

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: P367718

Luminaire Tested: **MSA-SA3A-740-U-T4FT**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367718  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3A-740-U-T4FT  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 11757 lumens  
Efficiency: N/A  
Efficacy: 122.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

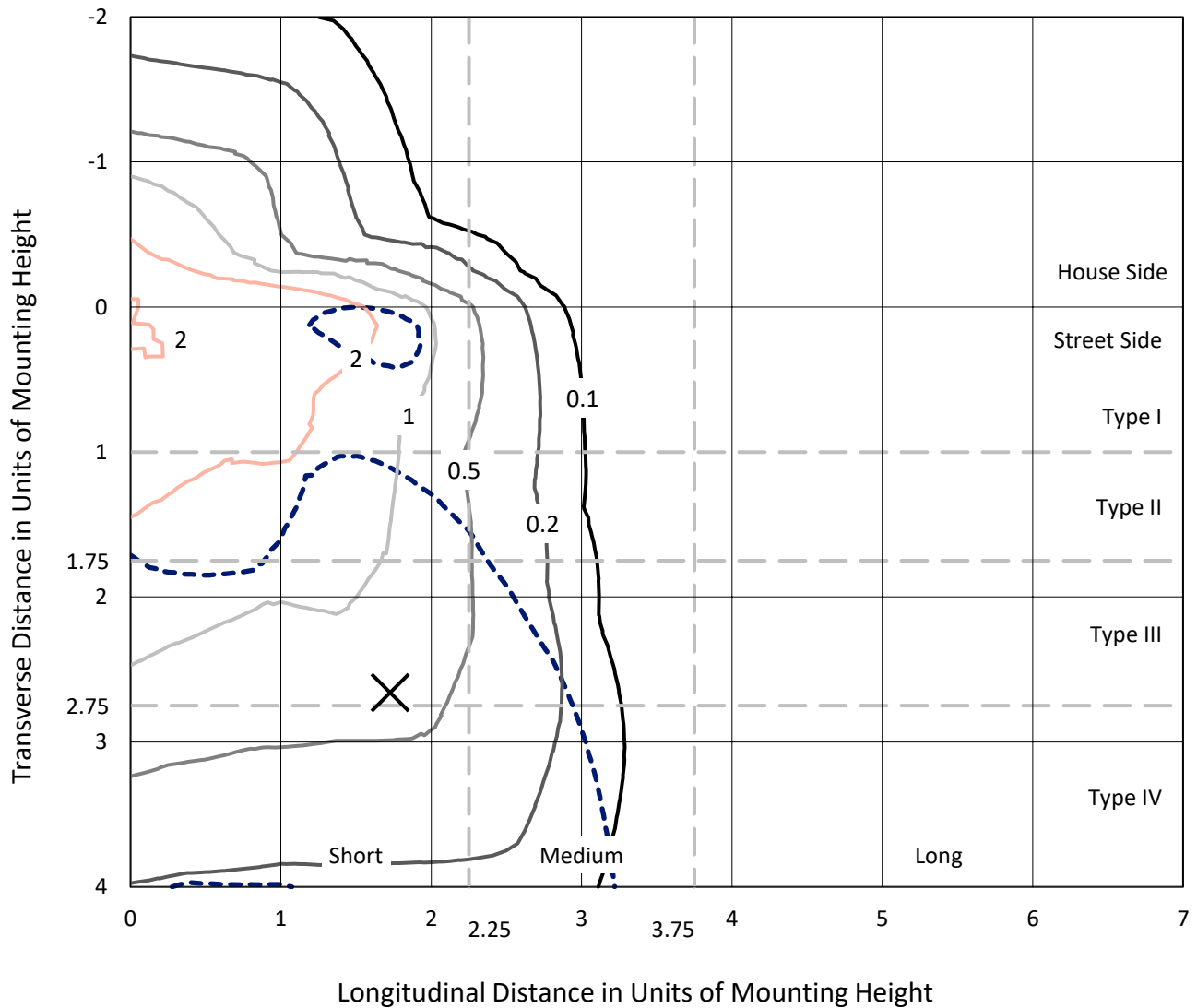
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Iso-Footcandle Lines of Horizontal Illumination

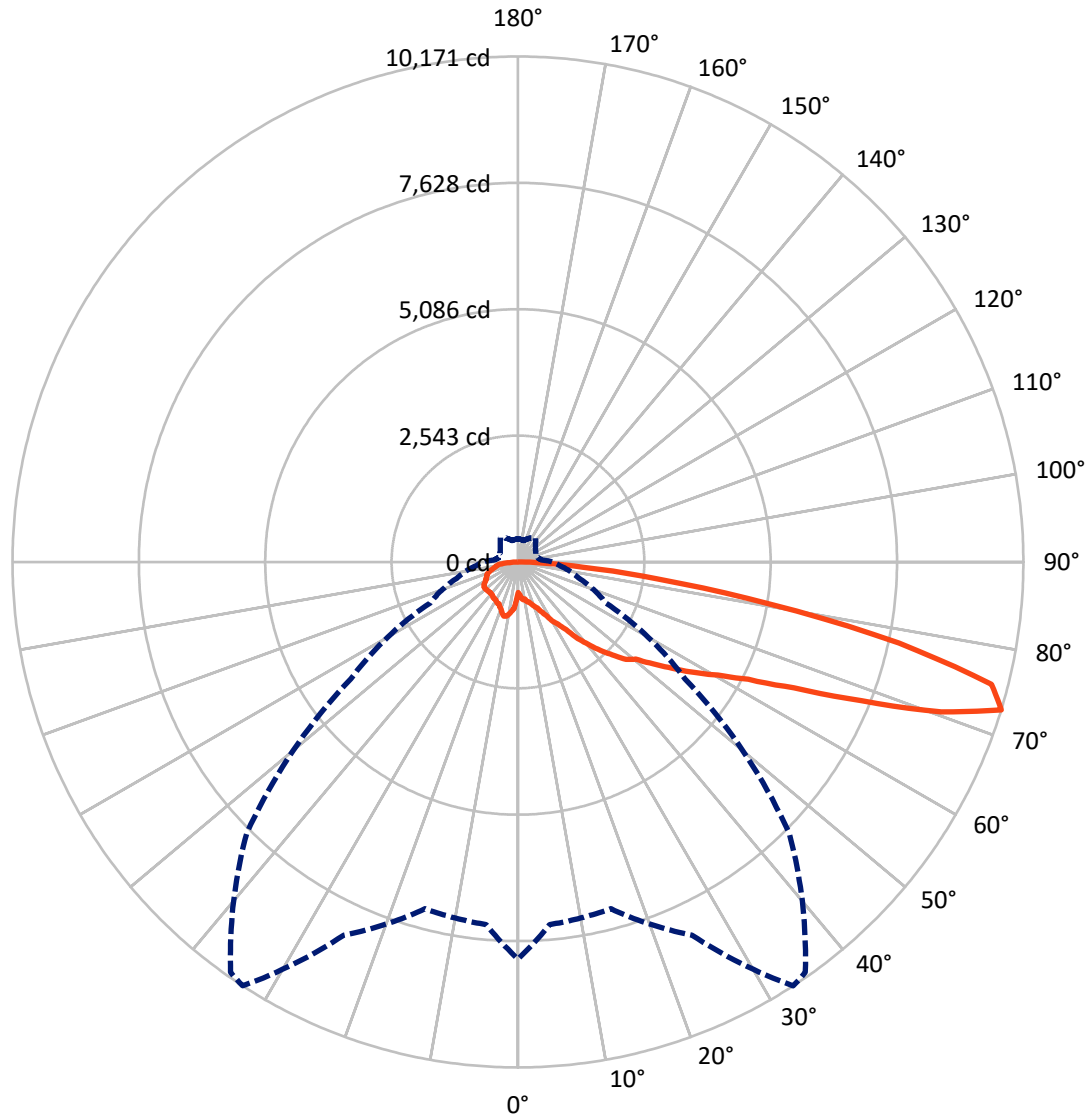
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.8 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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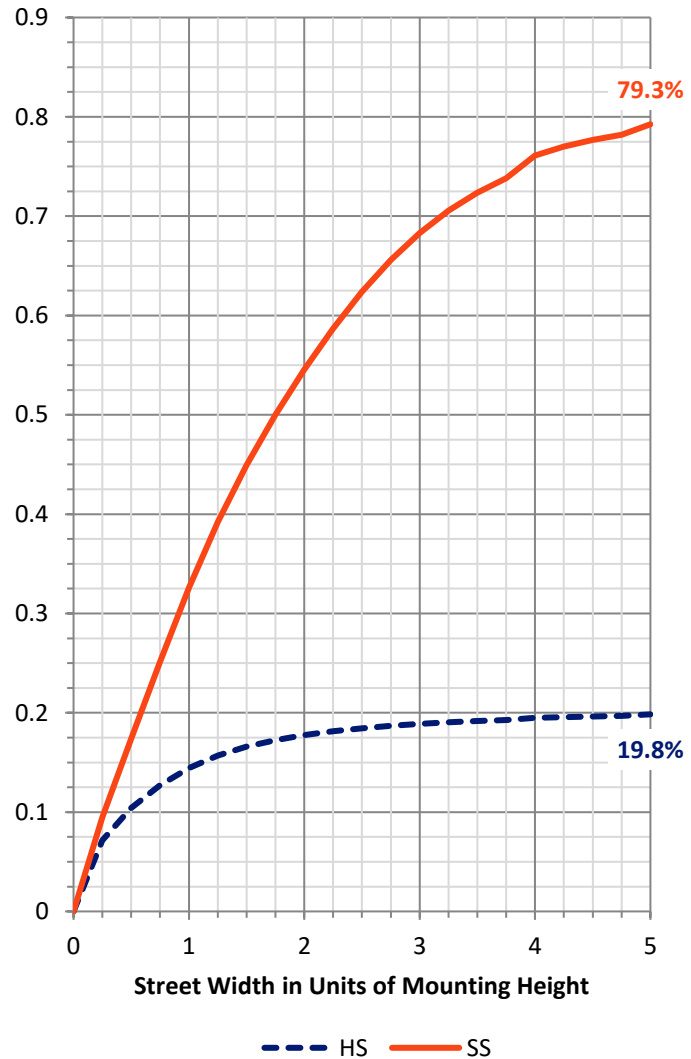
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 2378.4   | 0.0    | 2378.4  |
|                    | % Fixture | 20.2     | 0.0    | 20.2    |
| <b>Street Side</b> | Lumens    | 9378.6   | 0.0    | 9378.6  |
|                    | % Fixture | 79.8     | 0.0    | 79.8    |
| <b>Total</b>       | Lumens    | 11757.0  | 0.0    | 11757.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 84.8    | 0.7       |
| 10°-20°   | 313.3   | 2.7       |
| 20°-30°   | 571.2   | 4.9       |
| 30°-40°   | 966.4   | 8.2       |
| 40°-50°   | 1607.7  | 13.7      |
| 50°-60°   | 2359.4  | 20.1      |
| 60°-70°   | 3018.3  | 25.7      |
| 70°-80°   | 2455.6  | 20.9      |
| 80°-90°   | 380.3   | 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°    | 11757.0 | 100.0     |
| 0°-180°   | 11757.0 | 100.0     |

**Coefficient of Utilization**



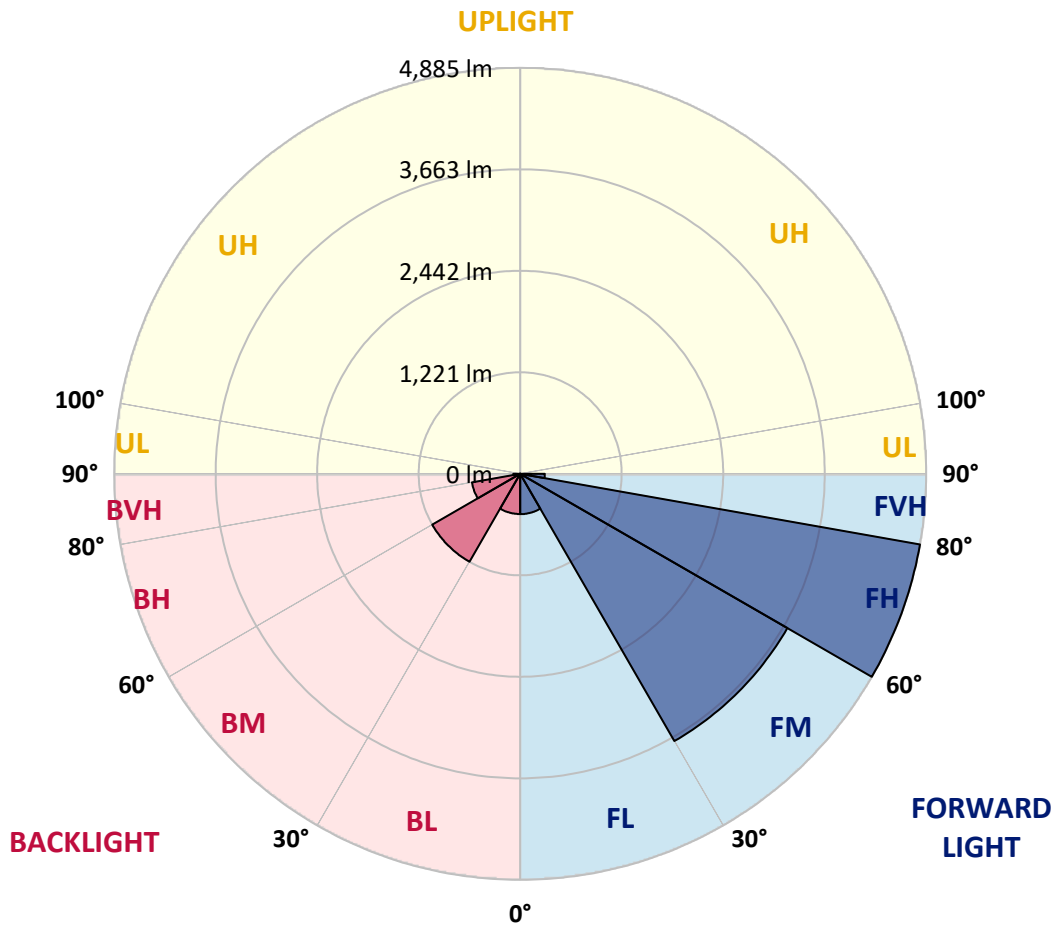
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 485.2  | 4.1       |                         |      |         |
| FM (30°-60°)   | 3712.0 | 31.6      |                         |      |         |
| FH (60°-80°)   | 4884.6 | 41.5      |                         |      | G2/5000 |
| FVH (80°-90°)  | 296.8  | 2.5       |                         |      | G3/500  |
| BL (0°-30°)    | 484.1  | 4.1       | B1/500                  |      |         |
| BM (30°-60°)   | 1221.5 | 10.4      | B2/2500                 |      |         |
| BH (60°-80°)   | 589.3  | 5.0       | B2/1000                 |      | G2/1000 |
| BVH (80°-90°)  | 83.5   | 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°    | 616.5  | 616.5  | 616.5  | 616.5  | 616.5   | 616.5   | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  |
| 2.5°  | 698.9  | 677.0  | 640.9  | 639.9  | 659.9   | 664.3   | 677.5  | 678.4  | 683.3  | 675.5  | 731.1  |
| 5°    | 771.1  | 747.7  | 733.5  | 738.4  | 729.2   | 740.4   | 740.4  | 772.6  | 815.5  | 865.2  | 936.0  |
| 7.5°  | 788.2  | 771.1  | 755.0  | 767.2  | 769.2   | 758.4   | 768.7  | 844.3  | 921.8  | 971.6  | 1084.7 |
| 10°   | 754.0  | 737.0  | 749.2  | 753.1  | 752.6   | 777.0   | 830.1  | 890.6  | 976.9  | 1068.6 | 1129.6 |
| 12.5° | 747.7  | 759.9  | 765.7  | 772.6  | 818.9   | 826.2   | 906.7  | 969.1  | 1055.9 | 1136.4 | 1294.9 |
| 15°   | 841.8  | 857.9  | 821.8  | 819.4  | 834.5   | 841.3   | 924.7  | 987.7  | 1114.5 | 1249.6 | 1392.0 |
| 17.5° | 975.9  | 981.8  | 916.9  | 883.8  | 895.0   | 900.4   | 936.9  | 1015.9 | 1094.0 | 1343.7 | 1521.2 |
| 20°   | 1105.7 | 1109.6 | 987.7  | 913.5  | 953.0   | 958.9   | 993.0  | 1038.4 | 1099.8 | 1396.4 | 1608.5 |
| 22.5° | 1241.8 | 1216.9 | 1083.2 | 989.6  | 1012.5  | 1014.0  | 1034.0 | 1058.9 | 1146.2 | 1388.1 | 1714.9 |
| 25°   | 1390.5 | 1374.9 | 1206.6 | 1116.9 | 1115.9  | 1095.9  | 1096.9 | 1132.5 | 1195.4 | 1476.8 | 1784.6 |
| 27.5° | 1588.1 | 1590.0 | 1345.6 | 1297.4 | 1221.8  | 1208.6  | 1142.8 | 1209.1 | 1280.8 | 1477.8 | 1935.3 |
| 30°   | 1844.1 | 1796.8 | 1539.3 | 1461.2 | 1386.6  | 1358.8  | 1269.6 | 1326.1 | 1357.4 | 1562.2 | 2099.2 |
| 32.5° | 2052.4 | 2038.7 | 1741.2 | 1623.2 | 1501.2  | 1533.4  | 1434.9 | 1385.2 | 1441.2 | 1707.5 | 2347.4 |
| 35°   | 2251.9 | 2207.0 | 1954.8 | 1801.2 | 1672.9  | 1653.4  | 1589.5 | 1597.8 | 1631.9 | 1891.4 | 2671.8 |
| 37.5° | 2549.4 | 2525.0 | 2257.2 | 2011.4 | 1951.4  | 1871.9  | 1831.4 | 1857.3 | 1830.5 | 2127.0 | 3158.1 |
| 40°   | 2882.0 | 2740.6 | 2509.9 | 2290.9 | 2178.7  | 2122.6  | 2136.7 | 2112.4 | 2091.9 | 2391.3 | 3594.1 |
| 42.5° | 3200.5 | 3071.7 | 2677.6 | 2579.1 | 2432.8  | 2456.2  | 2378.7 | 2395.7 | 2453.8 | 2766.4 | 3997.4 |
| 45°   | 3547.3 | 3268.8 | 2855.7 | 2768.8 | 2664.0  | 2693.7  | 2755.7 | 2737.1 | 2832.3 | 3208.8 | 4377.4 |
| 47.5° | 3720.4 | 3455.6 | 3074.2 | 2932.7 | 2931.3  | 2869.3  | 3246.3 | 3287.3 | 3138.5 | 3536.5 | 4763.2 |
| 50°   | 3887.2 | 3626.8 | 3236.6 | 3141.0 | 3071.7  | 3204.4  | 3717.0 | 3622.9 | 3415.6 | 3912.6 | 5187.5 |
| 52.5° | 4119.4 | 3822.3 | 3422.9 | 3321.0 | 3406.8  | 3529.7  | 4092.5 | 4074.0 | 3687.2 | 4299.3 | 5556.2 |
| 55°   | 4296.4 | 3996.5 | 3703.3 | 3608.7 | 3772.6  | 3893.1  | 4474.9 | 4363.2 | 3919.9 | 4583.2 | 5789.8 |
| 57.5° | 4606.6 | 4298.9 | 4117.4 | 3907.2 | 4201.8  | 4199.8  | 4843.7 | 4757.3 | 4168.6 | 4816.3 | 5884.0 |
| 60°   | 5099.7 | 4738.3 | 4548.6 | 4306.2 | 4621.7  | 4734.4  | 5265.1 | 5016.3 | 4344.7 | 4963.6 | 5714.3 |
| 62.5° | 5791.8 | 5362.6 | 5054.8 | 4814.9 | 5199.7  | 5403.6  | 5785.5 | 5205.1 | 4355.9 | 4921.7 | 5268.0 |
| 65°   | 6647.8 | 6125.9 | 5722.5 | 5468.9 | 6103.9  | 6395.1  | 6414.6 | 5321.6 | 4252.5 | 4488.1 | 4329.6 |
| 67.5° | 7482.8 | 6896.0 | 6475.1 | 6523.4 | 7450.6  | 7588.6  | 7096.5 | 5419.2 | 3697.0 | 3603.8 | 3006.4 |
| 70°   | 8032.4 | 7396.4 | 7116.0 | 7628.1 | 9036.7  | 8895.2  | 7649.1 | 5162.1 | 2911.3 | 2336.2 | 1692.9 |
| 72.5° | 7991.0 | 7325.2 | 7224.3 | 8284.6 | 10171.1 | 10082.9 | 7716.4 | 4105.2 | 1949.9 | 1277.4 | 844.3  |
| 75°   | 6510.2 | 5992.7 | 6222.0 | 7842.7 | 9844.4  | 9840.0  | 6699.5 | 2541.1 | 1000.3 | 656.0  | 533.6  |
| 77.5° | 3599.5 | 3398.5 | 4072.1 | 5938.1 | 7838.3  | 7878.3  | 4526.6 | 1152.5 | 539.4  | 464.8  | 401.9  |
| 80°   | 1260.8 | 1242.2 | 1764.6 | 3204.4 | 5156.3  | 5166.0  | 2105.0 | 527.2  | 392.1  | 351.7  | 295.1  |
| 82.5° | 460.9  | 457.0  | 731.6  | 1488.6 | 2839.1  | 2832.7  | 798.4  | 328.2  | 290.7  | 248.7  | 194.6  |
| 85°   | 183.9  | 180.0  | 334.6  | 660.9  | 1304.2  | 1283.2  | 310.2  | 186.3  | 190.2  | 148.3  | 95.6   |
| 87.5° | 50.7   | 52.7   | 113.6  | 206.8  | 399.5   | 370.2   | 78.0   | 62.9   | 77.1   | 60.5   | 30.2   |
| 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°    | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  | 616.5  |
| 2.5°  | 740.9  | 745.7  | 697.5  | 714.5  | 736.5  | 748.2  | 754.0  | 729.2  | 737.4  | 772.6  | 771.1  |
| 5°    | 950.6  | 931.1  | 912.5  | 931.6  | 918.9  | 900.8  | 930.1  | 928.6  | 947.7  | 966.7  | 971.1  |
| 7.5°  | 1107.1 | 1081.8 | 1073.0 | 1030.1 | 987.2  | 943.8  | 981.3  | 1004.7 | 1009.6 | 1056.9 | 1076.9 |
| 10°   | 1163.7 | 1154.0 | 1157.4 | 1100.8 | 1095.4 | 1099.8 | 1065.2 | 1027.6 | 1050.6 | 1031.1 | 1045.7 |
| 12.5° | 1294.4 | 1318.8 | 1258.3 | 1219.8 | 1216.4 | 1189.6 | 1120.3 | 1095.9 | 1070.1 | 1096.9 | 1083.2 |
| 15°   | 1399.3 | 1444.7 | 1379.8 | 1312.0 | 1235.4 | 1194.0 | 1134.9 | 1097.9 | 1080.8 | 1086.7 | 1070.1 |
| 17.5° | 1552.9 | 1595.4 | 1430.5 | 1326.6 | 1247.6 | 1186.6 | 1096.4 | 1017.4 | 1059.4 | 1062.8 | 1043.7 |
| 20°   | 1654.9 | 1657.8 | 1447.6 | 1290.5 | 1219.3 | 1113.5 | 1025.7 | 956.4  | 1004.7 | 1054.0 | 1075.4 |
| 22.5° | 1754.4 | 1732.4 | 1468.6 | 1261.8 | 1116.4 | 1014.0 | 971.1  | 966.7  | 1002.8 | 1044.2 | 1049.1 |
| 25°   | 1829.0 | 1832.4 | 1480.7 | 1251.0 | 1055.9 | 916.4  | 916.4  | 948.1  | 979.9  | 1078.4 | 1073.5 |
| 27.5° | 2009.9 | 1876.8 | 1433.4 | 1201.8 | 972.0  | 859.4  | 916.9  | 959.4  | 974.5  | 1081.3 | 1092.0 |
| 30°   | 2141.6 | 2054.8 | 1443.2 | 1117.4 | 887.2  | 832.6  | 879.9  | 933.0  | 975.0  | 1098.4 | 1094.5 |
| 32.5° | 2362.6 | 2128.9 | 1466.1 | 998.9  | 823.8  | 822.3  | 864.3  | 920.3  | 970.6  | 1079.8 | 1085.7 |
| 35°   | 2606.9 | 2347.4 | 1402.2 | 908.6  | 808.7  | 816.5  | 870.6  | 893.0  | 952.0  | 1072.5 | 1077.9 |
| 37.5° | 3059.0 | 2461.6 | 1361.7 | 838.9  | 798.9  | 821.3  | 841.8  | 876.5  | 936.0  | 1035.9 | 1071.1 |
| 40°   | 3324.4 | 2696.7 | 1211.5 | 798.4  | 778.4  | 817.4  | 827.7  | 856.9  | 889.1  | 992.0  | 1014.5 |
| 42.5° | 3673.6 | 2770.8 | 1083.2 | 753.5  | 768.2  | 801.3  | 832.1  | 839.4  | 860.8  | 922.8  | 963.8  |
| 45°   | 3964.8 | 2826.4 | 947.2  | 717.5  | 733.5  | 836.9  | 838.9  | 835.5  | 831.6  | 854.5  | 888.2  |
| 47.5° | 4266.2 | 2975.6 | 821.8  | 677.5  | 720.4  | 866.2  | 842.3  | 811.1  | 795.0  | 797.9  | 829.1  |
| 50°   | 4598.8 | 3083.9 | 733.1  | 644.8  | 723.3  | 866.2  | 858.9  | 786.2  | 754.0  | 745.7  | 778.4  |
| 52.5° | 4891.4 | 3096.6 | 665.8  | 618.4  | 711.1  | 836.5  | 870.1  | 770.6  | 716.5  | 696.5  | 727.2  |
| 55°   | 5050.9 | 2936.1 | 617.0  | 594.5  | 679.9  | 809.6  | 864.3  | 761.8  | 671.1  | 656.0  | 683.3  |
| 57.5° | 5047.5 | 2669.8 | 575.5  | 561.4  | 644.3  | 772.1  | 831.6  | 714.0  | 643.3  | 634.5  | 661.4  |
| 60°   | 4865.6 | 2357.7 | 543.8  | 534.1  | 607.7  | 717.5  | 773.1  | 682.8  | 616.5  | 612.1  | 641.4  |
| 62.5° | 4453.0 | 2035.3 | 513.1  | 505.3  | 573.6  | 678.9  | 745.3  | 648.2  | 588.7  | 588.2  | 616.0  |
| 65°   | 3646.8 | 1633.9 | 484.3  | 482.4  | 541.9  | 640.9  | 718.9  | 618.9  | 559.9  | 569.7  | 598.0  |
| 67.5° | 2512.8 | 1148.1 | 453.6  | 459.4  | 512.6  | 604.3  | 698.9  | 599.4  | 529.7  | 549.7  | 575.0  |
| 70°   | 1378.8 | 710.1  | 419.4  | 431.2  | 475.5  | 561.9  | 667.7  | 567.7  | 490.2  | 520.9  | 538.5  |
| 72.5° | 701.4  | 473.6  | 377.0  | 395.5  | 430.2  | 499.4  | 609.2  | 521.9  | 447.7  | 459.4  | 468.7  |
| 75°   | 471.1  | 356.5  | 329.7  | 350.2  | 375.1  | 439.9  | 540.4  | 479.0  | 407.3  | 405.8  | 416.0  |
| 77.5° | 356.0  | 278.5  | 280.0  | 303.4  | 319.5  | 386.8  | 485.8  | 442.9  | 373.1  | 369.7  | 384.8  |
| 80°   | 260.4  | 211.2  | 225.3  | 249.7  | 264.3  | 347.3  | 450.2  | 402.9  | 326.8  | 313.1  | 325.8  |
| 82.5° | 172.7  | 149.7  | 166.8  | 191.2  | 202.9  | 290.2  | 408.7  | 341.9  | 266.3  | 231.7  | 233.6  |
| 85°   | 81.5   | 78.5   | 99.5   | 111.2  | 126.3  | 180.0  | 305.8  | 236.5  | 169.7  | 140.5  | 146.8  |
| 87.5° | 18.5   | 24.9   | 32.7   | 32.2   | 37.6   | 48.3   | 95.1   | 66.3   | 49.3   | 33.7   | 22.4   |
| 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)