

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: INVUE

Report Number: P597129

Luminaire Tested: **MSA-SA4B-835-U-T3-HSS**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P597129
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-11)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4B-835-U-T3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11829 lumens
Efficiency: N/A
Efficacy: 69.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

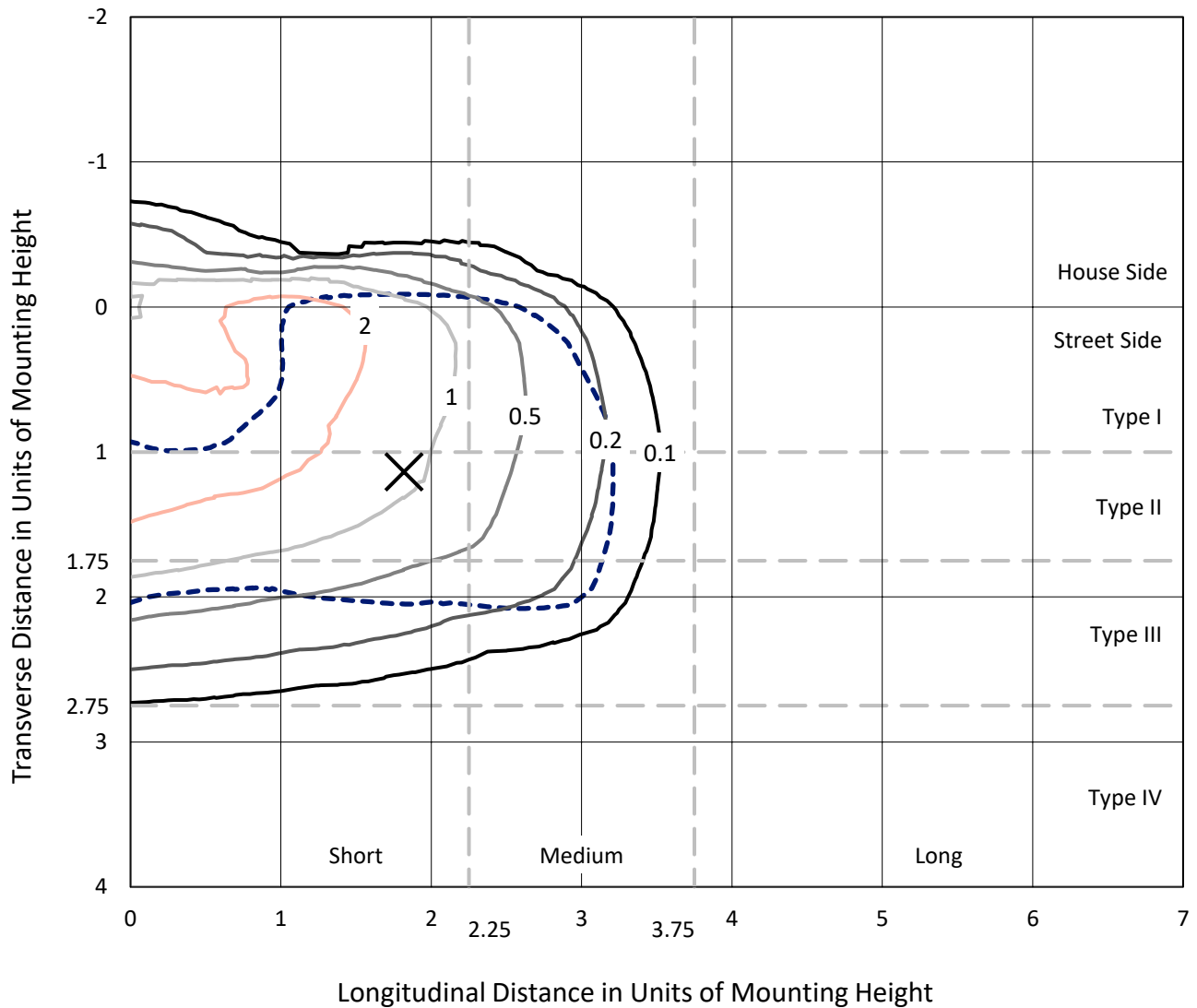
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

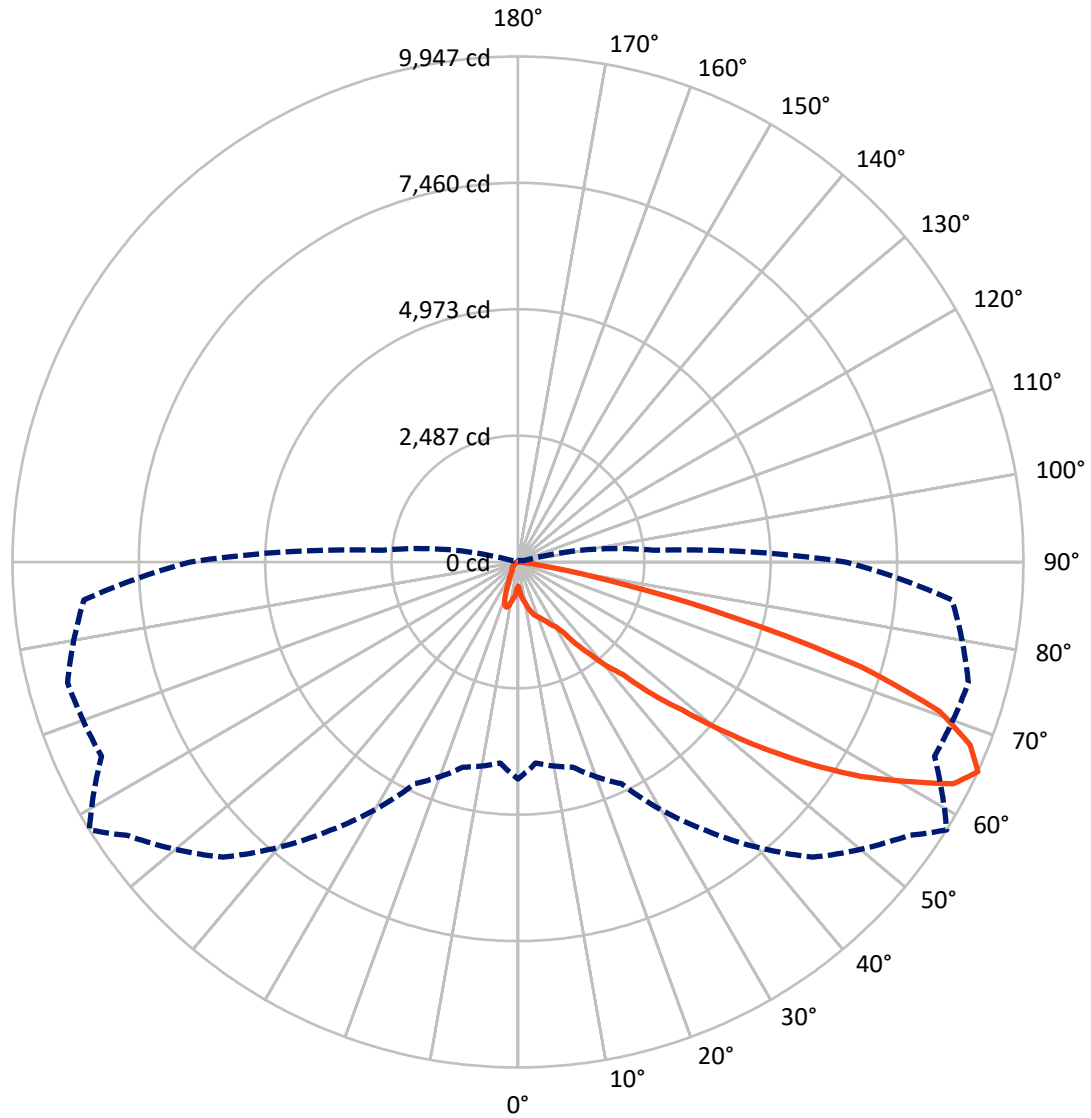
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.1 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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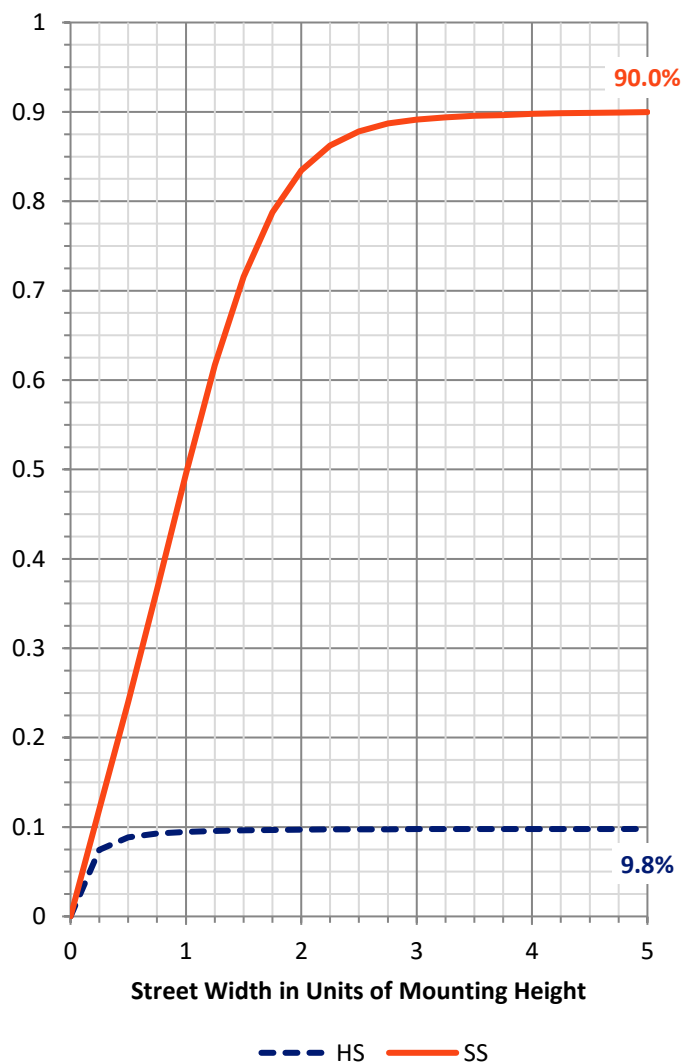
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 1167.2 | 0.0 | 1167.2 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 10661.8 | 0.0 | 10661.8 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 11829.0 | 0.0 | 11829.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 66.5 | 0.6 |
| 10°-20° | 242.8 | 2.1 |
| 20°-30° | 470.0 | 4.0 |
| 30°-40° | 937.7 | 7.9 |
| 40°-50° | 1917.1 | 16.2 |
| 50°-60° | 3400.3 | 28.7 |
| 60°-70° | 3584.8 | 30.3 |
| 70°-80° | 1162.2 | 9.8 |
| 80°-90° | 47.5 | 0.4 |
| 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° | 11829.0 | 100.0 |
| 0°-180° | 11829.0 | 100.0 |

Coefficient of Utilization



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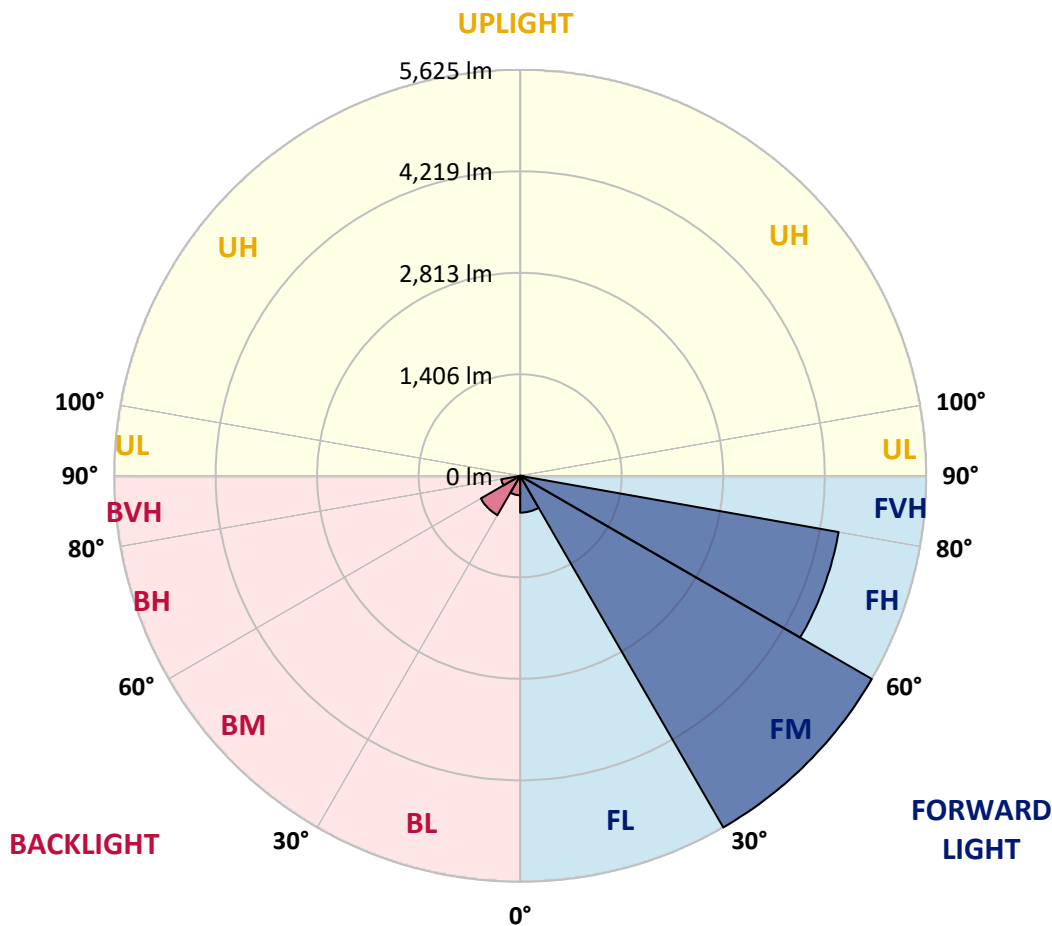
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 510.3 | 4.3 | | | |
| FM (30°-60°) | 5625.3 | 47.6 | | | |
| FH (60°-80°) | 4480.7 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 45.5 | 0.4 | | | G1/100 |
| BL (0°-30°) | 269.0 | 2.3 | B1/500 | | |
| BM (30°-60°) | 629.8 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 266.4 | 2.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 2.0 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 |
| 2.5° | 578.1 | 560.8 | 533.5 | 538.1 | 543.5 | 554.1 | 545.5 | 537.5 | 528.8 | 517.5 | 560.8 |
| 5° | 698.0 | 669.3 | 666.7 | 660.7 | 656.0 | 655.4 | 666.0 | 662.7 | 667.3 | 688.7 | 710.6 |
| 7.5° | 741.9 | 729.9 | 707.3 | 716.6 | 702.0 | 690.7 | 737.9 | 753.3 | 782.6 | 792.6 | 849.8 |
| 10° | 737.3 | 720.0 | 729.3 | 733.9 | 743.9 | 785.2 | 815.2 | 831.8 | 857.2 | 911.8 | 900.4 |
| 12.5° | 758.6 | 773.9 | 783.9 | 784.6 | 835.8 | 911.8 | 933.1 | 947.1 | 992.4 | 1013.7 | 1069.6 |
| 15° | 829.8 | 855.2 | 839.2 | 845.8 | 862.5 | 955.1 | 1005.0 | 1035.6 | 1099.6 | 1168.8 | 1182.8 |
| 17.5° | 931.7 | 947.7 | 914.4 | 890.5 | 936.4 | 987.0 | 1077.6 | 1109.6 | 1150.2 | 1312.0 | 1342.0 |
| 20° | 1060.3 | 1087.6 | 1015.7 | 920.4 | 981.0 | 1041.0 | 1139.5 | 1154.9 | 1198.2 | 1409.3 | 1456.6 |
| 22.5° | 1360.7 | 1320.0 | 1210.1 | 1061.6 | 1043.6 | 1070.3 | 1164.2 | 1224.1 | 1297.4 | 1463.9 | 1573.8 |
| 25° | 1657.0 | 1643.0 | 1481.2 | 1315.4 | 1195.5 | 1135.5 | 1260.1 | 1293.4 | 1413.3 | 1593.8 | 1654.4 |
| 27.5° | 1986.7 | 2014.7 | 1744.3 | 1643.7 | 1408.6 | 1212.8 | 1320.0 | 1403.3 | 1545.1 | 1641.0 | 1786.9 |
| 30° | 2421.6 | 2377.0 | 2060.0 | 1959.4 | 1691.0 | 1425.3 | 1475.2 | 1480.5 | 1689.0 | 1796.9 | 1935.4 |
| 32.5° | 2762.6 | 2791.2 | 2393.0 | 2238.5 | 2024.0 | 1752.3 | 1591.8 | 1661.0 | 1810.2 | 2050.6 | 2181.8 |
| 35° | 3131.6 | 3128.9 | 2740.6 | 2532.8 | 2252.4 | 2019.3 | 1937.4 | 1988.0 | 2175.2 | 2447.6 | 2482.2 |
| 37.5° | 3683.0 | 3635.7 | 3177.5 | 2873.2 | 2634.7 | 2435.6 | 2373.0 | 2305.7 | 2498.9 | 2758.6 | 2888.5 |
| 40° | 4203.2 | 4040.0 | 3616.4 | 3255.5 | 2950.4 | 2869.2 | 2642.7 | 2684.0 | 2741.3 | 3084.3 | 3443.3 |
| 42.5° | 4728.7 | 4627.4 | 4061.3 | 3759.0 | 3384.0 | 3190.9 | 3043.0 | 3023.7 | 3296.1 | 3702.4 | 4073.3 |
| 45° | 5422.0 | 5112.3 | 4659.4 | 4393.7 | 3959.4 | 3765.6 | 3646.4 | 3717.7 | 3962.8 | 4556.2 | 4803.3 |
| 47.5° | 6004.1 | 5719.0 | 5330.1 | 4926.5 | 4470.9 | 4688.7 | 4464.9 | 4352.4 | 4688.7 | 5302.1 | 5630.4 |
| 50° | 6504.3 | 6186.6 | 5793.0 | 5493.9 | 5420.0 | 5629.1 | 5176.2 | 5217.5 | 5436.0 | 6156.6 | 6341.7 |
| 52.5° | 6867.9 | 6533.6 | 6189.9 | 6045.4 | 6348.4 | 6453.6 | 6226.5 | 6135.3 | 6333.8 | 6885.2 | 6975.1 |
| 55° | 7141.6 | 6799.3 | 6530.9 | 6730.0 | 7316.1 | 7281.5 | 7361.4 | 7049.7 | 7239.5 | 7645.1 | 7602.5 |
| 57.5° | 7158.3 | 6752.7 | 6595.5 | 6915.8 | 7720.4 | 8256.5 | 8490.3 | 7960.2 | 8068.0 | 8239.2 | 8143.3 |
| 60° | 6634.8 | 6231.2 | 6218.5 | 6673.4 | 7837.6 | 8508.9 | 9020.4 | 8762.0 | 8617.5 | 8744.7 | 8562.9 |
| 62.5° | 5591.8 | 5309.4 | 5441.3 | 5944.1 | 7401.4 | 8369.7 | 9302.8 | 9613.9 | 9051.1 | 9079.7 | 8821.3 |
| 65° | 4269.8 | 3973.4 | 4179.9 | 4813.3 | 6447.6 | 8213.9 | 9382.8 | 9946.9 | 9043.1 | 9175.0 | 8573.5 |
| 67.5° | 2827.9 | 2656.0 | 2889.8 | 3587.8 | 5126.3 | 7250.9 | 9341.5 | 9597.2 | 8756.0 | 8802.7 | 7653.8 |
| 70° | 1459.9 | 1417.9 | 1607.1 | 2157.9 | 3446.6 | 5570.5 | 8935.9 | 8796.0 | 8173.3 | 7583.2 | 5903.5 |
| 72.5° | 467.5 | 469.5 | 651.4 | 985.7 | 1858.2 | 3391.3 | 6868.6 | 7060.4 | 6540.2 | 5547.2 | 3604.4 |
| 75° | 207.1 | 203.8 | 272.4 | 413.6 | 774.6 | 1520.5 | 4267.1 | 4474.3 | 4072.0 | 3051.7 | 1515.2 |
| 77.5° | 149.2 | 144.5 | 174.5 | 241.8 | 383.6 | 515.5 | 2000.7 | 2159.2 | 1846.2 | 1057.6 | 347.0 |
| 80° | 105.2 | 104.6 | 126.5 | 169.8 | 239.8 | 229.1 | 632.0 | 708.6 | 567.4 | 256.4 | 101.9 |
| 82.5° | 59.3 | 61.3 | 87.9 | 119.9 | 145.9 | 114.6 | 177.8 | 195.8 | 191.1 | 136.5 | 44.6 |
| 85° | 28.6 | 32.0 | 57.3 | 86.6 | 76.6 | 44.6 | 63.3 | 68.6 | 79.9 | 79.3 | 22.6 |
| 87.5° | 0.0 | 0.0 | 23.3 | 39.3 | 20.6 | 6.7 | 19.3 | 22.0 | 21.3 | 25.3 | 5.3 |
| 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° | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 | 473.5 |
| 2.5° | 569.4 | 565.4 | 514.8 | 518.8 | 530.1 | 525.5 | 529.5 | 520.2 | 509.5 | 552.8 | 552.1 |
| 5° | 720.0 | 690.0 | 674.0 | 659.4 | 662.0 | 632.0 | 649.4 | 657.4 | 656.0 | 680.7 | 687.3 |
| 7.5° | 851.8 | 811.9 | 779.9 | 749.3 | 702.6 | 660.7 | 686.7 | 703.3 | 714.6 | 757.3 | 773.9 |
| 10° | 913.8 | 881.1 | 868.5 | 808.5 | 775.2 | 749.3 | 718.0 | 695.3 | 704.6 | 693.3 | 704.6 |
| 12.5° | 1049.6 | 1027.7 | 979.0 | 918.4 | 878.5 | 825.2 | 708.6 | 611.4 | 551.5 | 552.1 | 548.1 |
| 15° | 1173.5 | 1172.2 | 1099.6 | 999.0 | 883.1 | 731.3 | 549.5 | 426.9 | 370.3 | 354.3 | 349.0 |
| 17.5° | 1335.4 | 1315.4 | 1182.8 | 1034.3 | 825.9 | 566.1 | 374.3 | 292.4 | 287.1 | 296.4 | 292.4 |
| 20° | 1438.6 | 1409.3 | 1224.1 | 983.0 | 680.7 | 383.0 | 282.4 | 259.1 | 275.1 | 288.4 | 285.1 |
| 22.5° | 1541.8 | 1497.9 | 1255.4 | 920.4 | 484.2 | 280.4 | 255.1 | 251.1 | 261.1 | 277.7 | 280.4 |
| 25° | 1598.4 | 1589.8 | 1316.7 | 803.2 | 331.7 | 245.8 | 245.8 | 244.4 | 247.8 | 259.7 | 257.7 |
| 27.5° | 1762.9 | 1645.7 | 1270.7 | 626.7 | 256.4 | 225.8 | 229.1 | 227.8 | 215.8 | 227.8 | 228.4 |
| 30° | 1865.5 | 1811.5 | 1274.1 | 446.2 | 225.8 | 199.8 | 208.5 | 197.8 | 179.8 | 189.8 | 187.8 |
| 32.5° | 2072.0 | 1937.4 | 1264.1 | 301.0 | 205.8 | 190.5 | 177.2 | 161.8 | 148.5 | 152.5 | 149.2 |
| 35° | 2312.4 | 2209.8 | 1128.9 | 241.8 | 191.8 | 168.5 | 147.2 | 131.9 | 117.9 | 121.2 | 120.5 |
| 37.5° | 2790.6 | 2464.9 | 1017.0 | 217.8 | 182.5 | 154.5 | 129.9 | 108.6 | 101.2 | 103.2 | 105.2 |
| 40° | 3233.5 | 2890.5 | 808.5 | 207.1 | 166.5 | 137.9 | 107.2 | 91.9 | 87.2 | 88.6 | 90.6 |
| 42.5° | 3895.5 | 3228.8 | 610.7 | 196.5 | 150.5 | 116.6 | 89.2 | 79.3 | 74.6 | 77.3 | 78.6 |
| 45° | 4536.2 | 3516.5 | 456.2 | 187.1 | 137.2 | 100.6 | 75.3 | 68.6 | 63.3 | 65.3 | 67.9 |
| 47.5° | 5176.2 | 3836.2 | 340.3 | 172.5 | 122.5 | 86.6 | 64.6 | 59.9 | 56.6 | 57.3 | 60.6 |
| 50° | 5749.0 | 3985.4 | 267.7 | 154.5 | 110.6 | 75.3 | 58.6 | 53.9 | 52.6 | 53.3 | 55.9 |
| 52.5° | 6169.9 | 3986.7 | 225.8 | 138.5 | 99.2 | 66.6 | 55.3 | 50.0 | 49.3 | 50.6 | 53.3 |
| 55° | 6550.2 | 3880.2 | 195.8 | 124.5 | 89.2 | 60.6 | 52.6 | 48.0 | 48.0 | 49.3 | 51.9 |
| 57.5° | 6802.6 | 3684.4 | 169.8 | 109.9 | 80.6 | 57.3 | 50.6 | 46.0 | 45.3 | 44.6 | 46.6 |
| 60° | 6925.8 | 3417.3 | 143.9 | 96.6 | 72.6 | 55.3 | 49.3 | 40.6 | 40.0 | 38.6 | 40.0 |
| 62.5° | 6847.9 | 3083.0 | 120.5 | 83.3 | 64.6 | 52.6 | 43.3 | 35.3 | 34.0 | 31.3 | 33.3 |
| 65° | 6449.6 | 2676.7 | 101.9 | 71.3 | 55.9 | 44.6 | 36.6 | 30.0 | 26.6 | 23.3 | 22.6 |
| 67.5° | 5635.1 | 2174.5 | 85.2 | 61.3 | 48.0 | 36.6 | 30.0 | 26.6 | 20.6 | 18.0 | 17.3 |
| 70° | 4223.2 | 1484.5 | 70.6 | 52.6 | 40.0 | 31.3 | 25.3 | 24.0 | 19.3 | 17.3 | 16.0 |
| 72.5° | 2477.6 | 801.2 | 59.3 | 46.0 | 34.0 | 26.0 | 20.6 | 22.0 | 19.3 | 16.0 | 14.7 |
| 75° | 989.7 | 266.4 | 47.3 | 36.6 | 27.3 | 18.6 | 17.3 | 18.0 | 17.3 | 14.7 | 12.0 |
| 77.5° | 225.8 | 83.9 | 36.6 | 28.6 | 21.3 | 12.0 | 14.0 | 15.3 | 15.3 | 12.0 | 8.7 |
| 80° | 70.6 | 33.3 | 21.3 | 18.0 | 15.3 | 6.7 | 10.0 | 10.7 | 7.3 | 3.3 | 0.0 |
| 82.5° | 22.6 | 9.3 | 7.3 | 7.3 | 6.7 | 1.3 | 2.0 | 1.3 | 0.0 | 0.0 | 0.0 |
| 85° | 8.7 | 6.0 | 4.7 | 4.7 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 3.3 | 2.7 | 2.0 | 2.7 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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)