

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: P367625

Luminaire Tested: **MSA-SA2D-760-U-T2-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367625
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-9)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2D-760-U-T2-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10172 lumens
Efficiency: N/A
Efficacy: 78.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium
BUG Rating: B1 - U0 - G2

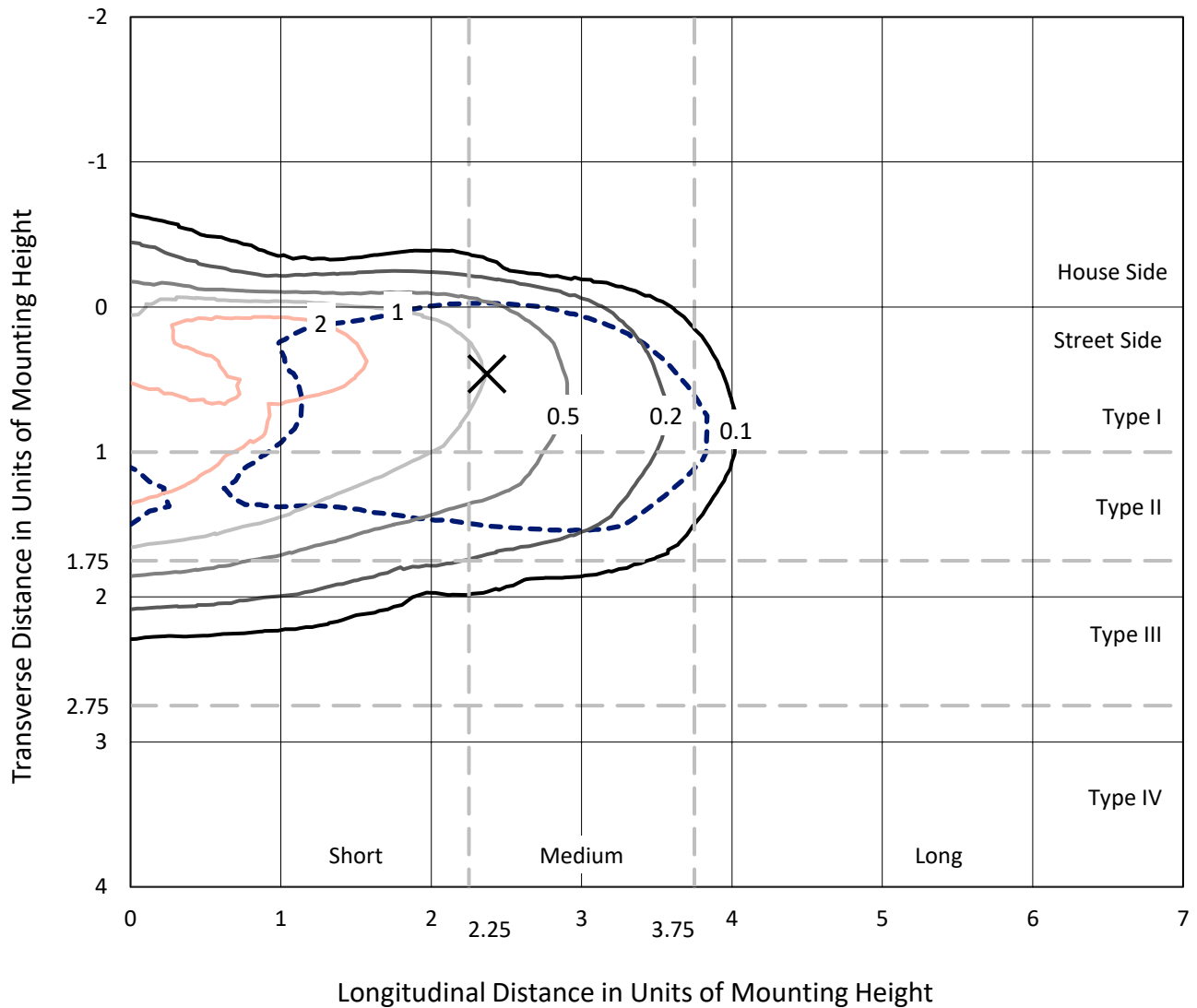
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

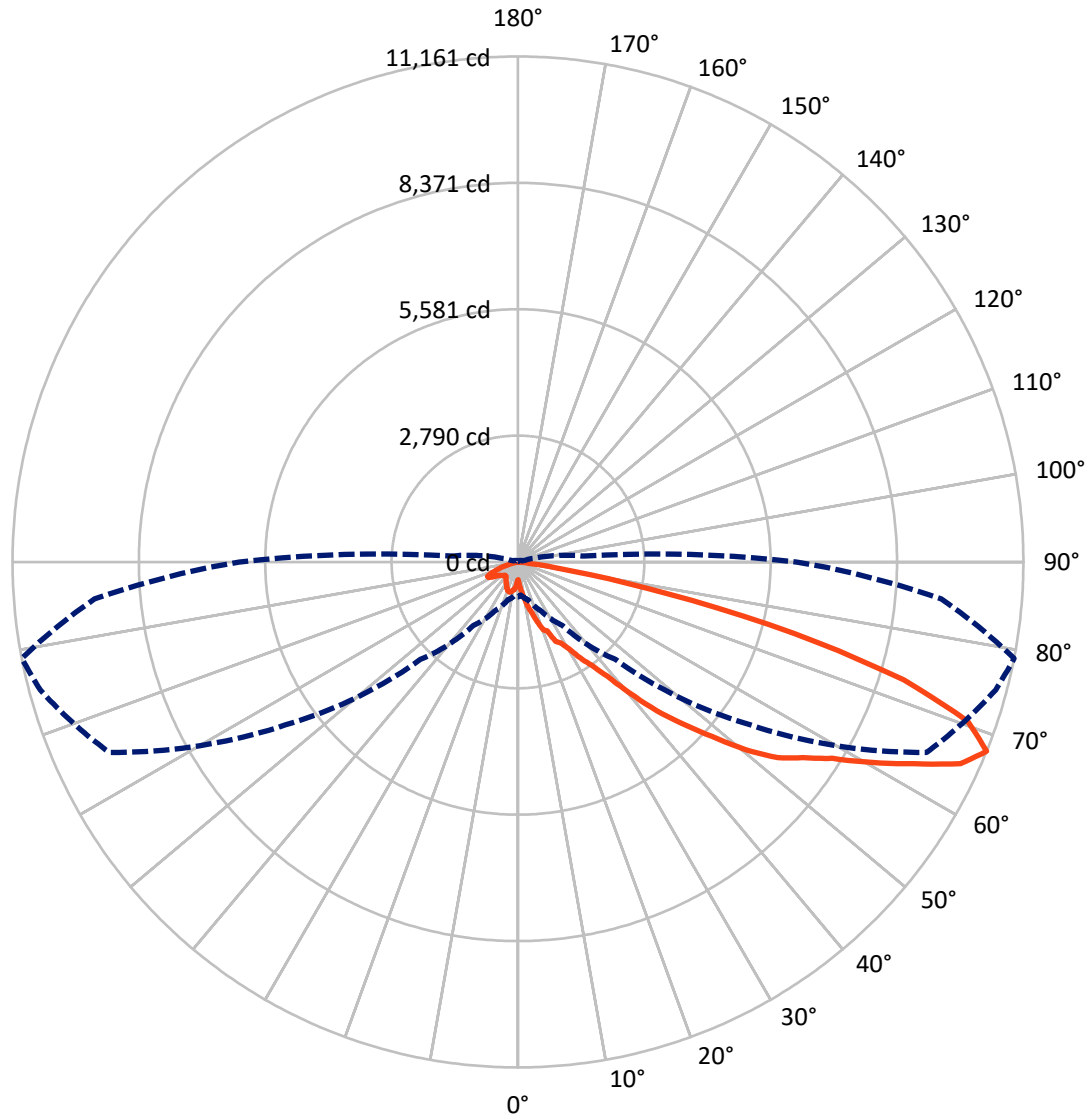
× Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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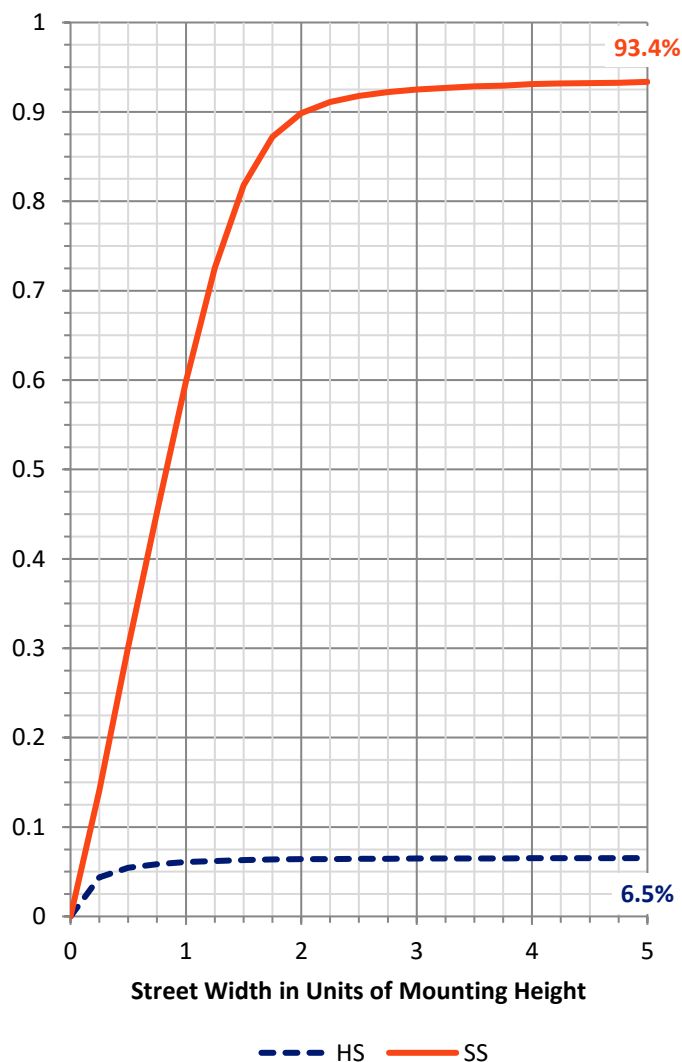
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 668.4 | 0.0 | 668.4 |
| | % Fixture | 6.6 | 0.0 | 6.6 |
| Street Side | Lumens | 9503.6 | 0.0 | 9503.6 |
| | % Fixture | 93.4 | 0.0 | 93.4 |
| Total | Lumens | 10172.0 | 0.0 | 10172.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 57.0 | 0.6 |
| 10°-20° | 227.3 | 2.2 |
| 20°-30° | 438.5 | 4.3 |
| 30°-40° | 861.4 | 8.5 |
| 40°-50° | 1725.5 | 17.0 |
| 50°-60° | 2758.0 | 27.1 |
| 60°-70° | 2775.0 | 27.3 |
| 70°-80° | 1251.9 | 12.3 |
| 80°-90° | 77.5 | 0.8 |
| 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° | 10172.0 | 100.0 |
| 0°-180° | 10172.0 | 100.0 |

Coefficient of Utilization



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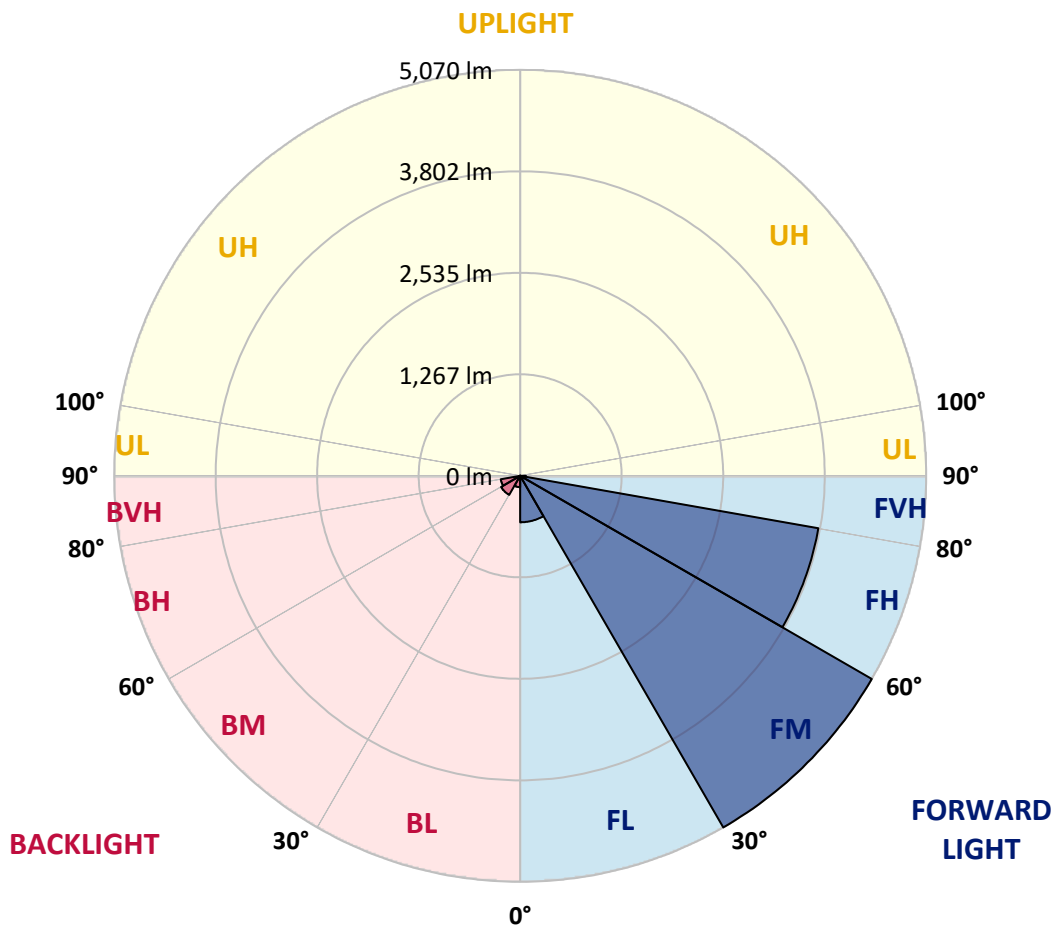
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 580.7 | 5.7 | | | |
| FM (30°-60°) | 5069.9 | 49.8 | | | |
| FH (60°-80°) | 3780.5 | 37.2 | | | G2/5000 |
| FVH (80°-90°) | 72.5 | 0.7 | | | G1/100 |
| BL (0°-30°) | 142.1 | 1.4 | B1/500 | | |
| BM (30°-60°) | 275.0 | 2.7 | B1/1000 | | |
| BH (60°-80°) | 246.4 | 2.4 | B1/500 | | G1/500 |
| BVH (80°-90°) | 4.9 | 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 II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 79° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| 0° | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 |
| 2.5° | 529.3 | 510.3 | 479.4 | 496.8 | 495.7 | 504.7 | 487.8 | 469.3 | 439.6 | 469.3 | 471.6 |
| 5° | 762.0 | 726.7 | 704.3 | 699.8 | 675.1 | 652.1 | 647.1 | 628.0 | 613.4 | 587.1 | 610.6 |
| 7.5° | 949.3 | 933.1 | 893.3 | 888.8 | 828.2 | 794.6 | 805.2 | 796.8 | 741.3 | 713.8 | 736.8 |
| 10° | 1028.9 | 1000.9 | 1006.5 | 1000.9 | 975.1 | 984.7 | 962.8 | 937.5 | 893.3 | 847.8 | 790.6 |
| 12.5° | 1059.8 | 1055.3 | 1101.8 | 1096.2 | 1156.8 | 1229.7 | 1180.9 | 1138.9 | 1036.2 | 1025.0 | 947.1 |
| 15° | 1126.0 | 1154.0 | 1147.3 | 1170.8 | 1209.5 | 1333.4 | 1332.3 | 1342.4 | 1233.6 | 1175.3 | 1062.6 |
| 17.5° | 1184.8 | 1205.6 | 1171.9 | 1198.9 | 1304.3 | 1379.4 | 1479.8 | 1440.5 | 1452.9 | 1393.4 | 1219.0 |
| 20° | 1159.6 | 1183.2 | 1149.5 | 1133.2 | 1318.8 | 1461.3 | 1595.3 | 1566.7 | 1640.7 | 1603.7 | 1363.1 |
| 22.5° | 1317.2 | 1272.9 | 1188.2 | 1135.5 | 1274.0 | 1459.6 | 1636.2 | 1755.7 | 1742.8 | 1651.9 | 1497.2 |
| 25° | 1511.7 | 1484.8 | 1383.3 | 1290.3 | 1302.6 | 1449.5 | 1765.2 | 1940.7 | 1978.8 | 1940.1 | 1624.4 |
| 27.5° | 1774.2 | 1768.0 | 1560.5 | 1520.2 | 1400.2 | 1405.2 | 1785.4 | 2174.0 | 2087.1 | 2026.5 | 1773.0 |
| 30° | 2116.8 | 2068.0 | 1821.8 | 1769.1 | 1591.9 | 1505.0 | 1908.7 | 2375.3 | 2311.3 | 2228.9 | 1912.7 |
| 32.5° | 2485.2 | 2492.5 | 2178.5 | 2004.6 | 1862.2 | 1759.0 | 1860.0 | 2469.5 | 2588.9 | 2522.2 | 2087.1 |
| 35° | 2903.5 | 2936.0 | 2551.9 | 2347.8 | 2070.8 | 1918.8 | 2069.7 | 2758.8 | 2973.0 | 2797.5 | 2320.9 |
| 37.5° | 3547.8 | 3546.6 | 3098.1 | 2691.5 | 2490.2 | 2325.4 | 2419.0 | 3021.8 | 3445.2 | 3198.4 | 2740.3 |
| 40° | 4114.7 | 3991.3 | 3574.1 | 3107.0 | 2793.0 | 2748.2 | 2680.3 | 3381.8 | 3949.3 | 3800.7 | 3113.2 |
| 42.5° | 4538.0 | 4451.1 | 3947.0 | 3583.7 | 3194.5 | 3052.1 | 3028.0 | 3909.4 | 4693.4 | 4485.3 | 3645.3 |
| 45° | 5044.4 | 4759.5 | 4388.3 | 4060.8 | 3664.4 | 3622.9 | 3566.3 | 4444.9 | 5559.1 | 5090.4 | 4107.9 |
| 47.5° | 5498.0 | 5230.0 | 4879.0 | 4458.4 | 4003.1 | 4345.1 | 4127.6 | 4915.4 | 6188.8 | 5748.7 | 4618.2 |
| 50° | 5879.9 | 5595.0 | 5201.9 | 4881.8 | 4686.6 | 4918.8 | 4556.0 | 5302.9 | 6869.0 | 6512.4 | 5095.4 |
| 52.5° | 6074.4 | 5752.0 | 5448.1 | 5250.2 | 5369.6 | 5317.4 | 5136.9 | 5772.2 | 7448.8 | 7181.9 | 5518.2 |
| 55° | 5914.6 | 5599.5 | 5472.2 | 5570.3 | 5933.1 | 5782.3 | 5796.9 | 6499.5 | 7996.1 | 7628.2 | 5886.0 |
| 57.5° | 5205.9 | 4918.2 | 4974.8 | 5243.4 | 5938.7 | 6333.5 | 6549.4 | 7206.0 | 8435.1 | 8184.5 | 6453.5 |
| 60° | 3938.0 | 3706.5 | 3916.2 | 4392.8 | 5380.3 | 6223.6 | 7083.2 | 7912.5 | 9062.6 | 8984.1 | 7312.5 |
| 62.5° | 2405.0 | 2279.4 | 2576.6 | 3171.0 | 4287.4 | 5684.7 | 7394.4 | 8854.6 | 9733.8 | 9817.3 | 8223.7 |
| 65° | 1226.9 | 1170.3 | 1418.1 | 1940.7 | 2896.8 | 4669.8 | 7169.6 | 9440.0 | 10427.4 | 10735.8 | 9092.3 |
| 67.5° | 772.7 | 736.2 | 868.6 | 1183.7 | 1709.1 | 3045.9 | 6277.4 | 9951.9 | 10917.5 | 11161.4 | 9382.2 |
| 70° | 535.5 | 512.5 | 626.9 | 812.5 | 1078.3 | 1640.7 | 4660.8 | 9474.2 | 10528.9 | 10540.1 | 8680.7 |
| 72.5° | 339.8 | 321.9 | 433.4 | 601.7 | 795.7 | 847.3 | 2671.9 | 7434.2 | 9012.7 | 8909.0 | 7029.9 |
| 75° | 220.4 | 211.4 | 275.3 | 440.7 | 611.2 | 522.6 | 1320.5 | 5016.3 | 6462.5 | 6299.9 | 4669.2 |
| 77.5° | 158.1 | 152.5 | 184.5 | 294.4 | 435.1 | 365.6 | 592.1 | 2989.8 | 3705.3 | 3349.8 | 2266.5 |
| 80° | 95.3 | 94.8 | 133.5 | 184.5 | 309.5 | 257.9 | 273.6 | 1357.5 | 1436.6 | 1171.4 | 692.5 |
| 82.5° | 47.7 | 49.3 | 74.6 | 118.9 | 199.1 | 168.8 | 125.0 | 452.0 | 385.8 | 284.3 | 140.2 |
| 85° | 11.2 | 14.0 | 39.3 | 81.9 | 99.8 | 67.3 | 59.4 | 118.3 | 106.0 | 80.2 | 40.9 |
| 87.5° | 0.0 | 0.0 | 12.3 | 19.6 | 26.9 | 11.2 | 20.2 | 22.4 | 28.6 | 22.4 | 8.4 |
| 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° | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 | 392.0 |
| 2.5° | 472.1 | 465.4 | 424.5 | 413.8 | 412.7 | 400.9 | 403.7 | 392.5 | 393.1 | 418.3 | 418.3 |
| 5° | 601.7 | 562.4 | 523.2 | 488.4 | 464.8 | 431.2 | 418.9 | 413.8 | 409.3 | 419.4 | 425.6 |
| 7.5° | 706.5 | 648.8 | 578.1 | 502.4 | 432.3 | 384.1 | 377.4 | 365.0 | 360.6 | 370.6 | 378.5 |
| 10° | 753.1 | 681.3 | 584.3 | 473.8 | 408.2 | 369.0 | 336.4 | 319.1 | 315.7 | 315.1 | 317.9 |
| 12.5° | 851.8 | 762.6 | 591.0 | 463.2 | 392.0 | 348.8 | 311.8 | 282.6 | 255.7 | 258.5 | 255.7 |
| 15° | 930.8 | 825.4 | 591.0 | 437.4 | 352.7 | 309.5 | 244.5 | 229.9 | 226.0 | 232.1 | 227.1 |
| 17.5° | 1050.3 | 887.6 | 561.3 | 391.4 | 319.1 | 240.6 | 215.9 | 214.8 | 222.6 | 231.6 | 226.0 |
| 20° | 1122.0 | 896.1 | 511.4 | 338.7 | 261.9 | 208.6 | 199.6 | 190.6 | 201.9 | 209.2 | 206.4 |
| 22.5° | 1196.6 | 896.6 | 461.5 | 310.6 | 210.8 | 190.1 | 175.5 | 168.2 | 169.9 | 176.6 | 177.8 |
| 25° | 1228.6 | 874.7 | 414.9 | 273.6 | 191.2 | 169.9 | 154.8 | 146.9 | 144.1 | 147.5 | 146.4 |
| 27.5° | 1315.5 | 832.7 | 364.5 | 233.3 | 181.7 | 150.8 | 136.8 | 127.3 | 118.9 | 124.5 | 125.6 |
| 30° | 1327.8 | 819.2 | 337.0 | 207.5 | 169.3 | 133.5 | 121.1 | 111.0 | 104.9 | 112.7 | 112.7 |
| 32.5° | 1367.1 | 745.2 | 323.0 | 196.8 | 156.4 | 123.4 | 106.5 | 99.3 | 98.1 | 103.2 | 103.7 |
| 35° | 1427.6 | 712.7 | 302.2 | 188.4 | 144.7 | 111.6 | 95.9 | 92.5 | 91.4 | 95.3 | 95.3 |
| 37.5° | 1632.9 | 672.3 | 279.2 | 181.1 | 134.6 | 105.4 | 93.1 | 87.5 | 88.0 | 91.4 | 93.6 |
| 40° | 1769.1 | 677.4 | 245.0 | 172.1 | 122.8 | 99.8 | 87.5 | 83.5 | 83.0 | 84.7 | 86.4 |
| 42.5° | 2022.0 | 681.3 | 229.9 | 162.6 | 113.8 | 93.1 | 81.9 | 79.1 | 76.8 | 78.5 | 80.2 |
| 45° | 2304.6 | 702.0 | 222.1 | 154.8 | 108.8 | 89.2 | 76.8 | 75.1 | 70.1 | 71.2 | 73.5 |
| 47.5° | 2577.1 | 777.7 | 212.5 | 143.5 | 104.3 | 86.9 | 71.8 | 67.8 | 64.5 | 63.9 | 66.2 |
| 50° | 2886.7 | 851.2 | 201.9 | 131.2 | 99.8 | 83.5 | 66.7 | 60.6 | 58.3 | 58.3 | 60.0 |
| 52.5° | 3163.7 | 921.3 | 191.8 | 122.8 | 96.4 | 77.4 | 62.2 | 56.1 | 54.4 | 54.4 | 56.6 |
| 55° | 3455.2 | 994.7 | 182.8 | 115.0 | 92.0 | 71.2 | 58.3 | 52.7 | 52.1 | 51.0 | 52.7 |
| 57.5° | 3970.0 | 1155.1 | 171.6 | 108.2 | 85.8 | 66.2 | 55.0 | 49.3 | 48.2 | 46.5 | 48.2 |
| 60° | 4719.7 | 1401.3 | 157.0 | 101.5 | 78.5 | 62.8 | 52.1 | 45.4 | 43.7 | 40.9 | 41.5 |
| 62.5° | 5452.6 | 1600.3 | 140.2 | 93.1 | 71.8 | 59.4 | 47.7 | 40.9 | 38.1 | 34.8 | 35.3 |
| 65° | 6080.6 | 1678.8 | 122.2 | 83.0 | 65.0 | 51.6 | 41.5 | 35.9 | 32.0 | 27.5 | 26.9 |
| 67.5° | 6154.6 | 1482.6 | 104.9 | 73.5 | 58.3 | 43.7 | 35.3 | 32.0 | 25.8 | 21.9 | 20.7 |
| 70° | 5538.9 | 1104.6 | 87.5 | 65.0 | 50.5 | 37.0 | 30.3 | 28.0 | 24.1 | 20.7 | 19.1 |
| 72.5° | 4410.7 | 815.3 | 73.5 | 57.8 | 44.3 | 31.4 | 25.8 | 26.4 | 24.1 | 20.2 | 17.9 |
| 75° | 2916.9 | 466.5 | 60.0 | 48.2 | 37.0 | 25.2 | 23.6 | 23.6 | 23.0 | 19.1 | 16.8 |
| 77.5° | 1403.5 | 201.3 | 46.0 | 38.1 | 29.7 | 19.1 | 21.3 | 21.3 | 21.9 | 17.4 | 14.0 |
| 80° | 398.1 | 60.6 | 28.6 | 25.8 | 21.9 | 12.9 | 16.8 | 16.3 | 14.6 | 10.1 | 6.2 |
| 82.5° | 71.2 | 23.6 | 12.9 | 13.5 | 12.3 | 5.0 | 9.5 | 9.0 | 7.3 | 3.9 | 0.6 |
| 85° | 19.6 | 9.0 | 7.3 | 7.9 | 6.2 | 1.7 | 3.9 | 5.0 | 3.9 | 2.2 | 0.0 |
| 87.5° | 5.0 | 3.9 | 5.0 | 5.6 | 4.5 | 0.6 | 1.7 | 0.6 | 1.7 | 0.6 | 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)