

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: P367482

Luminaire Tested: **MSA-SA2C-760-U-RW**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367482
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-SA2C-760-U-RW
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12669 lumens
Efficiency: N/A
Efficacy: 112.1 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G3

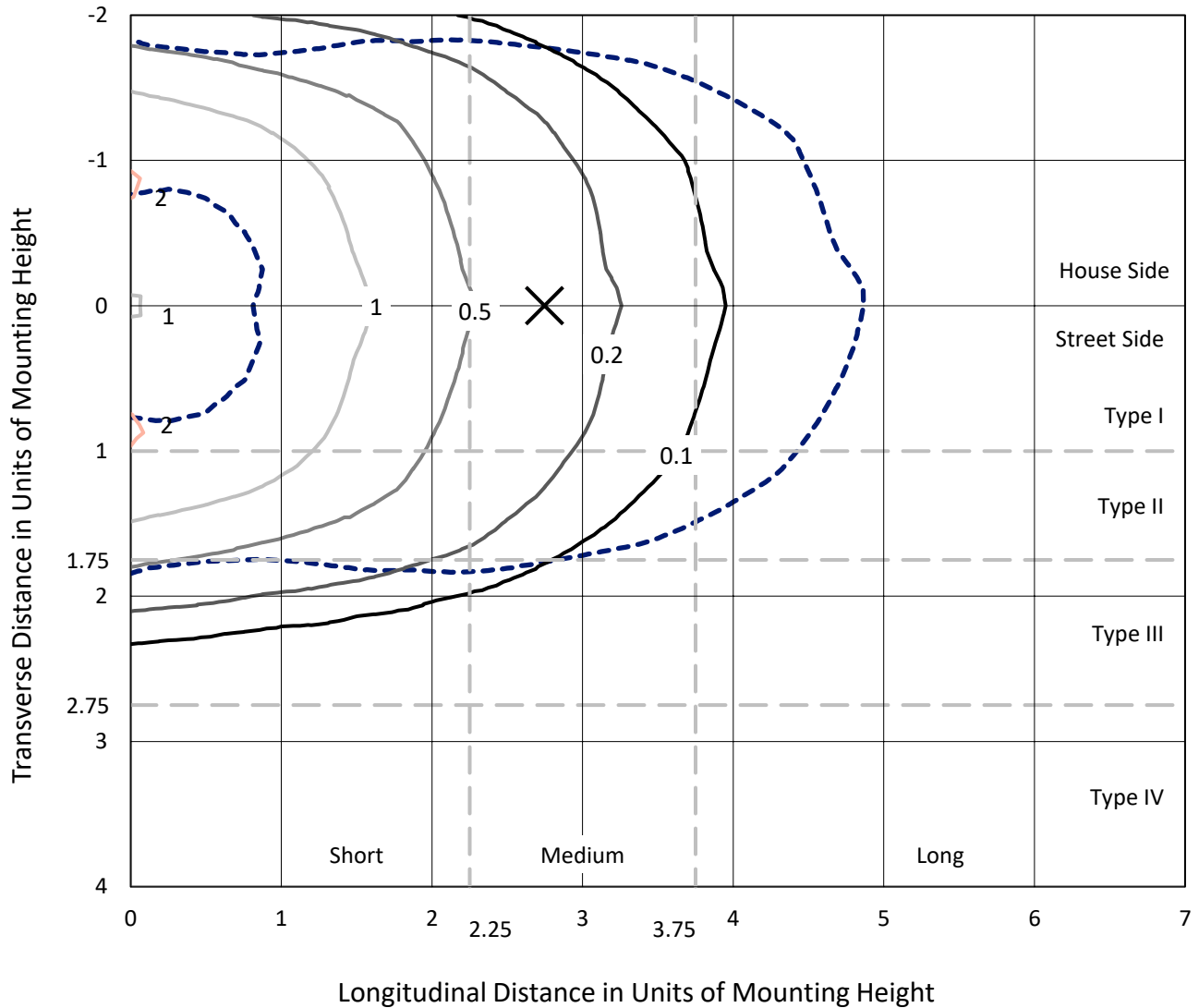
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

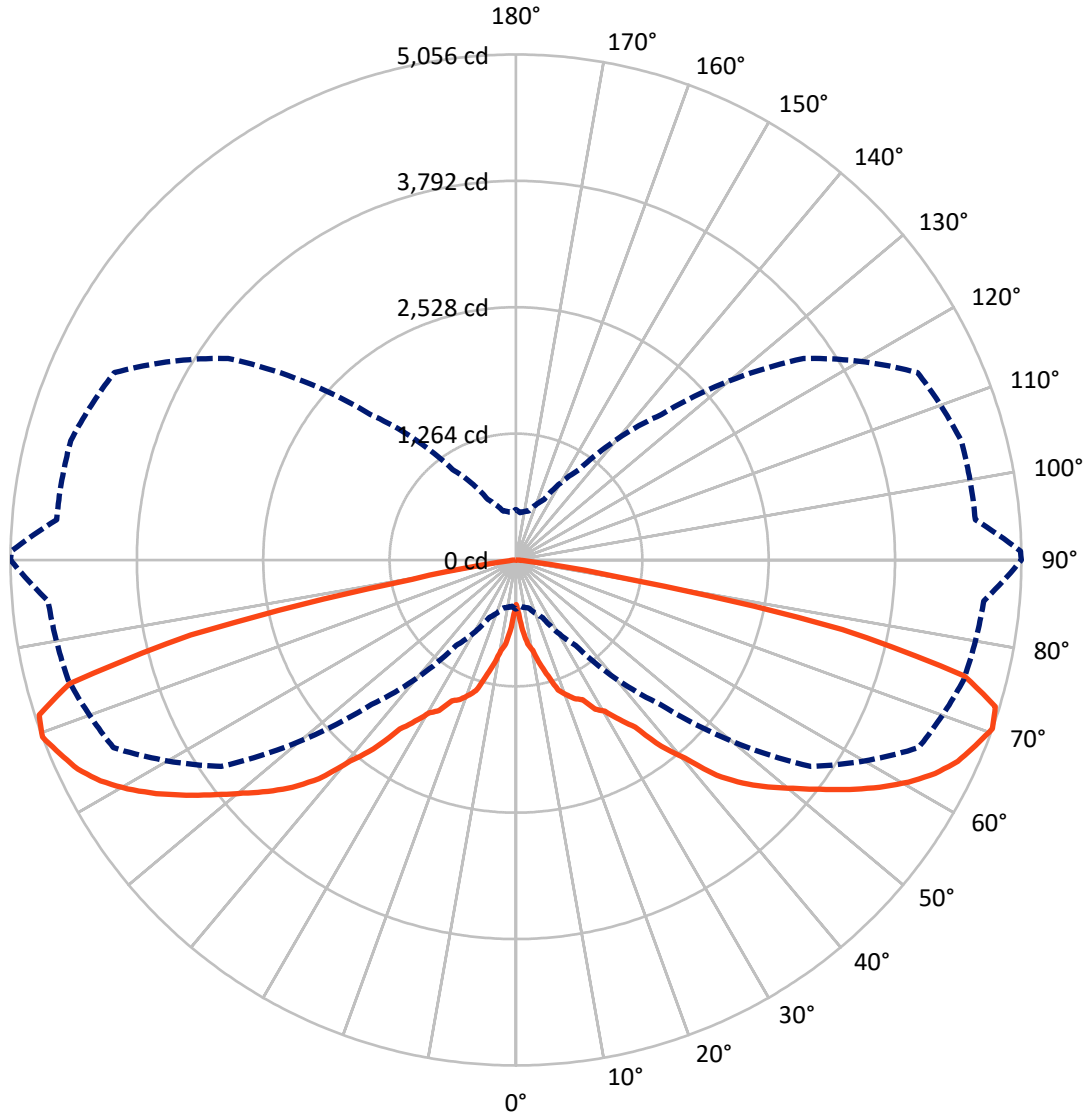
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.1 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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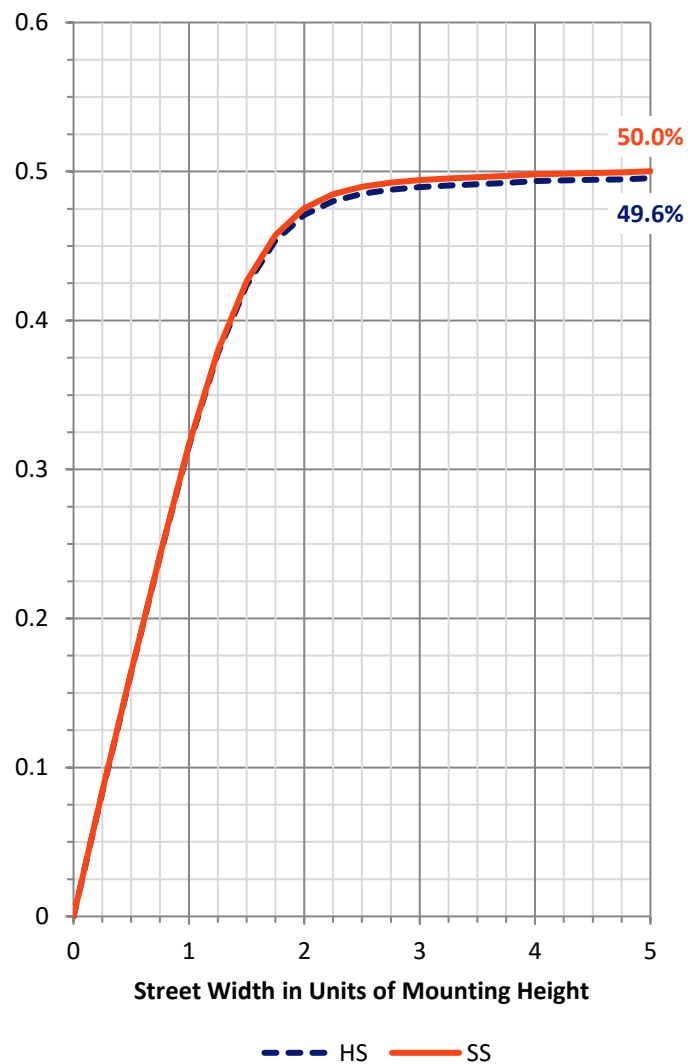
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6311.0 | 0.0 | 6311.0 |
| | % Fixture | 49.8 | 0.0 | 49.8 |
| Street Side | Lumens | 6358.0 | 0.0 | 6358.0 |
| | % Fixture | 50.2 | 0.0 | 50.2 |
| Total | Lumens | 12669.0 | 0.0 | 12669.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 67.1 | 0.5 |
| 10°-20° | 307.4 | 2.4 |
| 20°-30° | 664.7 | 5.2 |
| 30°-40° | 1268.2 | 10.0 |
| 40°-50° | 2303.9 | 18.2 |
| 50°-60° | 3236.4 | 25.5 |
| 60°-70° | 3090.1 | 24.4 |
| 70°-80° | 1585.9 | 12.5 |
| 80°-90° | 145.4 | 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° | 12669.0 | 100.0 |
| 0°-180° | 12669.0 | 100.0 |

Coefficient of Utilization



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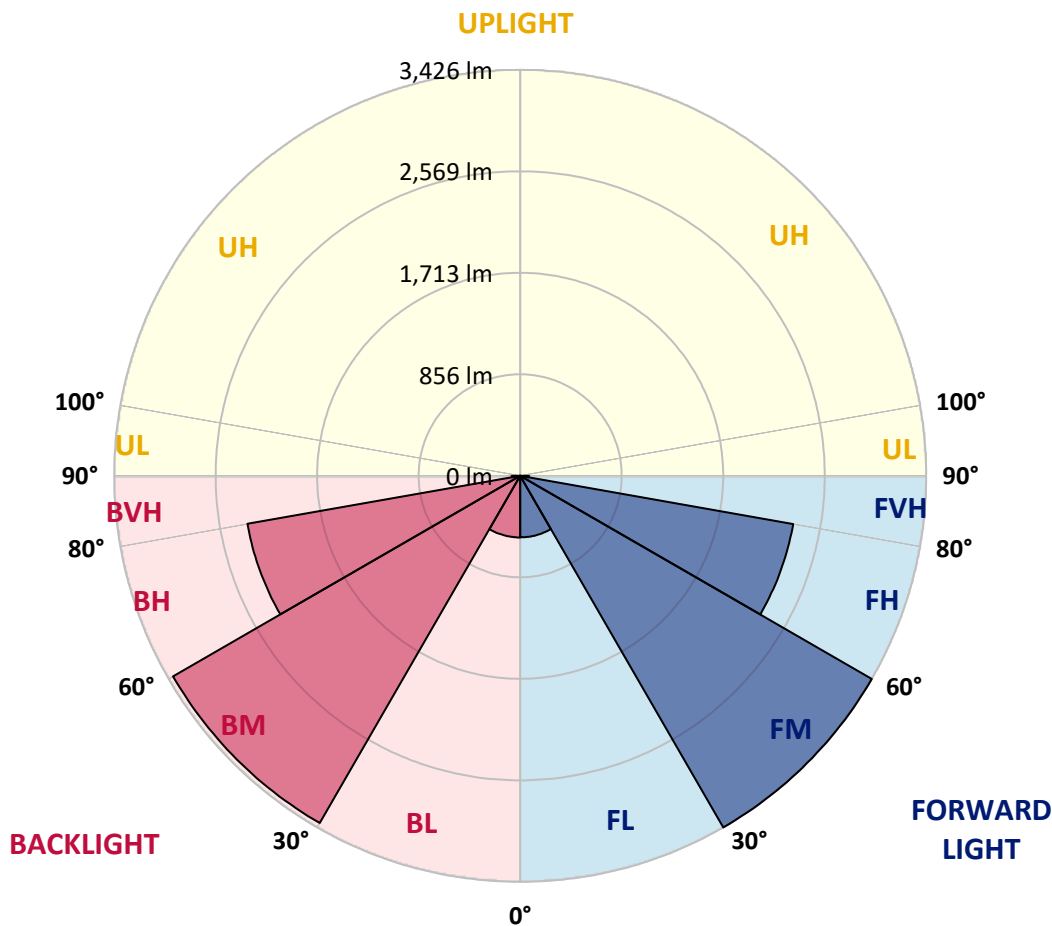
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 519.1 | 4.1 | | | |
| FM (30°-60°) | 3425.8 | 27.0 | | | |
| FH (60°-80°) | 2339.3 | 18.5 | | | G2/5000 |
| FVH (80°-90°) | 73.8 | 0.6 | | | G1/100 |
| BL (0°-30°) | 520.1 | 4.1 | B2/1000 | | |
| BM (30°-60°) | 3382.6 | 26.7 | B3/5000 | | |
| BH (60°-80°) | 2336.7 | 18.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 71.6 | 0.6 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 |
| 2.5° | 538.6 | 518.6 | 493.4 | 508.3 | 514.5 | 525.3 | 523.7 | 518.6 | 496.5 | 533.5 | 537.6 |
| 5° | 674.2 | 642.3 | 630.5 | 628.5 | 631.6 | 621.3 | 654.7 | 644.9 | 662.9 | 696.2 | 703.9 |
| 7.5° | 767.6 | 744.0 | 718.8 | 726.5 | 694.7 | 690.1 | 733.2 | 771.7 | 781.5 | 842.6 | 846.7 |
| 10° | 811.8 | 788.7 | 795.3 | 790.7 | 787.1 | 816.9 | 836.9 | 865.2 | 905.7 | 911.4 | 920.1 |
| 12.5° | 849.3 | 858.5 | 887.8 | 886.7 | 935.0 | 987.9 | 980.2 | 1009.5 | 1016.1 | 1087.0 | 1065.4 |
| 15° | 944.2 | 963.2 | 961.2 | 979.2 | 1000.2 | 1087.0 | 1087.5 | 1137.3 | 1183.0 | 1210.7 | 1203.5 |
| 17.5° | 1083.4 | 1090.1 | 1062.3 | 1063.4 | 1124.5 | 1159.9 | 1199.4 | 1190.7 | 1309.8 | 1364.3 | 1367.8 |
| 20° | 1166.6 | 1183.5 | 1151.7 | 1109.6 | 1217.9 | 1266.7 | 1288.8 | 1237.9 | 1365.3 | 1438.7 | 1438.7 |
| 22.5° | 1311.9 | 1268.2 | 1220.0 | 1191.7 | 1287.2 | 1339.1 | 1336.5 | 1322.2 | 1389.9 | 1519.8 | 1507.5 |
| 25° | 1392.0 | 1367.3 | 1343.2 | 1350.4 | 1398.7 | 1425.4 | 1460.8 | 1427.4 | 1491.1 | 1587.6 | 1547.0 |
| 27.5° | 1544.0 | 1498.3 | 1379.7 | 1474.1 | 1474.1 | 1454.1 | 1529.1 | 1545.0 | 1503.4 | 1660.5 | 1690.8 |
| 30° | 1716.0 | 1700.1 | 1532.2 | 1632.3 | 1601.5 | 1545.0 | 1688.8 | 1678.5 | 1608.7 | 1768.9 | 1755.0 |
| 32.5° | 1878.7 | 1931.1 | 1771.9 | 1717.0 | 1763.2 | 1784.8 | 1709.3 | 1740.1 | 1753.5 | 1908.0 | 1901.3 |
| 35° | 2128.3 | 2172.4 | 1961.4 | 1947.5 | 1870.5 | 1850.5 | 1908.0 | 1918.3 | 1919.3 | 2082.1 | 2052.3 |
| 37.5° | 2560.1 | 2496.4 | 2288.0 | 2189.9 | 2198.6 | 2174.5 | 2185.8 | 2104.7 | 2116.0 | 2352.1 | 2367.0 |
| 40° | 2875.9 | 2804.0 | 2571.9 | 2501.6 | 2329.0 | 2432.2 | 2340.8 | 2332.6 | 2310.0 | 2616.1 | 2607.8 |
| 42.5° | 3224.5 | 3125.9 | 2869.2 | 2775.2 | 2591.9 | 2549.8 | 2507.7 | 2602.7 | 2596.5 | 2880.0 | 2942.6 |
| 45° | 3487.9 | 3288.7 | 3154.7 | 3096.1 | 2986.3 | 2883.1 | 2843.0 | 2885.6 | 2866.1 | 3076.6 | 3186.0 |
| 47.5° | 3654.3 | 3481.2 | 3327.2 | 3204.0 | 3098.7 | 3351.8 | 3149.0 | 3092.0 | 3052.5 | 3288.2 | 3393.4 |
| 50° | 3786.7 | 3587.0 | 3405.2 | 3364.2 | 3447.3 | 3671.2 | 3351.3 | 3225.5 | 3273.8 | 3447.3 | 3590.6 |
| 52.5° | 3822.7 | 3611.1 | 3447.9 | 3421.7 | 3646.6 | 3687.1 | 3635.3 | 3423.7 | 3410.9 | 3638.4 | 3811.4 |
| 55° | 3712.8 | 3510.0 | 3432.5 | 3575.7 | 3824.2 | 3790.3 | 3869.4 | 3734.4 | 3643.5 | 3833.5 | 4051.2 |
| 57.5° | 3429.9 | 3228.6 | 3210.1 | 3416.5 | 3729.7 | 4018.3 | 4057.3 | 3950.5 | 3831.4 | 4032.7 | 4289.4 |
| 60° | 2965.2 | 2781.4 | 2828.1 | 3056.1 | 3528.5 | 3939.2 | 4146.7 | 4049.1 | 4012.1 | 4212.4 | 4510.2 |
| 62.5° | 2241.8 | 2098.5 | 2223.3 | 2541.1 | 3160.8 | 3837.1 | 4269.9 | 4254.5 | 4201.1 | 4403.4 | 4705.3 |
| 65° | 1429.5 | 1354.0 | 1481.3 | 1804.3 | 2590.4 | 3651.2 | 4329.0 | 4349.5 | 4398.8 | 4550.8 | 4856.3 |
| 67.5° | 830.8 | 790.7 | 868.3 | 1132.7 | 1844.8 | 2998.1 | 4219.1 | 4513.8 | 4539.5 | 4626.8 | 4955.4 |
| 70° | 491.4 | 465.2 | 497.0 | 636.2 | 1044.4 | 2042.5 | 3598.8 | 4441.9 | 4636.0 | 4696.6 | 5055.5 |
| 72.5° | 374.8 | 350.2 | 336.3 | 376.4 | 545.3 | 1055.2 | 2433.3 | 3765.2 | 4558.5 | 4650.4 | 5013.4 |
| 75° | 324.0 | 300.4 | 283.9 | 287.5 | 324.5 | 501.1 | 1319.1 | 2693.1 | 3884.3 | 4234.5 | 4630.9 |
| 77.5° | 278.3 | 257.2 | 245.4 | 244.4 | 249.0 | 275.2 | 551.5 | 1460.3 | 2432.8 | 3043.8 | 3338.5 |
| 80° | 222.8 | 206.4 | 203.8 | 203.8 | 197.2 | 195.1 | 274.2 | 555.6 | 925.8 | 1097.8 | 1052.6 |
| 82.5° | 162.8 | 146.3 | 162.8 | 160.7 | 150.4 | 142.2 | 174.6 | 240.3 | 285.5 | 225.4 | 178.2 |
| 85° | 109.9 | 95.0 | 107.3 | 109.4 | 99.6 | 73.9 | 104.7 | 120.1 | 123.2 | 77.0 | 63.7 |
| 87.5° | 38.5 | 37.5 | 60.6 | 52.9 | 43.1 | 25.2 | 38.5 | 41.6 | 43.6 | 27.2 | 18.5 |
| 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° | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 | 444.7 |
| 2.5° | 539.1 | 533.0 | 502.2 | 506.8 | 518.6 | 524.2 | 529.9 | 506.8 | 495.5 | 531.4 | 527.8 |
| 5° | 706.0 | 683.4 | 658.3 | 654.7 | 656.2 | 634.1 | 647.0 | 641.3 | 643.9 | 667.0 | 671.6 |
| 7.5° | 845.7 | 818.4 | 785.1 | 758.9 | 713.7 | 677.8 | 708.1 | 723.5 | 728.1 | 769.2 | 784.6 |
| 10° | 921.1 | 898.0 | 888.3 | 839.0 | 824.1 | 819.5 | 812.3 | 787.6 | 814.9 | 805.1 | 812.8 |
| 12.5° | 1069.0 | 1064.4 | 1013.6 | 981.2 | 984.3 | 993.0 | 947.8 | 923.2 | 887.8 | 943.2 | 923.2 |
| 15° | 1194.8 | 1214.8 | 1164.0 | 1105.0 | 1075.7 | 1090.6 | 1056.2 | 1020.2 | 988.4 | 1005.3 | 983.8 |
| 17.5° | 1355.5 | 1355.0 | 1255.9 | 1192.8 | 1190.2 | 1189.2 | 1138.3 | 1059.3 | 1097.3 | 1085.4 | 1086.5 |
| 20° | 1440.8 | 1426.9 | 1303.7 | 1230.8 | 1292.9 | 1270.8 | 1225.1 | 1123.4 | 1167.6 | 1182.0 | 1191.2 |
| 22.5° | 1512.1 | 1504.4 | 1355.0 | 1301.6 | 1341.7 | 1342.2 | 1296.5 | 1243.1 | 1237.4 | 1282.1 | 1258.0 |
| 25° | 1561.9 | 1592.7 | 1452.1 | 1439.2 | 1456.7 | 1439.2 | 1394.5 | 1359.6 | 1337.0 | 1403.8 | 1337.0 |
| 27.5° | 1680.0 | 1636.4 | 1466.9 | 1539.9 | 1550.6 | 1462.8 | 1518.8 | 1477.7 | 1415.1 | 1497.8 | 1525.0 |
| 30° | 1764.2 | 1789.9 | 1571.7 | 1681.6 | 1668.7 | 1587.6 | 1610.7 | 1609.2 | 1534.2 | 1695.4 | 1676.4 |
| 32.5° | 1909.0 | 1878.2 | 1742.7 | 1733.9 | 1764.7 | 1761.2 | 1722.1 | 1741.1 | 1759.6 | 1876.7 | 1904.9 |
| 35° | 2057.4 | 2090.3 | 1852.0 | 1911.1 | 1902.4 | 1846.9 | 1949.1 | 1937.3 | 1992.2 | 2232.5 | 2152.9 |
| 37.5° | 2392.2 | 2235.6 | 2097.5 | 2089.8 | 2148.3 | 2157.0 | 2124.2 | 2176.0 | 2294.6 | 2479.5 | 2564.7 |
| 40° | 2611.4 | 2540.1 | 2305.4 | 2314.7 | 2233.5 | 2373.2 | 2280.8 | 2447.6 | 2538.0 | 2849.7 | 2819.4 |
| 42.5° | 2943.1 | 2769.1 | 2543.7 | 2574.5 | 2558.0 | 2490.8 | 2612.5 | 2698.2 | 2827.6 | 3065.3 | 3218.9 |
| 45° | 3190.1 | 2951.3 | 2844.5 | 2825.6 | 2823.5 | 2940.6 | 2925.2 | 3062.3 | 3108.5 | 3287.1 | 3414.5 |
| 47.5° | 3377.5 | 3174.7 | 3016.6 | 3038.1 | 2975.5 | 3309.7 | 3131.6 | 3174.2 | 3267.6 | 3436.0 | 3584.4 |
| 50° | 3599.8 | 3373.9 | 3194.2 | 3247.6 | 3400.1 | 3528.5 | 3367.2 | 3294.3 | 3340.0 | 3538.7 | 3704.1 |
| 52.5° | 3805.7 | 3568.0 | 3370.3 | 3415.0 | 3664.0 | 3605.5 | 3588.0 | 3403.7 | 3398.1 | 3557.7 | 3745.7 |
| 55° | 4046.5 | 3778.5 | 3604.0 | 3745.7 | 3834.0 | 3761.6 | 3733.9 | 3509.5 | 3370.8 | 3459.7 | 3636.8 |
| 57.5° | 4282.7 | 3987.0 | 3813.4 | 3842.7 | 3954.6 | 3882.8 | 3674.8 | 3329.3 | 3156.2 | 3173.7 | 3352.9 |
| 60° | 4504.0 | 4178.5 | 4035.3 | 4007.0 | 4096.4 | 3814.5 | 3450.4 | 2999.1 | 2769.6 | 2727.5 | 2882.5 |
| 62.5° | 4693.5 | 4338.7 | 4203.2 | 4126.1 | 4211.4 | 3817.0 | 3100.8 | 2469.2 | 2217.1 | 2074.4 | 2195.0 |
| 65° | 4843.9 | 4471.7 | 4375.2 | 4335.1 | 4365.9 | 3585.0 | 2556.0 | 1813.0 | 1503.9 | 1345.8 | 1416.1 |
| 67.5° | 4944.1 | 4546.1 | 4502.0 | 4554.4 | 4143.6 | 2985.7 | 1893.6 | 1160.4 | 874.4 | 788.2 | 832.3 |
| 70° | 5047.8 | 4611.9 | 4610.3 | 4432.2 | 3513.6 | 2058.4 | 1106.0 | 669.0 | 508.8 | 475.5 | 503.2 |
| 72.5° | 5012.9 | 4533.8 | 4556.9 | 3876.1 | 2434.8 | 1100.3 | 583.8 | 378.4 | 344.5 | 356.3 | 381.0 |
| 75° | 4642.2 | 4122.0 | 4010.6 | 2786.5 | 1381.2 | 511.4 | 336.3 | 286.5 | 284.5 | 302.4 | 326.6 |
| 77.5° | 3367.2 | 2870.7 | 2576.0 | 1579.4 | 592.0 | 276.8 | 247.5 | 239.3 | 239.3 | 253.6 | 275.2 |
| 80° | 1110.1 | 960.7 | 1001.2 | 611.0 | 279.8 | 191.0 | 193.1 | 196.7 | 195.6 | 199.2 | 217.2 |
| 82.5° | 182.3 | 189.0 | 292.2 | 249.5 | 168.9 | 130.4 | 145.8 | 153.0 | 155.1 | 138.6 | 157.6 |
| 85° | 64.7 | 72.9 | 124.3 | 115.5 | 97.6 | 65.7 | 96.0 | 107.3 | 105.8 | 92.4 | 102.2 |
| 87.5° | 20.0 | 25.7 | 45.2 | 34.9 | 29.3 | 18.0 | 35.9 | 42.1 | 52.9 | 21.6 | 19.5 |
| 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)