

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: P197076

Luminaire Tested: **NAV-AF-06-D-UNV-SL3-8030-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197076
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24263)
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-SL3-8030-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20160 lumens
Efficiency: N/A
Efficacy: 81.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - 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

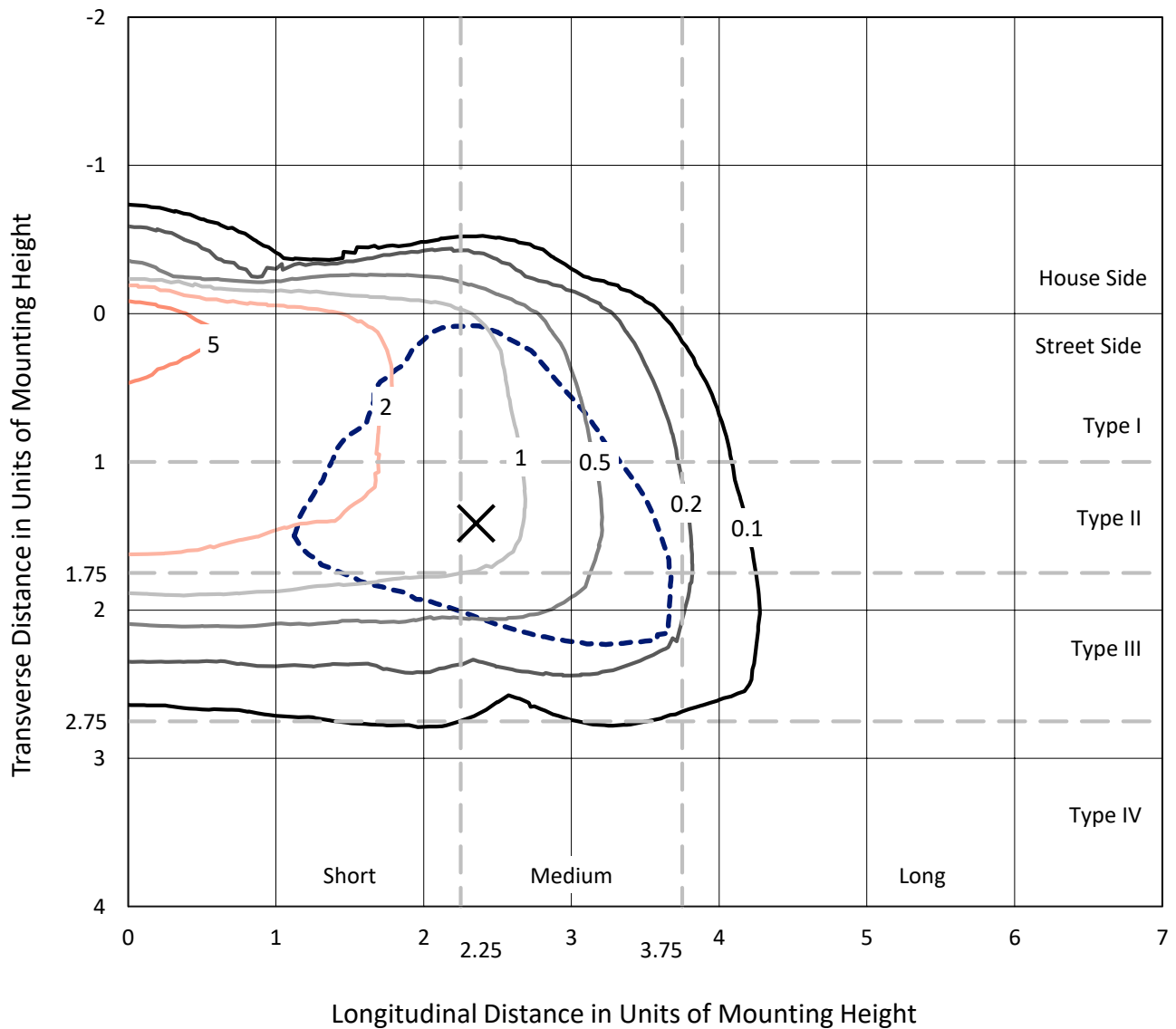


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Iso-Footcandle Lines of Horizontal Illumination

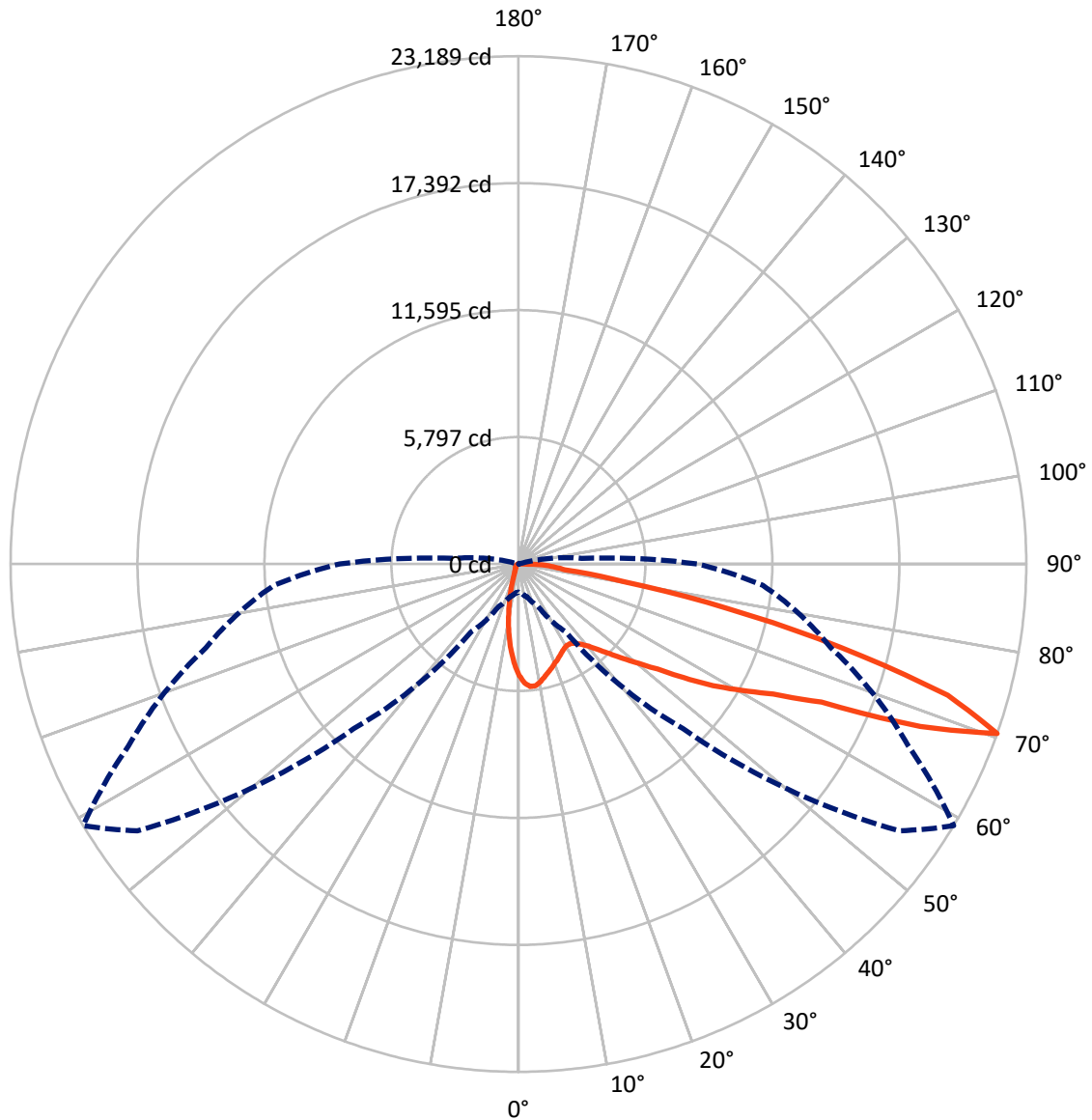
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.7 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1549.8 | 0.0 | 1549.8 |
| | % Fixture | 7.7 | 0.0 | 7.7 |
| Street Side | Lumens | 18610.2 | 0.0 | 18610.2 |
| | % Fixture | 92.3 | 0.0 | 92.3 |
| Total | Lumens | 20160.0 | 0.0 | 20160.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 419.2 | 2.1 |
| 10°-20° | 879.2 | 4.4 |
| 20°-30° | 1190.2 | 5.9 |
| 30°-40° | 1717.6 | 8.5 |
| 40°-50° | 2852.6 | 14.1 |
| 50°-60° | 4363.3 | 21.6 |
| 60°-70° | 5426.9 | 26.9 |
| 70°-80° | 3000.0 | 14.9 |
| 80°-90° | 311.1 | 1.5 |
| 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° | 20160.0 | 100.0 |
| 0°-180° | 20160.0 | 100.0 |



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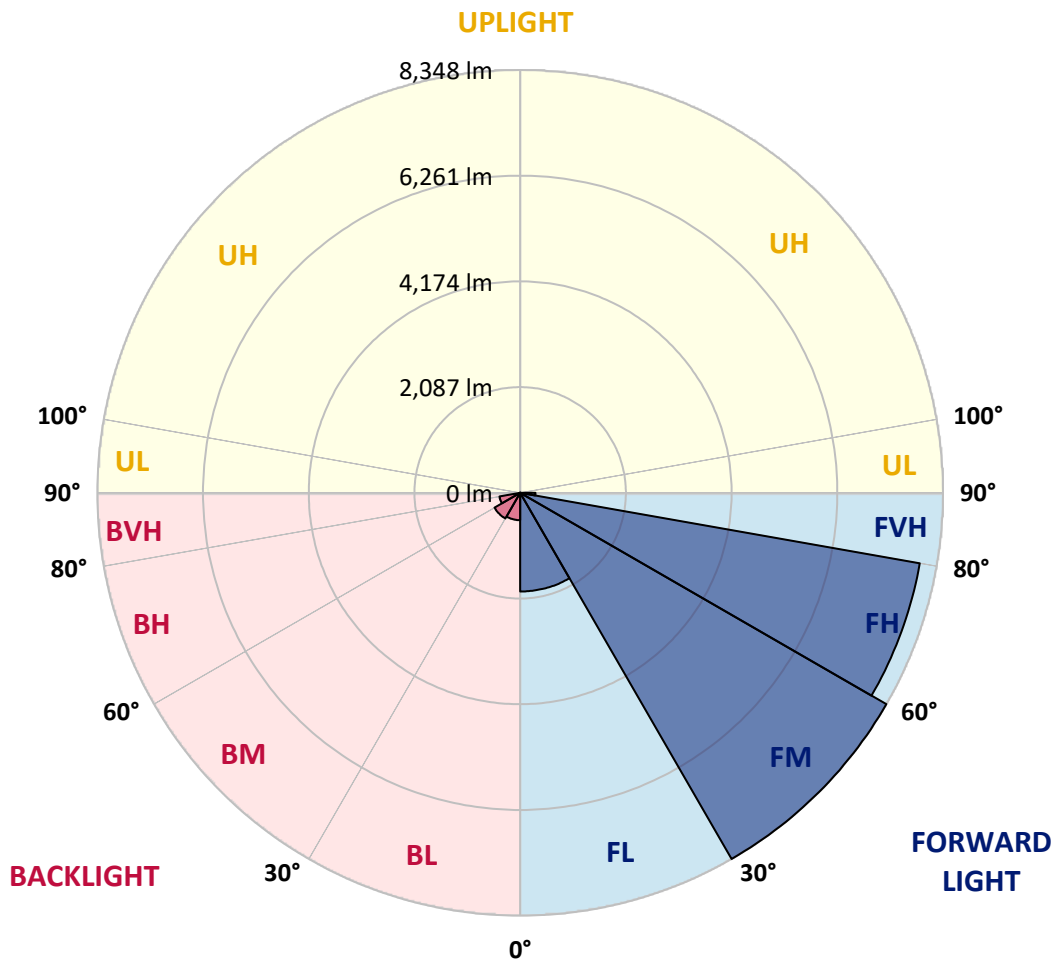
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|----------|
| | | | | B | U | G |
| FL | (0°-30°) | 1948.5 | 9.7 | | | |
| FM | (30°-60°) | 8348.5 | 41.4 | | | |
| FH | (60°-80°) | 8011.2 | 39.7 | | | G4/12000 |
| FVH | (80°-90°) | 302.1 | 1.5 | | | G3/500 |
| BL | (0°-30°) | 540.1 | 2.7 | B2/1000 | | |
| BM | (30°-60°) | 585.0 | 2.9 | B1/1000 | | |
| BH | (60°-80°) | 415.7 | 2.1 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 9.0 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G4

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|---------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 |
| 2.5° | 5762.3 | 5753.2 | 5715.2 | 5707.6 | 5665.0 | 5579.8 | 5481.0 | 5441.4 | 5360.8 | 5233.1 | 5091.7 |
| 5° | 5858.1 | 5862.7 | 5865.7 | 5849.0 | 5842.9 | 5773.0 | 5663.5 | 5616.3 | 5508.4 | 5298.5 | 5039.9 |
| 7.5° | 5499.2 | 5511.4 | 5549.4 | 5566.1 | 5639.1 | 5666.5 | 5643.7 | 5613.3 | 5528.1 | 5280.2 | 4916.8 |
| 10° | 5120.6 | 5143.4 | 5184.4 | 5211.8 | 5301.5 | 5374.5 | 5467.3 | 5474.9 | 5456.6 | 5219.4 | 4778.4 |
| 12.5° | 4795.1 | 4816.4 | 4862.0 | 4916.8 | 5008.0 | 5102.3 | 5240.7 | 5289.4 | 5350.2 | 5179.9 | 4679.5 |
| 15° | 4515.3 | 4521.4 | 4565.5 | 4633.9 | 4754.0 | 4883.3 | 5047.6 | 5119.0 | 5237.7 | 5164.7 | 4603.5 |
| 17.5° | 4270.4 | 4271.9 | 4300.8 | 4363.2 | 4509.2 | 4679.5 | 4871.1 | 4965.4 | 5116.0 | 5143.4 | 4536.6 |
| 20° | 4109.2 | 4107.7 | 4109.2 | 4142.7 | 4271.9 | 4474.2 | 4706.9 | 4805.7 | 4998.9 | 5117.5 | 4468.1 |
| 22.5° | 4054.5 | 4046.9 | 4011.9 | 3999.7 | 4081.8 | 4259.8 | 4538.1 | 4667.4 | 4894.0 | 5109.9 | 4417.9 |
| 25° | 4121.4 | 4116.8 | 4042.3 | 3972.3 | 3979.9 | 4091.0 | 4366.2 | 4524.4 | 4811.8 | 5137.3 | 4405.8 |
| 27.5° | 4337.3 | 4328.2 | 4214.2 | 4077.3 | 3990.6 | 4010.4 | 4238.5 | 4404.3 | 4746.4 | 5204.2 | 4422.5 |
| 30° | 4620.2 | 4621.7 | 4500.1 | 4334.3 | 4130.5 | 4018.0 | 4170.0 | 4326.7 | 4702.3 | 5304.6 | 4459.0 |
| 32.5° | 4935.0 | 4933.5 | 4846.8 | 4655.2 | 4395.1 | 4157.9 | 4200.5 | 4332.8 | 4708.4 | 5452.1 | 4529.0 |
| 35° | 5260.5 | 5243.7 | 5214.8 | 5046.0 | 4741.9 | 4402.7 | 4338.9 | 4436.2 | 4772.3 | 5646.7 | 4647.6 |
| 37.5° | 5636.1 | 5630.0 | 5658.9 | 5481.0 | 5170.7 | 4763.2 | 4582.2 | 4647.6 | 4933.5 | 5934.2 | 4839.2 |
| 40° | 6233.8 | 6200.3 | 6214.0 | 5972.2 | 5654.4 | 5248.3 | 4922.8 | 4939.6 | 5190.5 | 6314.4 | 5141.8 |
| 42.5° | 7372.9 | 7237.5 | 6983.5 | 6530.3 | 6186.6 | 5786.7 | 5368.4 | 5339.5 | 5554.0 | 6775.2 | 5540.3 |
| 45° | 8734.0 | 8578.9 | 7938.6 | 7146.3 | 6718.9 | 6364.6 | 5919.0 | 5841.4 | 6001.1 | 7324.2 | 6054.3 |
| 47.5° | 9870.0 | 9702.7 | 8854.1 | 7789.6 | 7260.3 | 6960.7 | 6528.8 | 6437.6 | 6536.4 | 7961.4 | 6671.8 |
| 50° | 10257.8 | 10165.1 | 9419.9 | 8324.9 | 7806.3 | 7629.9 | 7293.8 | 7141.7 | 7166.0 | 8648.8 | 7392.6 |
| 52.5° | 10079.9 | 10048.0 | 9549.1 | 8691.4 | 8311.2 | 8369.0 | 8131.7 | 7972.1 | 7944.7 | 9400.1 | 8189.5 |
| 55° | 9704.3 | 9689.0 | 9445.7 | 8895.2 | 8756.8 | 9045.7 | 9307.3 | 9168.9 | 8910.4 | 10198.5 | 8848.0 |
| 57.5° | 9167.4 | 9225.2 | 9400.1 | 9287.6 | 9304.3 | 9760.5 | 10399.3 | 10470.7 | 10084.5 | 10834.2 | 9336.2 |
| 60° | 7733.3 | 7888.4 | 8689.9 | 9708.8 | 10489.0 | 10949.8 | 11568.8 | 11702.6 | 11079.1 | 11269.2 | 9900.4 |
| 62.5° | 5716.7 | 5938.7 | 7080.9 | 8953.0 | 11141.4 | 13211.2 | 13124.5 | 13065.2 | 12028.0 | 11851.6 | 10927.0 |
| 65° | 3357.9 | 3618.0 | 4583.7 | 6995.7 | 10157.5 | 14665.1 | 16029.3 | 15208.1 | 13474.3 | 13062.2 | 12561.8 |
| 67.5° | 1672.9 | 1674.4 | 2110.9 | 3692.5 | 7506.7 | 13650.7 | 20269.3 | 19794.8 | 16549.4 | 14846.1 | 13206.7 |
| 70° | 1286.6 | 1321.6 | 1561.9 | 2145.9 | 3795.9 | 10631.9 | 21241.1 | 23189.2 | 19639.7 | 14767.0 | 11205.3 |
| 72.5° | 1090.4 | 1113.2 | 1390.0 | 1867.5 | 2837.8 | 5836.8 | 18388.1 | 20497.4 | 18740.9 | 12476.7 | 8259.5 |
| 75° | 784.7 | 803.0 | 1230.3 | 1694.2 | 2612.7 | 2895.6 | 12613.6 | 15202.0 | 14061.4 | 8776.6 | 4545.7 |
| 77.5° | 194.7 | 193.1 | 428.9 | 1374.8 | 2337.5 | 2412.0 | 7237.5 | 9748.4 | 8067.9 | 3593.7 | 1168.0 |
| 80° | 86.7 | 83.6 | 97.3 | 289.0 | 2174.8 | 2276.6 | 3183.0 | 4922.8 | 3094.8 | 582.5 | 357.4 |
| 82.5° | 60.8 | 57.8 | 60.8 | 106.5 | 726.9 | 2112.4 | 1923.8 | 2133.7 | 1133.0 | 199.2 | 152.1 |
| 85° | 19.8 | 18.2 | 33.5 | 89.7 | 203.8 | 1218.2 | 1876.7 | 1593.8 | 842.5 | 85.2 | 101.9 |
| 87.5° | 3.0 | 3.0 | 12.2 | 48.7 | 59.3 | 406.1 | 1101.1 | 1104.1 | 378.7 | 50.2 | 45.6 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 | 5097.7 |
| 2.5° | 5020.2 | 4930.4 | 4804.2 | 4678.0 | 4563.9 | 4446.8 | 4352.5 | 4308.4 | 4288.7 | 4261.3 | 4202.0 |
| 5° | 4904.6 | 4741.9 | 4465.1 | 4192.9 | 3938.9 | 3695.6 | 3487.2 | 3368.6 | 3240.8 | 3234.8 | 3172.4 |
| 7.5° | 4719.1 | 4487.9 | 4051.4 | 3628.6 | 3240.8 | 2869.8 | 2550.4 | 2343.6 | 2202.1 | 2113.9 | 2053.1 |
| 10° | 4512.2 | 4215.7 | 3637.8 | 3043.1 | 2515.4 | 2019.6 | 1609.0 | 1341.4 | 1178.6 | 1096.5 | 1049.4 |
| 12.5° | 4348.0 | 3975.4 | 3230.2 | 2482.0 | 1820.4 | 1251.6 | 869.9 | 675.2 | 588.6 | 555.1 | 539.9 |
| 15° | 4206.5 | 3754.9 | 2848.5 | 1980.1 | 1215.1 | 719.3 | 503.4 | 439.5 | 425.8 | 425.8 | 424.3 |
| 17.5° | 4063.6 | 3542.0 | 2477.4 | 1487.3 | 765.0 | 471.4 | 396.9 | 387.8 | 389.3 | 393.9 | 393.9 |
| 20° | 3928.2 | 3339.7 | 2120.0 | 1060.0 | 501.9 | 377.2 | 360.4 | 357.4 | 362.0 | 368.0 | 366.5 |
| 22.5° | 3818.7 | 3161.8 | 1785.4 | 728.5 | 386.3 | 342.2 | 331.5 | 327.0 | 330.0 | 334.6 | 333.1 |
| 25° | 3741.2 | 3009.7 | 1478.2 | 507.9 | 336.1 | 311.8 | 299.6 | 293.5 | 290.5 | 293.5 | 292.0 |
| 27.5° | 3694.0 | 2881.9 | 1189.3 | 381.7 | 301.1 | 281.3 | 266.1 | 254.0 | 246.4 | 246.4 | 243.3 |
| 30° | 3663.6 | 2761.8 | 932.3 | 316.3 | 272.2 | 250.9 | 229.6 | 212.9 | 200.7 | 197.7 | 196.2 |
| 32.5° | 3662.1 | 2658.4 | 696.5 | 279.8 | 244.8 | 220.5 | 194.7 | 173.4 | 159.7 | 156.6 | 155.1 |
| 35° | 3700.1 | 2574.7 | 512.5 | 252.5 | 220.5 | 191.6 | 162.7 | 139.9 | 127.7 | 127.7 | 126.2 |
| 37.5° | 3799.0 | 2526.1 | 387.8 | 231.2 | 200.7 | 167.3 | 136.9 | 115.6 | 104.9 | 108.0 | 108.0 |
| 40° | 3983.0 | 2516.9 | 316.3 | 214.4 | 184.0 | 146.0 | 111.0 | 94.3 | 89.7 | 94.3 | 94.3 |
| 42.5° | 4264.3 | 2565.6 | 281.3 | 202.3 | 168.8 | 124.7 | 92.8 | 80.6 | 79.1 | 83.6 | 83.6 |
| 45° | 4630.9 | 2661.4 | 261.6 | 191.6 | 152.1 | 103.4 | 77.6 | 70.0 | 68.4 | 74.5 | 74.5 |
| 47.5° | 5074.9 | 2790.7 | 243.3 | 179.5 | 135.4 | 85.2 | 65.4 | 59.3 | 59.3 | 65.4 | 66.9 |
| 50° | 5601.1 | 2965.6 | 225.1 | 167.3 | 121.7 | 71.5 | 54.7 | 50.2 | 51.7 | 57.8 | 59.3 |
| 52.5° | 6206.4 | 3180.0 | 208.4 | 156.6 | 106.5 | 57.8 | 45.6 | 42.6 | 44.1 | 50.2 | 51.7 |
| 55° | 6728.0 | 3367.1 | 188.6 | 146.0 | 86.7 | 47.1 | 38.0 | 36.5 | 38.0 | 45.6 | 45.6 |
| 57.5° | 7182.8 | 3546.5 | 170.3 | 129.3 | 68.4 | 38.0 | 30.4 | 30.4 | 33.5 | 41.1 | 42.6 |
| 60° | 7786.5 | 3829.4 | 155.1 | 109.5 | 51.7 | 28.9 | 24.3 | 25.9 | 30.4 | 36.5 | 38.0 |
| 62.5° | 8855.6 | 4310.0 | 135.4 | 91.2 | 38.0 | 22.8 | 19.8 | 21.3 | 27.4 | 35.0 | 36.5 |
| 65° | 10194.0 | 4764.7 | 112.5 | 76.0 | 28.9 | 16.7 | 15.2 | 19.8 | 27.4 | 35.0 | 36.5 |
| 67.5° | 10057.1 | 4144.2 | 88.2 | 60.8 | 21.3 | 13.7 | 12.2 | 18.2 | 25.9 | 35.0 | 36.5 |
| 70° | 8156.1 | 2904.7 | 65.4 | 41.1 | 16.7 | 12.2 | 12.2 | 18.2 | 25.9 | 33.5 | 35.0 |
| 72.5° | 5657.4 | 1616.6 | 50.2 | 27.4 | 15.2 | 12.2 | 10.6 | 16.7 | 24.3 | 33.5 | 35.0 |
| 75° | 2691.8 | 495.8 | 39.5 | 19.8 | 13.7 | 10.6 | 9.1 | 16.7 | 24.3 | 33.5 | 35.0 |
| 77.5° | 517.1 | 126.2 | 31.9 | 16.7 | 12.2 | 10.6 | 9.1 | 15.2 | 24.3 | 31.9 | 33.5 |
| 80° | 174.9 | 56.3 | 25.9 | 15.2 | 12.2 | 10.6 | 9.1 | 15.2 | 22.8 | 30.4 | 31.9 |
| 82.5° | 95.8 | 31.9 | 22.8 | 13.7 | 12.2 | 9.1 | 7.6 | 13.7 | 21.3 | 30.4 | 31.9 |
| 85° | 74.5 | 22.8 | 18.2 | 13.7 | 12.2 | 9.1 | 7.6 | 13.7 | 21.3 | 28.9 | 30.4 |
| 87.5° | 38.0 | 16.7 | 15.2 | 13.7 | 12.2 | 9.1 | 7.6 | 12.2 | 19.8 | 27.4 | 30.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)