

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: P366602

Luminaire Tested: **MSA-SA1A-727-U-RW**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366602
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1A-727-U-RW
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3471 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B2 - U0 - G2

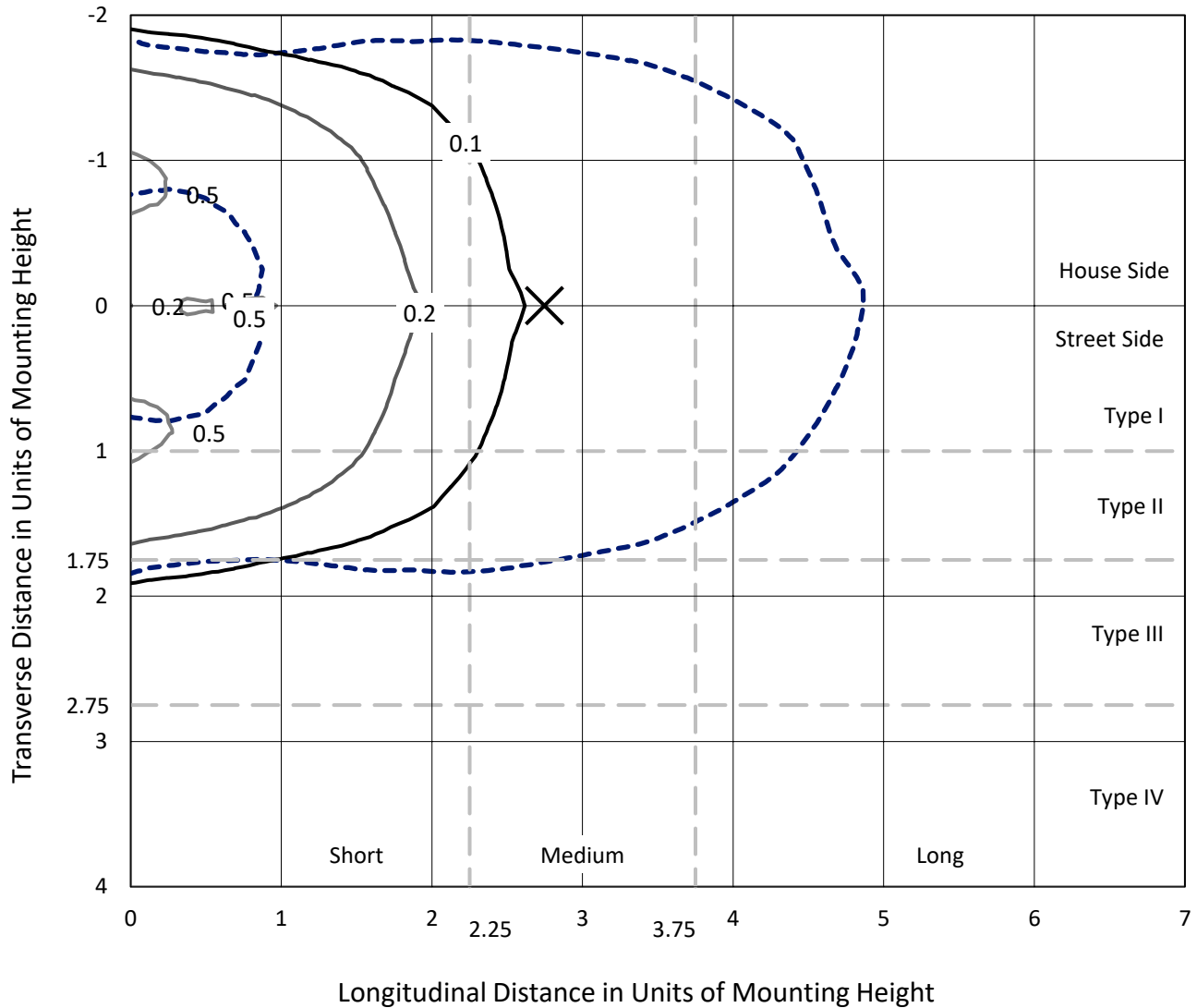
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

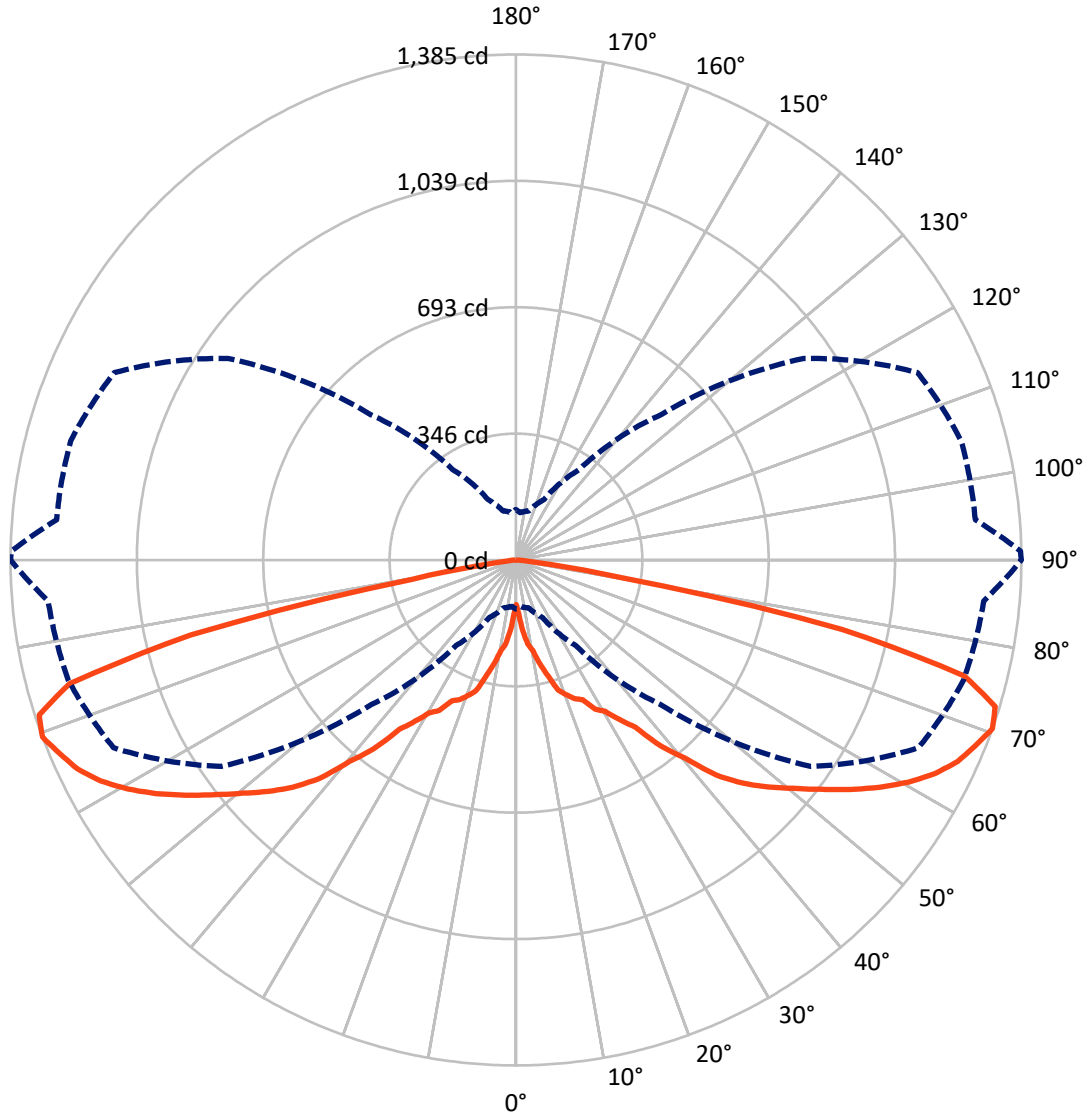
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.6 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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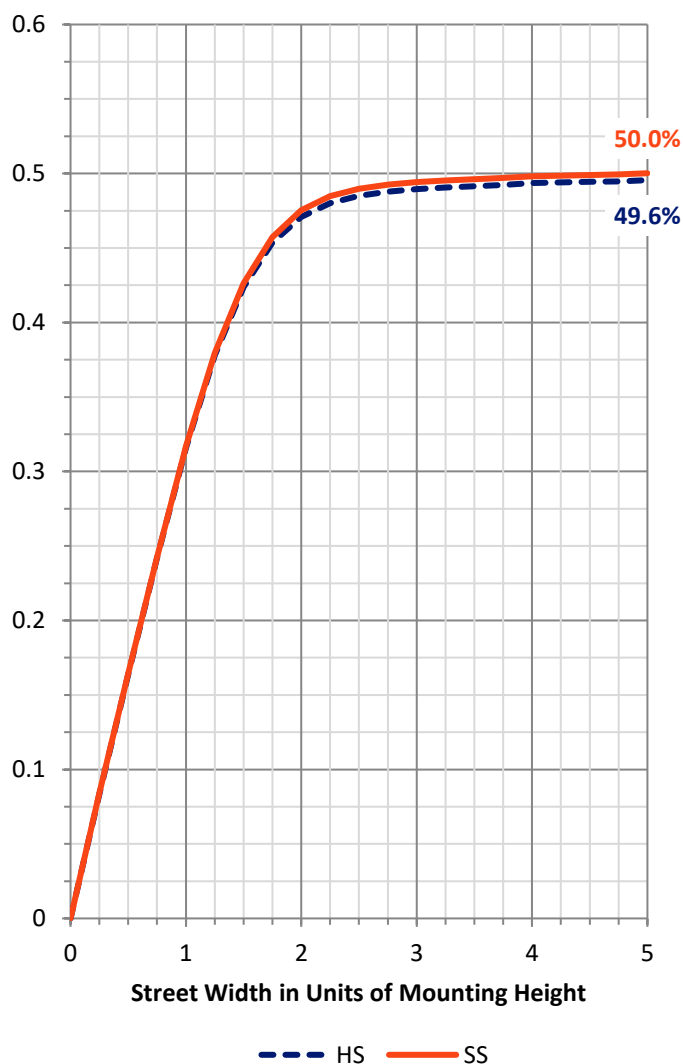
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1729.1 | 0.0 | 1729.1 |
| | % Fixture | 49.8 | 0.0 | 49.8 |
| Street Side | Lumens | 1741.9 | 0.0 | 1741.9 |
| | % Fixture | 50.2 | 0.0 | 50.2 |
| Total | Lumens | 3471.0 | 0.0 | 3471.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 18.4 | 0.5 |
| 10°-20° | 84.2 | 2.4 |
| 20°-30° | 182.1 | 5.2 |
| 30°-40° | 347.5 | 10.0 |
| 40°-50° | 631.2 | 18.2 |
| 50°-60° | 886.7 | 25.5 |
| 60°-70° | 846.6 | 24.4 |
| 70°-80° | 434.5 | 12.5 |
| 80°-90° | 39.8 | 1.1 |
| 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° | 3471.0 | 100.0 |
| 0°-180° | 3471.0 | 100.0 |

Coefficient of Utilization



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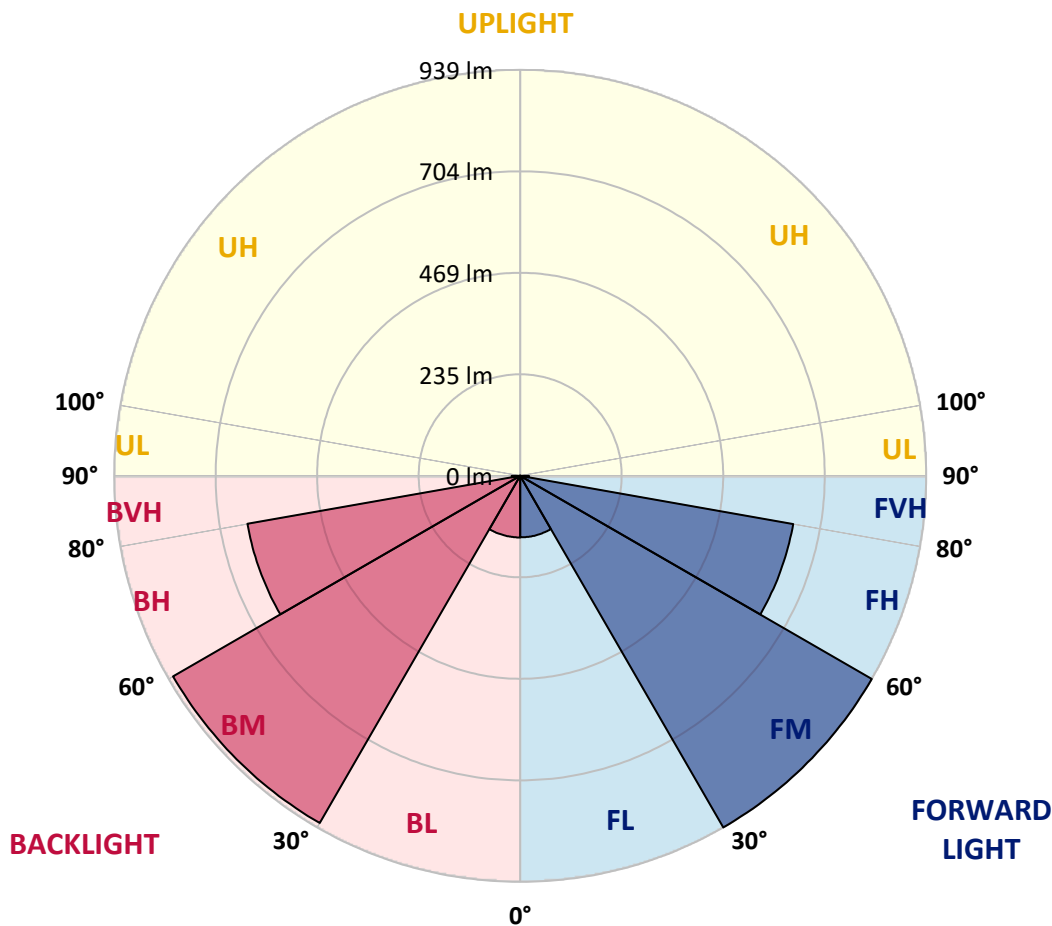
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 142.2 | 4.1 | | | |
| FM (30°-60°) | 938.6 | 27.0 | | | |
| FH (60°-80°) | 640.9 | 18.5 | | | G0/660 |
| FVH (80°-90°) | 20.2 | 0.6 | | | G1/100 |
| BL (0°-30°) | 142.5 | 4.1 | B1/500 | | |
| BM (30°-60°) | 926.8 | 26.7 | B1/1000 | | |
| BH (60°-80°) | 640.2 | 18.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 19.6 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 |
| 2.5° | 147.6 | 142.1 | 135.2 | 139.3 | 141.0 | 143.9 | 143.5 | 142.1 | 136.0 | 146.2 | 147.3 |
| 5° | 184.7 | 176.0 | 172.7 | 172.2 | 173.0 | 170.2 | 179.4 | 176.7 | 181.6 | 190.8 | 192.9 |
| 7.5° | 210.3 | 203.8 | 196.9 | 199.1 | 190.3 | 189.1 | 200.9 | 211.4 | 214.1 | 230.8 | 232.0 |
| 10° | 222.4 | 216.1 | 217.9 | 216.6 | 215.7 | 223.8 | 229.3 | 237.0 | 248.2 | 249.7 | 252.1 |
| 12.5° | 232.7 | 235.2 | 243.2 | 242.9 | 256.2 | 270.7 | 268.5 | 276.6 | 278.4 | 297.8 | 291.9 |
| 15° | 258.7 | 263.9 | 263.3 | 268.3 | 274.0 | 297.8 | 297.9 | 311.6 | 324.1 | 331.7 | 329.7 |
| 17.5° | 296.8 | 298.7 | 291.1 | 291.3 | 308.1 | 317.8 | 328.6 | 326.2 | 358.9 | 373.8 | 374.8 |
| 20° | 319.6 | 324.3 | 315.5 | 304.0 | 333.7 | 347.0 | 353.1 | 339.2 | 374.1 | 394.2 | 394.2 |
| 22.5° | 359.4 | 347.5 | 334.2 | 326.5 | 352.7 | 366.9 | 366.2 | 362.2 | 380.8 | 416.4 | 413.0 |
| 25° | 381.4 | 374.6 | 368.0 | 370.0 | 383.2 | 390.5 | 400.2 | 391.1 | 408.5 | 435.0 | 423.9 |
| 27.5° | 423.0 | 410.5 | 378.0 | 403.9 | 403.9 | 398.4 | 418.9 | 423.3 | 411.9 | 454.9 | 463.2 |
| 30° | 470.1 | 465.8 | 419.8 | 447.2 | 438.8 | 423.3 | 462.7 | 459.9 | 440.7 | 484.6 | 480.8 |
| 32.5° | 514.7 | 529.1 | 485.5 | 470.4 | 483.1 | 489.0 | 468.3 | 476.7 | 480.4 | 522.7 | 520.9 |
| 35° | 583.1 | 595.2 | 537.4 | 533.6 | 512.5 | 507.0 | 522.7 | 525.6 | 525.8 | 570.4 | 562.3 |
| 37.5° | 701.4 | 684.0 | 626.8 | 600.0 | 602.4 | 595.8 | 598.9 | 576.6 | 579.7 | 644.4 | 648.5 |
| 40° | 787.9 | 768.2 | 704.6 | 685.4 | 638.1 | 666.4 | 641.3 | 639.1 | 632.9 | 716.7 | 714.5 |
| 42.5° | 883.4 | 856.4 | 786.1 | 760.3 | 710.1 | 698.6 | 687.1 | 713.1 | 711.4 | 789.0 | 806.2 |
| 45° | 955.6 | 901.0 | 864.3 | 848.3 | 818.2 | 789.9 | 778.9 | 790.6 | 785.2 | 842.9 | 872.9 |
| 47.5° | 1001.2 | 953.8 | 911.6 | 877.8 | 849.0 | 918.3 | 862.8 | 847.1 | 836.3 | 900.9 | 929.7 |
| 50° | 1037.5 | 982.8 | 933.0 | 921.7 | 944.5 | 1005.8 | 918.2 | 883.7 | 896.9 | 944.5 | 983.7 |
| 52.5° | 1047.3 | 989.4 | 944.6 | 937.5 | 999.1 | 1010.2 | 996.0 | 938.0 | 934.5 | 996.8 | 1044.2 |
| 55° | 1017.2 | 961.7 | 940.4 | 979.7 | 1047.7 | 1038.5 | 1060.1 | 1023.1 | 998.2 | 1050.3 | 1109.9 |
| 57.5° | 939.7 | 884.6 | 879.5 | 936.0 | 1021.9 | 1100.9 | 1111.6 | 1082.4 | 1049.7 | 1104.9 | 1175.2 |
| 60° | 812.4 | 762.0 | 774.8 | 837.3 | 966.7 | 1079.3 | 1136.1 | 1109.4 | 1099.2 | 1154.1 | 1235.7 |
| 62.5° | 614.2 | 574.9 | 609.1 | 696.2 | 866.0 | 1051.3 | 1169.9 | 1165.6 | 1151.0 | 1206.4 | 1289.1 |
| 65° | 391.6 | 371.0 | 405.8 | 494.3 | 709.7 | 1000.3 | 1186.0 | 1191.7 | 1205.2 | 1246.8 | 1330.5 |
| 67.5° | 227.6 | 216.6 | 237.9 | 310.3 | 505.4 | 821.4 | 1155.9 | 1236.7 | 1243.7 | 1267.6 | 1357.7 |
| 70° | 134.6 | 127.5 | 136.2 | 174.3 | 286.1 | 559.6 | 986.0 | 1217.0 | 1270.2 | 1286.8 | 1385.1 |
| 72.5° | 102.7 | 95.9 | 92.1 | 103.1 | 149.4 | 289.1 | 666.7 | 1031.6 | 1248.9 | 1274.1 | 1373.5 |
| 75° | 88.8 | 82.3 | 77.8 | 78.8 | 88.9 | 137.3 | 361.4 | 737.8 | 1064.2 | 1160.1 | 1268.7 |
| 77.5° | 76.2 | 70.5 | 67.2 | 67.0 | 68.2 | 75.4 | 151.1 | 400.1 | 666.5 | 833.9 | 914.7 |
| 80° | 61.1 | 56.6 | 55.8 | 55.8 | 54.0 | 53.5 | 75.1 | 152.2 | 253.6 | 300.8 | 288.4 |
| 82.5° | 44.6 | 40.1 | 44.6 | 44.0 | 41.2 | 39.0 | 47.8 | 65.8 | 78.2 | 61.8 | 48.8 |
| 85° | 30.1 | 26.0 | 29.4 | 30.0 | 27.3 | 20.3 | 28.7 | 32.9 | 33.8 | 21.1 | 17.4 |
| 87.5° | 10.6 | 10.3 | 16.6 | 14.5 | 11.8 | 6.9 | 10.6 | 11.4 | 12.0 | 7.5 | 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):

| | 91° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------|
| 0° | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 | 121.8 |
| 2.5° | 147.7 | 146.0 | 137.6 | 138.8 | 142.1 | 143.6 | 145.2 | 138.8 | 135.8 | 145.6 | 144.6 |
| 5° | 193.4 | 187.2 | 180.3 | 179.4 | 179.8 | 173.7 | 177.3 | 175.7 | 176.4 | 182.7 | 184.0 |
| 7.5° | 231.7 | 224.2 | 215.1 | 207.9 | 195.5 | 185.7 | 194.0 | 198.2 | 199.5 | 210.7 | 215.0 |
| 10° | 252.4 | 246.0 | 243.4 | 229.9 | 225.8 | 224.5 | 222.5 | 215.8 | 223.3 | 220.6 | 222.7 |
| 12.5° | 292.9 | 291.6 | 277.7 | 268.8 | 269.7 | 272.1 | 259.7 | 252.9 | 243.2 | 258.4 | 252.9 |
| 15° | 327.3 | 332.8 | 318.9 | 302.7 | 294.7 | 298.8 | 289.4 | 279.5 | 270.8 | 275.4 | 269.5 |
| 17.5° | 371.4 | 371.2 | 344.1 | 326.8 | 326.1 | 325.8 | 311.9 | 290.2 | 300.6 | 297.4 | 297.7 |
| 20° | 394.7 | 390.9 | 357.2 | 337.2 | 354.2 | 348.2 | 335.6 | 307.8 | 319.9 | 323.8 | 326.4 |
| 22.5° | 414.3 | 412.2 | 371.2 | 356.6 | 367.6 | 367.7 | 355.2 | 340.6 | 339.0 | 351.3 | 344.7 |
| 25° | 427.9 | 436.4 | 397.8 | 394.3 | 399.1 | 394.3 | 382.1 | 372.5 | 366.3 | 384.6 | 366.3 |
| 27.5° | 460.3 | 448.3 | 401.9 | 421.9 | 424.8 | 400.8 | 416.1 | 404.9 | 387.7 | 410.3 | 417.8 |
| 30° | 483.4 | 490.4 | 430.6 | 460.7 | 457.2 | 435.0 | 441.3 | 440.9 | 420.3 | 464.5 | 459.3 |
| 32.5° | 523.0 | 514.6 | 477.4 | 475.1 | 483.5 | 482.5 | 471.8 | 477.0 | 482.1 | 514.2 | 521.9 |
| 35° | 563.7 | 572.7 | 507.4 | 523.6 | 521.2 | 506.0 | 534.0 | 530.8 | 545.8 | 611.7 | 589.8 |
| 37.5° | 655.4 | 612.5 | 574.7 | 572.5 | 588.6 | 591.0 | 582.0 | 596.2 | 628.7 | 679.3 | 702.7 |
| 40° | 715.5 | 695.9 | 631.6 | 634.2 | 611.9 | 650.2 | 624.9 | 670.6 | 695.4 | 780.7 | 772.4 |
| 42.5° | 806.3 | 758.7 | 696.9 | 705.3 | 700.8 | 682.4 | 715.8 | 739.2 | 774.7 | 839.8 | 881.9 |
| 45° | 874.0 | 808.6 | 779.3 | 774.1 | 773.6 | 805.6 | 801.4 | 839.0 | 851.6 | 900.6 | 935.5 |
| 47.5° | 925.4 | 869.8 | 826.5 | 832.4 | 815.2 | 906.8 | 858.0 | 869.7 | 895.3 | 941.4 | 982.0 |
| 50° | 986.3 | 924.4 | 875.1 | 889.8 | 931.5 | 966.7 | 922.5 | 902.6 | 915.1 | 969.5 | 1014.8 |
| 52.5° | 1042.7 | 977.5 | 923.4 | 935.6 | 1003.9 | 987.8 | 983.0 | 932.5 | 931.0 | 974.7 | 1026.2 |
| 55° | 1108.7 | 1035.2 | 987.4 | 1026.2 | 1050.4 | 1030.6 | 1023.0 | 961.5 | 923.5 | 947.9 | 996.4 |
| 57.5° | 1173.4 | 1092.3 | 1044.8 | 1052.8 | 1083.5 | 1063.8 | 1006.8 | 912.1 | 864.7 | 869.5 | 918.6 |
| 60° | 1234.0 | 1144.8 | 1105.6 | 1097.8 | 1122.3 | 1045.1 | 945.3 | 821.7 | 758.8 | 747.3 | 789.7 |
| 62.5° | 1285.9 | 1188.7 | 1151.6 | 1130.5 | 1153.8 | 1045.8 | 849.5 | 676.5 | 607.4 | 568.3 | 601.4 |
| 65° | 1327.1 | 1225.1 | 1198.7 | 1187.7 | 1196.2 | 982.2 | 700.3 | 496.7 | 412.0 | 368.7 | 388.0 |
| 67.5° | 1354.6 | 1245.5 | 1233.4 | 1247.8 | 1135.2 | 818.0 | 518.8 | 317.9 | 239.6 | 215.9 | 228.0 |
| 70° | 1383.0 | 1263.5 | 1263.1 | 1214.3 | 962.6 | 564.0 | 303.0 | 183.3 | 139.4 | 130.3 | 137.9 |
| 72.5° | 1373.4 | 1242.2 | 1248.5 | 1062.0 | 667.1 | 301.5 | 159.9 | 103.7 | 94.4 | 97.6 | 104.4 |
| 75° | 1271.8 | 1129.3 | 1098.8 | 763.4 | 378.4 | 140.1 | 92.1 | 78.5 | 77.9 | 82.9 | 89.5 |
| 77.5° | 922.5 | 786.5 | 705.8 | 432.7 | 162.2 | 75.8 | 67.8 | 65.6 | 65.6 | 69.5 | 75.4 |
| 80° | 304.1 | 263.2 | 274.3 | 167.4 | 76.7 | 52.3 | 52.9 | 53.9 | 53.6 | 54.6 | 59.5 |
| 82.5° | 49.9 | 51.8 | 80.0 | 68.4 | 46.3 | 35.7 | 40.0 | 41.9 | 42.5 | 38.0 | 43.2 |
| 85° | 17.7 | 20.0 | 34.0 | 31.7 | 26.7 | 18.0 | 26.3 | 29.4 | 29.0 | 25.3 | 28.0 |
| 87.5° | 5.5 | 7.0 | 12.4 | 9.6 | 8.0 | 4.9 | 9.8 | 11.5 | 14.5 | 5.9 | 5.3 |
| 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)