

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: P367758

Luminaire Tested: **MSA-SA3A-760-U-T2**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367758
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-8)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA3A-760-U-T2
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11700 lumens
Efficiency: N/A
Efficacy: 121.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B2 - U0 - G2

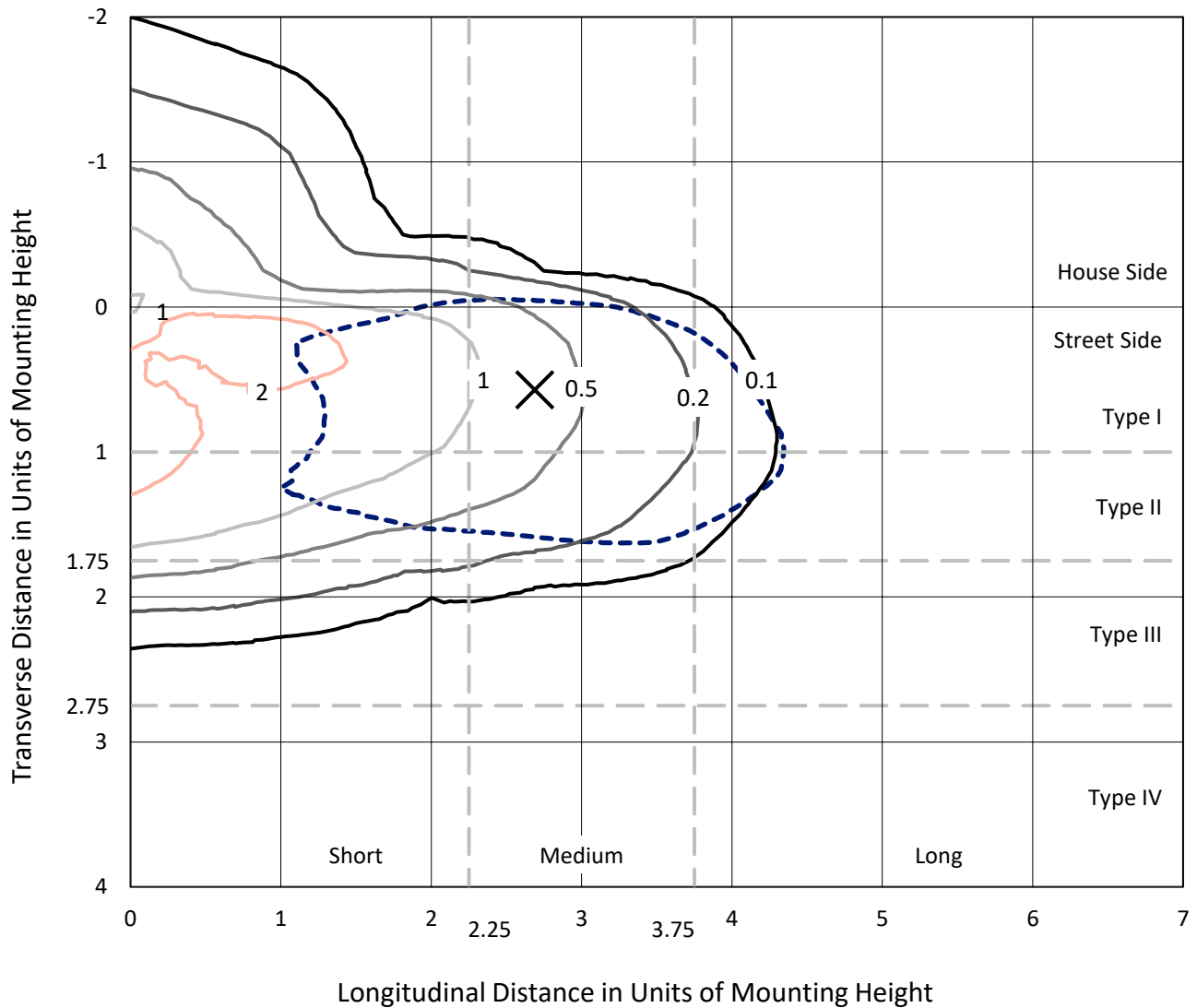
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

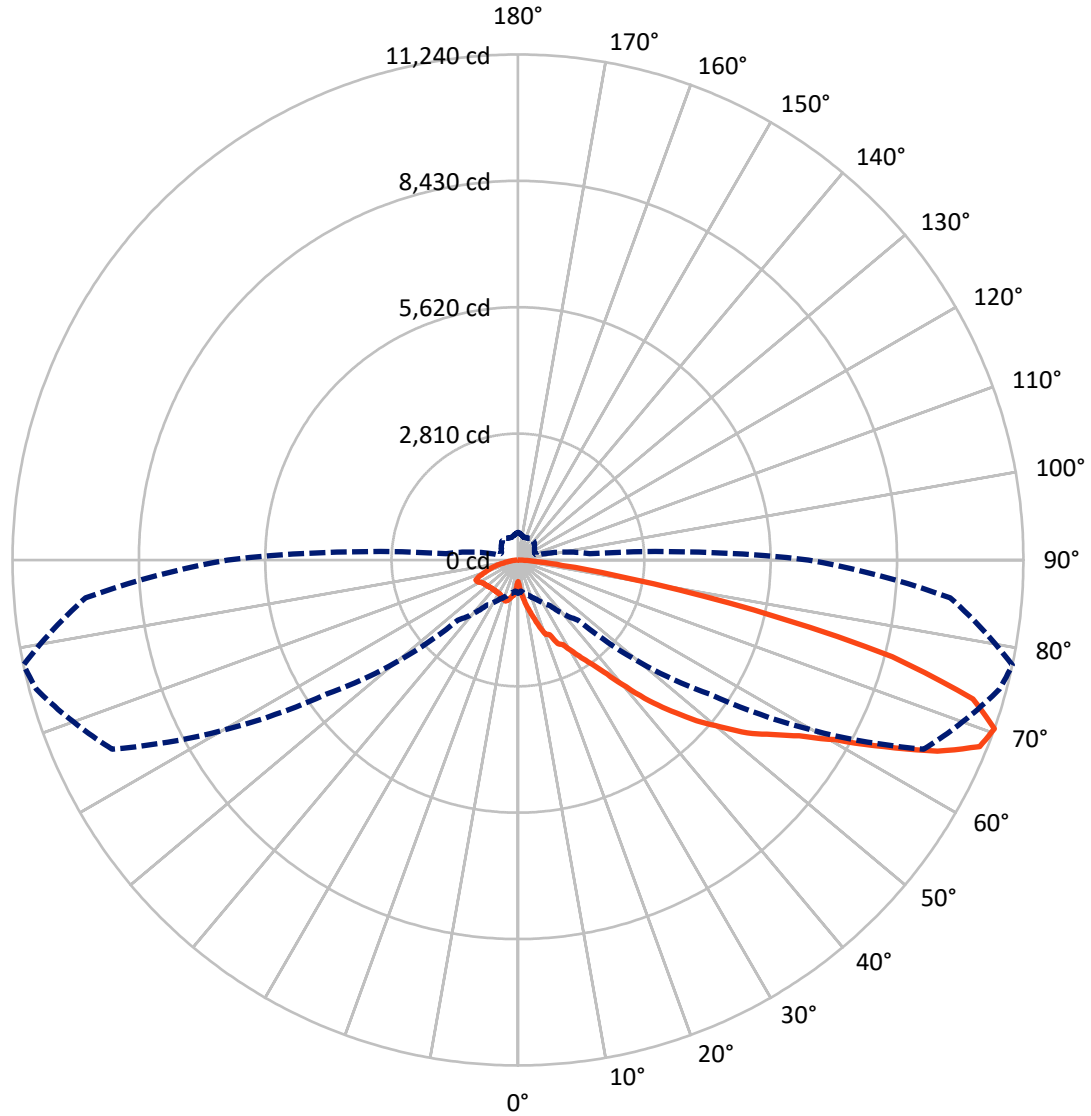
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.8 fc
 Type II - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 78-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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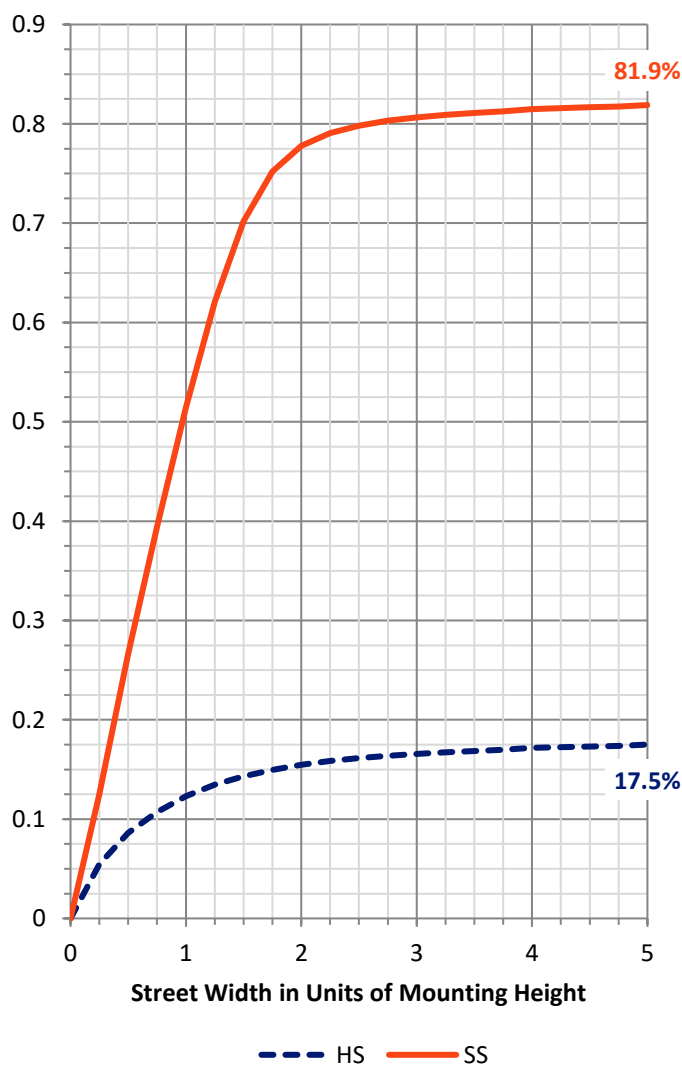
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2088.3 | 0.0 | 2088.3 |
| | % Fixture | 17.8 | 0.0 | 17.8 |
| Street Side | Lumens | 9611.7 | 0.0 | 9611.7 |
| | % Fixture | 82.2 | 0.0 | 82.2 |
| Total | Lumens | 11700.0 | 0.0 | 11700.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 73.7 | 0.6 |
| 10°-20° | 324.8 | 2.8 |
| 20°-30° | 625.2 | 5.3 |
| 30°-40° | 1053.0 | 9.0 |
| 40°-50° | 1822.0 | 15.6 |
| 50°-60° | 2751.0 | 23.5 |
| 60°-70° | 3047.1 | 26.0 |
| 70°-80° | 1756.8 | 15.0 |
| 80°-90° | 246.4 | 2.1 |
| 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° | 11700.0 | 100.0 |
| 0°-180° | 11700.0 | 100.0 |

Coefficient of Utilization



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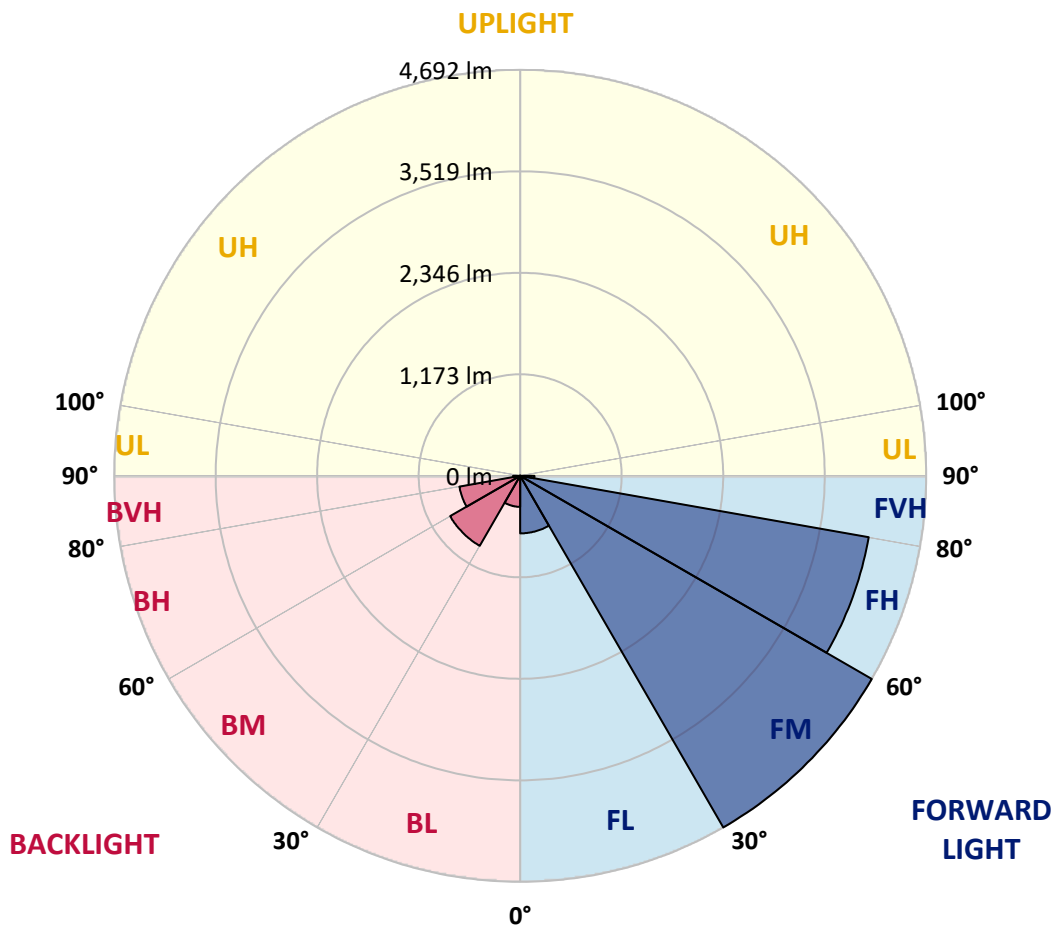
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 665.1 | 5.7 | | | |
| FM | (30°-60°) | 4692.0 | 40.1 | | | |
| FH | (60°-80°) | 4090.2 | 35.0 | | | G2/5000 |
| FVH | (80°-90°) | 164.4 | 1.4 | | | G2/225 |
| BL | (0°-30°) | 358.6 | 3.1 | B1/500 | | |
| BM | (30°-60°) | 934.0 | 8.0 | B1/1000 | | |
| BH | (60°-80°) | 713.7 | 6.1 | B2/1000 | | G2/1000 |
| BVH | (80°-90°) | 82.0 | 0.7 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 78° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------|
| 0° | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 |
| 2.5° | 614.1 | 592.1 | 559.0 | 572.6 | 589.2 | 591.1 | 585.8 | 555.5 | 545.3 | 568.2 | 575.1 |
| 5° | 860.4 | 823.3 | 800.9 | 793.6 | 768.7 | 717.0 | 754.1 | 735.0 | 738.9 | 727.7 | 749.7 |
| 7.5° | 1067.7 | 1042.8 | 1009.6 | 1000.4 | 943.3 | 902.8 | 928.2 | 919.9 | 879.9 | 864.3 | 889.2 |
| 10° | 1173.0 | 1145.7 | 1147.2 | 1127.2 | 1112.1 | 1116.0 | 1103.3 | 1066.7 | 1036.9 | 1016.0 | 956.0 |
| 12.5° | 1236.4 | 1243.3 | 1279.8 | 1269.6 | 1326.7 | 1373.5 | 1337.9 | 1283.7 | 1189.6 | 1170.6 | 1111.1 |
| 15° | 1387.1 | 1412.5 | 1378.4 | 1394.0 | 1418.4 | 1508.1 | 1493.5 | 1481.8 | 1382.3 | 1345.2 | 1235.5 |
| 17.5° | 1542.2 | 1547.1 | 1495.4 | 1487.1 | 1545.7 | 1591.0 | 1648.1 | 1582.2 | 1594.4 | 1568.6 | 1391.0 |
| 20° | 1575.4 | 1609.1 | 1534.9 | 1483.7 | 1604.2 | 1693.9 | 1764.7 | 1694.9 | 1759.3 | 1766.1 | 1519.3 |
| 22.5° | 1696.9 | 1656.4 | 1558.8 | 1508.6 | 1613.9 | 1724.2 | 1839.3 | 1878.3 | 1857.8 | 1800.3 | 1643.2 |
| 25° | 1781.2 | 1759.8 | 1660.3 | 1604.7 | 1644.7 | 1746.1 | 1948.1 | 2050.0 | 2068.0 | 2060.2 | 1761.2 |
| 27.5° | 1937.8 | 1948.5 | 1743.7 | 1759.3 | 1703.7 | 1713.0 | 2013.4 | 2277.8 | 2165.1 | 2133.9 | 1907.6 |
| 30° | 2185.1 | 2137.3 | 1907.6 | 1920.3 | 1828.1 | 1812.5 | 2151.4 | 2474.3 | 2373.4 | 2335.8 | 2028.0 |
| 32.5° | 2443.1 | 2447.5 | 2168.5 | 2060.2 | 2011.0 | 1995.4 | 2124.1 | 2577.2 | 2636.7 | 2588.0 | 2210.0 |
| 35° | 2807.0 | 2781.6 | 2451.4 | 2309.0 | 2131.0 | 2103.6 | 2318.7 | 2875.7 | 2985.0 | 2848.4 | 2426.0 |
| 37.5° | 3361.0 | 3284.5 | 2900.1 | 2570.9 | 2439.2 | 2408.0 | 2596.8 | 3143.5 | 3389.3 | 3219.6 | 2779.2 |
| 40° | 3805.9 | 3650.3 | 3301.1 | 2900.1 | 2677.2 | 2715.8 | 2794.3 | 3468.4 | 3808.8 | 3713.2 | 3106.0 |
| 42.5° | 4160.5 | 4022.4 | 3584.9 | 3303.0 | 3000.1 | 2952.3 | 3038.2 | 3870.7 | 4379.5 | 4285.8 | 3513.7 |
| 45° | 4500.4 | 4219.5 | 3903.9 | 3650.3 | 3359.1 | 3417.1 | 3404.5 | 4281.4 | 5079.4 | 4791.1 | 3874.2 |
| 47.5° | 4836.0 | 4572.1 | 4241.9 | 3901.0 | 3607.8 | 3969.3 | 3834.2 | 4586.8 | 5551.5 | 5337.9 | 4253.6 |
| 50° | 5267.2 | 4976.9 | 4600.9 | 4258.0 | 4082.4 | 4346.8 | 4120.0 | 4845.3 | 6080.2 | 5829.5 | 4611.6 |
| 52.5° | 5553.5 | 5271.1 | 4941.3 | 4696.5 | 4680.4 | 4578.5 | 4520.4 | 5172.5 | 6543.6 | 6391.4 | 4991.1 |
| 55° | 5519.8 | 5247.6 | 5098.4 | 5125.2 | 5324.2 | 4980.4 | 4933.1 | 5656.9 | 7026.9 | 6850.9 | 5400.8 |
| 57.5° | 5097.9 | 4800.9 | 4832.6 | 4991.6 | 5526.1 | 5686.1 | 5605.7 | 6174.4 | 7458.1 | 7378.1 | 5907.6 |
| 60° | 3971.2 | 3818.6 | 4076.6 | 4367.3 | 5255.9 | 5892.9 | 6458.7 | 6805.5 | 7988.8 | 8116.6 | 6703.6 |
| 62.5° | 2579.7 | 2375.8 | 2783.6 | 3277.2 | 4449.7 | 5756.4 | 7327.4 | 8002.4 | 8857.9 | 9148.1 | 7913.2 |
| 65° | 1336.4 | 1303.7 | 1589.1 | 2042.7 | 3097.7 | 4908.2 | 7633.7 | 9257.9 | 9914.4 | 10252.4 | 9068.6 |
| 67.5° | 971.6 | 911.1 | 1043.3 | 1310.1 | 1891.0 | 3346.9 | 7053.3 | 10218.3 | 10762.6 | 11072.3 | 9740.3 |
| 70° | 739.9 | 695.0 | 796.0 | 961.3 | 1235.0 | 1890.5 | 5206.7 | 9956.3 | 11089.9 | 11240.1 | 9651.0 |
| 72.5° | 554.1 | 515.5 | 603.8 | 758.0 | 951.6 | 1064.3 | 3077.7 | 8186.3 | 10531.4 | 10582.6 | 8661.9 |
| 75° | 442.4 | 412.6 | 450.7 | 598.5 | 775.5 | 724.3 | 1634.9 | 5931.0 | 8556.5 | 8600.4 | 6616.3 |
| 77.5° | 362.9 | 337.5 | 353.1 | 448.7 | 603.3 | 544.8 | 811.1 | 3772.7 | 5432.5 | 5365.2 | 3722.5 |
| 80° | 296.1 | 274.1 | 281.4 | 324.4 | 459.5 | 406.8 | 455.6 | 1968.0 | 2591.4 | 2487.0 | 1548.1 |
| 82.5° | 227.8 | 209.2 | 223.9 | 238.5 | 332.6 | 292.2 | 265.8 | 895.5 | 1061.3 | 988.7 | 567.7 |
| 85° | 152.7 | 135.6 | 194.6 | 179.0 | 217.5 | 179.5 | 145.3 | 356.5 | 395.6 | 368.7 | 199.5 |
| 87.5° | 41.9 | 39.5 | 65.4 | 89.3 | 89.3 | 67.8 | 53.2 | 86.3 | 110.2 | 96.6 | 46.8 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 0° | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 | 477.0 |
| 2.5° | 578.0 | 567.2 | 539.0 | 536.5 | 543.3 | 544.3 | 539.9 | 529.7 | 524.3 | 553.6 | 549.2 |
| 5° | 744.3 | 706.3 | 683.3 | 662.4 | 633.1 | 612.1 | 617.5 | 632.1 | 637.0 | 658.9 | 661.4 |
| 7.5° | 873.6 | 823.3 | 773.1 | 705.8 | 661.4 | 633.1 | 654.6 | 670.2 | 682.4 | 713.6 | 726.3 |
| 10° | 929.6 | 875.0 | 803.8 | 733.1 | 720.9 | 725.8 | 713.6 | 717.5 | 736.5 | 738.0 | 744.3 |
| 12.5° | 1034.0 | 972.1 | 843.8 | 779.9 | 776.5 | 786.7 | 782.3 | 800.4 | 813.6 | 849.2 | 834.0 |
| 15° | 1134.0 | 1055.0 | 874.0 | 808.7 | 794.5 | 815.0 | 838.9 | 869.2 | 897.5 | 931.1 | 914.0 |
| 17.5° | 1255.5 | 1136.4 | 875.5 | 795.5 | 798.0 | 841.8 | 866.7 | 883.3 | 967.7 | 1014.0 | 990.6 |
| 20° | 1332.0 | 1144.7 | 842.8 | 762.8 | 798.0 | 837.5 | 872.1 | 890.1 | 984.8 | 1054.5 | 1070.6 |
| 22.5° | 1401.3 | 1147.7 | 817.5 | 745.3 | 767.7 | 819.9 | 872.1 | 912.1 | 972.6 | 1039.4 | 1041.8 |
| 25° | 1439.3 | 1145.2 | 784.8 | 746.7 | 767.2 | 793.1 | 839.4 | 876.0 | 920.9 | 1014.0 | 1016.5 |
| 27.5° | 1536.9 | 1113.5 | 752.6 | 752.6 | 763.3 | 764.3 | 823.3 | 844.8 | 851.1 | 936.0 | 951.1 |
| 30° | 1565.2 | 1120.3 | 748.7 | 751.6 | 757.0 | 747.2 | 773.1 | 787.2 | 796.5 | 869.6 | 872.1 |
| 32.5° | 1610.5 | 1065.7 | 760.4 | 742.8 | 736.0 | 734.5 | 740.9 | 753.6 | 757.5 | 802.3 | 810.6 |
| 35° | 1665.6 | 1043.8 | 764.3 | 740.4 | 726.7 | 719.4 | 738.4 | 722.8 | 735.0 | 787.7 | 793.6 |
| 37.5° | 1845.1 | 1013.5 | 784.3 | 740.4 | 722.8 | 714.5 | 705.3 | 712.6 | 756.0 | 806.7 | 837.9 |
| 40° | 1959.8 | 1022.8 | 779.4 | 747.7 | 709.7 | 701.9 | 686.3 | 713.1 | 780.4 | 870.1 | 893.5 |
| 42.5° | 2160.7 | 1028.2 | 785.3 | 744.3 | 714.1 | 683.8 | 694.1 | 723.3 | 794.0 | 845.3 | 881.4 |
| 45° | 2368.5 | 1044.7 | 781.4 | 734.1 | 704.3 | 718.4 | 704.3 | 730.6 | 764.3 | 765.8 | 793.1 |
| 47.5° | 2572.4 | 1111.6 | 773.1 | 713.1 | 701.9 | 738.9 | 702.8 | 707.2 | 709.7 | 718.4 | 750.6 |
| 50° | 2811.8 | 1182.8 | 761.4 | 683.8 | 705.3 | 739.9 | 708.2 | 686.7 | 684.3 | 713.1 | 749.2 |
| 52.5° | 3084.0 | 1263.3 | 746.2 | 655.5 | 685.3 | 730.6 | 726.7 | 688.2 | 667.2 | 695.0 | 731.1 |
| 55° | 3404.5 | 1355.0 | 728.7 | 627.2 | 663.3 | 731.6 | 737.0 | 678.0 | 667.7 | 698.0 | 736.5 |
| 57.5° | 3830.3 | 1487.6 | 694.5 | 586.3 | 636.5 | 716.5 | 710.6 | 666.3 | 656.5 | 688.7 | 728.7 |
| 60° | 4557.0 | 1742.7 | 645.8 | 545.8 | 607.7 | 679.4 | 689.2 | 645.3 | 635.5 | 671.1 | 713.1 |
| 62.5° | 5530.0 | 2049.5 | 586.8 | 506.3 | 572.6 | 639.4 | 662.4 | 615.0 | 614.1 | 659.4 | 703.3 |
| 65° | 6435.8 | 2223.6 | 525.8 | 470.2 | 536.5 | 602.4 | 632.1 | 586.8 | 588.7 | 645.8 | 689.7 |
| 67.5° | 6812.3 | 2018.8 | 471.2 | 438.0 | 495.1 | 559.9 | 607.2 | 564.8 | 558.5 | 627.2 | 667.7 |
| 70° | 6458.7 | 1603.7 | 423.9 | 403.9 | 448.2 | 514.1 | 572.6 | 535.5 | 520.9 | 583.3 | 615.0 |
| 72.5° | 5714.9 | 1336.9 | 379.5 | 363.9 | 407.3 | 465.8 | 525.8 | 496.0 | 477.0 | 524.8 | 553.1 |
| 75° | 4467.3 | 1096.9 | 328.7 | 324.4 | 360.4 | 421.9 | 477.0 | 456.5 | 432.1 | 462.4 | 490.7 |
| 77.5° | 2543.6 | 694.1 | 276.1 | 279.0 | 304.8 | 369.7 | 418.5 | 402.4 | 377.5 | 390.2 | 422.9 |
| 80° | 1017.9 | 350.2 | 221.9 | 223.9 | 245.8 | 303.9 | 346.8 | 340.9 | 315.1 | 325.3 | 347.8 |
| 82.5° | 380.4 | 192.2 | 163.9 | 164.9 | 186.8 | 240.5 | 296.1 | 293.1 | 268.7 | 261.4 | 274.1 |
| 85° | 151.2 | 95.1 | 100.5 | 104.9 | 125.8 | 173.1 | 237.5 | 210.7 | 181.9 | 159.5 | 167.3 |
| 87.5° | 36.1 | 30.2 | 35.1 | 37.1 | 41.0 | 54.1 | 86.8 | 69.7 | 71.7 | 57.6 | 42.9 |
| 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)