

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: P367356

Luminaire Tested: **MSA-SA2B-760-U-SL4**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367356  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2B-760-U-SL4  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9703 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3

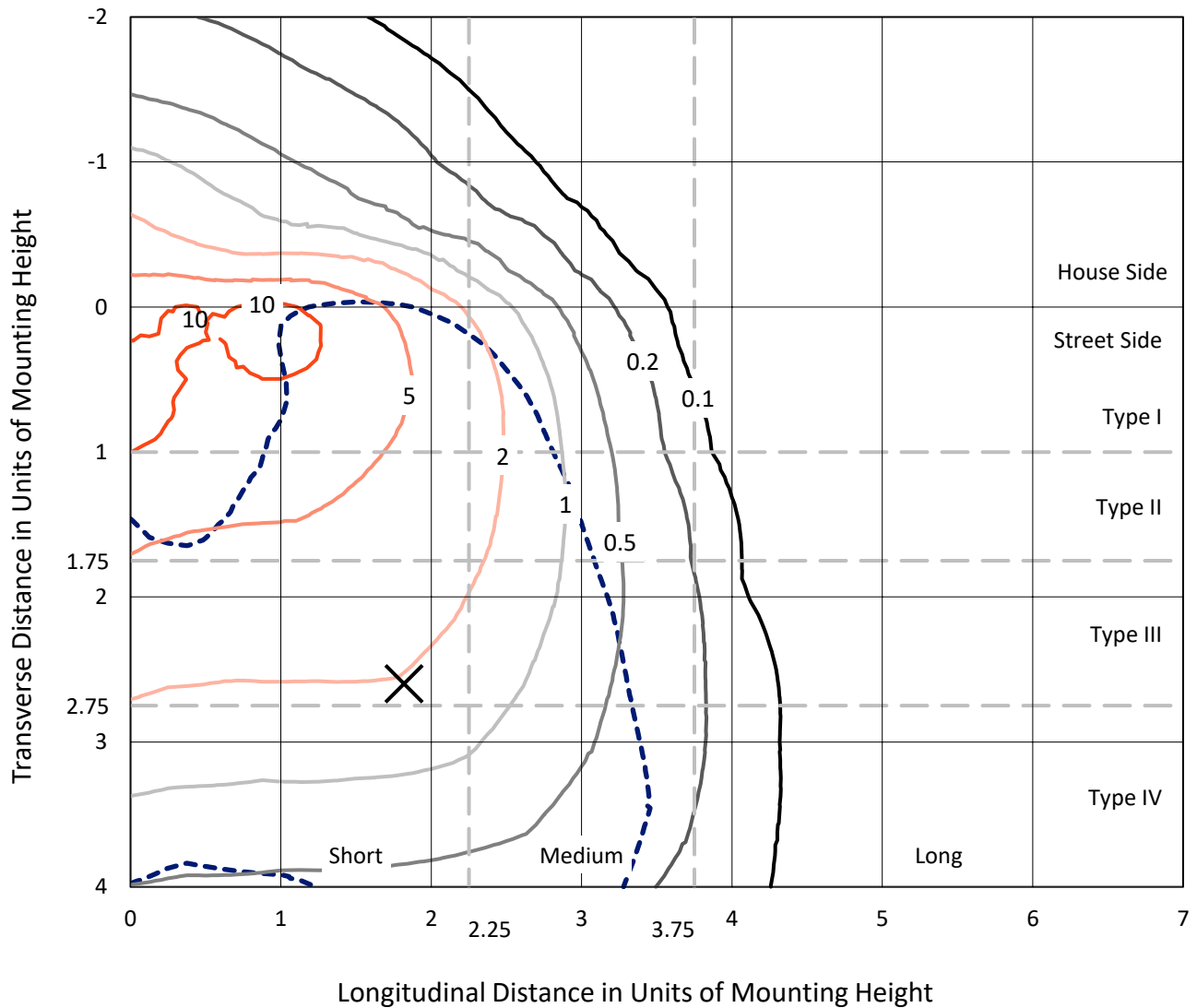
Input Watts (W): 85  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Iso-Footcandle Lines of Horizontal Illumination

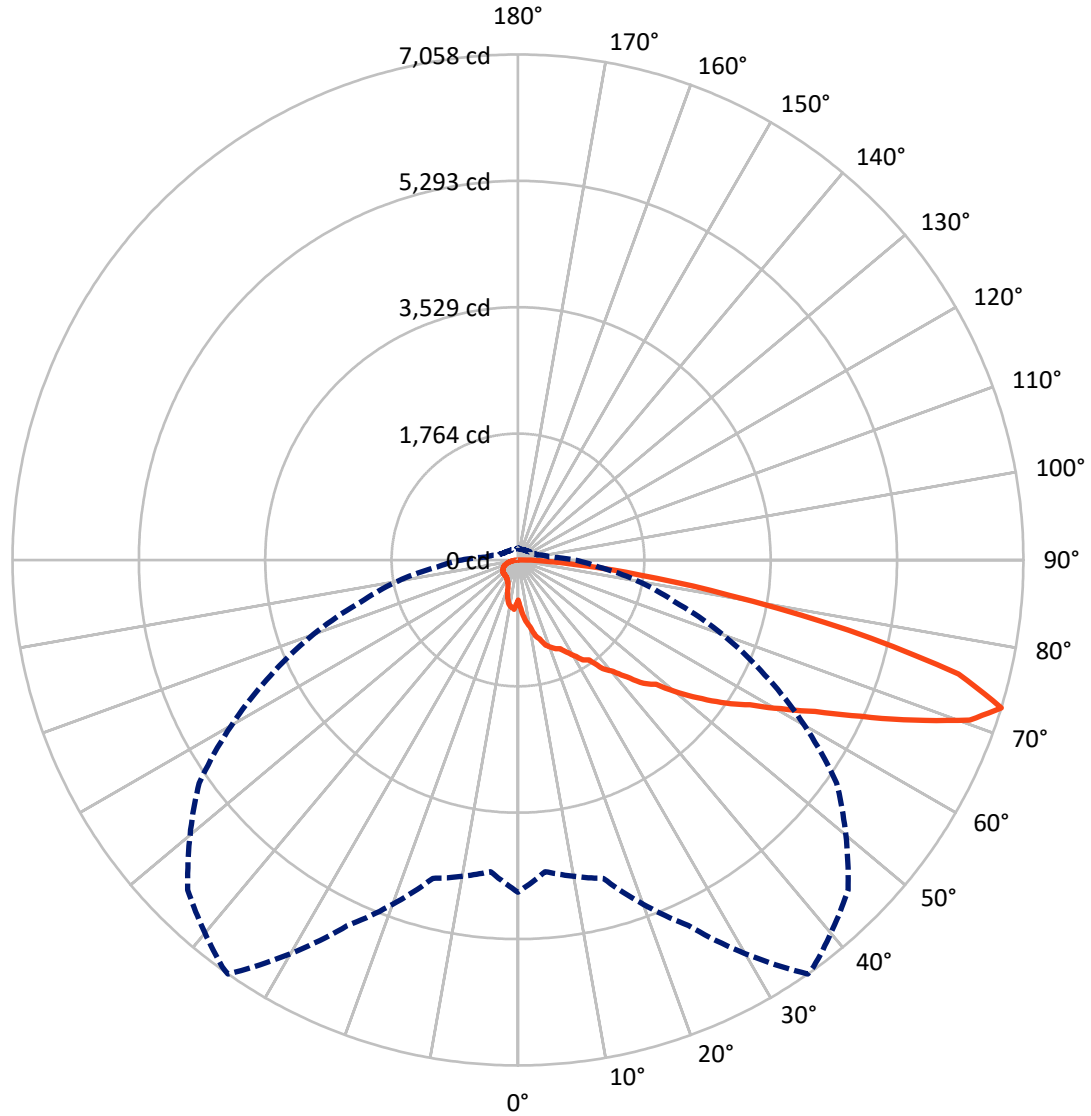
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.2 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1302.1   | 0.0    | 1302.1 |
|                    | % Fixture | 13.4     | 0.0    | 13.4   |
| <b>Street Side</b> | Lumens    | 8400.9   | 0.0    | 8400.9 |
|                    | % Fixture | 86.6     | 0.0    | 86.6   |
| <b>Total</b>       | Lumens    | 9703.0   | 0.0    | 9703.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 74.5   | 0.8       |
| 10°-20°   | 262.5  | 2.7       |
| 20°-30°   | 456.1  | 4.7       |
| 30°-40°   | 762.4  | 7.9       |
| 40°-50°   | 1323.2 | 13.6      |
| 50°-60°   | 2000.3 | 20.6      |
| 60°-70°   | 2591.4 | 26.7      |
| 70°-80°   | 1912.1 | 19.7      |
| 80°-90°   | 320.5  | 3.3       |
| 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°    | 9703.0 | 100.0     |
| 0°-180°   | 9703.0 | 100.0     |

**Coefficient of Utilization**



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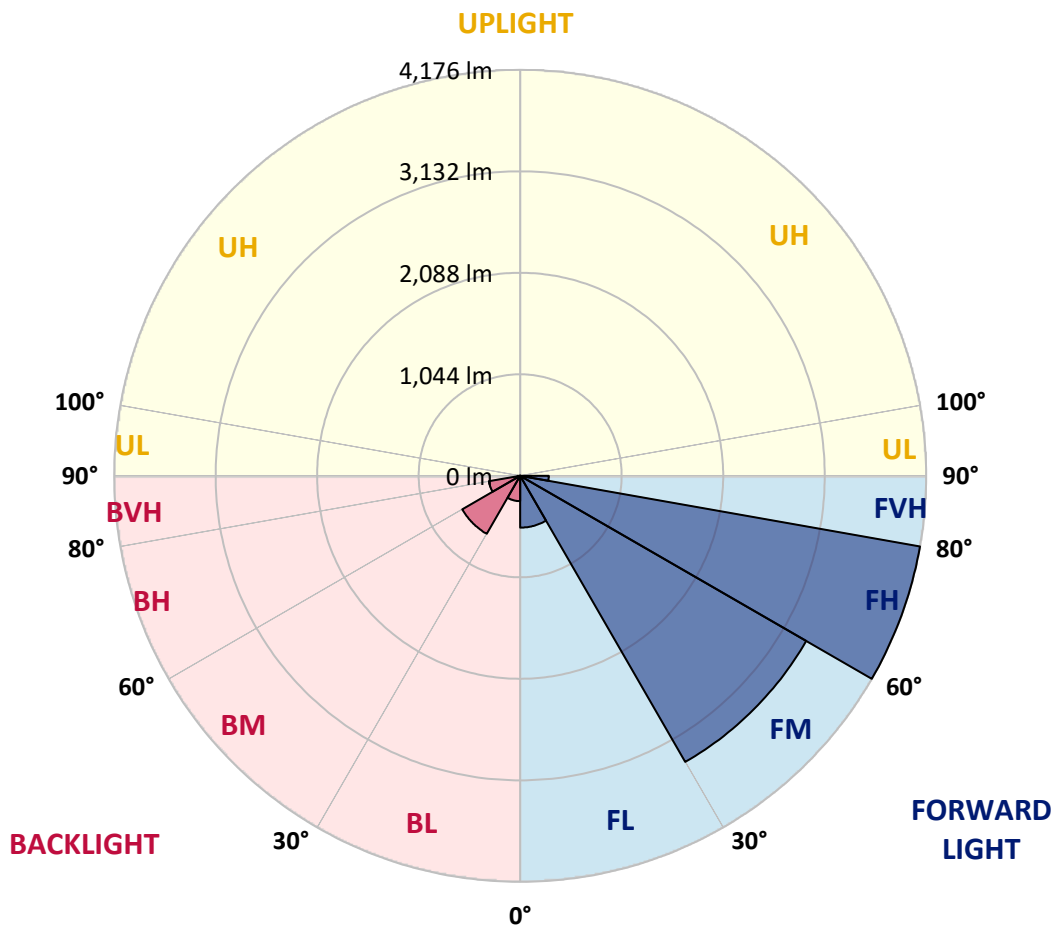
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 532.9  | 5.5       |                         |      |         |
| FM (30°-60°)   | 3397.6 | 35.0      |                         |      |         |
| FH (60°-80°)   | 4176.1 | 43.0      |                         |      | G2/5000 |
| FVH (80°-90°)  | 294.2  | 3.0       |                         |      | G3/500  |
| BL (0°-30°)    | 260.3  | 2.7       | B1/500                  |      |         |
| BM (30°-60°)   | 688.2  | 7.1       | B1/1000                 |      |         |
| BH (60°-80°)   | 327.4  | 3.4       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 26.2   | 0.3       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  | 560.7  |
| 2.5°  | 699.5  | 665.9  | 636.9  | 635.7  | 662.6  | 673.0  | 668.8  | 659.7  | 649.0  | 626.2  | 675.9  |
| 5°    | 876.3  | 828.3  | 819.2  | 808.4  | 784.0  | 790.6  | 750.8  | 781.1  | 790.6  | 812.5  | 845.7  |
| 7.5°  | 980.7  | 952.5  | 930.6  | 921.5  | 879.2  | 874.2  | 844.8  | 887.9  | 906.1  | 903.2  | 952.5  |
| 10°   | 1021.7 | 996.0  | 997.7  | 967.8  | 954.2  | 960.0  | 963.3  | 964.1  | 975.3  | 984.4  | 959.6  |
| 12.5° | 1042.8 | 1052.7 | 1089.2 | 1068.9 | 1086.3 | 1093.3 | 1128.1 | 1092.5 | 1093.7 | 1046.9 | 1072.6 |
| 15°   | 1149.2 | 1174.1 | 1153.0 | 1152.1 | 1146.7 | 1158.3 | 1188.2 | 1164.1 | 1182.8 | 1167.9 | 1134.7 |
| 17.5° | 1277.6 | 1285.1 | 1244.5 | 1227.9 | 1249.4 | 1245.7 | 1238.3 | 1242.0 | 1195.6 | 1281.8 | 1241.2 |
| 20°   | 1317.0 | 1346.4 | 1292.9 | 1227.9 | 1299.1 | 1308.7 | 1307.0 | 1290.9 | 1211.3 | 1335.6 | 1296.2 |
| 22.5° | 1431.3 | 1391.5 | 1349.3 | 1307.8 | 1344.3 | 1349.7 | 1340.6 | 1302.0 | 1275.5 | 1322.8 | 1353.8 |
| 25°   | 1483.0 | 1473.5 | 1419.7 | 1414.7 | 1374.5 | 1355.5 | 1371.2 | 1360.0 | 1333.9 | 1418.0 | 1383.6 |
| 27.5° | 1601.5 | 1590.3 | 1466.5 | 1517.4 | 1459.0 | 1454.0 | 1370.8 | 1408.1 | 1434.2 | 1427.9 | 1479.3 |
| 30°   | 1735.6 | 1748.5 | 1567.5 | 1618.4 | 1550.9 | 1541.8 | 1458.2 | 1505.4 | 1523.2 | 1529.0 | 1593.2 |
| 32.5° | 1884.7 | 1919.9 | 1740.2 | 1698.4 | 1662.3 | 1668.6 | 1597.7 | 1511.6 | 1580.8 | 1716.2 | 1743.9 |
| 35°   | 2046.2 | 2060.7 | 1872.3 | 1809.4 | 1715.4 | 1708.7 | 1710.0 | 1720.7 | 1790.7 | 1945.2 | 1966.7 |
| 37.5° | 2344.8 | 2277.7 | 2112.5 | 1953.1 | 1921.6 | 1859.9 | 1901.7 | 1934.8 | 2004.8 | 2241.7 | 2332.0 |
| 40°   | 2528.7 | 2479.0 | 2227.2 | 2134.9 | 2047.9 | 2053.7 | 2132.0 | 2131.6 | 2296.8 | 2541.1 | 2679.0 |
| 42.5° | 2698.9 | 2644.7 | 2407.4 | 2314.6 | 2232.2 | 2252.5 | 2274.9 | 2314.2 | 2631.0 | 3024.9 | 3087.8 |
| 45°   | 2836.0 | 2717.1 | 2546.5 | 2525.8 | 2457.9 | 2431.0 | 2525.8 | 2588.8 | 3030.6 | 3416.2 | 3452.7 |
| 47.5° | 2929.2 | 2831.5 | 2664.6 | 2646.3 | 2596.2 | 2662.1 | 2920.9 | 2961.5 | 3340.4 | 3809.2 | 3806.3 |
| 50°   | 3070.8 | 2937.1 | 2786.3 | 2776.8 | 2918.0 | 2953.2 | 3268.8 | 3264.6 | 3641.9 | 4135.6 | 4067.2 |
| 52.5° | 3234.0 | 3065.4 | 2901.9 | 3004.1 | 3219.5 | 3236.9 | 3510.6 | 3622.0 | 3971.2 | 4450.3 | 4271.8 |
| 55°   | 3421.6 | 3233.2 | 3075.0 | 3211.6 | 3532.2 | 3480.8 | 3757.9 | 4030.0 | 4383.2 | 4782.0 | 4419.7 |
| 57.5° | 3653.9 | 3425.3 | 3297.4 | 3505.2 | 3817.5 | 3863.1 | 4112.0 | 4454.5 | 4714.9 | 4988.3 | 4527.3 |
| 60°   | 3899.1 | 3630.7 | 3513.5 | 3711.5 | 4217.2 | 4269.3 | 4512.8 | 4807.3 | 5086.8 | 5182.5 | 4507.0 |
| 62.5° | 4133.1 | 3842.8 | 3736.8 | 3981.1 | 4660.3 | 4789.5 | 4969.2 | 5156.8 | 5396.2 | 5229.7 | 4261.5 |
| 65°   | 4393.6 | 4102.8 | 4036.2 | 4402.7 | 5261.2 | 5389.6 | 5624.4 | 5568.1 | 5502.2 | 5062.4 | 3855.2 |
| 67.5° | 4669.4 | 4374.1 | 4386.5 | 4891.8 | 5969.8 | 5991.7 | 6352.4 | 5978.1 | 5377.6 | 4619.3 | 3173.1 |
| 70°   | 4817.6 | 4515.3 | 4643.3 | 5413.2 | 6690.8 | 6659.3 | 6733.0 | 6088.2 | 4869.4 | 3651.4 | 2187.1 |
| 72.5° | 4637.9 | 4368.3 | 4602.7 | 5632.7 | 7057.7 | 7023.8 | 6519.3 | 5434.3 | 3807.2 | 2270.7 | 1133.9 |
| 75°   | 3926.8 | 3666.8 | 4025.4 | 5021.0 | 6353.7 | 6385.2 | 5548.2 | 4041.1 | 2179.6 | 913.2  | 470.9  |
| 77.5° | 2668.3 | 2534.1 | 2841.4 | 3742.5 | 4719.5 | 4828.4 | 4116.5 | 2363.1 | 915.2  | 378.1  | 284.9  |
| 80°   | 1410.1 | 1346.4 | 1573.3 | 2156.0 | 2988.4 | 3069.6 | 2420.6 | 1177.0 | 468.8  | 244.8  | 203.3  |
| 82.5° | 766.2  | 739.2  | 861.0  | 1108.6 | 1698.0 | 1768.8 | 1255.2 | 781.9  | 316.0  | 153.2  | 124.2  |
| 85°   | 514.8  | 504.4  | 585.2  | 595.5  | 803.0  | 826.2  | 657.6  | 602.2  | 189.7  | 75.0   | 82.0   |
| 87.5° | 257.6  | 247.2  | 308.1  | 272.1  | 306.5  | 306.9  | 301.5  | 384.3  | 48.0   | 24.8   | 14.9   |
| 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°    | 560.7  | 560.7  | 560.7 | 560.7 | 560.7 | 560.7 | 560.7 | 560.7 | 560.7 | 560.7 | 560.7 |
| 2.5°  | 676.7  | 662.2  | 612.1 | 611.7 | 619.1 | 614.2 | 617.9 | 597.6 | 588.9 | 628.7 | 626.6 |
| 5°    | 841.1  | 797.6  | 755.8 | 741.3 | 724.3 | 687.5 | 689.5 | 690.0 | 683.7 | 707.3 | 709.0 |
| 7.5°  | 937.6  | 885.4  | 846.9 | 769.9 | 709.4 | 662.2 | 668.4 | 675.5 | 668.4 | 699.9 | 711.5 |
| 10°   | 951.7  | 910.3  | 864.3 | 778.6 | 738.4 | 695.7 | 652.7 | 614.6 | 610.0 | 595.5 | 600.1 |
| 12.5° | 1035.3 | 1001.0 | 904.9 | 810.9 | 764.1 | 698.6 | 620.0 | 576.5 | 540.0 | 546.2 | 534.6 |
| 15°   | 1104.1 | 1079.7 | 964.5 | 841.5 | 729.7 | 648.5 | 564.9 | 505.2 | 472.5 | 468.8 | 457.2 |
| 17.5° | 1197.3 | 1162.5 | 969.9 | 820.4 | 685.4 | 588.1 | 493.7 | 426.1 | 412.1 | 406.3 | 400.5 |
| 20°   | 1242.0 | 1179.5 | 950.4 | 754.1 | 633.6 | 516.0 | 423.2 | 365.3 | 361.1 | 371.5 | 369.4 |
| 22.5° | 1280.9 | 1193.5 | 933.0 | 714.0 | 552.9 | 443.1 | 375.2 | 337.1 | 332.6 | 345.8 | 348.3 |
| 25°   | 1303.7 | 1233.7 | 914.0 | 673.0 | 502.8 | 388.9 | 339.2 | 317.6 | 318.5 | 335.9 | 333.8 |
| 27.5° | 1406.4 | 1247.8 | 866.0 | 624.5 | 445.2 | 348.7 | 321.8 | 310.6 | 306.0 | 330.1 | 332.1 |
| 30°   | 1471.0 | 1339.7 | 855.2 | 573.2 | 402.5 | 319.3 | 306.0 | 301.5 | 300.7 | 329.7 | 331.7 |
| 32.5° | 1591.1 | 1370.4 | 860.2 | 517.3 | 364.0 | 310.2 | 294.5 | 294.0 | 302.3 | 330.1 | 333.4 |
| 35°   | 1757.6 | 1499.6 | 836.1 | 485.4 | 342.9 | 296.1 | 285.3 | 288.7 | 302.7 | 333.0 | 337.5 |
| 37.5° | 2082.3 | 1621.3 | 843.6 | 455.5 | 335.9 | 291.6 | 282.9 | 284.9 | 307.7 | 340.4 | 352.8 |
| 40°   | 2339.5 | 1842.1 | 832.0 | 440.6 | 326.3 | 290.7 | 277.5 | 285.8 | 307.3 | 344.6 | 355.7 |
| 42.5° | 2712.2 | 2018.1 | 833.2 | 425.7 | 325.9 | 287.4 | 276.6 | 286.6 | 306.5 | 340.8 | 356.2 |
| 45°   | 3031.9 | 2175.9 | 851.1 | 417.0 | 321.8 | 292.8 | 275.4 | 287.8 | 301.1 | 327.6 | 344.6 |
| 47.5° | 3294.0 | 2351.9 | 869.3 | 408.8 | 320.1 | 297.8 | 274.2 | 279.1 | 292.0 | 312.7 | 328.0 |
| 50°   | 3507.7 | 2475.7 | 892.5 | 407.1 | 320.1 | 295.3 | 270.8 | 270.4 | 281.2 | 297.8 | 312.3 |
| 52.5° | 3674.2 | 2563.1 | 908.2 | 409.2 | 320.1 | 285.8 | 266.7 | 263.4 | 270.0 | 282.0 | 296.5 |
| 55°   | 3794.7 | 2590.0 | 895.4 | 414.6 | 319.7 | 277.1 | 259.2 | 256.4 | 259.7 | 267.9 | 281.6 |
| 57.5° | 3843.2 | 2519.2 | 818.7 | 405.0 | 319.7 | 270.8 | 250.1 | 246.8 | 250.1 | 256.4 | 270.0 |
| 60°   | 3721.8 | 2291.4 | 708.2 | 380.6 | 313.5 | 262.6 | 239.8 | 237.7 | 242.7 | 248.1 | 261.3 |
| 62.5° | 3417.5 | 1988.7 | 590.1 | 351.6 | 300.7 | 255.5 | 229.8 | 230.3 | 238.1 | 245.6 | 258.8 |
| 65°   | 2944.5 | 1622.6 | 492.0 | 322.2 | 284.5 | 244.3 | 219.5 | 222.4 | 233.6 | 243.5 | 256.8 |
| 67.5° | 2317.1 | 1202.2 | 414.1 | 293.6 | 261.7 | 226.1 | 207.9 | 208.7 | 216.6 | 226.1 | 239.0 |
| 70°   | 1548.9 | 764.9  | 340.4 | 260.1 | 231.9 | 202.5 | 190.1 | 187.2 | 185.1 | 193.4 | 204.6 |
| 72.5° | 785.6  | 451.8  | 279.5 | 222.4 | 199.6 | 176.8 | 167.3 | 159.9 | 154.1 | 159.0 | 167.7 |
| 75°   | 411.7  | 316.0  | 225.7 | 184.7 | 164.8 | 150.3 | 143.3 | 133.4 | 129.2 | 132.1 | 138.3 |
| 77.5° | 291.1  | 247.2  | 182.6 | 146.2 | 134.2 | 119.3 | 120.5 | 110.2 | 106.8 | 108.5 | 115.1 |
| 80°   | 223.6  | 195.9  | 140.4 | 110.6 | 103.5 | 89.0  | 93.2  | 87.0  | 82.8  | 82.0  | 87.0  |
| 82.5° | 152.4  | 147.4  | 99.8  | 77.4  | 72.5  | 62.1  | 67.9  | 65.4  | 60.0  | 56.7  | 59.2  |
| 85°   | 102.7  | 97.7   | 60.9  | 44.7  | 42.7  | 32.3  | 41.4  | 39.8  | 35.2  | 30.2  | 30.6  |
| 87.5° | 17.8   | 32.7   | 17.4  | 11.2  | 10.4  | 3.7   | 9.5   | 9.1   | 8.3   | 4.1   | 3.3   |
| 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)