

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: P195094

Luminaire Tested: **NAV-AF-04-D-UNV-RW-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195094
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-04-D-UNV-RW-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 27349 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B4 - U0 - G4

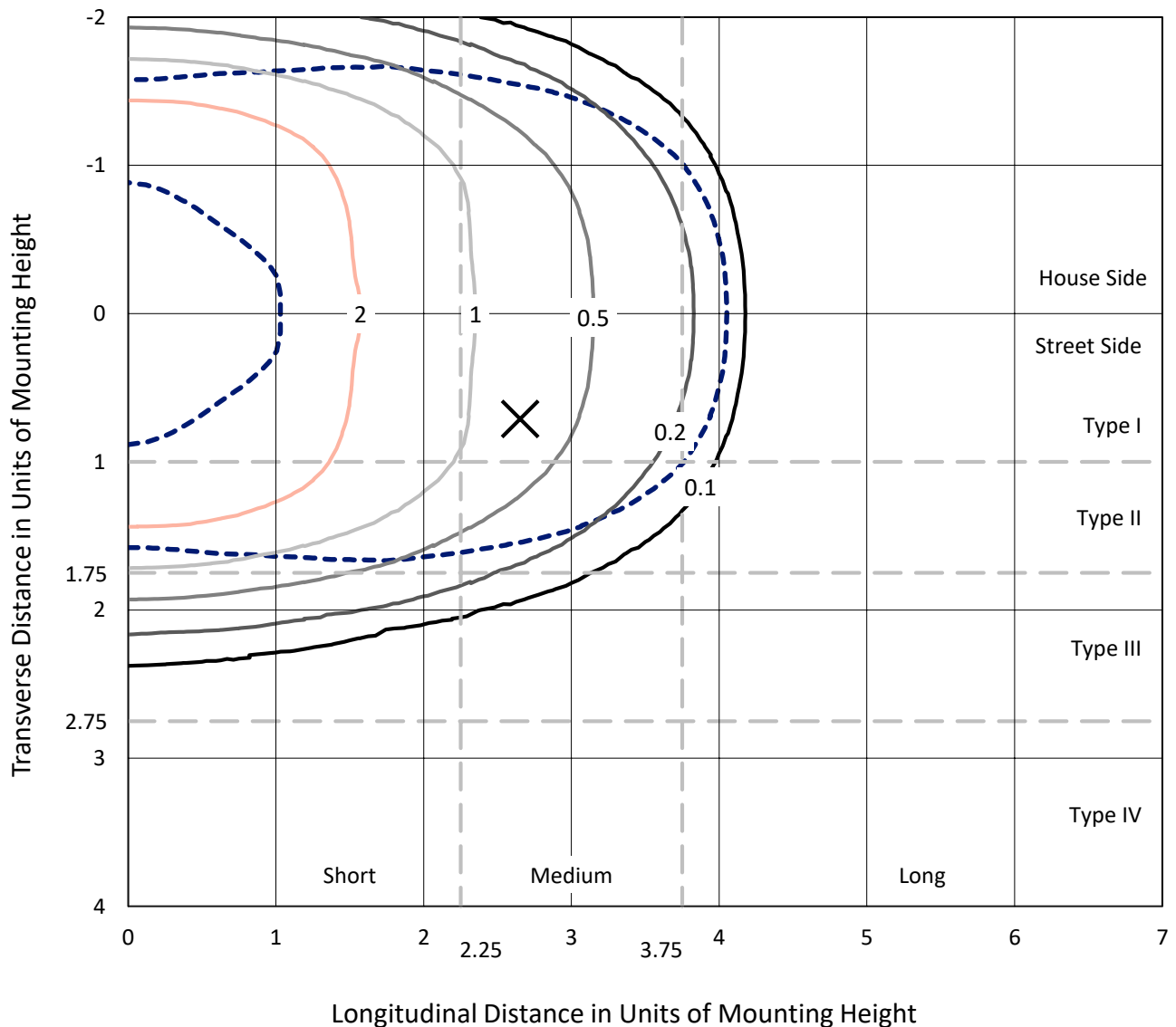
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

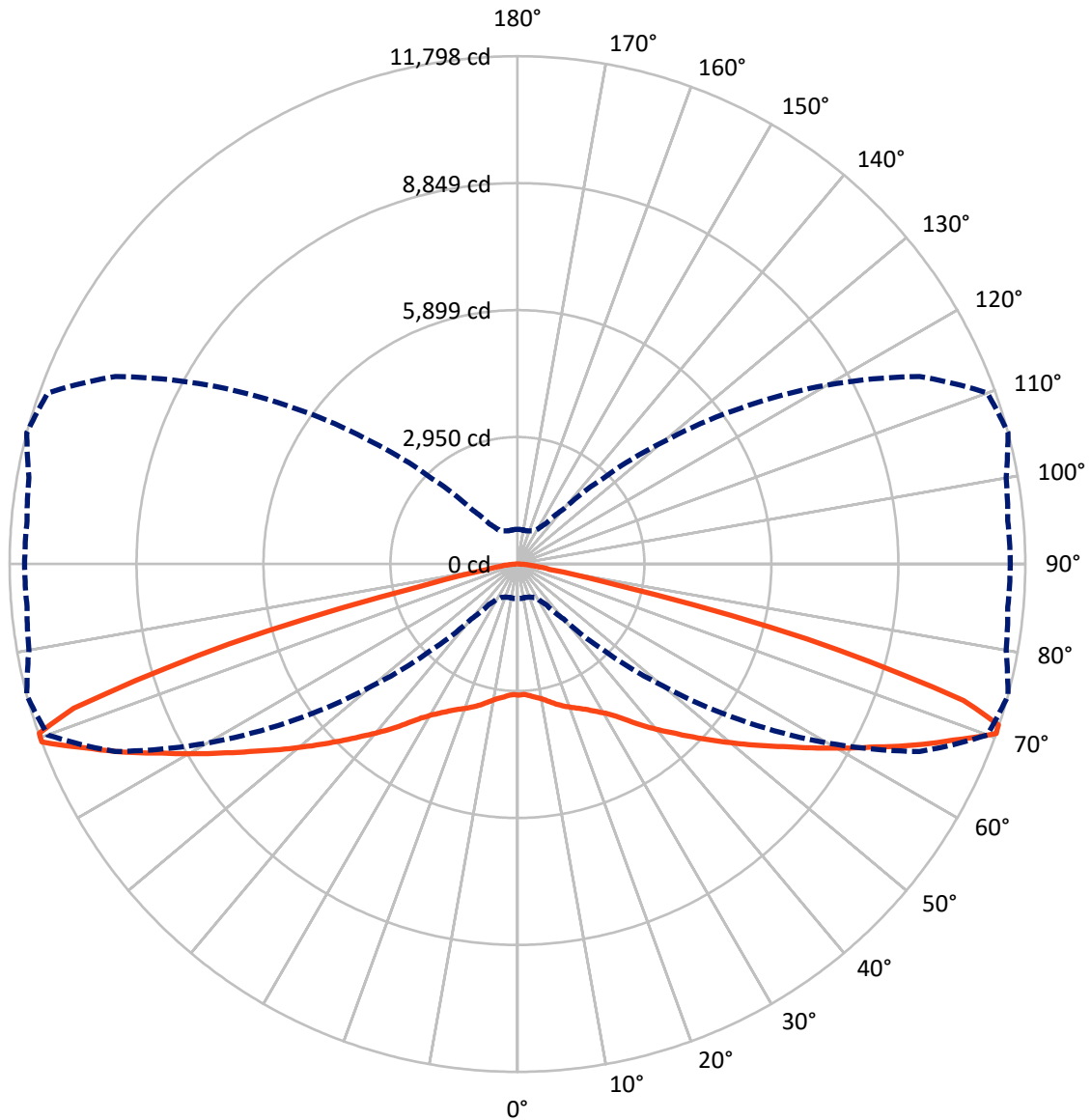
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.9 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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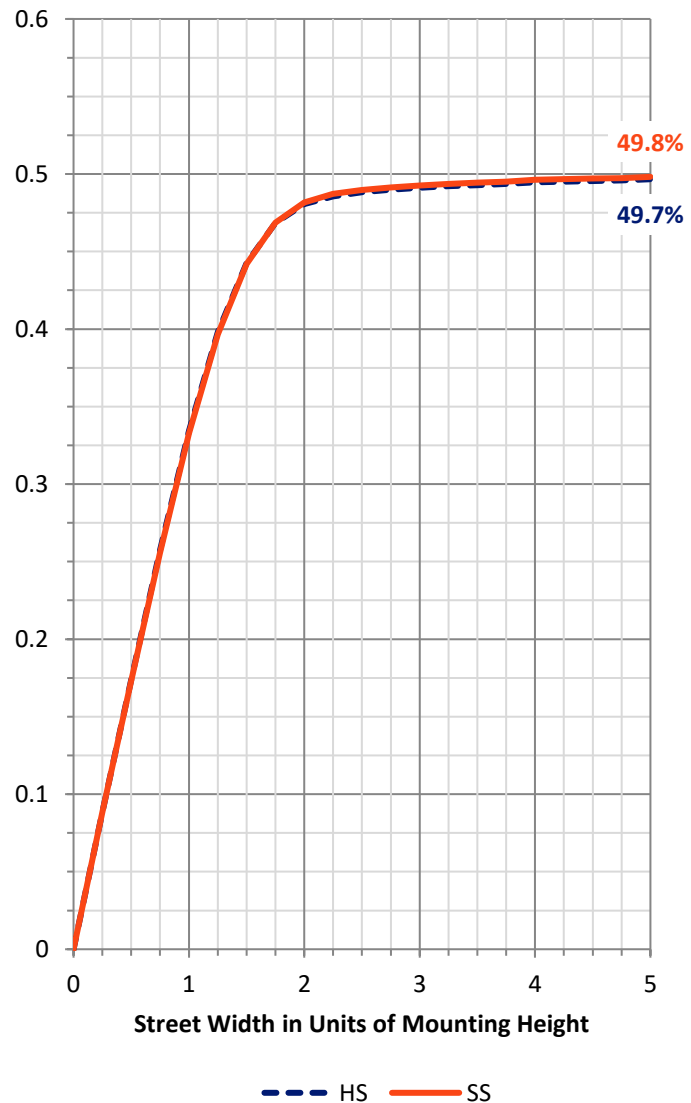
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 13674.5 | 0.0 | 13674.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 13674.5 | 0.0 | 13674.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 27349.0 | 0.0 | 27349.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 292.1 | 1.1 |
| 10°-20° | 906.0 | 3.3 |
| 20°-30° | 1701.6 | 6.2 |
| 30°-40° | 2997.4 | 11.0 |
| 40°-50° | 4967.6 | 18.2 |
| 50°-60° | 6910.7 | 25.3 |
| 60°-70° | 6523.9 | 23.9 |
| 70°-80° | 2786.4 | 10.2 |
| 80°-90° | 263.3 | 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° | 27349.0 | 100.0 |
| 0°-180° | 27349.0 | 100.0 |

Coefficient of Utilization



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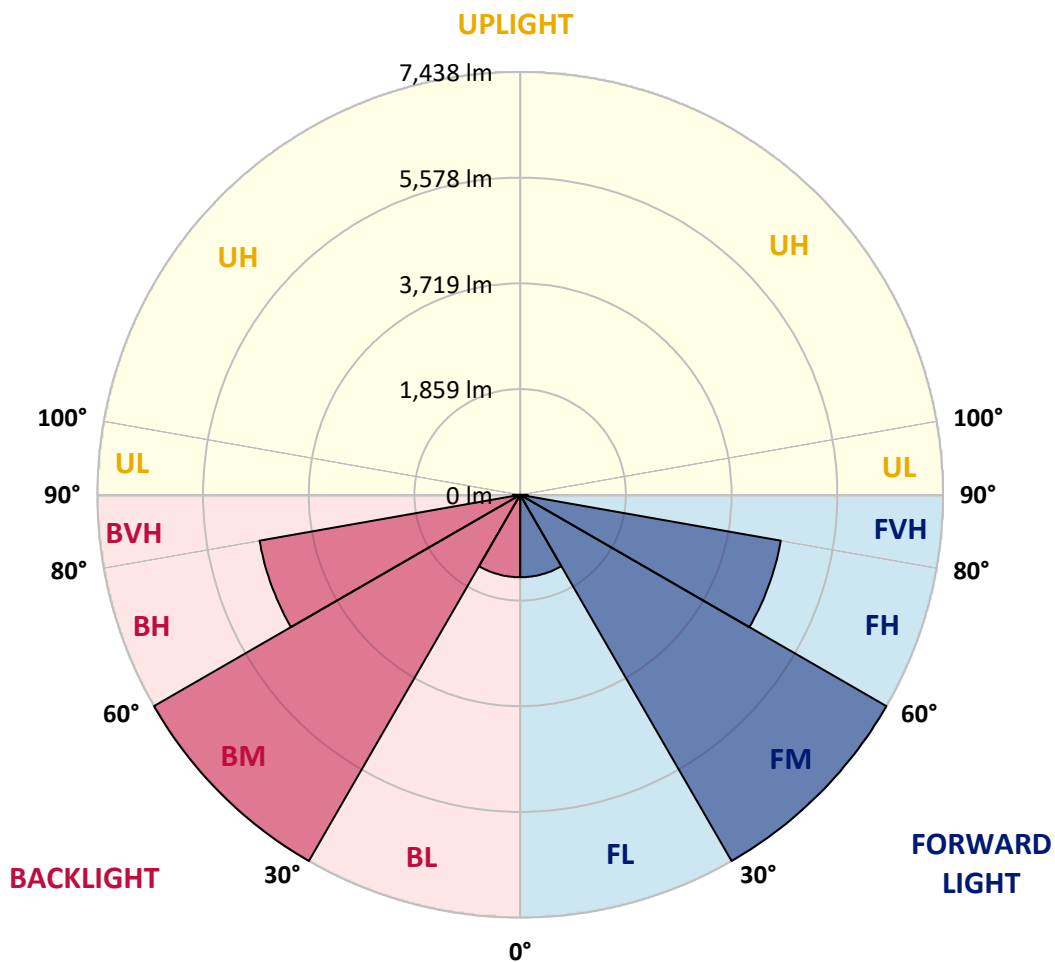
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1449.9 | 5.3 | | | |
| FM | (30°-60°) | 7437.9 | 27.2 | | | |
| FH | (60°-80°) | 4655.1 | 17.0 | | | G2/5000 |
| FVH | (80°-90°) | 131.6 | 0.5 | | | G2/225 |
| BL | (0°-30°) | 1449.9 | 5.3 | B3/2500 | | |
| BM | (30°-60°) | 7437.9 | 27.2 | B4/8500 | | |
| BH | (60°-80°) | 4655.1 | 17.0 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 131.6 | 0.5 | | | G2/225 |
| 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° | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 |
| 2.5° | 3064.4 | 3062.7 | 3064.4 | 3059.3 | 3061.0 | 3059.3 | 3059.3 | 3052.4 | 3052.4 | 3049.0 | 3043.9 |
| 5° | 3030.2 | 3033.6 | 3033.6 | 3033.6 | 3038.7 | 3038.7 | 3045.6 | 3047.3 | 3052.4 | 3057.6 | 3061.0 |
| 7.5° | 2973.6 | 2975.3 | 2980.5 | 2983.9 | 2994.2 | 3007.9 | 3021.6 | 3037.0 | 3050.7 | 3067.9 | 3086.7 |
| 10° | 2925.6 | 2929.0 | 2937.6 | 2946.2 | 2965.0 | 2982.2 | 3006.2 | 3030.2 | 3054.1 | 3083.3 | 3112.4 |
| 12.5° | 2899.9 | 2905.0 | 2918.8 | 2932.5 | 2961.6 | 2983.9 | 3016.4 | 3054.1 | 3086.7 | 3114.1 | 3146.7 |
| 15° | 2903.3 | 2905.0 | 2923.9 | 2942.7 | 2983.9 | 3014.7 | 3061.0 | 3105.6 | 3145.0 | 3175.8 | 3213.5 |
| 17.5° | 2953.0 | 2956.5 | 2975.3 | 3002.7 | 3042.2 | 3081.6 | 3131.3 | 3177.5 | 3230.7 | 3266.7 | 3311.2 |
| 20° | 3050.7 | 3055.9 | 3076.4 | 3105.6 | 3148.4 | 3189.5 | 3241.0 | 3288.9 | 3343.8 | 3386.6 | 3431.2 |
| 22.5° | 3177.5 | 3186.1 | 3208.4 | 3244.4 | 3287.2 | 3336.9 | 3390.1 | 3439.8 | 3491.2 | 3534.0 | 3571.7 |
| 25° | 3347.2 | 3357.5 | 3381.5 | 3417.5 | 3460.3 | 3513.5 | 3568.3 | 3619.7 | 3672.9 | 3705.4 | 3736.3 |
| 27.5° | 3575.2 | 3592.3 | 3618.0 | 3647.2 | 3684.9 | 3741.4 | 3792.8 | 3835.7 | 3887.1 | 3923.1 | 3943.7 |
| 30° | 3882.0 | 3905.9 | 3926.5 | 3957.4 | 3984.8 | 4044.8 | 4085.9 | 4120.2 | 4159.6 | 4180.2 | 4185.3 |
| 32.5° | 4257.3 | 4279.6 | 4300.1 | 4322.4 | 4360.1 | 4415.0 | 4454.4 | 4473.2 | 4493.8 | 4490.4 | 4471.5 |
| 35° | 4680.6 | 4697.8 | 4709.8 | 4749.2 | 4810.9 | 4846.9 | 4876.0 | 4882.9 | 4886.3 | 4850.3 | 4814.3 |
| 37.5° | 5126.2 | 5146.8 | 5157.1 | 5218.8 | 5277.1 | 5318.2 | 5331.9 | 5347.3 | 5337.0 | 5277.1 | 5211.9 |
| 40° | 5607.8 | 5630.1 | 5661.0 | 5714.1 | 5782.7 | 5822.1 | 5839.2 | 5837.5 | 5828.9 | 5758.7 | 5652.4 |
| 42.5° | 6080.9 | 6108.3 | 6134.0 | 6226.6 | 6283.1 | 6350.0 | 6358.5 | 6356.8 | 6338.0 | 6257.4 | 6134.0 |
| 45° | 6481.9 | 6514.5 | 6567.6 | 6670.4 | 6761.3 | 6841.8 | 6874.4 | 6886.4 | 6867.5 | 6781.9 | 6641.3 |
| 47.5° | 6812.7 | 6835.0 | 6901.8 | 7026.9 | 7143.5 | 7261.7 | 7326.9 | 7373.1 | 7371.4 | 7309.7 | 7160.6 |
| 50° | 7038.9 | 7064.6 | 7146.9 | 7287.4 | 7433.1 | 7572.0 | 7700.5 | 7805.0 | 7854.7 | 7810.2 | 7671.4 |
| 52.5° | 7104.1 | 7136.6 | 7244.6 | 7412.6 | 7582.2 | 7769.1 | 7961.0 | 8146.1 | 8257.5 | 8284.9 | 8177.0 |
| 55° | 6829.8 | 6865.8 | 7023.5 | 7256.6 | 7536.0 | 7811.9 | 8103.3 | 8367.2 | 8596.9 | 8703.1 | 8660.3 |
| 57.5° | 6031.2 | 6056.9 | 6257.4 | 6559.0 | 6958.4 | 7443.4 | 7933.6 | 8416.9 | 8811.1 | 9087.0 | 9135.0 |
| 60° | 4769.7 | 4802.3 | 5021.7 | 5340.5 | 5794.7 | 6408.2 | 7093.8 | 7885.6 | 8658.6 | 9291.0 | 9604.6 |
| 62.5° | 3218.7 | 3241.0 | 3451.8 | 3743.1 | 4240.2 | 4831.4 | 5595.8 | 6598.5 | 7700.5 | 8829.9 | 9714.3 |
| 65° | 1689.9 | 1689.9 | 1832.1 | 2036.1 | 2432.0 | 2961.6 | 3744.8 | 4773.2 | 6084.3 | 7494.8 | 8973.9 |
| 67.5° | 980.3 | 978.6 | 1011.2 | 1057.5 | 1182.6 | 1396.8 | 1828.7 | 2584.5 | 3825.4 | 5467.3 | 7150.3 |
| 70° | 809.0 | 803.8 | 798.7 | 798.7 | 817.5 | 850.1 | 932.4 | 1139.7 | 1667.6 | 2819.3 | 4399.5 |
| 71° | 773.0 | 769.5 | 755.8 | 750.7 | 759.3 | 776.4 | 812.4 | 908.4 | 1184.3 | 1923.0 | 3285.5 |
| 72.5° | 730.1 | 721.5 | 701.0 | 692.4 | 694.1 | 701.0 | 711.3 | 749.0 | 832.9 | 1093.5 | 1873.3 |
| 75° | 665.0 | 644.4 | 618.7 | 606.7 | 601.6 | 599.9 | 599.9 | 610.1 | 629.0 | 659.8 | 767.8 |
| 77.5° | 589.6 | 560.4 | 533.0 | 521.0 | 512.5 | 507.3 | 503.9 | 497.0 | 493.6 | 507.3 | 546.7 |
| 80° | 498.7 | 467.9 | 445.6 | 438.8 | 433.6 | 423.3 | 409.6 | 395.9 | 387.3 | 394.2 | 418.2 |
| 82.5° | 385.6 | 354.8 | 358.2 | 359.9 | 351.3 | 334.2 | 320.5 | 305.1 | 289.6 | 286.2 | 298.2 |
| 85° | 306.8 | 291.4 | 281.1 | 303.4 | 284.5 | 263.9 | 245.1 | 219.4 | 183.4 | 150.8 | 164.5 |
| 87.5° | 132.0 | 133.7 | 192.0 | 289.6 | 253.7 | 204.0 | 169.7 | 137.1 | 87.4 | 65.1 | 66.8 |
| 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° | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 | 3045.6 |
| 2.5° | 3042.2 | 3042.2 | 3037.0 | 3033.6 | 3033.6 | 3033.6 | 3030.2 | 3031.9 |
| 5° | 3062.7 | 3066.1 | 3069.6 | 3067.9 | 3073.0 | 3078.1 | 3076.4 | 3074.7 |
| 7.5° | 3097.0 | 3107.3 | 3117.6 | 3122.7 | 3129.6 | 3136.4 | 3138.1 | 3133.0 |
| 10° | 3131.3 | 3151.8 | 3167.3 | 3181.0 | 3189.5 | 3196.4 | 3201.5 | 3199.8 |
| 12.5° | 3174.1 | 3203.3 | 3230.7 | 3258.1 | 3277.0 | 3287.2 | 3297.5 | 3294.1 |
| 15° | 3244.4 | 3277.0 | 3311.2 | 3347.2 | 3376.4 | 3391.8 | 3407.2 | 3403.8 |
| 17.5° | 3340.4 | 3369.5 | 3396.9 | 3432.9 | 3468.9 | 3486.0 | 3503.2 | 3501.5 |
| 20° | 3460.3 | 3482.6 | 3498.0 | 3518.6 | 3552.9 | 3571.7 | 3587.2 | 3582.0 |
| 22.5° | 3597.4 | 3604.3 | 3606.0 | 3612.9 | 3640.3 | 3662.6 | 3683.1 | 3688.3 |
| 25° | 3746.6 | 3741.4 | 3731.1 | 3726.0 | 3744.8 | 3768.8 | 3794.5 | 3801.4 |
| 27.5° | 3931.7 | 3914.5 | 3888.8 | 3868.2 | 3873.4 | 3904.2 | 3933.4 | 3940.2 |
| 30° | 4164.7 | 4125.3 | 4070.5 | 4031.1 | 4024.2 | 4056.8 | 4087.6 | 4097.9 |
| 32.5° | 4430.4 | 4377.3 | 4301.9 | 4241.9 | 4216.2 | 4245.3 | 4272.7 | 4288.1 |
| 35° | 4745.8 | 4687.5 | 4596.6 | 4519.5 | 4478.4 | 4497.2 | 4545.2 | 4562.4 |
| 37.5° | 5119.4 | 5038.8 | 4937.7 | 4840.0 | 4771.5 | 4774.9 | 4826.3 | 4846.9 |
| 40° | 5532.4 | 5415.9 | 5287.3 | 5165.7 | 5066.3 | 5059.4 | 5105.7 | 5121.1 |
| 42.5° | 5962.6 | 5813.5 | 5662.7 | 5503.3 | 5379.9 | 5357.6 | 5417.6 | 5419.3 |
| 45° | 6425.4 | 6233.4 | 6046.6 | 5861.5 | 5733.0 | 5693.5 | 5751.8 | 5758.7 |
| 47.5° | 6919.0 | 6679.0 | 6457.9 | 6257.4 | 6118.6 | 6056.9 | 6113.4 | 6123.7 |
| 50° | 7433.1 | 7184.6 | 6927.5 | 6704.7 | 6541.9 | 6466.5 | 6533.3 | 6540.2 |
| 52.5° | 7942.2 | 7707.4 | 7452.0 | 7196.6 | 6999.5 | 6913.8 | 6992.7 | 7016.7 |
| 55° | 8454.6 | 8228.4 | 7988.4 | 7733.1 | 7484.5 | 7409.1 | 7494.8 | 7520.5 |
| 57.5° | 8987.6 | 8770.0 | 8552.3 | 8295.2 | 8053.6 | 7938.7 | 8031.3 | 8067.3 |
| 60° | 9575.5 | 9383.5 | 9177.9 | 8919.1 | 8680.8 | 8547.2 | 8626.0 | 8667.1 |
| 62.5° | 10153.1 | 10113.6 | 9926.8 | 9657.8 | 9356.1 | 9222.4 | 9289.3 | 9318.4 |
| 65° | 10201.1 | 10840.3 | 10831.8 | 10564.4 | 10142.8 | 9918.3 | 9937.1 | 9950.8 |
| 67.5° | 8903.6 | 10370.7 | 11308.2 | 11392.2 | 10922.6 | 10571.3 | 10530.1 | 10538.7 |
| 70° | 6303.7 | 8317.5 | 10307.3 | 11613.3 | 11798.4 | 11525.9 | 11436.8 | 11450.5 |
| 71° | 5050.8 | 7136.6 | 9327.0 | 11083.7 | 11784.7 | 11705.9 | 11656.1 | 11692.1 |
| 72.5° | 3223.8 | 5258.2 | 7390.3 | 9491.5 | 10836.9 | 11222.5 | 11279.1 | 11301.4 |
| 75° | 1170.6 | 2262.3 | 3828.8 | 5486.2 | 6953.2 | 7962.7 | 8518.0 | 8562.6 |
| 77.5° | 629.0 | 810.7 | 1252.9 | 1871.6 | 2351.5 | 2608.5 | 2639.4 | 2651.4 |
| 80° | 462.7 | 536.4 | 613.6 | 701.0 | 755.8 | 766.1 | 747.3 | 707.8 |
| 82.5° | 327.4 | 370.2 | 401.0 | 431.9 | 454.2 | 435.3 | 361.6 | 275.9 |
| 85° | 190.2 | 209.1 | 226.2 | 241.7 | 245.1 | 231.4 | 152.5 | 125.1 |
| 87.5° | 75.4 | 82.3 | 80.6 | 90.8 | 87.4 | 80.6 | 60.0 | 51.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)