

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: P367475

Luminaire Tested: **MSA-SA2C-750-U-T4FT-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367475  
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-SA2C-750-U-T4FT-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) 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: 9238 lumens  
Efficiency: N/A  
Efficacy: 81.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2

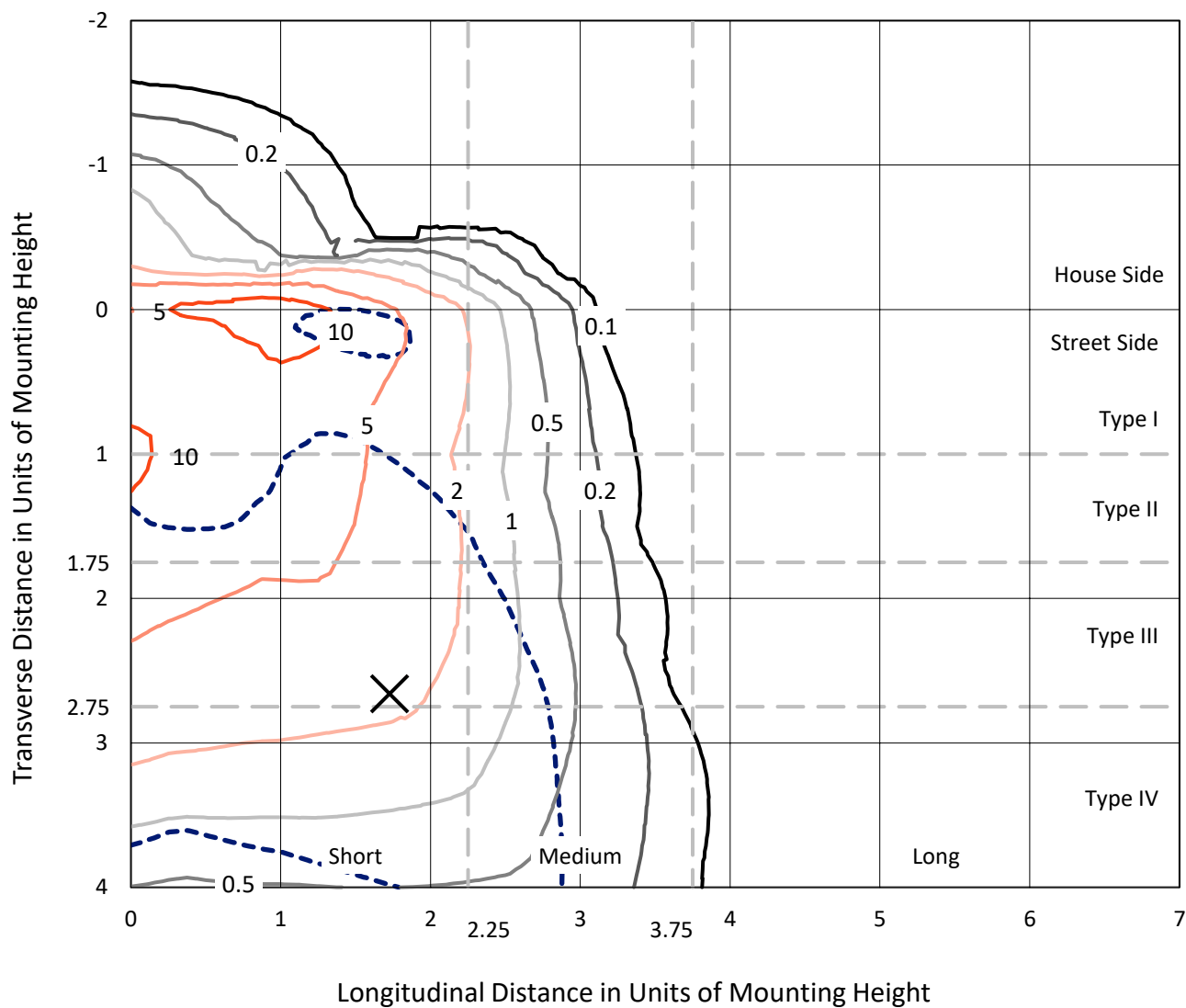
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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## Iso-Footcandle Lines of Horizontal Illumination

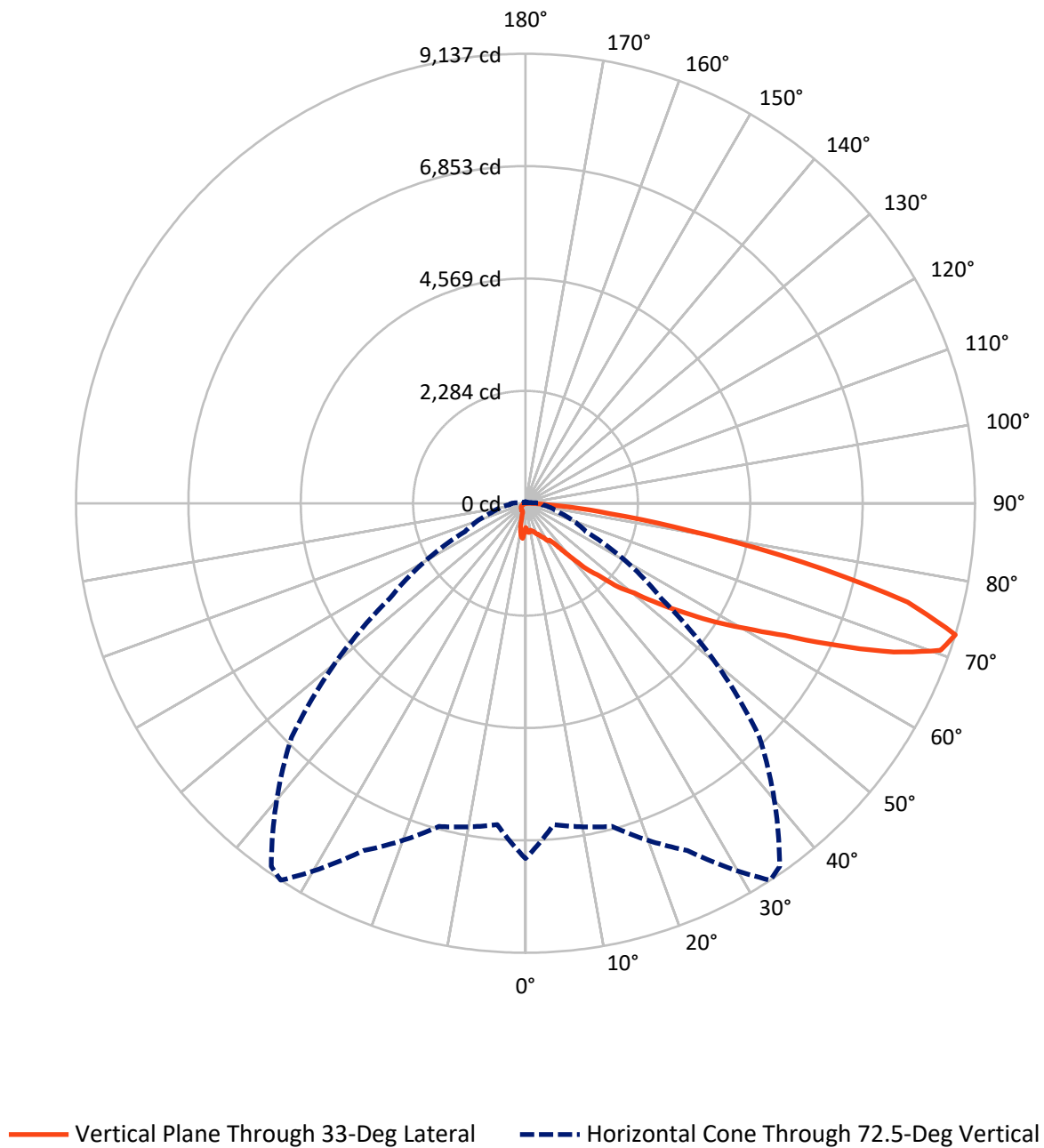
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.5 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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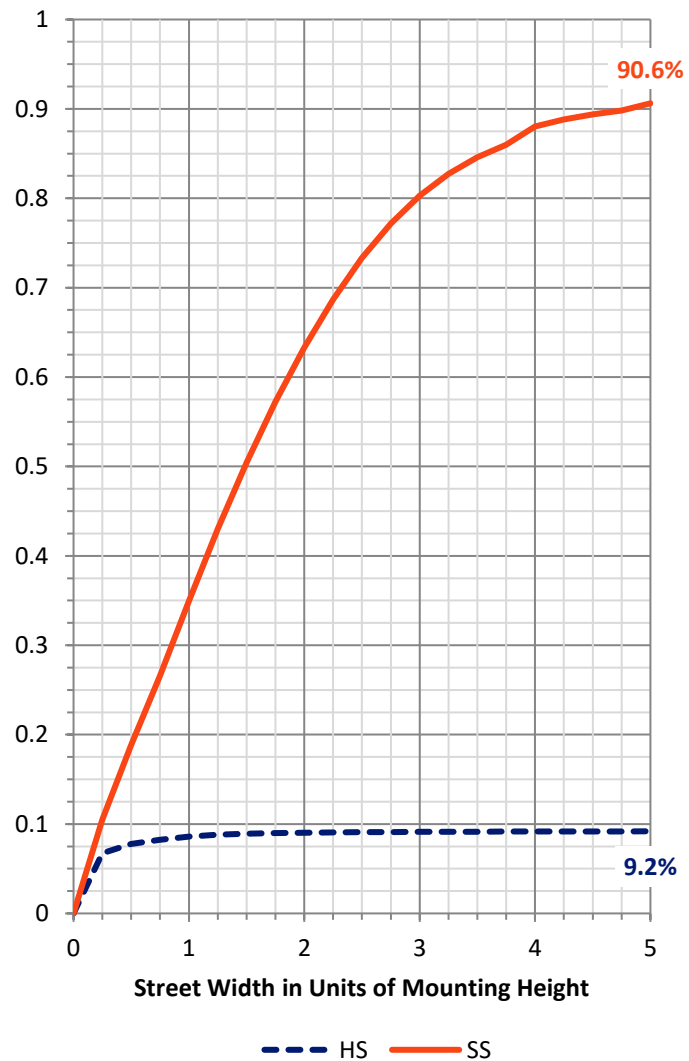
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 854.2    | 0.0    | 854.2  |
|                    | % Fixture | 9.2      | 0.0    | 9.2    |
| <b>Street Side</b> | Lumens    | 8383.8   | 0.0    | 8383.8 |
|                    | % Fixture | 90.8     | 0.0    | 90.8   |
| <b>Total</b>       | Lumens    | 9238.0   | 0.0    | 9238.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 63.6   | 0.7       |
| 10°-20°   | 189.5  | 2.1       |
| 20°-30°   | 321.4  | 3.5       |
| 30°-40°   | 588.2  | 6.4       |
| 40°-50°   | 1241.4 | 13.4      |
| 50°-60°   | 2076.9 | 22.5      |
| 60°-70°   | 2780.1 | 30.1      |
| 70°-80°   | 1816.0 | 19.7      |
| 80°-90°   | 161.0  | 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°    | 9238.0 | 100.0     |
| 0°-180°   | 9238.0 | 100.0     |

**Coefficient of Utilization**



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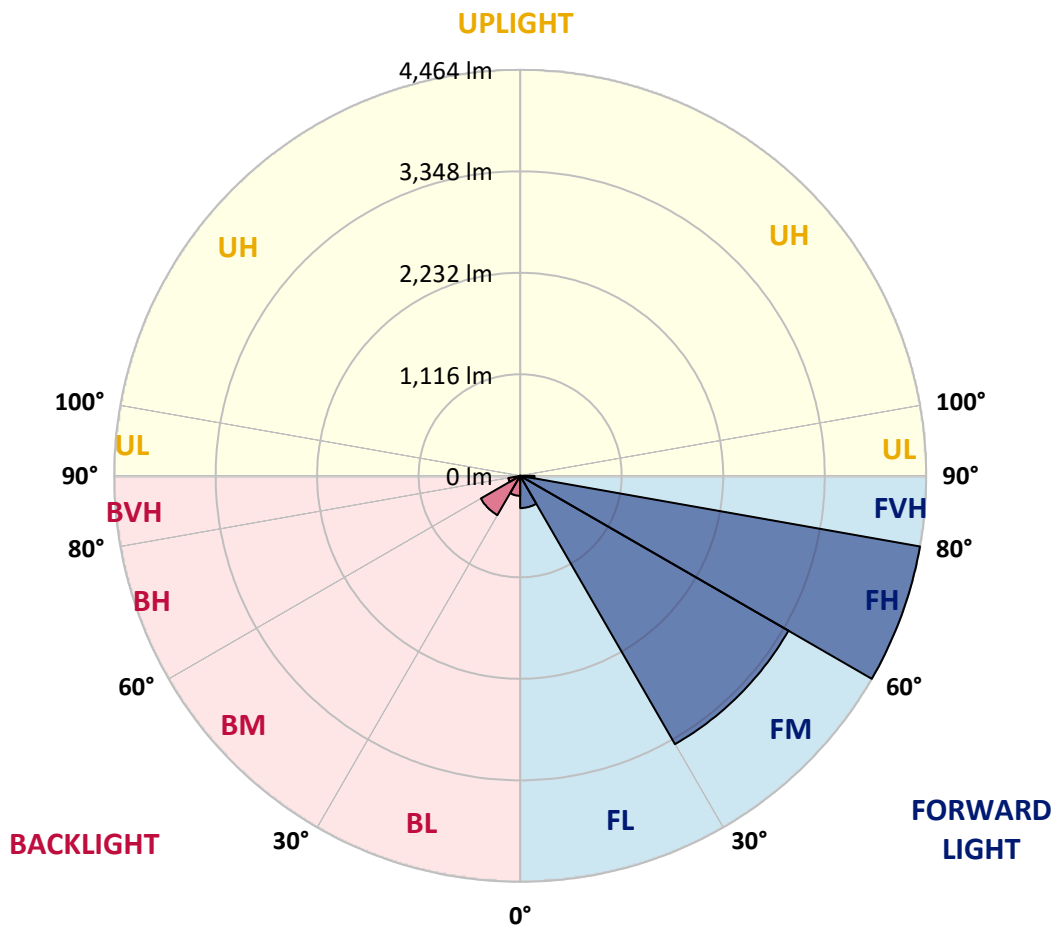
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 354.6  | 3.8       |                         |      |         |
| FM   | (30°-60°)   | 3407.1 | 36.9      |                         |      |         |
| FH   | (60°-80°)   | 4464.2 | 48.3      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 157.9  | 1.7       |                         |      | G2/225  |
| BL   | (0°-30°)    | 219.9  | 2.4       | B1/500                  |      |         |
| BM   | (30°-60°)   | 499.4  | 5.4       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 131.8  | 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°    | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  | 491.4  |
| 2.5°  | 585.7  | 563.2  | 530.3  | 532.4  | 538.0  | 542.6  | 555.0  | 549.8  | 540.1  | 539.6  | 585.7  |
| 5°    | 620.6  | 595.5  | 593.4  | 596.5  | 595.0  | 603.2  | 592.9  | 626.2  | 654.5  | 688.3  | 742.7  |
| 7.5°  | 603.7  | 591.9  | 577.0  | 592.4  | 591.9  | 587.8  | 594.4  | 662.1  | 730.4  | 773.4  | 863.2  |
| 10°   | 555.0  | 541.6  | 552.9  | 558.0  | 554.4  | 572.4  | 617.0  | 672.4  | 754.0  | 844.2  | 887.8  |
| 12.5° | 541.1  | 549.3  | 553.4  | 553.4  | 587.8  | 597.0  | 665.2  | 717.5  | 814.5  | 885.8  | 1012.5 |
| 15°   | 595.0  | 610.9  | 582.6  | 576.5  | 587.3  | 592.4  | 668.3  | 731.4  | 855.5  | 985.8  | 1092.0 |
| 17.5° | 680.6  | 679.6  | 636.0  | 611.9  | 628.8  | 641.1  | 683.2  | 757.0  | 829.9  | 1064.3 | 1218.1 |
| 20°   | 739.6  | 740.6  | 662.1  | 611.9  | 667.8  | 675.0  | 721.6  | 780.6  | 838.1  | 1103.8 | 1300.7 |
| 22.5° | 815.5  | 788.3  | 701.6  | 652.9  | 690.9  | 697.5  | 748.8  | 795.5  | 880.1  | 1099.1 | 1406.4 |
| 25°   | 877.6  | 860.1  | 750.9  | 717.0  | 750.9  | 741.6  | 788.3  | 858.6  | 925.3  | 1172.5 | 1468.4 |
| 27.5° | 974.0  | 944.2  | 785.8  | 791.9  | 789.9  | 796.5  | 807.3  | 915.0  | 1004.8 | 1176.1 | 1612.0 |
| 30°   | 1063.7 | 1046.3 | 863.7  | 863.7  | 883.7  | 870.9  | 878.6  | 1008.9 | 1081.7 | 1259.2 | 1773.6 |
| 32.5° | 1156.6 | 1157.6 | 955.5  | 906.8  | 890.9  | 943.7  | 995.5  | 1054.5 | 1174.5 | 1401.7 | 2020.8 |
| 35°   | 1402.3 | 1381.7 | 1131.4 | 1009.9 | 997.1  | 994.0  | 1077.1 | 1236.6 | 1339.2 | 1587.4 | 2353.7 |
| 37.5° | 1897.2 | 1825.9 | 1510.0 | 1243.8 | 1195.6 | 1179.1 | 1273.5 | 1437.1 | 1539.2 | 1860.3 | 2904.0 |
| 40°   | 2405.0 | 2274.2 | 1923.4 | 1623.3 | 1466.9 | 1396.1 | 1505.9 | 1644.9 | 1826.4 | 2161.9 | 3413.3 |
| 42.5° | 2850.7 | 2689.1 | 2234.7 | 2032.6 | 1829.0 | 1798.2 | 1695.1 | 1921.3 | 2236.7 | 2600.9 | 3912.4 |
| 45°   | 3285.1 | 2967.1 | 2511.7 | 2351.6 | 2104.4 | 2121.9 | 2087.0 | 2282.9 | 2663.0 | 3082.0 | 4355.0 |
| 47.5° | 3584.1 | 3298.4 | 2851.2 | 2643.5 | 2544.5 | 2442.4 | 2719.4 | 2923.0 | 3042.5 | 3387.7 | 4737.6 |
| 50°   | 3906.2 | 3616.9 | 3143.0 | 2997.9 | 2867.6 | 2970.7 | 3330.2 | 3357.4 | 3347.7 | 3672.8 | 4998.2 |
| 52.5° | 4322.2 | 3981.1 | 3477.9 | 3313.8 | 3387.7 | 3490.3 | 3905.2 | 3910.3 | 3619.0 | 3912.9 | 5185.9 |
| 55°   | 4706.8 | 4328.8 | 3924.2 | 3769.3 | 3923.7 | 4010.3 | 4470.4 | 4301.7 | 3777.0 | 4076.0 | 5278.2 |
| 57.5° | 5249.0 | 4811.5 | 4517.6 | 4244.7 | 4557.6 | 4474.5 | 4967.4 | 4716.6 | 3954.4 | 4184.2 | 5244.4 |
| 60°   | 5934.2 | 5419.3 | 5124.9 | 4836.1 | 5171.5 | 5227.9 | 5452.6 | 4923.8 | 4023.2 | 4219.6 | 5040.7 |
| 62.5° | 6631.2 | 6113.2 | 5726.0 | 5530.0 | 5910.6 | 6096.3 | 5901.9 | 5026.9 | 3940.6 | 4150.4 | 4579.6 |
| 65°   | 7496.0 | 6832.8 | 6380.4 | 6265.5 | 6970.8 | 7243.6 | 6433.3 | 5052.0 | 3781.1 | 3769.3 | 3682.1 |
| 67.5° | 8088.4 | 7442.6 | 7027.7 | 7220.0 | 8072.0 | 8094.0 | 6910.2 | 5059.7 | 3244.1 | 2951.2 | 2416.8 |
| 70°   | 8228.9 | 7537.5 | 7351.9 | 7918.1 | 8950.5 | 8673.1 | 7064.1 | 4669.9 | 2406.0 | 1751.5 | 1104.8 |
| 72.5° | 7223.6 | 6557.9 | 6799.5 | 7786.3 | 9137.2 | 9010.0 | 6724.1 | 3369.2 | 1354.6 | 700.6  | 339.0  |
| 75°   | 4430.9 | 4028.3 | 5100.8 | 6601.5 | 8020.7 | 7938.6 | 5245.9 | 1740.8 | 545.7  | 280.0  | 126.7  |
| 77.5° | 1927.0 | 1789.5 | 2661.9 | 4380.1 | 5763.4 | 5690.1 | 3073.8 | 641.1  | 282.1  | 197.0  | 64.1   |
| 80°   | 637.5  | 618.6  | 1008.4 | 2074.2 | 3375.9 | 3311.3 | 1295.1 | 266.7  | 201.1  | 158.0  | 35.9   |
| 82.5° | 151.3  | 150.3  | 351.8  | 954.5  | 1719.7 | 1665.9 | 397.5  | 147.2  | 145.7  | 124.6  | 19.0   |
| 85°   | 38.0   | 39.0   | 97.5   | 390.3  | 698.6  | 616.0  | 103.6  | 73.3   | 102.6  | 84.6   | 9.7    |
| 87.5° | 0.0    | 0.0    | 25.1   | 55.9   | 105.7  | 66.2   | 11.3   | 19.5   | 28.7   | 30.3   | 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°    | 491.4  | 491.4  | 491.4  | 491.4 | 491.4 | 491.4 | 491.4 | 491.4 | 491.4 | 491.4 | 491.4 |
| 2.5°  | 596.0  | 590.3  | 544.2  | 555.5 | 572.9 | 571.4 | 582.6 | 573.9 | 566.2 | 604.2 | 600.6 |
| 5°    | 758.1  | 727.3  | 712.9  | 732.9 | 722.2 | 697.0 | 718.1 | 714.5 | 708.3 | 721.1 | 730.9 |
| 7.5°  | 879.6  | 851.4  | 838.6  | 796.5 | 735.5 | 687.3 | 695.0 | 677.0 | 660.1 | 680.1 | 700.6 |
| 10°   | 919.6  | 904.2  | 902.7  | 820.6 | 763.2 | 693.4 | 610.9 | 539.6 | 520.6 | 495.5 | 506.7 |
| 12.5° | 1028.4 | 1037.6 | 979.6  | 883.7 | 772.9 | 639.1 | 492.4 | 391.3 | 350.3 | 323.6 | 325.2 |
| 15°   | 1117.6 | 1149.9 | 1065.8 | 893.5 | 680.1 | 487.3 | 327.7 | 237.0 | 211.3 | 204.6 | 202.6 |
| 17.5° | 1250.4 | 1281.7 | 1092.5 | 824.2 | 548.3 | 330.3 | 210.8 | 184.6 | 186.2 | 190.8 | 189.8 |
| 20°   | 1348.9 | 1344.3 | 1069.4 | 701.6 | 404.2 | 216.4 | 176.4 | 172.8 | 181.1 | 194.4 | 191.3 |
| 22.5° | 1443.8 | 1412.0 | 1055.0 | 588.3 | 261.6 | 173.9 | 170.3 | 169.8 | 177.5 | 190.3 | 193.9 |
| 25°   | 1511.5 | 1516.6 | 1030.9 | 460.6 | 190.3 | 161.6 | 164.6 | 169.3 | 176.9 | 190.8 | 188.7 |
| 27.5° | 1705.4 | 1561.8 | 930.4  | 334.4 | 160.5 | 154.9 | 162.6 | 171.8 | 174.4 | 191.8 | 192.3 |
| 30°   | 1831.0 | 1732.0 | 864.7  | 225.2 | 148.2 | 143.1 | 158.5 | 170.8 | 173.9 | 196.4 | 198.0 |
| 32.5° | 2050.0 | 1805.4 | 788.8  | 167.2 | 138.0 | 139.5 | 149.3 | 165.7 | 180.0 | 204.1 | 205.2 |
| 35°   | 2322.4 | 2040.8 | 651.4  | 150.3 | 134.4 | 131.8 | 136.4 | 155.4 | 179.0 | 205.2 | 210.3 |
| 37.5° | 2840.9 | 2181.9 | 516.5  | 145.7 | 134.4 | 129.8 | 134.4 | 145.7 | 175.9 | 215.4 | 226.2 |
| 40°   | 3188.2 | 2469.1 | 372.4  | 144.6 | 131.8 | 127.7 | 129.2 | 140.5 | 167.2 | 209.3 | 225.2 |
| 42.5° | 3615.9 | 2590.1 | 274.4  | 142.1 | 129.2 | 123.1 | 124.1 | 138.5 | 158.5 | 196.4 | 208.2 |
| 45°   | 3966.2 | 2678.3 | 215.9  | 141.0 | 123.1 | 121.0 | 123.1 | 136.9 | 150.3 | 168.7 | 179.5 |
| 47.5° | 4232.4 | 2780.9 | 173.4  | 134.4 | 121.6 | 121.0 | 118.5 | 128.2 | 136.4 | 141.0 | 148.2 |
| 50°   | 4427.3 | 2757.8 | 143.6  | 124.1 | 116.4 | 119.5 | 114.9 | 116.4 | 118.5 | 115.9 | 124.1 |
| 52.5° | 4546.8 | 2674.8 | 119.5  | 111.8 | 110.3 | 112.8 | 107.2 | 102.6 | 99.0  | 96.9  | 102.1 |
| 55°   | 4590.4 | 2508.1 | 101.6  | 95.9  | 99.5  | 100.5 | 95.9  | 87.7  | 81.6  | 78.5  | 82.6  |
| 57.5° | 4507.8 | 2254.2 | 88.2   | 79.5  | 87.7  | 87.7  | 81.6  | 72.8  | 65.7  | 60.5  | 64.6  |
| 60°   | 4298.6 | 1973.6 | 78.5   | 66.2  | 74.9  | 75.4  | 68.2  | 59.0  | 53.3  | 48.2  | 50.8  |
| 62.5° | 3908.8 | 1667.9 | 68.7   | 57.4  | 64.6  | 65.1  | 56.4  | 47.7  | 43.6  | 38.0  | 40.0  |
| 65°   | 3129.2 | 1275.6 | 58.5   | 50.8  | 55.9  | 54.4  | 46.7  | 40.5  | 35.4  | 30.3  | 31.3  |
| 67.5° | 2031.1 | 787.3  | 50.8   | 46.2  | 47.2  | 45.6  | 39.5  | 35.4  | 29.7  | 25.6  | 26.2  |
| 70°   | 909.4  | 339.0  | 44.6   | 41.5  | 41.0  | 38.5  | 33.3  | 32.8  | 29.2  | 25.6  | 25.6  |
| 72.5° | 280.6  | 127.7  | 38.5   | 37.4  | 35.4  | 32.3  | 29.2  | 31.3  | 28.7  | 24.6  | 24.1  |
| 75°   | 110.8  | 58.5   | 31.8   | 31.8  | 30.8  | 26.7  | 26.2  | 28.2  | 26.7  | 22.6  | 21.5  |
| 77.5° | 58.0   | 36.9   | 26.2   | 27.2  | 26.7  | 20.5  | 23.6  | 25.6  | 24.6  | 19.0  | 15.9  |
| 80°   | 34.4   | 22.6   | 19.5   | 22.1  | 21.5  | 14.4  | 18.0  | 16.4  | 11.8  | 5.6   | 1.5   |
| 82.5° | 19.0   | 10.3   | 8.7    | 12.8  | 12.8  | 5.1   | 9.2   | 8.2   | 4.6   | 0.0   | 0.0   |
| 85°   | 9.2    | 7.2    | 6.7    | 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   | 2.1   | 0.0   | 1.5   | 2.1   | 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)