

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: P367805

Luminaire Tested: **MSA-SA3B-727-U-T4FT-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367805
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-13)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA3B-727-U-T4FT-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9206 lumens
Efficiency: N/A
Efficacy: 73.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

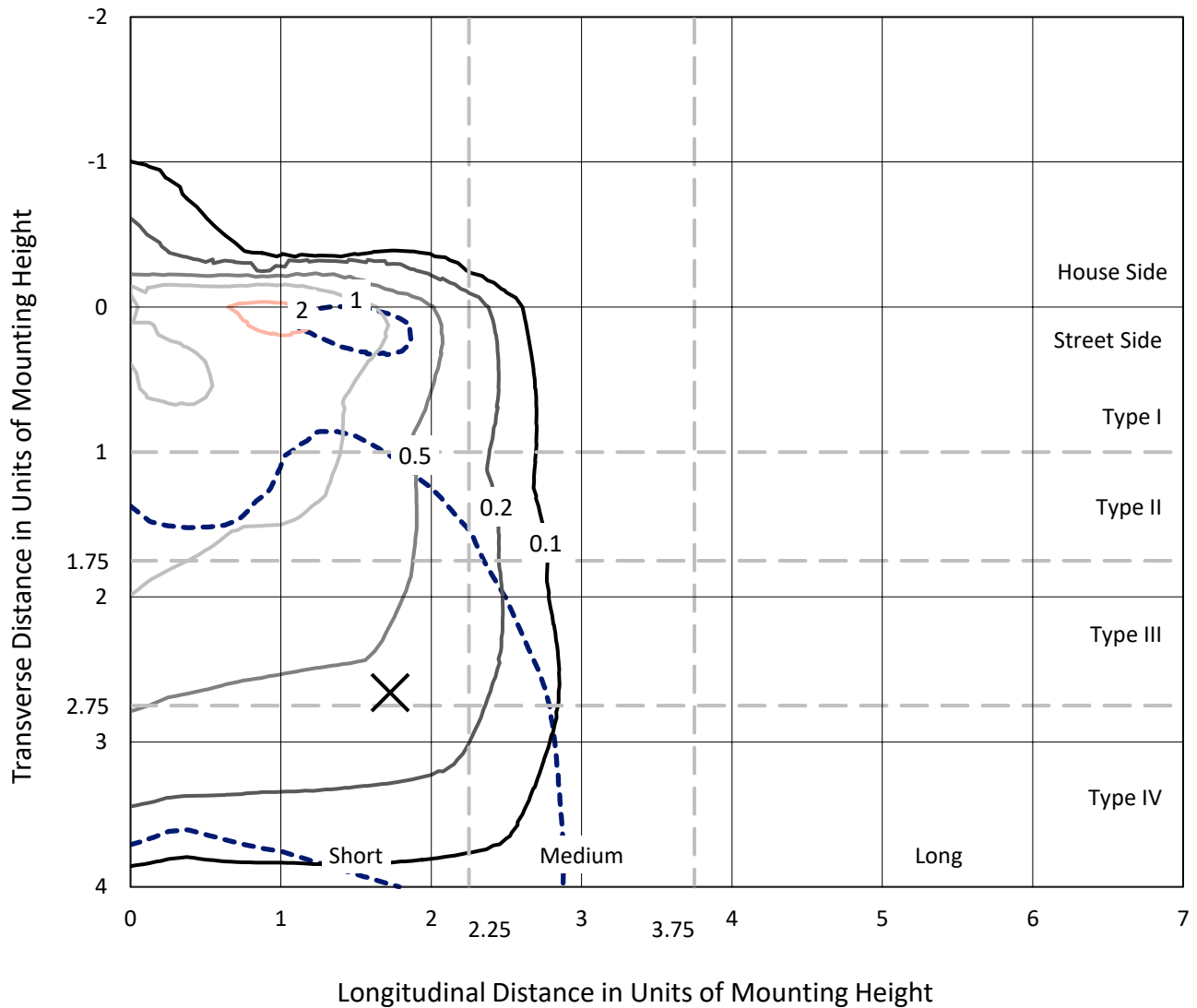
Input Watts (W): 126
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P367805
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Iso-Footcandle Lines of Horizontal Illumination

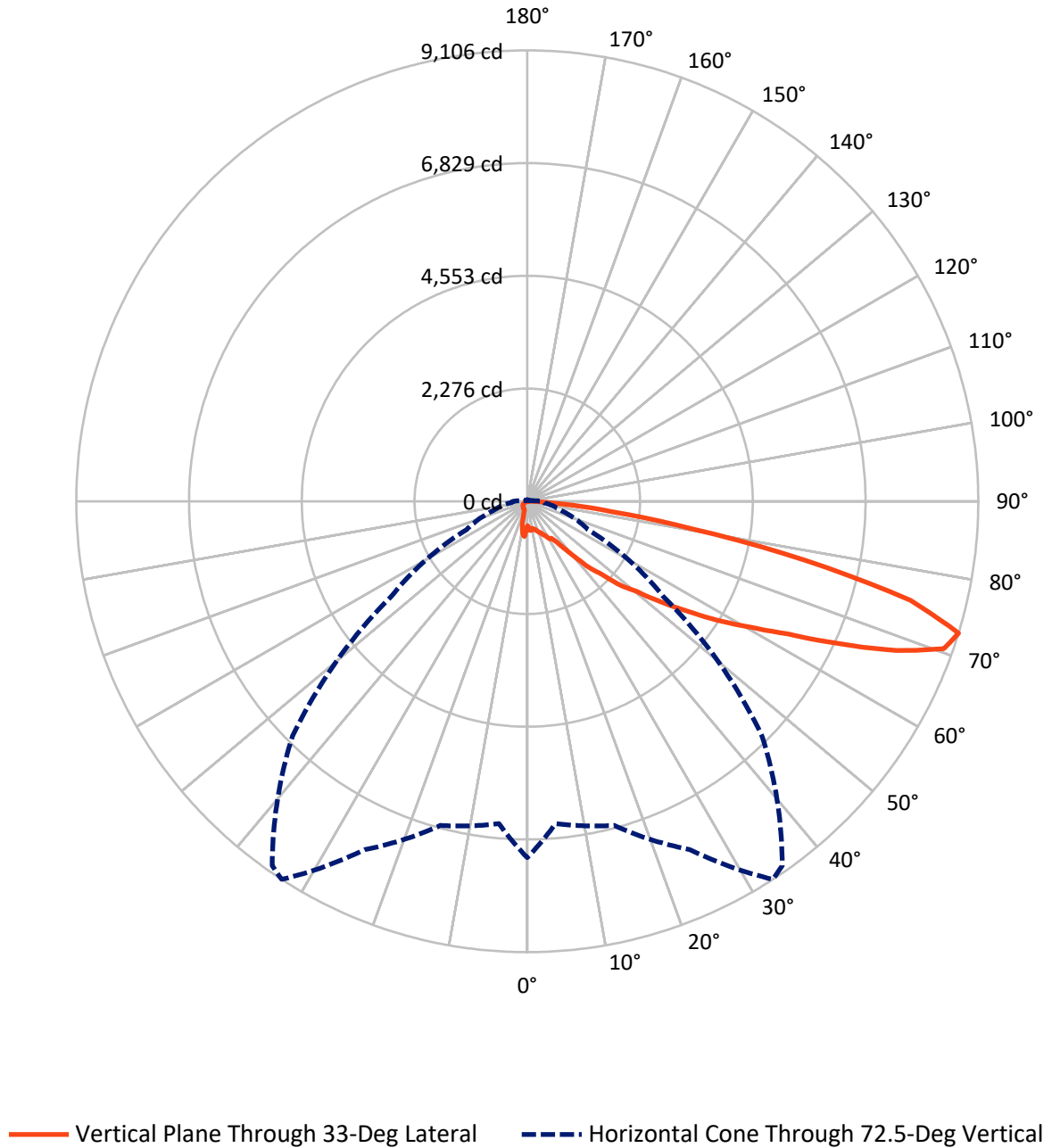
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.3 fc
 Type IV - Short - N/A

REPORT NUMBER: P367805
CATALOG NUMBER: MSA-SA3B-727-U-T4FT-HSS

Luminous Intensity Polar Plot



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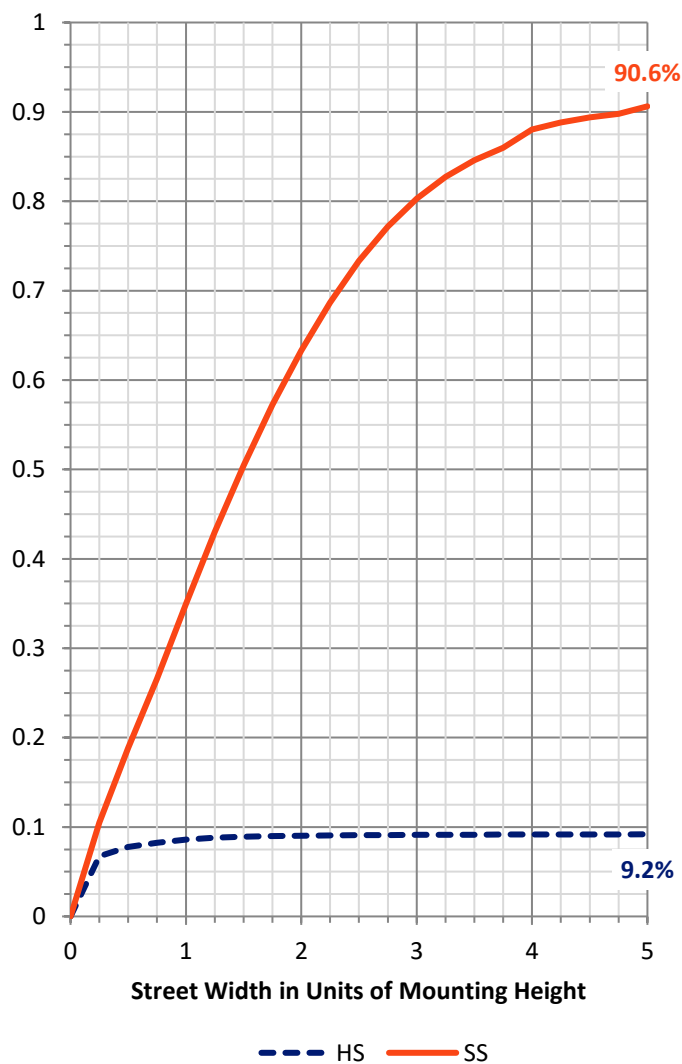
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 851.2 | 0.0 | 851.2 |
| | % Fixture | 9.2 | 0.0 | 9.2 |
| Street Side | Lumens | 8354.8 | 0.0 | 8354.8 |
| | % Fixture | 90.8 | 0.0 | 90.8 |
| Total | Lumens | 9206.0 | 0.0 | 9206.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 63.4 | 0.7 |
| 10°-20° | 188.8 | 2.1 |
| 20°-30° | 320.3 | 3.5 |
| 30°-40° | 586.1 | 6.4 |
| 40°-50° | 1237.1 | 13.4 |
| 50°-60° | 2069.7 | 22.5 |
| 60°-70° | 2770.4 | 30.1 |
| 70°-80° | 1809.7 | 19.7 |
| 80°-90° | 160.4 | 1.7 |
| 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° | 9206.0 | 100.0 |
| 0°-180° | 9206.0 | 100.0 |

Coefficient of Utilization

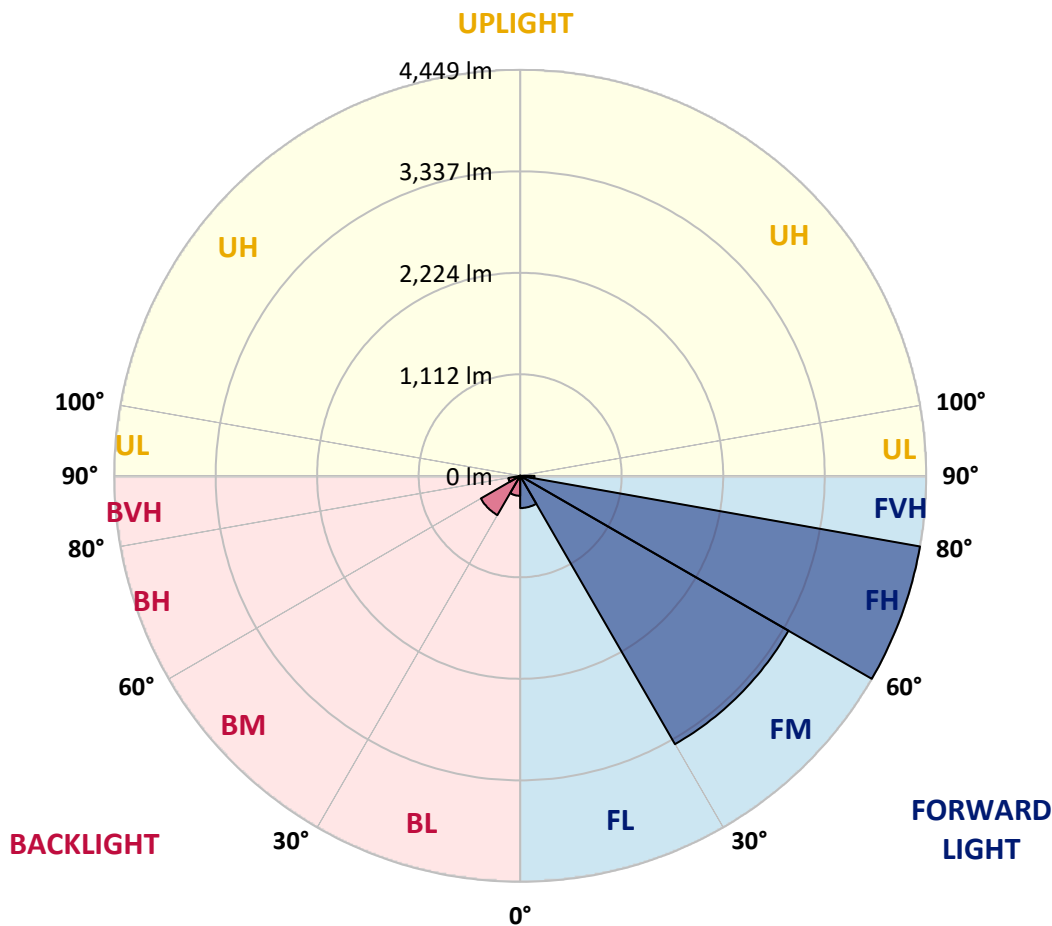


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 353.4 | 3.8 | | | |
| FM (30°-60°) | 3395.3 | 36.9 | | | |
| FH (60°-80°) | 4448.7 | 48.3 | | | G2/5000 |
| FVH (80°-90°) | 157.3 | 1.7 | | | G2/225 |
| BL (0°-30°) | 219.1 | 2.4 | B1/500 | | |
| BM (30°-60°) | 497.6 | 5.4 | B1/1000 | | |
| BH (60°-80°) | 131.4 | 1.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 3.1 | 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 IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 |
| 2.5° | 583.7 | 561.2 | 528.5 | 530.5 | 536.2 | 540.8 | 553.0 | 547.9 | 538.2 | 537.7 | 583.7 |
| 5° | 618.5 | 593.4 | 591.4 | 594.4 | 592.9 | 601.1 | 590.9 | 624.1 | 652.2 | 685.9 | 740.1 |
| 7.5° | 601.6 | 589.8 | 575.0 | 590.3 | 589.8 | 585.7 | 592.4 | 659.9 | 727.8 | 770.8 | 860.2 |
| 10° | 553.0 | 539.7 | 551.0 | 556.1 | 552.5 | 570.4 | 614.9 | 670.1 | 751.3 | 841.3 | 884.7 |
| 12.5° | 539.2 | 547.4 | 551.5 | 551.5 | 585.7 | 594.9 | 662.9 | 715.1 | 811.7 | 882.7 | 1008.9 |
| 15° | 592.9 | 608.7 | 580.6 | 574.5 | 585.2 | 590.3 | 666.0 | 728.9 | 852.5 | 982.4 | 1088.2 |
| 17.5° | 678.3 | 677.2 | 633.8 | 609.8 | 626.6 | 638.9 | 680.8 | 754.4 | 827.0 | 1060.6 | 1213.9 |
| 20° | 737.0 | 738.1 | 659.9 | 609.8 | 665.5 | 672.6 | 719.1 | 777.9 | 835.2 | 1099.9 | 1296.2 |
| 22.5° | 812.7 | 785.6 | 699.2 | 650.7 | 688.5 | 695.1 | 746.2 | 792.7 | 877.1 | 1095.3 | 1401.5 |
| 25° | 874.5 | 857.1 | 748.3 | 714.5 | 748.3 | 739.1 | 785.6 | 855.6 | 922.1 | 1168.4 | 1463.3 |
| 27.5° | 970.6 | 941.0 | 783.0 | 789.2 | 787.1 | 793.8 | 804.5 | 911.8 | 1001.3 | 1172.0 | 1606.4 |
| 30° | 1060.1 | 1042.7 | 860.7 | 860.7 | 880.7 | 867.9 | 875.5 | 1005.4 | 1078.0 | 1254.8 | 1767.5 |
| 32.5° | 1152.6 | 1153.6 | 952.2 | 903.7 | 887.8 | 940.5 | 992.1 | 1050.9 | 1170.5 | 1396.9 | 2013.8 |
| 35° | 1397.4 | 1377.0 | 1127.5 | 1006.4 | 993.6 | 990.5 | 1073.4 | 1232.3 | 1334.5 | 1581.9 | 2345.5 |
| 37.5° | 1890.6 | 1819.6 | 1504.7 | 1239.5 | 1191.4 | 1175.1 | 1269.1 | 1432.2 | 1533.9 | 1853.8 | 2894.0 |
| 40° | 2396.6 | 2266.3 | 1916.7 | 1617.7 | 1461.8 | 1391.3 | 1500.6 | 1639.2 | 1820.1 | 2154.4 | 3401.5 |
| 42.5° | 2840.8 | 2679.8 | 2226.9 | 2025.6 | 1822.7 | 1792.0 | 1689.2 | 1914.7 | 2229.0 | 2591.9 | 3898.8 |
| 45° | 3273.7 | 2956.8 | 2503.0 | 2343.5 | 2097.1 | 2114.5 | 2079.7 | 2275.0 | 2653.7 | 3071.3 | 4339.9 |
| 47.5° | 3571.7 | 3287.0 | 2841.3 | 2634.3 | 2535.7 | 2434.0 | 2710.0 | 2912.9 | 3032.0 | 3375.9 | 4721.2 |
| 50° | 3892.7 | 3604.4 | 3132.1 | 2987.5 | 2857.7 | 2960.4 | 3318.7 | 3345.8 | 3336.1 | 3660.1 | 4980.9 |
| 52.5° | 4307.2 | 3967.3 | 3465.9 | 3302.3 | 3375.9 | 3478.2 | 3891.7 | 3896.8 | 3606.5 | 3899.3 | 5167.9 |
| 55° | 4690.5 | 4313.8 | 3910.6 | 3756.2 | 3910.1 | 3996.4 | 4454.9 | 4286.8 | 3763.9 | 4061.9 | 5259.9 |
| 57.5° | 5230.8 | 4794.8 | 4501.9 | 4230.0 | 4541.8 | 4459.0 | 4950.2 | 4700.3 | 3940.7 | 4169.7 | 5226.2 |
| 60° | 5913.7 | 5400.5 | 5107.1 | 4819.3 | 5153.6 | 5209.8 | 5433.7 | 4906.7 | 4009.2 | 4205.0 | 5023.3 |
| 62.5° | 6608.3 | 6092.0 | 5706.1 | 5510.9 | 5890.1 | 6075.2 | 5881.4 | 5009.5 | 3926.9 | 4136.0 | 4563.8 |
| 65° | 7470.0 | 6809.1 | 6358.3 | 6243.8 | 6946.6 | 7218.5 | 6411.0 | 5034.5 | 3768.0 | 3756.2 | 3669.3 |
| 67.5° | 8060.4 | 7416.9 | 7003.4 | 7195.0 | 8044.0 | 8066.0 | 6886.3 | 5042.2 | 3232.8 | 2941.0 | 2408.4 |
| 70° | 8200.4 | 7511.4 | 7326.4 | 7890.7 | 8919.5 | 8643.0 | 7039.6 | 4653.7 | 2397.7 | 1745.5 | 1101.0 |
| 72.5° | 7198.6 | 6535.2 | 6775.9 | 7759.3 | 9105.6 | 8978.8 | 6700.8 | 3357.5 | 1349.9 | 698.2 | 337.8 |
| 75° | 4415.6 | 4014.3 | 5083.1 | 6578.6 | 7992.9 | 7911.1 | 5227.7 | 1734.7 | 543.8 | 279.1 | 126.2 |
| 77.5° | 1920.3 | 1783.3 | 2652.7 | 4365.0 | 5743.4 | 5670.4 | 3063.1 | 638.9 | 281.1 | 196.3 | 63.9 |
| 80° | 635.3 | 616.4 | 1004.9 | 2067.0 | 3364.2 | 3299.8 | 1290.6 | 265.8 | 200.4 | 157.4 | 35.8 |
| 82.5° | 150.8 | 149.8 | 350.6 | 951.2 | 1713.8 | 1660.1 | 396.1 | 146.7 | 145.2 | 124.2 | 18.9 |
| 85° | 37.8 | 38.8 | 97.1 | 389.0 | 696.1 | 613.9 | 103.2 | 73.1 | 102.2 | 84.3 | 9.7 |
| 87.5° | 0.0 | 0.0 | 25.0 | 55.7 | 105.3 | 65.9 | 11.2 | 19.4 | 28.6 | 30.2 | 5.1 |
| 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° | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 | 489.7 |
| 2.5° | 593.9 | 588.3 | 542.3 | 553.5 | 570.9 | 569.4 | 580.6 | 571.9 | 564.3 | 602.1 | 598.5 |
| 5° | 755.4 | 724.8 | 710.5 | 730.4 | 719.7 | 694.6 | 715.6 | 712.0 | 705.9 | 718.6 | 728.3 |
| 7.5° | 876.6 | 848.5 | 835.7 | 793.8 | 732.9 | 684.9 | 692.6 | 674.7 | 657.8 | 677.7 | 698.2 |
| 10° | 916.4 | 901.1 | 899.6 | 817.8 | 760.5 | 691.0 | 608.7 | 537.7 | 518.8 | 493.7 | 505.0 |
| 12.5° | 1024.8 | 1034.0 | 976.2 | 880.7 | 770.3 | 636.9 | 490.7 | 390.0 | 349.1 | 322.5 | 324.0 |
| 15° | 1113.7 | 1145.9 | 1062.1 | 890.4 | 677.7 | 485.6 | 326.6 | 236.1 | 210.6 | 203.9 | 201.9 |
| 17.5° | 1246.1 | 1277.3 | 1088.7 | 821.4 | 546.4 | 329.2 | 210.1 | 184.0 | 185.5 | 190.1 | 189.1 |
| 20° | 1344.2 | 1339.6 | 1065.7 | 699.2 | 402.8 | 215.7 | 175.8 | 172.2 | 180.4 | 193.7 | 190.6 |
| 22.5° | 1438.8 | 1407.1 | 1051.4 | 586.3 | 260.7 | 173.3 | 169.7 | 169.2 | 176.8 | 189.6 | 193.2 |
| 25° | 1506.3 | 1511.4 | 1027.3 | 459.0 | 189.6 | 161.0 | 164.1 | 168.7 | 176.3 | 190.1 | 188.1 |
| 27.5° | 1699.5 | 1556.4 | 927.2 | 333.2 | 160.0 | 154.4 | 162.0 | 171.2 | 173.8 | 191.2 | 191.7 |
| 30° | 1824.7 | 1726.0 | 861.7 | 224.4 | 147.7 | 142.6 | 157.9 | 170.2 | 173.3 | 195.8 | 197.3 |
| 32.5° | 2042.9 | 1799.1 | 786.1 | 166.6 | 137.5 | 139.0 | 148.7 | 165.1 | 179.4 | 203.4 | 204.4 |
| 35° | 2314.3 | 2033.7 | 649.1 | 149.8 | 133.9 | 131.4 | 136.0 | 154.9 | 178.4 | 204.4 | 209.6 |
| 37.5° | 2831.1 | 2174.3 | 514.7 | 145.2 | 133.9 | 129.3 | 133.9 | 145.2 | 175.3 | 214.7 | 225.4 |
| 40° | 3177.1 | 2460.5 | 371.1 | 144.1 | 131.4 | 127.3 | 128.8 | 140.0 | 166.6 | 208.5 | 224.4 |
| 42.5° | 3603.4 | 2581.2 | 273.4 | 141.6 | 128.8 | 122.7 | 123.7 | 138.0 | 157.9 | 195.8 | 207.5 |
| 45° | 3952.5 | 2669.1 | 215.2 | 140.6 | 122.7 | 120.6 | 122.7 | 136.5 | 149.8 | 168.2 | 178.9 |
| 47.5° | 4217.8 | 2771.3 | 172.8 | 133.9 | 121.1 | 120.6 | 118.1 | 127.8 | 136.0 | 140.6 | 147.7 |
| 50° | 4412.0 | 2748.3 | 143.1 | 123.7 | 116.0 | 119.1 | 114.5 | 116.0 | 118.1 | 115.5 | 123.7 |
| 52.5° | 4531.1 | 2665.5 | 119.1 | 111.4 | 109.9 | 112.4 | 106.8 | 102.2 | 98.6 | 96.6 | 101.7 |
| 55° | 4574.5 | 2499.4 | 101.2 | 95.6 | 99.2 | 100.2 | 95.6 | 87.4 | 81.3 | 78.2 | 82.3 |
| 57.5° | 4492.2 | 2246.4 | 87.9 | 79.2 | 87.4 | 87.4 | 81.3 | 72.6 | 65.4 | 60.3 | 64.4 |
| 60° | 4283.7 | 1966.8 | 78.2 | 65.9 | 74.6 | 75.1 | 68.0 | 58.8 | 53.2 | 48.0 | 50.6 |
| 62.5° | 3895.2 | 1662.2 | 68.5 | 57.2 | 64.4 | 64.9 | 56.2 | 47.5 | 43.4 | 37.8 | 39.9 |
| 65° | 3118.3 | 1271.2 | 58.3 | 50.6 | 55.7 | 54.2 | 46.5 | 40.4 | 35.3 | 30.2 | 31.2 |
| 67.5° | 2024.0 | 784.6 | 50.6 | 46.0 | 47.0 | 45.5 | 39.4 | 35.3 | 29.6 | 25.6 | 26.1 |
| 70° | 906.2 | 337.8 | 44.5 | 41.4 | 40.9 | 38.3 | 33.2 | 32.7 | 29.1 | 25.6 | 25.6 |
| 72.5° | 279.6 | 127.3 | 38.3 | 37.3 | 35.3 | 32.2 | 29.1 | 31.2 | 28.6 | 24.5 | 24.0 |
| 75° | 110.4 | 58.3 | 31.7 | 31.7 | 30.7 | 26.6 | 26.1 | 28.1 | 26.6 | 22.5 | 21.5 |
| 77.5° | 57.8 | 36.8 | 26.1 | 27.1 | 26.6 | 20.4 | 23.5 | 25.6 | 24.5 | 18.9 | 15.8 |
| 80° | 34.2 | 22.5 | 19.4 | 22.0 | 21.5 | 14.3 | 17.9 | 16.4 | 11.8 | 5.6 | 1.5 |
| 82.5° | 18.9 | 10.2 | 8.7 | 12.8 | 12.8 | 5.1 | 9.2 | 8.2 | 4.6 | 0.0 | 0.0 |
| 85° | 9.2 | 7.2 | 6.6 | 7.2 | 5.1 | 1.5 | 4.6 | 4.6 | 2.6 | 0.0 | 0.0 |
| 87.5° | 4.6 | 4.1 | 3.1 | 2.6 | 2.0 | 0.0 | 1.5 | 2.0 | 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)