990.4 | 6154.9 | 6230.9 | 6200.3 |
| 57.5° | 4317.9 | 4336.4 | 4479.9 | 4696.0 | 4981.7 | 5329.1 | 5680.0 | 6025.9 | 6308.3 | 6505.9 | 6540.2 |
| 60° | 3414.9 | 3438.2 | 3595.2 | 3823.5 | 4148.7 | 4587.9 | 5078.7 | 5645.7 | 6199.1 | 6651.8 | 6876.3 |
| 62.5° | 2304.4 | 2320.3 | 2471.2 | 2679.9 | 3035.8 | 3459.0 | 4006.3 | 4724.2 | 5513.1 | 6321.7 | 6954.9 |
| 65° | 1209.8 | 1209.8 | 1311.7 | 1457.7 | 1741.1 | 2120.2 | 2681.1 | 3417.3 | 4356.0 | 5365.8 | 6424.8 |
| 67.5° | 701.9 | 700.7 | 724.0 | 757.0 | 846.6 | 1000.0 | 1309.3 | 1850.5 | 2738.8 | 3914.3 | 5119.3 |
| 70° | 579.2 | 575.5 | 571.8 | 571.8 | 585.3 | 608.6 | 667.5 | 815.9 | 1193.8 | 2018.4 | 3149.8 |
| 71° | 553.4 | 551.0 | 541.2 | 537.4 | 543.6 | 555.8 | 581.6 | 650.3 | 847.9 | 1376.7 | 2352.3 |
| 72.5° | 522.7 | 516.6 | 501.8 | 495.7 | 496.9 | 501.8 | 509.2 | 536.3 | 596.3 | 782.9 | 1341.1 |
| 75° | 476.1 | 461.4 | 442.9 | 434.5 | 430.7 | 429.5 | 429.5 | 436.8 | 450.3 | 472.4 | 549.7 |
| 77.5° | 422.1 | 401.2 | 381.7 | 373.0 | 366.9 | 363.2 | 360.8 | 355.8 | 353.4 | 363.2 | 391.4 |
| 80° | 357.1 | 335.0 | 319.0 | 314.1 | 310.4 | 303.0 | 293.3 | 283.4 | 277.3 | 282.2 | 299.4 |
| 82.5° | 276.1 | 254.0 | 256.4 | 257.7 | 251.6 | 239.3 | 229.5 | 218.4 | 207.4 | 205.0 | 213.5 |
| 85° | 219.6 | 208.5 | 201.2 | 217.2 | 203.7 | 189.0 | 175.5 | 157.2 | 131.3 | 107.9 | 117.8 |
| 87.5° | 94.5 | 95.7 | 137.4 | 207.4 | 181.6 | 146.0 | 121.5 | 98.2 | 62.6 | 46.7 | 47.8 |
| 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° | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 | 2180.5 |
| 2.5° | 2178.0 | 2178.0 | 2174.4 | 2171.8 | 2171.8 | 2171.8 | 2169.5 | 2170.7 |
| 5° | 2192.8 | 2195.2 | 2197.6 | 2196.4 | 2200.1 | 2203.8 | 2202.5 | 2201.3 |
| 7.5° | 2217.3 | 2224.6 | 2231.9 | 2235.7 | 2240.6 | 2245.5 | 2246.7 | 2243.1 |
| 10° | 2241.8 | 2256.5 | 2267.5 | 2277.4 | 2283.5 | 2288.4 | 2292.2 | 2290.9 |
| 12.5° | 2272.5 | 2293.4 | 2313.0 | 2332.5 | 2346.2 | 2353.5 | 2360.9 | 2358.4 |
| 15° | 2322.9 | 2346.2 | 2370.7 | 2396.4 | 2417.3 | 2428.3 | 2439.3 | 2436.9 |
| 17.5° | 2391.4 | 2412.3 | 2432.0 | 2457.8 | 2483.6 | 2495.8 | 2508.0 | 2506.9 |
| 20° | 2477.5 | 2493.4 | 2504.4 | 2519.1 | 2543.7 | 2557.2 | 2568.2 | 2564.6 |
| 22.5° | 2575.6 | 2580.4 | 2581.7 | 2586.6 | 2606.3 | 2622.2 | 2637.0 | 2640.6 |
| 25° | 2682.4 | 2678.6 | 2671.3 | 2667.6 | 2681.1 | 2698.2 | 2716.7 | 2721.5 |
| 27.5° | 2814.8 | 2802.6 | 2784.2 | 2769.4 | 2773.1 | 2795.2 | 2816.0 | 2821.0 |
| 30° | 2981.6 | 2953.5 | 2914.3 | 2886.0 | 2881.0 | 2904.4 | 2926.5 | 2933.8 |
| 32.5° | 3171.9 | 3133.9 | 3079.9 | 3037.0 | 3018.5 | 3039.4 | 3059.0 | 3070.0 |
| 35° | 3397.8 | 3356.0 | 3290.9 | 3235.7 | 3206.3 | 3219.8 | 3254.2 | 3266.5 |
| 37.5° | 3665.2 | 3607.5 | 3535.1 | 3465.1 | 3416.1 | 3418.5 | 3455.4 | 3470.1 |
| 40° | 3960.8 | 3877.5 | 3785.4 | 3698.3 | 3627.2 | 3622.3 | 3655.4 | 3666.4 |
| 42.5° | 4268.9 | 4162.1 | 4054.2 | 3940.0 | 3851.7 | 3835.8 | 3878.7 | 3879.9 |
| 45° | 4600.3 | 4462.8 | 4329.1 | 4196.5 | 4104.5 | 4076.3 | 4118.0 | 4122.9 |
| 47.5° | 4953.6 | 4781.8 | 4623.6 | 4479.9 | 4380.5 | 4336.4 | 4376.9 | 4384.2 |
| 50° | 5321.7 | 5143.8 | 4959.8 | 4800.2 | 4683.6 | 4629.7 | 4677.5 | 4682.5 |
| 52.5° | 5686.2 | 5518.0 | 5335.2 | 5152.3 | 5011.2 | 4949.9 | 5006.4 | 5023.5 |
| 55° | 6053.1 | 5891.0 | 5719.2 | 5536.3 | 5358.5 | 5304.5 | 5365.8 | 5384.3 |
| 57.5° | 6434.6 | 6278.8 | 6123.0 | 5938.9 | 5765.9 | 5683.6 | 5750.0 | 5775.7 |
| 60° | 6855.5 | 6718.2 | 6570.9 | 6385.5 | 6215.0 | 6119.3 | 6175.8 | 6205.2 |
| 62.5° | 7269.0 | 7240.8 | 7107.1 | 6914.4 | 6698.4 | 6602.7 | 6650.6 | 6671.5 |
| 65° | 7303.4 | 7761.1 | 7754.9 | 7563.5 | 7261.7 | 7100.9 | 7114.4 | 7124.2 |
| 67.5° | 6374.5 | 7424.8 | 8096.1 | 8156.2 | 7820.0 | 7568.4 | 7539.0 | 7545.1 |
| 70° | 4513.1 | 5954.8 | 7379.5 | 8314.5 | 8447.0 | 8252.0 | 8188.1 | 8197.9 |
| 71° | 3616.2 | 5109.4 | 6677.6 | 7935.3 | 8437.2 | 8380.7 | 8345.1 | 8370.9 |
| 72.5° | 2308.1 | 3764.5 | 5291.0 | 6795.4 | 7758.6 | 8034.7 | 8075.3 | 8091.2 |
| 75° | 838.1 | 1619.7 | 2741.2 | 3927.8 | 4978.2 | 5700.8 | 6098.5 | 6130.3 |
| 77.5° | 450.3 | 580.3 | 897.0 | 1339.9 | 1683.4 | 1867.6 | 1889.6 | 1898.3 |
| 80° | 331.3 | 384.0 | 439.3 | 501.8 | 541.2 | 548.5 | 535.1 | 506.8 |
| 82.5° | 234.4 | 265.1 | 287.2 | 309.2 | 325.1 | 311.7 | 259.0 | 197.5 |
| 85° | 136.2 | 149.6 | 161.9 | 173.0 | 175.5 | 165.6 | 109.3 | 89.6 |
| 87.5° | 54.0 | 58.9 | 57.7 | 65.0 | 62.6 | 57.7 | 42.9 | 36.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)