

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: P597000

Luminaire Tested: **MSA-SA2D-835-U-T4FT**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P597000
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2D-835-U-T4FT
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11145 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G3

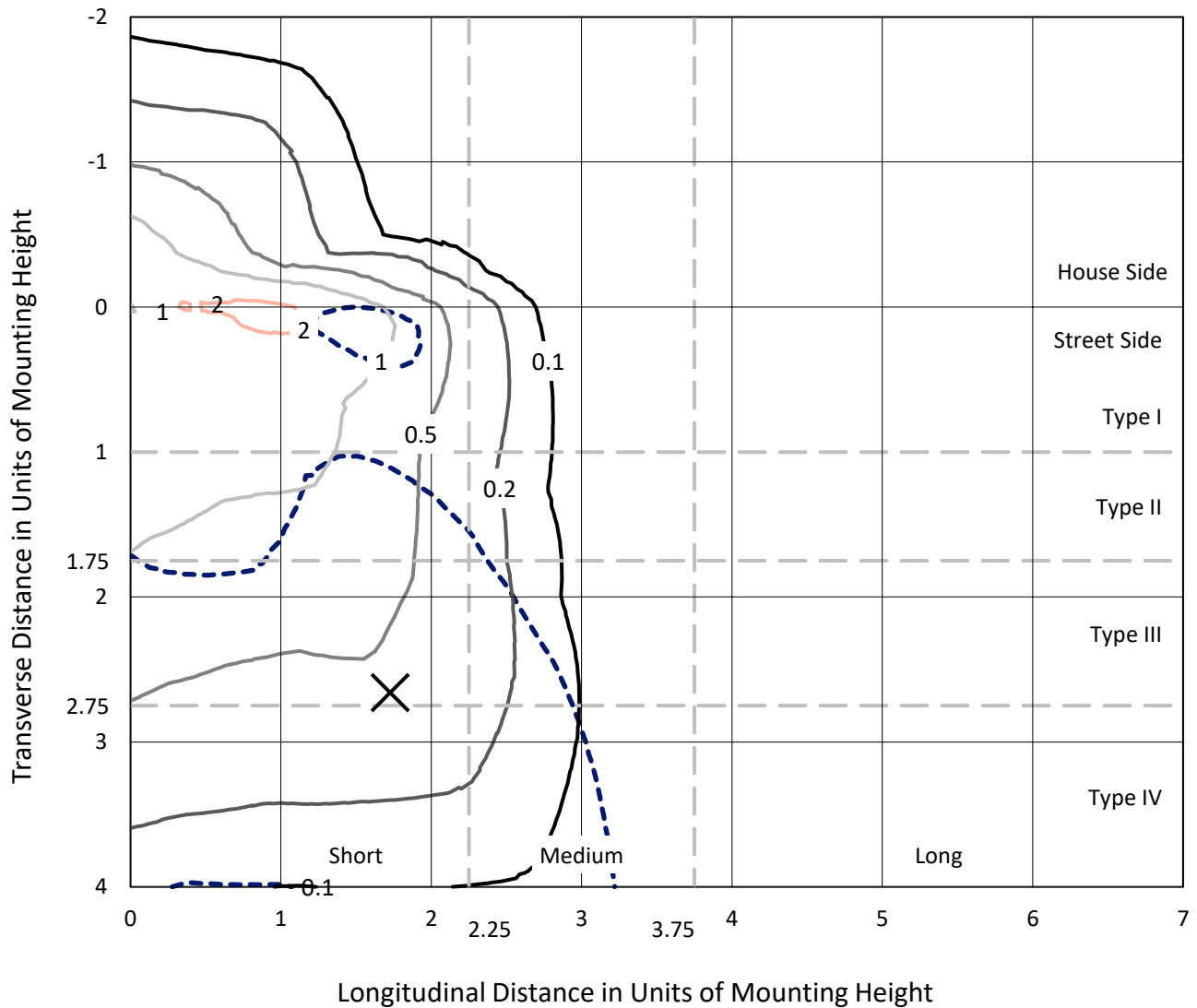
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

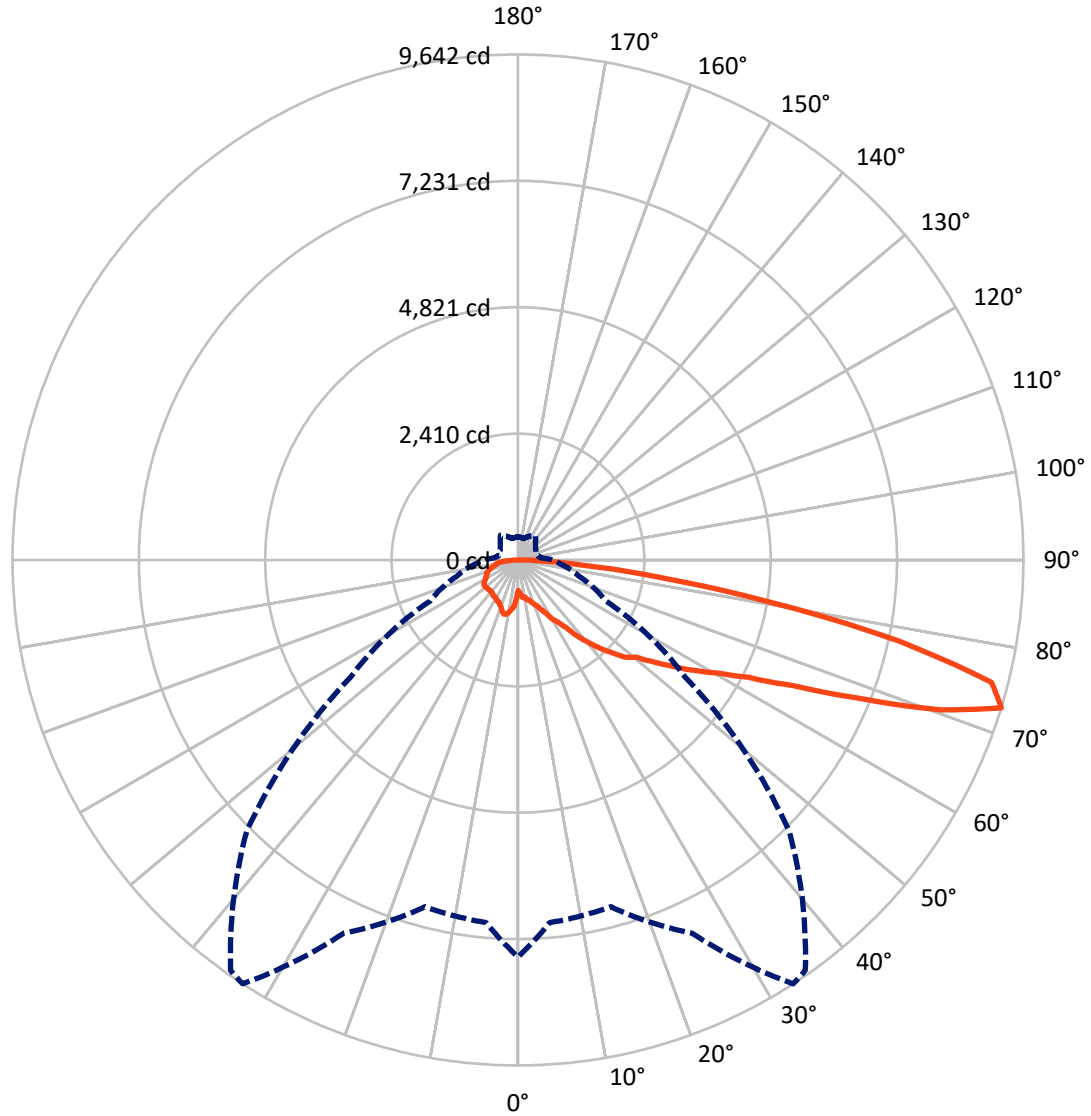
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.3 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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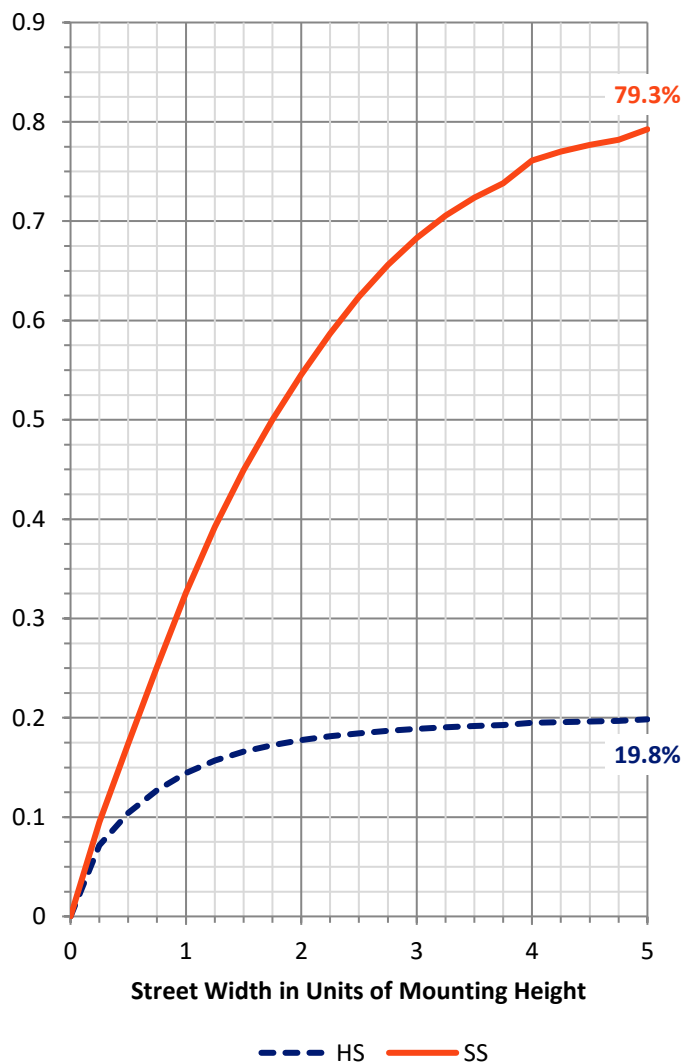
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2254.6 | 0.0 | 2254.6 |
| | % Fixture | 20.2 | 0.0 | 20.2 |
| Street Side | Lumens | 8890.4 | 0.0 | 8890.4 |
| | % Fixture | 79.8 | 0.0 | 79.8 |
| Total | Lumens | 11145.0 | 0.0 | 11145.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 80.4 | 0.7 |
| 10°-20° | 296.9 | 2.7 |
| 20°-30° | 541.5 | 4.9 |
| 30°-40° | 916.1 | 8.2 |
| 40°-50° | 1524.0 | 13.7 |
| 50°-60° | 2236.6 | 20.1 |
| 60°-70° | 2861.2 | 25.7 |
| 70°-80° | 2327.8 | 20.9 |
| 80°-90° | 360.5 | 3.2 |
| 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° | 11145.0 | 100.0 |
| 0°-180° | 11145.0 | 100.0 |

Coefficient of Utilization



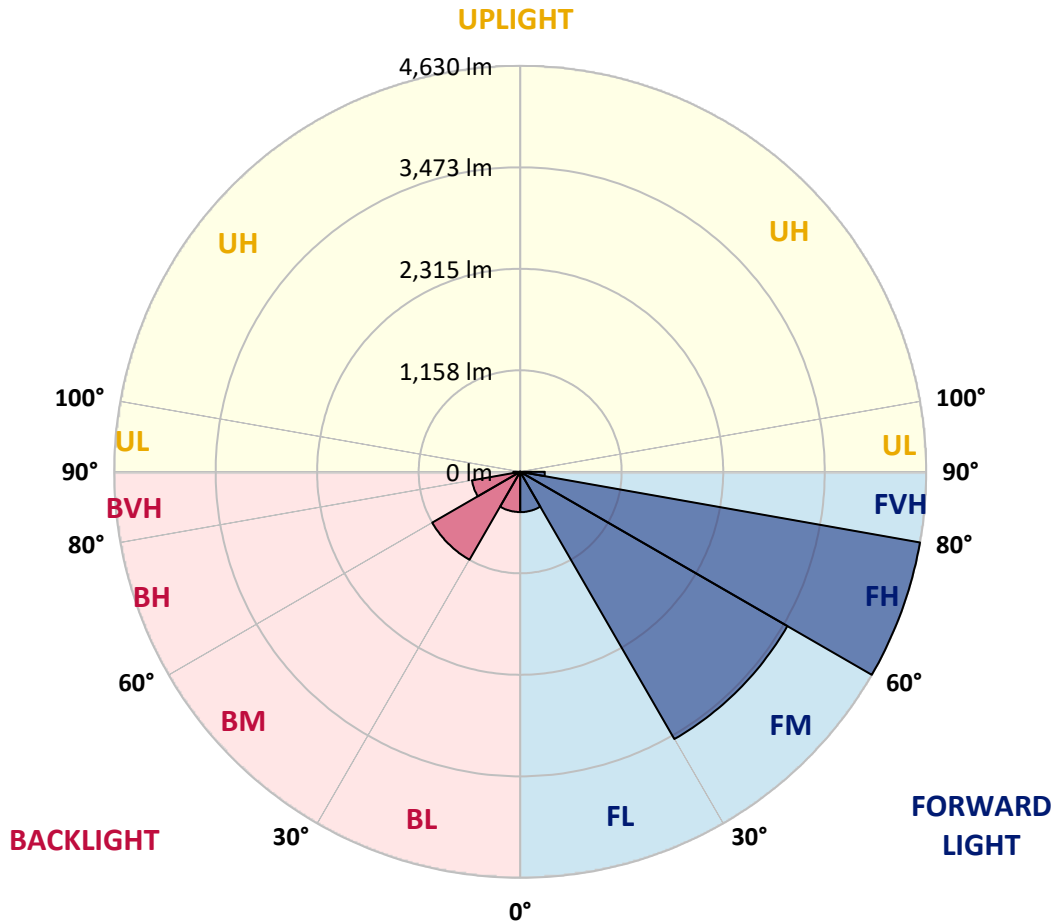
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 460.0 | 4.1 | | | |
| FM (30°-60°) | 3518.7 | 31.6 | | | |
| FH (60°-80°) | 4630.3 | 41.5 | | | G2/5000 |
| FVH (80°-90°) | 281.4 | 2.5 | | | G3/500 |
| BL (0°-30°) | 458.9 | 4.1 | B1/500 | | |
| BM (30°-60°) | 1158.0 | 10.4 | B2/2500 | | |
| BH (60°-80°) | 558.7 | 5.0 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 79.1 | 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-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 |
| 2.5° | 662.5 | 641.7 | 607.5 | 606.6 | 625.5 | 629.7 | 642.2 | 643.1 | 647.7 | 640.3 | 693.1 |
| 5° | 731.0 | 708.8 | 695.4 | 700.0 | 691.2 | 701.8 | 701.8 | 732.3 | 773.0 | 820.2 | 887.2 |
| 7.5° | 747.1 | 731.0 | 715.7 | 727.3 | 729.1 | 718.9 | 728.7 | 800.3 | 873.8 | 921.0 | 1028.2 |
| 10° | 714.8 | 698.6 | 710.2 | 713.9 | 713.4 | 736.5 | 786.9 | 844.2 | 926.1 | 1013.0 | 1070.8 |
| 12.5° | 708.8 | 720.3 | 725.9 | 732.3 | 776.3 | 783.2 | 859.5 | 918.7 | 1001.0 | 1077.3 | 1227.5 |
| 15° | 798.0 | 813.3 | 779.0 | 776.7 | 791.1 | 797.5 | 876.6 | 936.2 | 1056.5 | 1184.5 | 1319.5 |
| 17.5° | 925.1 | 930.7 | 869.2 | 837.8 | 848.4 | 853.5 | 888.2 | 963.1 | 1037.0 | 1273.8 | 1442.0 |
| 20° | 1048.1 | 1051.8 | 936.2 | 866.0 | 903.4 | 909.0 | 941.3 | 984.3 | 1042.6 | 1323.7 | 1524.8 |
| 22.5° | 1177.1 | 1153.5 | 1026.9 | 938.1 | 959.8 | 961.2 | 980.2 | 1003.7 | 1086.5 | 1315.8 | 1625.6 |
| 25° | 1318.1 | 1303.3 | 1143.8 | 1058.8 | 1057.8 | 1038.9 | 1039.8 | 1073.6 | 1133.2 | 1400.0 | 1691.7 |
| 27.5° | 1505.4 | 1507.2 | 1275.6 | 1229.8 | 1158.2 | 1145.7 | 1083.3 | 1146.1 | 1214.1 | 1400.9 | 1834.6 |
| 30° | 1748.1 | 1703.3 | 1459.2 | 1385.2 | 1314.4 | 1288.1 | 1203.5 | 1257.1 | 1286.7 | 1480.9 | 1989.9 |
| 32.5° | 1945.5 | 1932.6 | 1650.6 | 1538.7 | 1423.1 | 1453.6 | 1360.2 | 1313.1 | 1366.2 | 1618.7 | 2225.3 |
| 35° | 2134.6 | 2092.1 | 1853.1 | 1707.4 | 1585.8 | 1567.3 | 1506.8 | 1514.6 | 1547.0 | 1793.0 | 2532.7 |
| 37.5° | 2416.7 | 2393.5 | 2139.7 | 1906.7 | 1849.8 | 1774.5 | 1736.1 | 1760.6 | 1735.2 | 2016.3 | 2993.7 |
| 40° | 2732.0 | 2597.9 | 2379.2 | 2171.6 | 2065.3 | 2012.1 | 2025.5 | 2002.4 | 1983.0 | 2266.9 | 3407.0 |
| 42.5° | 3033.9 | 2911.8 | 2538.3 | 2444.9 | 2306.2 | 2328.4 | 2254.8 | 2271.0 | 2326.0 | 2622.4 | 3789.4 |
| 45° | 3362.6 | 3098.6 | 2707.0 | 2624.7 | 2525.3 | 2553.5 | 2612.2 | 2594.7 | 2684.8 | 3041.7 | 4149.5 |
| 47.5° | 3526.7 | 3275.7 | 2914.1 | 2780.1 | 2778.7 | 2720.0 | 3077.3 | 3116.2 | 2975.2 | 3352.4 | 4515.2 |
| 50° | 3684.9 | 3438.0 | 3068.1 | 2977.5 | 2911.8 | 3037.6 | 3523.5 | 3434.3 | 3237.8 | 3708.9 | 4917.5 |
| 52.5° | 3904.9 | 3623.4 | 3244.7 | 3148.1 | 3229.5 | 3346.0 | 3879.5 | 3861.9 | 3495.3 | 4075.5 | 5267.0 |
| 55° | 4072.8 | 3788.4 | 3510.6 | 3420.9 | 3576.2 | 3690.4 | 4242.0 | 4136.1 | 3715.8 | 4344.6 | 5488.5 |
| 57.5° | 4366.8 | 4075.1 | 3903.1 | 3703.8 | 3983.1 | 3981.2 | 4591.5 | 4509.7 | 3951.6 | 4565.6 | 5577.7 |
| 60° | 4834.2 | 4491.7 | 4311.8 | 4082.0 | 4381.2 | 4488.0 | 4991.0 | 4755.2 | 4118.5 | 4705.3 | 5416.8 |
| 62.5° | 5490.3 | 5083.5 | 4791.7 | 4564.2 | 4929.0 | 5122.3 | 5484.3 | 4934.1 | 4129.2 | 4665.5 | 4993.8 |
| 65° | 6301.7 | 5807.0 | 5424.7 | 5184.2 | 5786.2 | 6062.2 | 6080.7 | 5044.6 | 4031.2 | 4254.5 | 4104.2 |
| 67.5° | 7093.3 | 6537.1 | 6138.1 | 6183.8 | 7062.7 | 7193.6 | 6727.1 | 5137.1 | 3504.6 | 3416.2 | 2849.9 |
| 70° | 7614.3 | 7011.4 | 6745.6 | 7231.0 | 8566.3 | 8432.2 | 7250.9 | 4893.4 | 2759.7 | 2214.6 | 1604.8 |
| 72.5° | 7575.0 | 6943.9 | 6848.2 | 7853.3 | 9641.7 | 9558.0 | 7314.7 | 3891.5 | 1848.4 | 1210.9 | 800.3 |
| 75° | 6171.3 | 5680.8 | 5898.1 | 7434.5 | 9331.9 | 9327.8 | 6350.7 | 2408.8 | 948.3 | 621.9 | 505.8 |
| 77.5° | 3412.1 | 3221.6 | 3860.1 | 5629.0 | 7430.3 | 7468.2 | 4291.0 | 1092.5 | 511.4 | 440.6 | 381.0 |
| 80° | 1195.2 | 1177.6 | 1672.8 | 3037.6 | 4887.9 | 4897.1 | 1995.5 | 499.8 | 371.7 | 333.3 | 279.7 |
| 82.5° | 436.9 | 433.2 | 693.5 | 1411.1 | 2691.3 | 2685.3 | 756.9 | 311.2 | 275.6 | 235.8 | 184.5 |
| 85° | 174.3 | 170.6 | 317.2 | 626.5 | 1236.3 | 1216.4 | 294.0 | 176.6 | 180.3 | 140.6 | 90.6 |
| 87.5° | 48.1 | 49.9 | 107.7 | 196.0 | 378.7 | 350.9 | 74.0 | 59.6 | 73.1 | 57.3 | 28.7 |
| 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° | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 | 584.4 |
| 2.5° | 702.3 | 706.9 | 661.1 | 677.3 | 698.1 | 709.2 | 714.8 | 691.2 | 699.1 | 732.3 | 731.0 |
| 5° | 901.1 | 882.6 | 865.0 | 883.1 | 871.1 | 853.9 | 881.7 | 880.3 | 898.3 | 916.4 | 920.5 |
| 7.5° | 1049.5 | 1025.5 | 1017.2 | 976.5 | 935.8 | 894.6 | 930.2 | 952.4 | 957.0 | 1001.9 | 1020.9 |
| 10° | 1103.1 | 1093.9 | 1097.1 | 1043.5 | 1038.4 | 1042.6 | 1009.8 | 974.2 | 995.9 | 977.4 | 991.3 |
| 12.5° | 1227.1 | 1250.2 | 1192.8 | 1156.3 | 1153.1 | 1127.7 | 1062.0 | 1038.9 | 1014.4 | 1039.8 | 1026.9 |
| 15° | 1326.5 | 1369.5 | 1308.0 | 1243.7 | 1171.1 | 1131.8 | 1075.9 | 1040.7 | 1024.6 | 1030.1 | 1014.4 |
| 17.5° | 1472.1 | 1512.3 | 1356.0 | 1257.6 | 1182.7 | 1124.9 | 1039.3 | 964.4 | 1004.2 | 1007.4 | 989.4 |
| 20° | 1568.7 | 1571.5 | 1372.2 | 1223.4 | 1155.9 | 1055.5 | 972.3 | 906.7 | 952.4 | 999.1 | 1019.5 |
| 22.5° | 1663.0 | 1642.2 | 1392.1 | 1196.1 | 1058.3 | 961.2 | 920.5 | 916.4 | 950.6 | 989.9 | 994.5 |
| 25° | 1733.8 | 1737.0 | 1403.7 | 1185.9 | 1001.0 | 868.7 | 868.7 | 898.8 | 928.8 | 1022.2 | 1017.6 |
| 27.5° | 1905.3 | 1779.1 | 1358.8 | 1139.2 | 921.4 | 814.6 | 869.2 | 909.4 | 923.8 | 1025.0 | 1035.2 |
| 30° | 2030.1 | 1947.8 | 1368.1 | 1059.2 | 841.0 | 789.2 | 834.1 | 884.5 | 924.2 | 1041.2 | 1037.5 |
| 32.5° | 2239.6 | 2018.1 | 1389.8 | 946.9 | 780.9 | 779.5 | 819.3 | 872.4 | 920.1 | 1023.6 | 1029.2 |
| 35° | 2471.2 | 2225.3 | 1329.2 | 861.3 | 766.6 | 774.0 | 825.3 | 846.5 | 902.5 | 1016.7 | 1021.8 |
| 37.5° | 2899.8 | 2333.4 | 1290.9 | 795.2 | 757.3 | 778.6 | 798.0 | 830.8 | 887.2 | 982.0 | 1015.3 |
| 40° | 3151.3 | 2556.3 | 1148.5 | 756.9 | 737.9 | 774.9 | 784.6 | 812.3 | 842.8 | 940.4 | 961.7 |
| 42.5° | 3482.4 | 2626.6 | 1026.9 | 714.3 | 728.2 | 759.6 | 788.8 | 795.7 | 816.0 | 874.8 | 913.6 |
| 45° | 3758.4 | 2679.3 | 897.9 | 680.1 | 695.4 | 793.4 | 795.2 | 792.0 | 788.3 | 810.0 | 841.9 |
| 47.5° | 4044.1 | 2820.7 | 779.0 | 642.2 | 682.9 | 821.1 | 798.5 | 768.9 | 753.6 | 756.4 | 786.0 |
| 50° | 4359.4 | 2923.4 | 694.9 | 611.2 | 685.7 | 821.1 | 814.2 | 745.3 | 714.8 | 706.9 | 737.9 |
| 52.5° | 4636.8 | 2935.4 | 631.1 | 586.2 | 674.1 | 792.9 | 824.8 | 730.5 | 679.2 | 660.2 | 689.4 |
| 55° | 4788.0 | 2783.3 | 584.9 | 563.6 | 644.5 | 767.5 | 819.3 | 722.2 | 636.2 | 621.9 | 647.7 |
| 57.5° | 4784.8 | 2530.9 | 545.6 | 532.2 | 610.8 | 731.9 | 788.3 | 676.9 | 609.8 | 601.5 | 626.9 |
| 60° | 4612.3 | 2235.0 | 515.5 | 506.3 | 576.1 | 680.1 | 732.8 | 647.3 | 584.4 | 580.2 | 608.0 |
| 62.5° | 4221.2 | 1929.4 | 486.4 | 479.0 | 543.7 | 643.6 | 706.5 | 614.5 | 558.0 | 557.6 | 583.9 |
| 65° | 3456.9 | 1548.8 | 459.1 | 457.3 | 513.7 | 607.5 | 681.5 | 586.7 | 530.8 | 540.0 | 566.8 |
| 67.5° | 2382.0 | 1088.4 | 430.0 | 435.5 | 485.9 | 572.8 | 662.5 | 568.2 | 502.1 | 521.1 | 545.1 |
| 70° | 1307.0 | 673.2 | 397.6 | 408.7 | 450.8 | 532.6 | 632.9 | 538.2 | 464.7 | 493.8 | 510.4 |
| 72.5° | 664.8 | 448.9 | 357.4 | 375.0 | 407.8 | 473.4 | 577.5 | 494.7 | 424.4 | 435.5 | 444.3 |
| 75° | 446.6 | 338.0 | 312.5 | 332.0 | 355.5 | 417.0 | 512.3 | 454.0 | 386.1 | 384.7 | 394.4 |
| 77.5° | 337.5 | 264.0 | 265.4 | 287.6 | 302.8 | 366.6 | 460.5 | 419.8 | 353.7 | 350.5 | 364.8 |
| 80° | 246.9 | 200.2 | 213.6 | 236.7 | 250.6 | 329.2 | 426.7 | 381.9 | 309.8 | 296.8 | 308.8 |
| 82.5° | 163.7 | 141.9 | 158.1 | 181.2 | 192.3 | 275.1 | 387.4 | 324.1 | 252.4 | 219.6 | 221.5 |
| 85° | 77.2 | 74.4 | 94.3 | 105.4 | 119.7 | 170.6 | 289.9 | 224.2 | 160.9 | 133.2 | 139.2 |
| 87.5° | 17.6 | 23.6 | 31.0 | 30.5 | 35.6 | 45.8 | 90.2 | 62.9 | 46.7 | 31.9 | 21.3 |
| 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)