

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: P195024

Luminaire Tested: **NAV-AF-06-D-UNV-5WQ-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195024
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-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 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: 41111 lumens
Efficiency: N/A
Efficacy: 107.6 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): 382
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

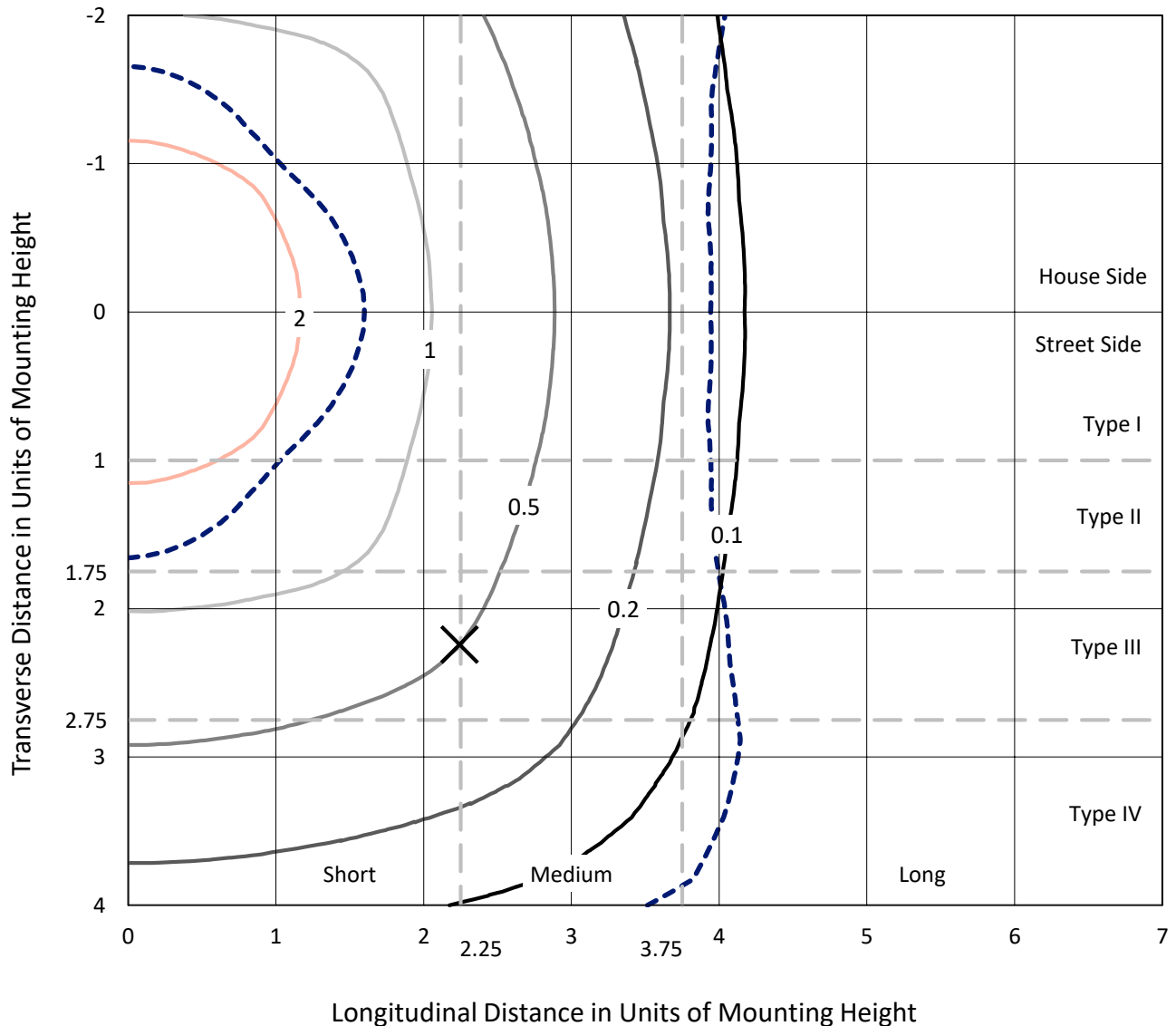


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

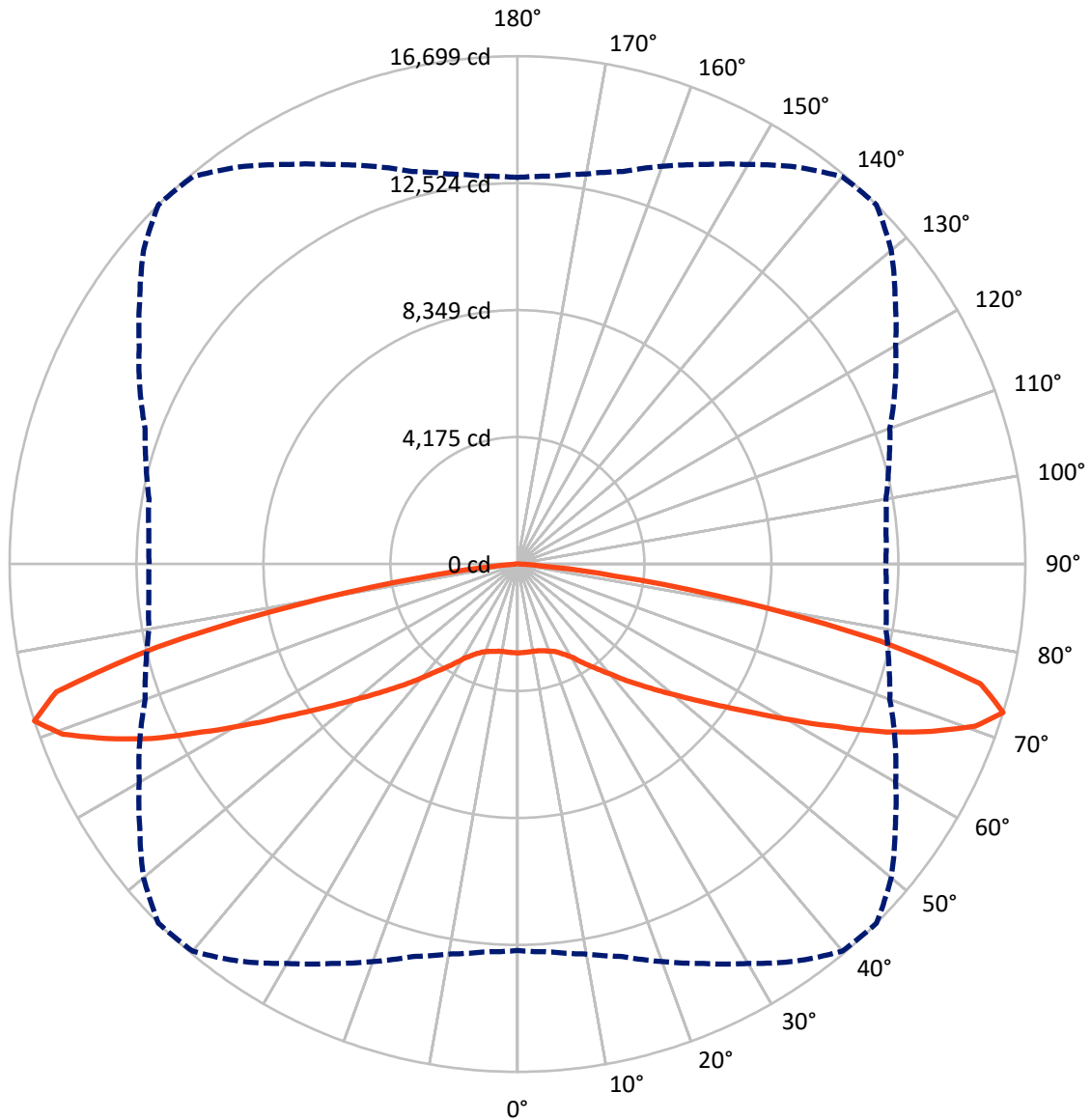


Based on 30 foot mounting height. Maximum calculated value = 3.2 fc
 Type V - Short - Semi-Cutoff

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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 | 20555.5 | 0.0 | 20555.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 20555.5 | 0.0 | 20555.5 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 41111.0 | 0.0 | 41111.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 279.0 | 0.7 |
| 10°-20° | 844.3 | 2.1 |
| 20°-30° | 1524.1 | 3.7 |
| 30°-40° | 2599.8 | 6.3 |
| 40°-50° | 4426.2 | 10.8 |
| 50°-60° | 7123.2 | 17.3 |
| 60°-70° | 11846.1 | 28.8 |
| 70°-80° | 11459.7 | 27.9 |
| 80°-90° | 1008.6 | 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° | 41111.0 | 100.0 |
| 0°-180° | 41111.0 | 100.0 |



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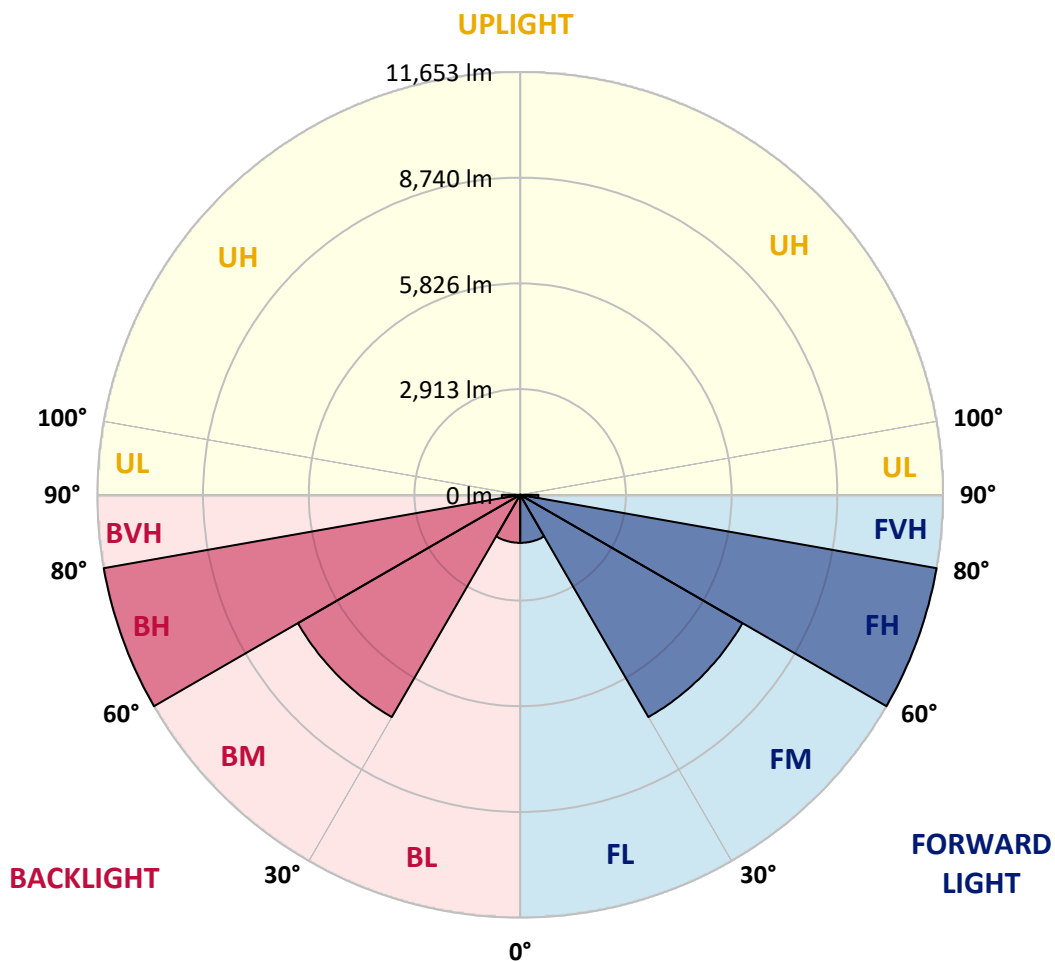
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|---------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1323.7 | 3.2 | | | |
| FM | (30°-60°) | 7074.6 | 17.2 | | | |
| FH | (60°-80°) | 11652.9 | 28.3 | | | G4/12000 |
| FVH | (80°-90°) | 504.3 | 1.2 | | | G4/750 |
| BL | (0°-30°) | 1323.7 | 3.2 | B3/2500 | | |
| BM | (30°-60°) | 7074.6 | 17.2 | B4/8500 | | |
| BH | (60°-80°) | 11652.9 | 28.3 | B5 | | G4/12000 |
| BVH | (80°-90°) | 504.3 | 1.2 | | | G4/750 |
| 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° | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 |
| 2.5° | 2945.5 | 2945.5 | 2948.0 | 2945.5 | 2940.4 | 2937.9 | 2930.3 | 2925.2 | 2920.2 | 2917.6 | 2912.6 |
| 5° | 2948.0 | 2948.0 | 2950.5 | 2948.0 | 2942.9 | 2937.9 | 2932.8 | 2925.2 | 2920.2 | 2915.1 | 2912.6 |
| 7.5° | 2958.1 | 2960.6 | 2963.2 | 2960.6 | 2950.5 | 2945.5 | 2937.9 | 2930.3 | 2920.2 | 2915.1 | 2910.0 |
| 10° | 2978.4 | 2978.4 | 2978.4 | 2975.8 | 2968.2 | 2958.1 | 2948.0 | 2940.4 | 2927.7 | 2915.1 | 2907.5 |
| 12.5° | 2993.5 | 2996.1 | 2996.1 | 2991.0 | 2980.9 | 2968.2 | 2958.1 | 2950.5 | 2940.4 | 2930.3 | 2922.7 |
| 15° | 3016.3 | 3016.3 | 3013.8 | 3003.7 | 2988.5 | 2978.4 | 2973.3 | 2970.8 | 2968.2 | 2963.2 | 2955.6 |
| 17.5° | 3061.9 | 3059.3 | 3051.7 | 3036.6 | 3018.8 | 3011.2 | 3006.2 | 3006.2 | 3006.2 | 3003.7 | 2998.6 |
| 20° | 3127.7 | 3127.7 | 3117.5 | 3092.2 | 3077.0 | 3069.5 | 3061.9 | 3061.9 | 3061.9 | 3054.3 | 3046.7 |
| 22.5° | 3233.9 | 3236.5 | 3221.3 | 3190.9 | 3170.7 | 3155.5 | 3145.4 | 3137.8 | 3130.2 | 3125.1 | 3112.5 |
| 25° | 3378.2 | 3375.6 | 3357.9 | 3320.0 | 3304.8 | 3289.6 | 3269.4 | 3256.7 | 3246.6 | 3239.0 | 3223.8 |
| 27.5° | 3530.0 | 3527.5 | 3507.2 | 3474.3 | 3464.2 | 3441.4 | 3426.2 | 3408.5 | 3395.9 | 3383.2 | 3368.0 |
| 30° | 3724.8 | 3712.2 | 3697.0 | 3671.7 | 3666.6 | 3648.9 | 3628.7 | 3603.4 | 3583.1 | 3562.9 | 3545.2 |
| 32.5° | 3899.4 | 3899.4 | 3876.7 | 3864.0 | 3874.1 | 3866.5 | 3869.1 | 3853.9 | 3841.2 | 3833.6 | 3815.9 |
| 35° | 4142.4 | 4142.4 | 4132.2 | 4117.1 | 4119.6 | 4101.9 | 4099.3 | 4101.9 | 4112.0 | 4112.0 | 4091.8 |
| 37.5° | 4466.3 | 4471.3 | 4438.4 | 4433.4 | 4420.7 | 4395.4 | 4382.8 | 4387.8 | 4410.6 | 4423.2 | 4395.4 |
| 40° | 4868.6 | 4878.7 | 4868.6 | 4835.7 | 4820.5 | 4777.5 | 4752.2 | 4752.2 | 4769.9 | 4782.6 | 4772.5 |
| 42.5° | 5265.9 | 5283.6 | 5265.9 | 5240.6 | 5227.9 | 5195.0 | 5182.4 | 5192.5 | 5215.3 | 5230.5 | 5215.3 |
| 45° | 5708.7 | 5721.4 | 5698.6 | 5668.2 | 5653.1 | 5635.3 | 5627.7 | 5635.3 | 5660.6 | 5675.8 | 5670.8 |
| 47.5° | 6144.0 | 6161.7 | 6133.8 | 6121.2 | 6121.2 | 6103.5 | 6123.7 | 6144.0 | 6166.7 | 6202.2 | 6187.0 |
| 50° | 6569.1 | 6591.9 | 6574.1 | 6576.7 | 6596.9 | 6629.8 | 6667.8 | 6708.3 | 6748.7 | 6786.7 | 6791.8 |
| 52.5° | 6948.6 | 6984.1 | 6986.6 | 7032.2 | 7095.4 | 7146.0 | 7252.3 | 7340.9 | 7437.0 | 7469.9 | 7454.7 |
| 55° | 7348.5 | 7396.5 | 7459.8 | 7530.7 | 7631.9 | 7735.6 | 7915.3 | 8074.7 | 8201.2 | 8279.7 | 8267.0 |
| 57.5° | 7920.3 | 7968.4 | 8034.2 | 8150.6 | 8302.4 | 8444.2 | 8689.6 | 8937.6 | 9129.9 | 9248.8 | 9190.6 |
| 60° | 8661.8 | 8712.4 | 8798.4 | 8922.4 | 9119.8 | 9312.1 | 9648.7 | 10005.4 | 10304.0 | 10440.7 | 10334.4 |
| 62.5° | 9643.6 | 9691.7 | 9747.3 | 9911.8 | 10132.0 | 10380.0 | 10802.5 | 11260.6 | 11640.1 | 11771.7 | 11622.4 |
| 65° | 11042.9 | 11101.1 | 11118.8 | 11253.0 | 11468.1 | 11698.3 | 12153.8 | 12670.0 | 13102.7 | 13317.8 | 13019.2 |
| 67.5° | 12619.4 | 12642.2 | 12713.0 | 12869.9 | 13090.1 | 13297.6 | 13656.9 | 14145.3 | 14560.3 | 14679.2 | 14360.4 |
| 70° | 13543.0 | 13588.6 | 13712.6 | 13930.2 | 14193.4 | 14519.8 | 14912.0 | 15438.3 | 15909.0 | 15964.7 | 15559.8 |
| 72.5° | 12708.0 | 12801.6 | 13021.8 | 13360.8 | 13912.5 | 14492.0 | 15167.6 | 15944.4 | 16620.1 | 16698.5 | 16048.2 |
| 75° | 10192.7 | 10299.0 | 10562.1 | 10934.1 | 11587.0 | 12447.3 | 13424.1 | 14590.6 | 15602.8 | 15731.9 | 14871.5 |
| 77.5° | 5432.9 | 5564.5 | 5946.6 | 6447.6 | 7378.8 | 8517.5 | 9694.2 | 11025.2 | 11885.6 | 12176.6 | 11556.6 |
| 80° | 1369.0 | 1439.8 | 1624.6 | 1918.1 | 2548.2 | 3466.7 | 4481.4 | 5913.7 | 6981.5 | 7434.5 | 6981.5 |
| 82.5° | 531.4 | 584.5 | 635.1 | 670.6 | 731.3 | 857.8 | 1184.3 | 1930.7 | 2601.3 | 3203.6 | 2773.4 |
| 85° | 205.0 | 217.6 | 313.8 | 356.8 | 356.8 | 392.2 | 450.4 | 531.4 | 657.9 | 718.7 | 602.2 |
| 87.5° | 81.0 | 88.6 | 108.8 | 167.0 | 172.1 | 151.8 | 161.9 | 182.2 | 139.2 | 116.4 | 131.6 |
| 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° | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 | 2922.7 |
| 2.5° | 2910.0 | 2907.5 | 2902.4 | 2905.0 | 2902.4 | 2902.4 | 2902.4 | 2902.4 |
| 5° | 2907.5 | 2907.5 | 2902.4 | 2902.4 | 2902.4 | 2905.0 | 2902.4 | 2902.4 |
| 7.5° | 2905.0 | 2902.4 | 2897.4 | 2894.8 | 2894.8 | 2892.3 | 2892.3 | 2892.3 |
| 10° | 2899.9 | 2894.8 | 2889.8 | 2887.3 | 2887.3 | 2882.2 | 2882.2 | 2882.2 |
| 12.5° | 2912.6 | 2905.0 | 2899.9 | 2897.4 | 2897.4 | 2897.4 | 2899.9 | 2899.9 |
| 15° | 2948.0 | 2932.8 | 2925.2 | 2922.7 | 2925.2 | 2930.3 | 2932.8 | 2935.3 |
| 17.5° | 2985.9 | 2970.8 | 2958.1 | 2953.0 | 2955.6 | 2963.2 | 2970.8 | 2975.8 |
| 20° | 3034.0 | 3021.4 | 3006.2 | 3001.1 | 3001.1 | 3011.2 | 3016.3 | 3023.9 |
| 22.5° | 3102.3 | 3092.2 | 3079.6 | 3072.0 | 3066.9 | 3079.6 | 3087.2 | 3092.2 |
| 25° | 3211.2 | 3201.0 | 3190.9 | 3183.3 | 3180.8 | 3193.4 | 3198.5 | 3201.0 |
| 27.5° | 3355.4 | 3345.3 | 3340.2 | 3337.7 | 3330.1 | 3335.1 | 3342.7 | 3340.2 |
| 30° | 3542.6 | 3550.2 | 3542.6 | 3542.6 | 3530.0 | 3535.1 | 3530.0 | 3524.9 |
| 32.5° | 3793.2 | 3785.6 | 3762.8 | 3747.6 | 3729.9 | 3729.9 | 3722.3 | 3714.7 |
| 35° | 4043.7 | 4018.4 | 4005.7 | 4013.3 | 4005.7 | 4010.8 | 3998.1 | 3985.5 |
| 37.5° | 4339.7 | 4324.6 | 4322.0 | 4344.8 | 4339.7 | 4344.8 | 4344.8 | 4327.1 |
| 40° | 4732.0 | 4721.8 | 4739.6 | 4777.5 | 4792.7 | 4790.2 | 4795.2 | 4772.5 |
| 42.5° | 5182.4 | 5164.7 | 5172.3 | 5205.2 | 5222.9 | 5227.9 | 5225.4 | 5205.2 |
| 45° | 5632.8 | 5637.9 | 5637.9 | 5673.3 | 5691.0 | 5701.1 | 5683.4 | 5675.8 |
| 47.5° | 6141.4 | 6149.0 | 6131.3 | 6154.1 | 6159.1 | 6176.9 | 6161.7 | 6149.0 |
| 50° | 6728.5 | 6700.7 | 6660.2 | 6667.8 | 6667.8 | 6662.7 | 6645.0 | 6629.8 |
| 52.5° | 7383.9 | 7320.6 | 7244.7 | 7219.4 | 7191.6 | 7163.7 | 7128.3 | 7100.5 |
| 55° | 8130.4 | 8021.6 | 7884.9 | 7821.7 | 7768.5 | 7705.3 | 7624.3 | 7596.4 |
| 57.5° | 8995.8 | 8808.5 | 8626.3 | 8512.5 | 8375.8 | 8292.3 | 8188.6 | 8183.5 |
| 60° | 10023.2 | 9770.1 | 9448.7 | 9279.2 | 9142.6 | 9043.9 | 8965.4 | 8935.1 |
| 62.5° | 11209.9 | 10774.7 | 10428.0 | 10245.8 | 10086.4 | 10025.7 | 9927.0 | 9939.7 |
| 65° | 12427.1 | 11984.3 | 11647.7 | 11500.9 | 11351.7 | 11311.2 | 11220.1 | 11253.0 |
| 67.5° | 13745.5 | 13381.1 | 13011.6 | 12875.0 | 12738.3 | 12697.9 | 12604.2 | 12632.1 |
| 70° | 14927.2 | 14464.1 | 14044.1 | 13775.8 | 13543.0 | 13355.8 | 13236.8 | 13188.8 |
| 72.5° | 15162.5 | 14360.4 | 13699.9 | 13029.3 | 12642.2 | 12303.1 | 12163.9 | 12110.8 |
| 75° | 13624.0 | 12379.0 | 11437.7 | 10650.7 | 10215.5 | 9722.0 | 9668.9 | 9595.5 |
| 77.5° | 10597.6 | 9180.5 | 8041.8 | 7029.6 | 6445.1 | 5842.8 | 5635.3 | 5478.5 |
| 80° | 6321.1 | 4858.5 | 3765.3 | 2639.3 | 2153.4 | 1733.4 | 1629.6 | 1520.8 |
| 82.5° | 2262.2 | 1450.0 | 976.8 | 761.7 | 680.7 | 627.6 | 587.1 | 533.9 |
| 85° | 546.6 | 460.5 | 435.2 | 394.8 | 389.7 | 331.5 | 235.3 | 210.0 |
| 87.5° | 174.6 | 159.4 | 161.9 | 154.4 | 161.9 | 121.5 | 98.7 | 88.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)