

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: P368652

Luminaire Tested: **MSA-SA4D-750-U-SL3**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368652  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4D-750-U-SL3  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS  
EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 25813 lumens  
Efficiency: N/A  
Efficacy: 99.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B3 - U0 - G4

Input Watts (W): 259  
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

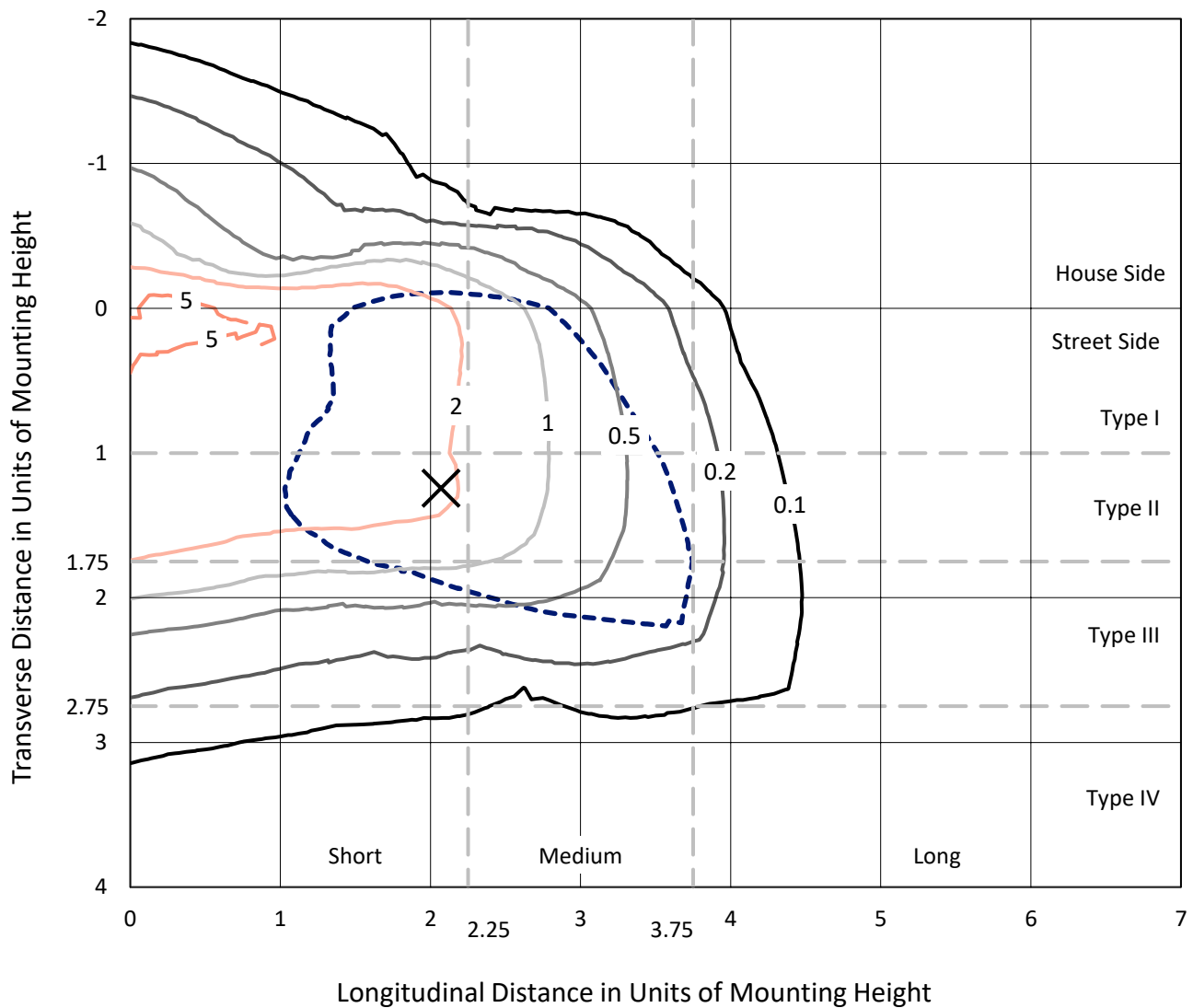


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## Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

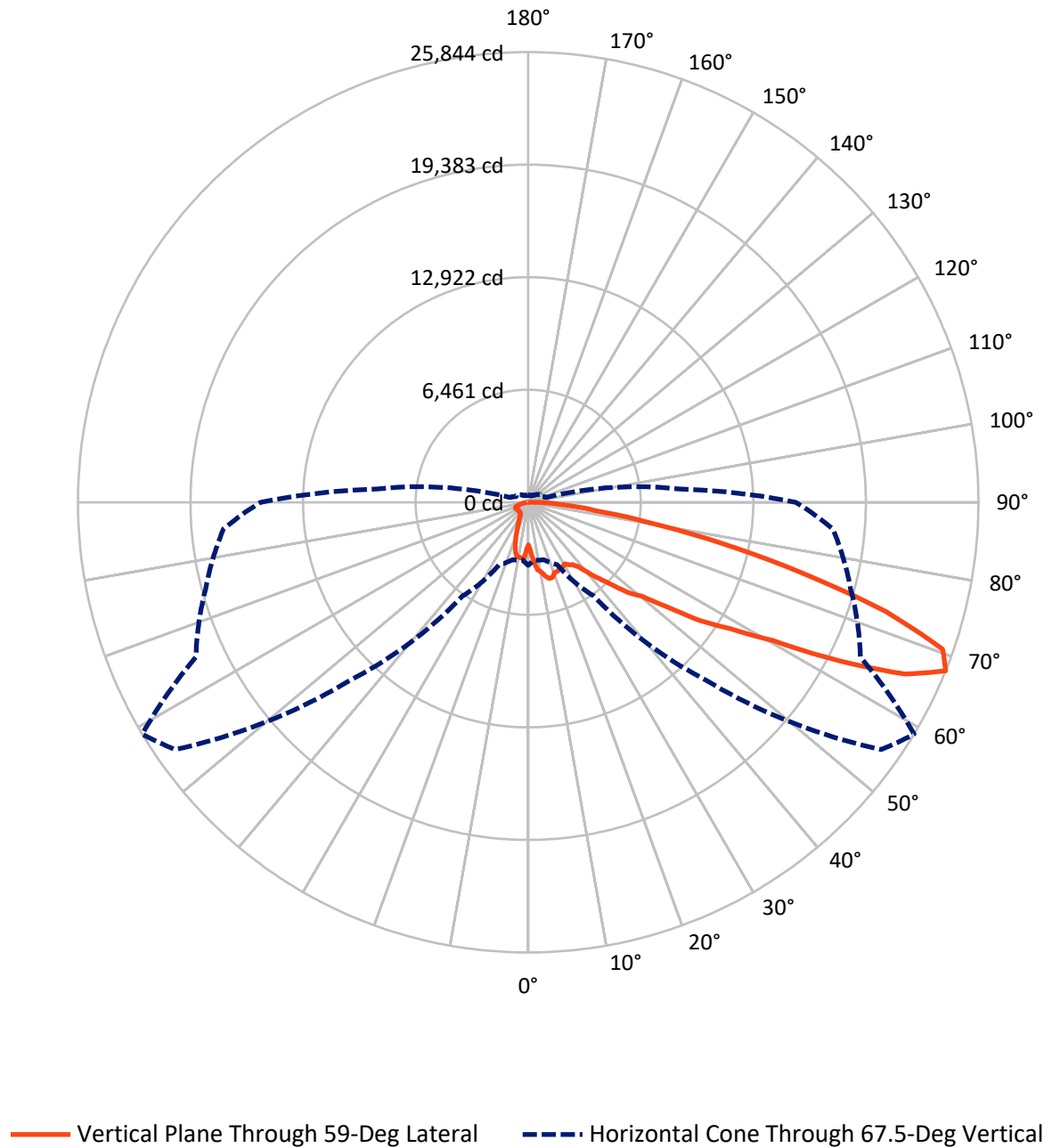


Based on 25 foot mounting height. Maximum calculated value = 6.7 fc  
 Type III - Short - N/A

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## Luminous Intensity Polar Plot



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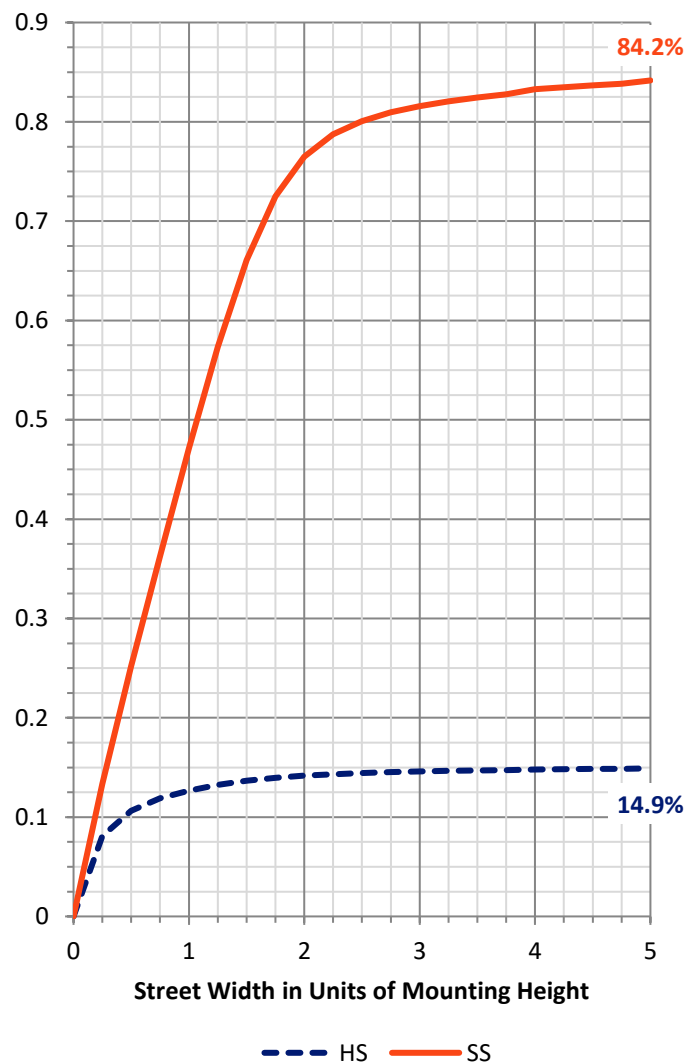
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3885.4   | 0.0    | 3885.4  |
|                    | % Fixture | 15.1     | 0.0    | 15.1    |
| <b>Street Side</b> | Lumens    | 21927.6  | 0.0    | 21927.6 |
|                    | % Fixture | 84.9     | 0.0    | 84.9    |
| <b>Total</b>       | Lumens    | 25813.0  | 0.0    | 25813.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 319.0   | 1.2       |
| 10°-20°   | 944.0   | 3.7       |
| 20°-30°   | 1348.1  | 5.2       |
| 30°-40°   | 1986.6  | 7.7       |
| 40°-50°   | 3356.4  | 13.0      |
| 50°-60°   | 5840.8  | 22.6      |
| 60°-70°   | 7442.9  | 28.8      |
| 70°-80°   | 3941.1  | 15.3      |
| 80°-90°   | 634.0   | 2.5       |
| 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°    | 25813.0 | 100.0     |
| 0°-180°   | 25813.0 | 100.0     |

**Coefficient of Utilization**



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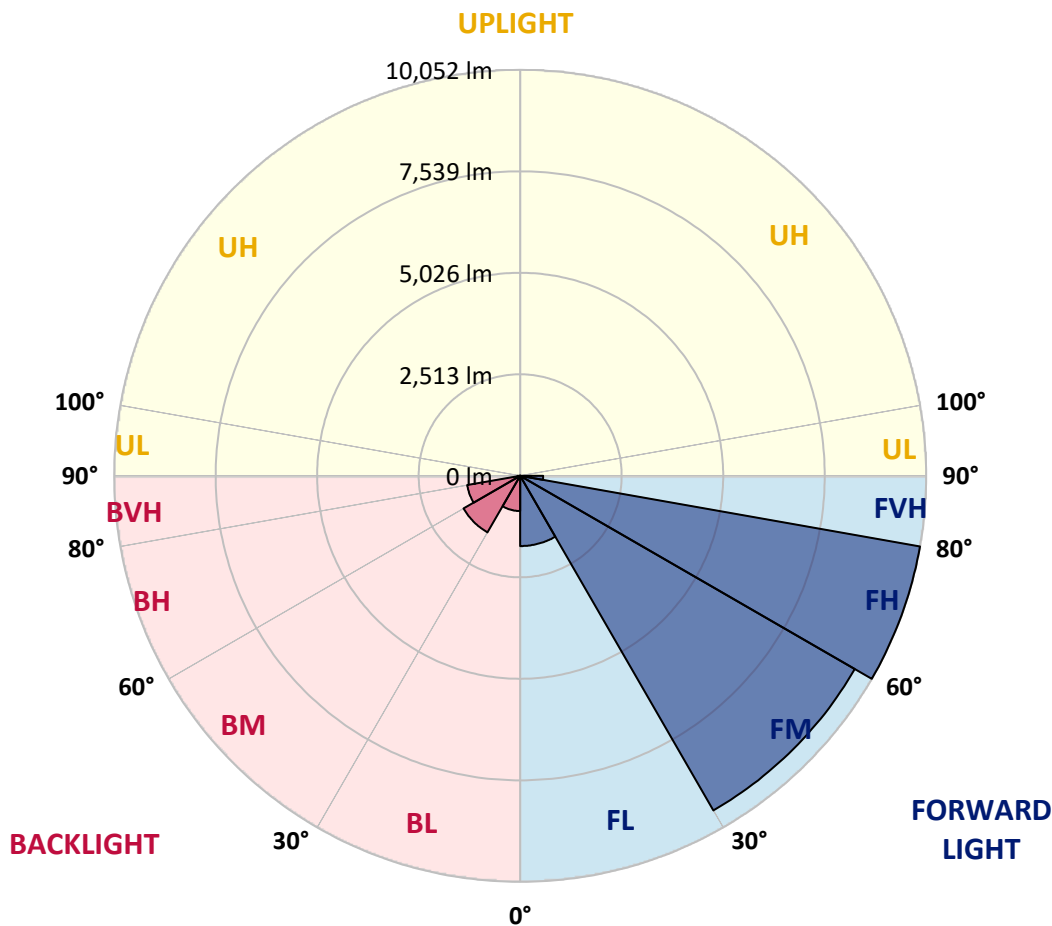
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens  | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|---------|-----------|-------------------------|------|----------|
|      |             |         |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1739.9  | 6.7       |                         |      |          |
| FM   | (30°-60°)   | 9565.9  | 37.1      |                         |      |          |
| FH   | (60°-80°)   | 10052.4 | 38.9      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 569.4   | 2.2       |                         |      | G4/750   |
| BL   | (0°-30°)    | 871.3   | 3.4       | B2/1000                 |      |          |
| BM   | (30°-60°)   | 1617.8  | 6.3       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 1331.7  | 5.2       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 64.5    | 0.3       |                         |      | G1/100   |
| UL   | (90°-100°)  | 0.0     | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0     | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type III Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 15°     | 25°     | 35°     | 45°     | 55°     | 59°     | 65°     | 75°     | 85°     |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  | 2442.6  |
| 2.5°  | 3049.7  | 2907.5  | 2756.5  | 2799.2  | 2885.6  | 2925.0  | 2882.3  | 2840.8  | 2787.2  | 2723.7  | 2940.3  |
| 5°    | 3698.3  | 3487.2  | 3456.6  | 3455.5  | 3424.9  | 3302.4  | 3459.9  | 3448.9  | 3512.4  | 3578.0  | 3746.5  |
| 7.5°  | 3883.2  | 3804.4  | 3719.1  | 3759.6  | 3605.4  | 3598.8  | 3843.8  | 3913.8  | 4036.3  | 3995.9  | 4222.3  |
| 10°   | 3788.0  | 3699.4  | 3744.3  | 3727.9  | 3742.1  | 3904.0  | 4053.8  | 4058.2  | 4189.5  | 4318.6  | 4173.1  |
| 12.5° | 3620.7  | 3627.2  | 3805.5  | 3799.0  | 4028.7  | 4329.5  | 4374.3  | 4339.3  | 4553.7  | 4466.2  | 4590.9  |
| 15°   | 3739.9  | 3819.8  | 3774.9  | 3813.2  | 3904.0  | 4286.8  | 4411.5  | 4538.4  | 4741.9  | 4820.6  | 4695.9  |
| 17.5° | 3930.2  | 3972.9  | 3771.6  | 3750.8  | 3937.9  | 4119.5  | 4429.0  | 4537.3  | 4569.1  | 5130.2  | 4954.1  |
| 20°   | 3849.3  | 3935.7  | 3738.8  | 3486.1  | 3796.8  | 4037.4  | 4342.6  | 4309.8  | 4464.0  | 5154.3  | 5007.7  |
| 22.5° | 4079.0  | 3935.7  | 3685.2  | 3505.8  | 3615.2  | 3836.2  | 4095.4  | 4310.9  | 4493.6  | 5013.2  | 5085.4  |
| 25°   | 4122.8  | 4054.9  | 3820.9  | 3642.6  | 3605.4  | 3684.1  | 4053.8  | 4195.0  | 4503.4  | 5205.7  | 5043.8  |
| 27.5° | 4389.7  | 4287.9  | 3811.0  | 3816.5  | 3631.6  | 3492.7  | 3922.6  | 4219.0  | 4615.0  | 5086.5  | 5145.5  |
| 30°   | 4721.1  | 4643.4  | 4045.1  | 4067.0  | 3811.0  | 3555.0  | 4012.3  | 4102.0  | 4679.5  | 5272.4  | 5273.5  |
| 32.5° | 4969.4  | 5106.1  | 4505.6  | 4208.1  | 4117.3  | 3925.9  | 3874.5  | 4278.1  | 4604.1  | 5609.3  | 5492.3  |
| 35°   | 5416.8  | 5522.9  | 4860.0  | 4621.6  | 4314.2  | 4098.7  | 4248.6  | 4394.0  | 4918.0  | 6052.3  | 5817.1  |
| 37.5° | 6244.8  | 6122.3  | 5518.5  | 5143.3  | 5028.5  | 4717.8  | 4801.0  | 4699.2  | 5259.3  | 6550.0  | 6453.8  |
| 40°   | 6724.0  | 6617.9  | 5982.3  | 5774.5  | 5319.4  | 5358.8  | 5254.9  | 5329.3  | 5715.4  | 7079.5  | 7048.8  |
| 42.5° | 7196.5  | 7054.3  | 6517.2  | 6372.8  | 5918.9  | 5726.4  | 5745.0  | 5985.6  | 6418.8  | 7934.9  | 7833.1  |
| 45°   | 7663.6  | 7299.3  | 7064.2  | 7102.4  | 6883.7  | 6488.8  | 6516.1  | 6742.6  | 7186.7  | 8912.8  | 8678.7  |
| 47.5° | 8021.3  | 7720.5  | 7536.7  | 7489.7  | 7381.4  | 7909.7  | 7673.4  | 7765.3  | 7961.1  | 9783.5  | 9694.9  |
| 50°   | 8698.4  | 8347.2  | 8107.7  | 8039.9  | 8407.4  | 9142.5  | 8661.2  | 8463.2  | 8880.0  | 10909.1 | 10863.1 |
| 52.5° | 9782.4  | 9344.8  | 8945.6  | 8941.2  | 9472.8  | 9949.8  | 10288.9 | 9947.6  | 10100.7 | 12062.0 | 12193.3 |
| 55°   | 10728.6 | 10222.1 | 9863.3  | 10061.3 | 10818.3 | 11110.3 | 12262.2 | 11995.3 | 11866.2 | 13225.9 | 13601.1 |
| 57.5° | 11081.9 | 10490.1 | 10256.0 | 10548.1 | 11663.8 | 13164.6 | 14382.1 | 13679.8 | 13554.0 | 14542.9 | 15329.4 |
| 60°   | 10306.4 | 9680.7  | 9694.9  | 10245.1 | 12177.9 | 14673.0 | 16700.0 | 16103.8 | 15366.6 | 16182.6 | 16950.5 |
| 62.5° | 8096.8  | 7531.2  | 7899.9  | 8736.7  | 11747.0 | 16138.8 | 19806.5 | 20058.1 | 17437.2 | 17542.2 | 17849.6 |
| 65°   | 5503.2  | 5111.6  | 5444.1  | 6263.4  | 9527.5  | 16938.4 | 22765.4 | 23774.0 | 19323.0 | 18432.6 | 18237.9 |
| 67.5° | 3621.8  | 3345.0  | 3409.6  | 3954.3  | 6558.8  | 14440.1 | 24744.2 | 25843.5 | 21047.0 | 19163.3 | 17553.2 |
| 70°   | 2804.7  | 2581.5  | 2553.1  | 2838.6  | 3889.8  | 10031.8 | 23571.6 | 25243.0 | 22097.1 | 18478.6 | 15299.8 |
| 72.5° | 2200.8  | 2031.3  | 2046.6  | 2321.2  | 3012.5  | 5565.6  | 18240.1 | 21465.9 | 20515.4 | 15936.5 | 11754.6 |
| 75°   | 1716.3  | 1577.3  | 1655.0  | 1968.9  | 2786.1  | 3458.8  | 12584.9 | 16292.0 | 15861.0 | 11800.6 | 6704.3  |
| 77.5° | 1245.9  | 1156.2  | 1266.7  | 1676.9  | 2618.7  | 2967.6  | 7834.2  | 11366.3 | 10160.9 | 6058.9  | 2300.4  |
| 80°   | 817.1   | 766.8   | 857.6   | 1367.3  | 2374.8  | 2856.1  | 4841.4  | 6964.6  | 5020.8  | 1702.0  | 870.7   |
| 82.5° | 481.3   | 459.4   | 534.9   | 925.4   | 1908.8  | 2676.7  | 3229.1  | 3870.1  | 2054.3  | 719.8   | 462.7   |
| 85°   | 252.7   | 236.3   | 317.2   | 531.6   | 1315.9  | 2443.7  | 2542.1  | 2316.8  | 992.1   | 312.8   | 221.0   |
| 87.5° | 84.2    | 82.0    | 134.5   | 205.6   | 497.7   | 1297.3  | 1356.4  | 1100.4  | 409.1   | 90.8    | 48.1    |
| 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°    | 2442.6  | 2442.6  | 2442.6 | 2442.6 | 2442.6 | 2442.6 | 2442.6 | 2442.6 | 2442.6 | 2442.6 | 2442.6 |
| 2.5°  | 2969.8  | 2926.1  | 2674.5 | 2709.5 | 2742.3 | 2725.9 | 2716.1 | 2602.3 | 2591.4 | 2753.2 | 2740.1 |
| 5°    | 3742.1  | 3560.5  | 3346.1 | 3336.3 | 3195.2 | 3050.8 | 3079.2 | 3033.3 | 3046.4 | 3113.1 | 3119.7 |
| 7.5°  | 4150.1  | 3923.7  | 3719.1 | 3386.6 | 3104.4 | 2875.8 | 2911.9 | 2900.9 | 2871.4 | 3022.3 | 3062.8 |
| 10°   | 4142.4  | 3941.2  | 3710.4 | 3307.8 | 3117.5 | 2931.5 | 2708.4 | 2497.3 | 2434.9 | 2360.6 | 2367.1 |
| 12.5° | 4415.9  | 4237.6  | 3734.4 | 3324.2 | 3066.1 | 2745.6 | 2327.7 | 2096.9 | 1876.0 | 1871.6 | 1815.8 |
| 15°   | 4501.2  | 4370.0  | 3785.9 | 3230.2 | 2706.2 | 2246.8 | 1814.7 | 1564.2 | 1404.5 | 1372.8 | 1325.8 |
| 17.5° | 4716.7  | 4511.1  | 3629.4 | 2926.1 | 2288.4 | 1756.7 | 1364.0 | 1189.0 | 1175.9 | 1197.8 | 1173.7 |
| 20°   | 4730.9  | 4397.3  | 3347.2 | 2476.5 | 1838.8 | 1331.2 | 1112.5 | 1024.9 | 1072.0 | 1125.6 | 1123.4 |
| 22.5° | 4718.9  | 4254.0  | 3103.3 | 2093.6 | 1381.5 | 1069.8 | 974.6  | 954.9  | 998.7  | 1078.5 | 1088.4 |
| 25°   | 4596.4  | 4207.0  | 2798.1 | 1719.5 | 1121.2 | 916.7  | 890.4  | 902.4  | 957.1  | 1051.2 | 1051.2 |
| 27.5° | 4724.4  | 4015.6  | 2415.2 | 1399.0 | 942.9  | 816.0  | 834.6  | 865.2  | 905.7  | 1012.9 | 1032.6 |
| 30°   | 4682.8  | 4079.0  | 2106.8 | 1126.7 | 831.3  | 746.0  | 787.6  | 818.2  | 864.1  | 975.7  | 985.6  |
| 32.5° | 4794.4  | 3909.5  | 1847.5 | 947.3  | 758.0  | 718.7  | 728.5  | 770.1  | 830.2  | 917.7  | 935.3  |
| 35°   | 4965.0  | 3971.8  | 1550.0 | 852.1  | 721.9  | 686.9  | 705.5  | 738.4  | 798.5  | 883.8  | 898.1  |
| 37.5° | 5509.8  | 3968.5  | 1344.4 | 799.6  | 715.4  | 680.4  | 689.1  | 712.1  | 782.1  | 859.8  | 892.6  |
| 40°   | 5859.8  | 4196.0  | 1157.3 | 787.6  | 707.7  | 677.1  | 669.4  | 694.6  | 750.4  | 842.3  | 865.2  |
| 42.5° | 6517.2  | 4335.0  | 1076.4 | 783.2  | 706.6  | 658.5  | 650.8  | 680.4  | 735.1  | 820.4  | 855.4  |
| 45°   | 7211.8  | 4533.0  | 1011.8 | 781.0  | 703.4  | 655.2  | 632.3  | 669.4  | 715.4  | 797.4  | 837.9  |
| 47.5° | 8028.9  | 4951.9  | 975.7  | 773.4  | 696.8  | 659.6  | 625.7  | 644.3  | 695.7  | 777.7  | 818.2  |
| 50°   | 9098.7  | 5506.5  | 983.4  | 762.4  | 706.6  | 660.7  | 615.8  | 624.6  | 671.6  | 751.5  | 793.0  |
| 52.5° | 10399.3 | 6365.2  | 1032.6 | 766.8  | 713.2  | 655.2  | 611.5  | 607.1  | 647.6  | 717.6  | 759.1  |
| 55°   | 11966.8 | 7583.7  | 1180.3 | 787.6  | 713.2  | 654.1  | 604.9  | 585.2  | 615.8  | 672.7  | 713.2  |
| 57.5° | 13858.1 | 8994.8  | 1469.1 | 797.4  | 707.7  | 647.6  | 590.7  | 555.7  | 574.3  | 621.3  | 659.6  |
| 60°   | 15482.5 | 10133.5 | 1766.6 | 804.0  | 718.7  | 632.3  | 562.2  | 518.5  | 530.5  | 566.6  | 600.5  |
| 62.5° | 16310.6 | 10452.9 | 1856.3 | 798.5  | 748.2  | 622.4  | 528.3  | 479.1  | 480.2  | 510.8  | 541.5  |
| 65°   | 16465.9 | 10027.4 | 1496.4 | 793.0  | 786.5  | 621.3  | 504.3  | 445.2  | 437.5  | 459.4  | 485.7  |
| 67.5° | 15358.9 | 8703.8  | 1079.6 | 781.0  | 790.9  | 614.7  | 487.9  | 417.9  | 398.2  | 413.5  | 435.4  |
| 70°   | 13041.0 | 7009.5  | 906.8  | 757.0  | 738.4  | 581.9  | 459.4  | 389.4  | 363.2  | 374.1  | 390.5  |
| 72.5° | 9722.2  | 5186.0  | 790.9  | 705.5  | 643.2  | 497.7  | 415.7  | 357.7  | 330.3  | 338.0  | 350.0  |
| 75°   | 5401.5  | 2766.4  | 661.8  | 613.7  | 525.1  | 402.5  | 354.4  | 317.2  | 293.2  | 296.4  | 309.6  |
| 77.5° | 1793.9  | 1020.6  | 485.7  | 486.8  | 397.1  | 310.7  | 292.1  | 271.3  | 252.7  | 253.8  | 264.7  |
| 80°   | 812.7   | 564.4   | 347.8  | 350.0  | 276.7  | 225.3  | 224.2  | 217.7  | 205.6  | 202.4  | 210.0  |
| 82.5° | 471.5   | 342.4   | 238.5  | 227.5  | 178.3  | 146.6  | 163.0  | 159.7  | 156.4  | 144.4  | 146.6  |
| 85°   | 231.9   | 183.8   | 124.7  | 118.1  | 98.4   | 73.3   | 87.5   | 90.8   | 87.5   | 74.4   | 73.3   |
| 87.5° | 56.9    | 60.2    | 30.6   | 28.4   | 16.4   | 7.7    | 13.1   | 13.1   | 16.4   | 10.9   | 5.5    |
| 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)