

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: P596984

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

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596984
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-7)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2D-835-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: 11419 lumens
Efficiency: N/A
Efficacy: 88.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B3 - U0 - G3

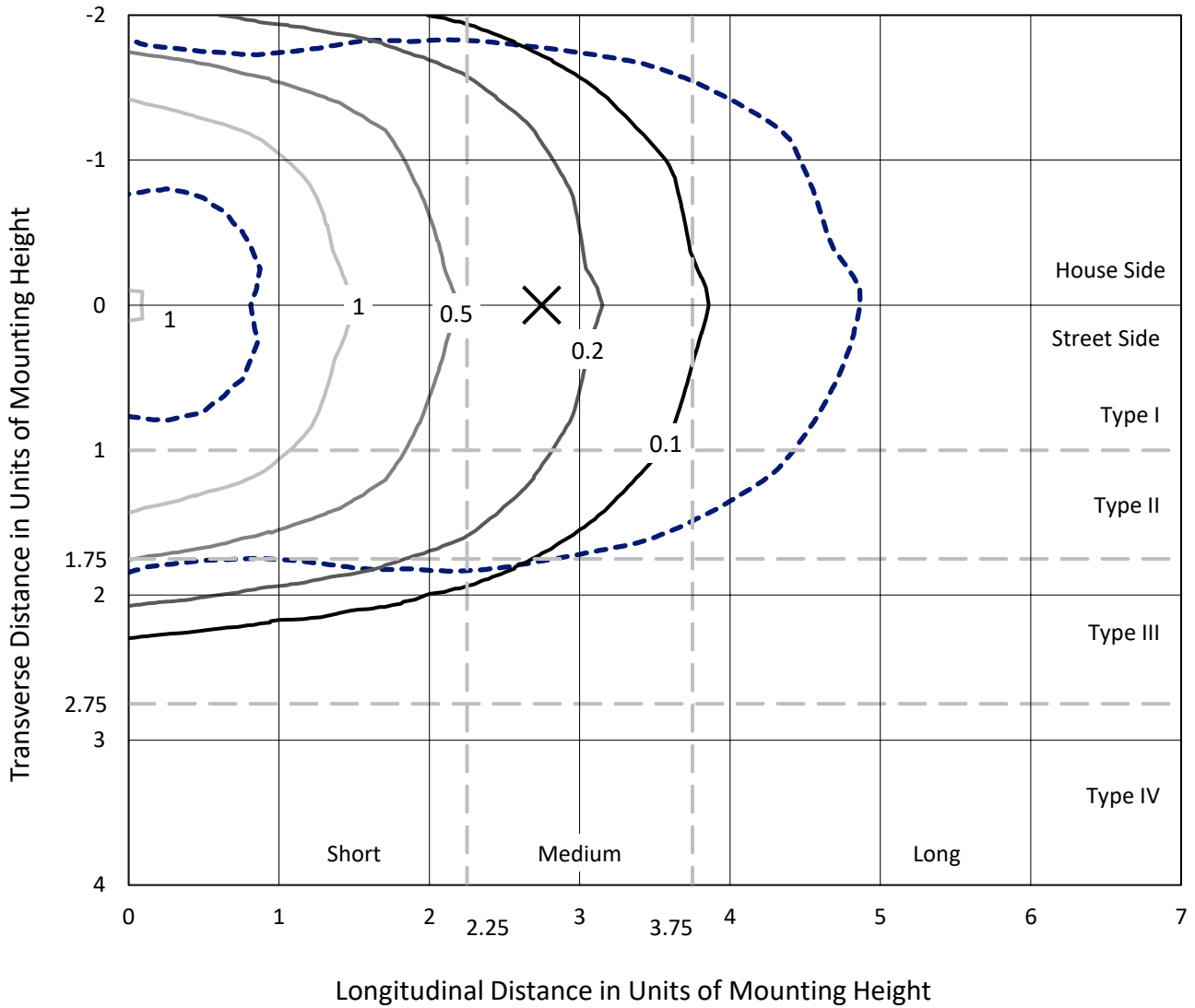
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

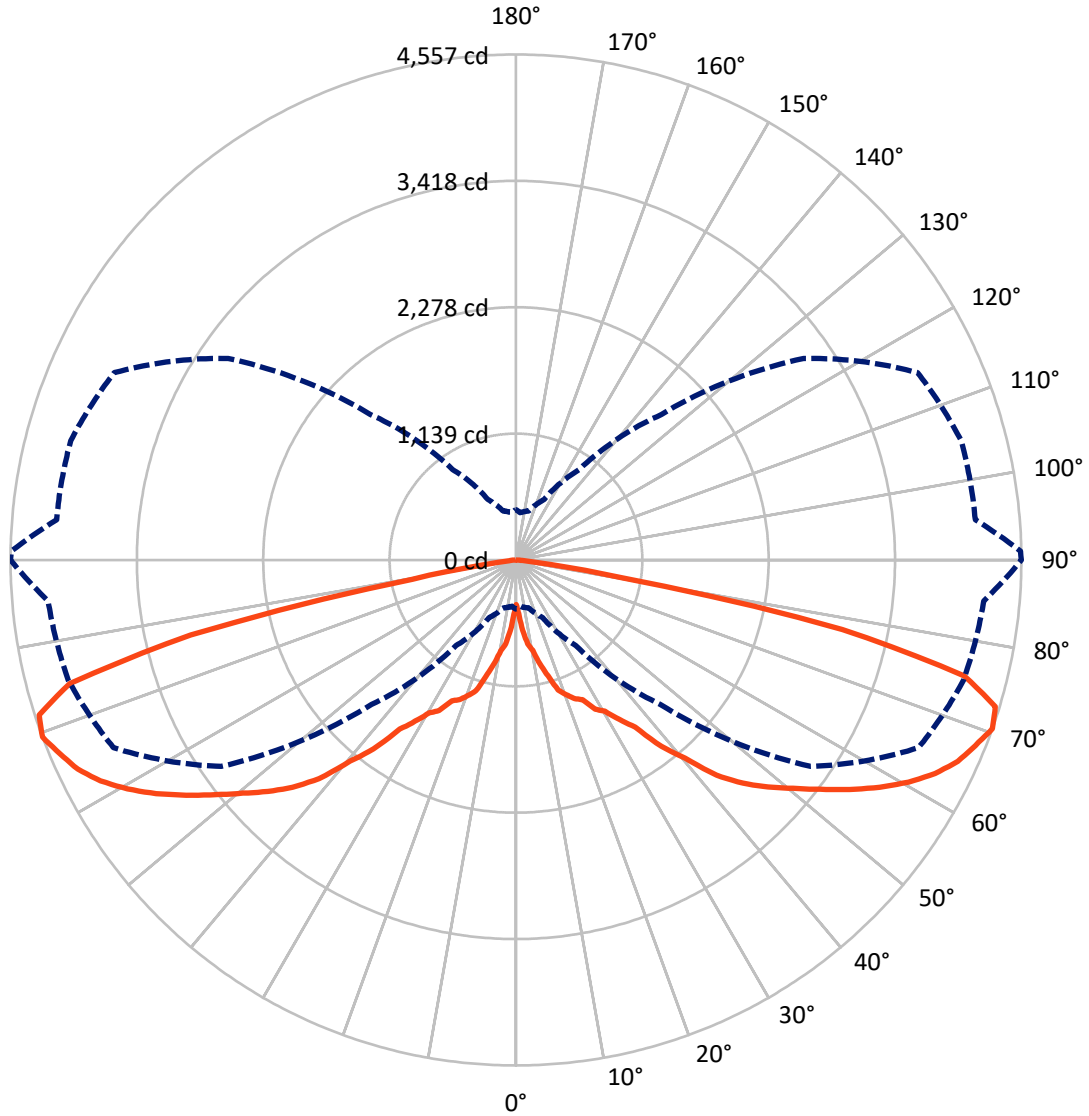
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.9 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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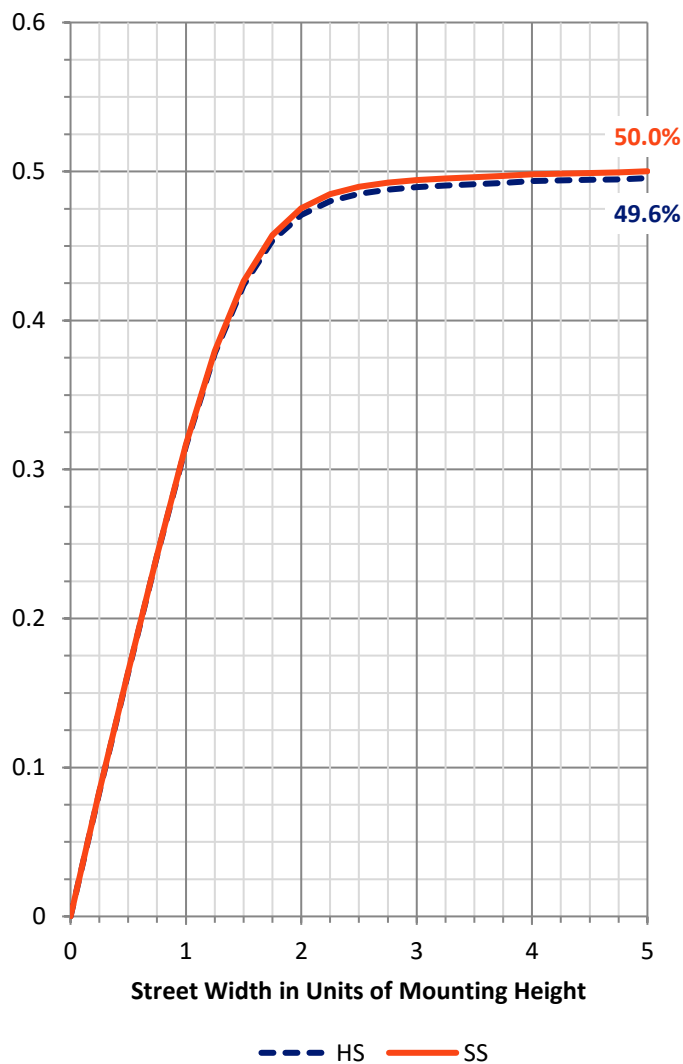
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5688.3 | 0.0 | 5688.3 |
| | % Fixture | 49.8 | 0.0 | 49.8 |
| Street Side | Lumens | 5730.6 | 0.0 | 5730.6 |
| | % Fixture | 50.2 | 0.0 | 50.2 |
| Total | Lumens | 11419.0 | 0.0 | 11419.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 60.5 | 0.5 |
| 10°-20° | 277.1 | 2.4 |
| 20°-30° | 599.1 | 5.2 |
| 30°-40° | 1143.1 | 10.0 |
| 40°-50° | 2076.6 | 18.2 |
| 50°-60° | 2917.1 | 25.5 |
| 60°-70° | 2785.2 | 24.4 |
| 70°-80° | 1429.4 | 12.5 |
| 80°-90° | 131.0 | 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° | 11419.0 | 100.0 |
| 0°-180° | 11419.0 | 100.0 |

Coefficient of Utilization



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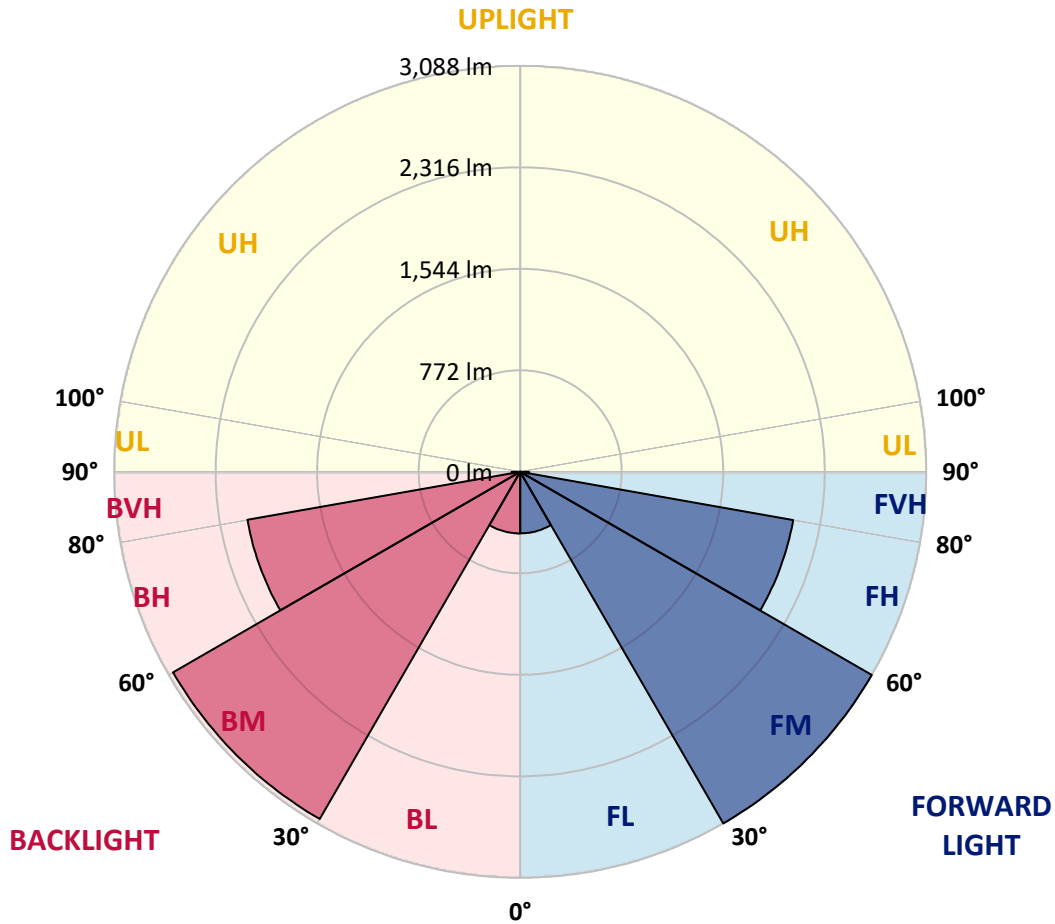
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 467.9 | 4.1 | | | |
| FM (30°-60°) | 3087.8 | 27.0 | | | |
| FH (60°-80°) | 2108.5 | 18.5 | | | G2/5000 |
| FVH (80°-90°) | 66.5 | 0.6 | | | G1/100 |
| BL (0°-30°) | 468.8 | 4.1 | B1/500 | | |
| BM (30°-60°) | 3048.9 | 26.7 | B3/5000 | | |
| BH (60°-80°) | 2106.2 | 18.4 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 64.5 | 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° | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 |
| 2.5° | 485.5 | 467.4 | 444.7 | 458.2 | 463.7 | 473.4 | 472.1 | 467.4 | 447.5 | 480.8 | 484.5 |
| 5° | 607.7 | 579.0 | 568.3 | 566.5 | 569.2 | 560.0 | 590.1 | 581.3 | 597.5 | 627.6 | 634.5 |
| 7.5° | 691.9 | 670.6 | 647.9 | 654.9 | 626.2 | 622.0 | 660.9 | 695.6 | 704.4 | 759.4 | 763.2 |
| 10° | 731.7 | 710.9 | 716.9 | 712.7 | 709.5 | 736.3 | 754.4 | 779.8 | 816.4 | 821.5 | 829.3 |
| 12.5° | 765.5 | 773.8 | 800.2 | 799.2 | 842.8 | 890.4 | 883.5 | 909.9 | 915.9 | 979.7 | 960.3 |
| 15° | 851.1 | 868.2 | 866.4 | 882.6 | 901.5 | 979.7 | 980.2 | 1025.1 | 1066.3 | 1091.3 | 1084.8 |
| 17.5° | 976.5 | 982.5 | 957.5 | 958.4 | 1013.5 | 1045.5 | 1081.1 | 1073.2 | 1180.6 | 1229.6 | 1232.9 |
| 20° | 1051.5 | 1066.7 | 1038.1 | 1000.1 | 1097.8 | 1141.7 | 1161.6 | 1115.8 | 1230.6 | 1296.8 | 1296.8 |
| 22.5° | 1182.4 | 1143.1 | 1099.6 | 1074.1 | 1160.2 | 1207.0 | 1204.7 | 1191.7 | 1252.8 | 1369.9 | 1358.8 |
| 25° | 1254.6 | 1232.4 | 1210.7 | 1217.2 | 1260.7 | 1284.7 | 1316.7 | 1286.6 | 1344.0 | 1431.0 | 1394.4 |
| 27.5° | 1391.6 | 1350.4 | 1243.5 | 1328.7 | 1328.7 | 1310.6 | 1378.2 | 1392.6 | 1355.1 | 1496.7 | 1524.0 |
| 30° | 1546.7 | 1532.3 | 1381.0 | 1471.2 | 1443.5 | 1392.6 | 1522.1 | 1512.9 | 1449.9 | 1594.3 | 1581.8 |
| 32.5° | 1693.4 | 1740.6 | 1597.1 | 1547.6 | 1589.2 | 1608.7 | 1540.6 | 1568.4 | 1580.4 | 1719.7 | 1713.7 |
| 35° | 1918.3 | 1958.1 | 1767.9 | 1755.4 | 1686.0 | 1667.9 | 1719.7 | 1729.0 | 1729.9 | 1876.6 | 1849.8 |
| 37.5° | 2307.5 | 2250.1 | 2062.2 | 1973.8 | 1981.7 | 1959.9 | 1970.1 | 1897.0 | 1907.2 | 2120.1 | 2133.5 |
| 40° | 2592.1 | 2527.3 | 2318.1 | 2254.7 | 2099.2 | 2192.3 | 2109.9 | 2102.5 | 2082.1 | 2357.9 | 2350.5 |
| 42.5° | 2906.4 | 2817.5 | 2586.1 | 2501.4 | 2336.2 | 2298.2 | 2260.3 | 2345.9 | 2340.4 | 2595.8 | 2652.3 |
| 45° | 3143.8 | 2964.2 | 2843.4 | 2790.7 | 2691.6 | 2598.6 | 2562.5 | 2600.9 | 2583.3 | 2773.1 | 2871.6 |
| 47.5° | 3293.7 | 3137.8 | 2998.9 | 2887.8 | 2793.0 | 3021.1 | 2838.3 | 2787.0 | 2751.3 | 2963.7 | 3058.6 |
| 50° | 3413.1 | 3233.1 | 3069.3 | 3032.2 | 3107.2 | 3309.0 | 3020.7 | 2907.3 | 2950.8 | 3107.2 | 3236.3 |
| 52.5° | 3445.5 | 3254.8 | 3107.7 | 3084.1 | 3286.8 | 3323.3 | 3276.6 | 3085.9 | 3074.4 | 3279.4 | 3435.3 |
| 55° | 3346.5 | 3163.7 | 3093.8 | 3222.9 | 3446.9 | 3416.4 | 3487.6 | 3365.9 | 3284.0 | 3455.2 | 3651.5 |
| 57.5° | 3091.5 | 2910.1 | 2893.4 | 3079.4 | 3361.7 | 3621.8 | 3657.0 | 3560.7 | 3453.4 | 3634.8 | 3866.2 |
| 60° | 2672.6 | 2507.0 | 2549.1 | 2754.6 | 3180.3 | 3550.6 | 3737.5 | 3649.6 | 3616.3 | 3796.8 | 4065.2 |
| 62.5° | 2020.6 | 1891.4 | 2003.9 | 2290.4 | 2849.0 | 3458.5 | 3848.6 | 3834.7 | 3786.6 | 3968.9 | 4241.1 |
| 65° | 1288.4 | 1220.4 | 1335.2 | 1626.3 | 2334.8 | 3290.9 | 3901.8 | 3920.3 | 3964.8 | 4101.8 | 4377.1 |
| 67.5° | 748.8 | 712.7 | 782.6 | 1020.9 | 1662.8 | 2702.3 | 3802.8 | 4068.4 | 4091.6 | 4170.3 | 4466.4 |
| 70° | 442.9 | 419.3 | 448.0 | 573.4 | 941.3 | 1841.0 | 3243.7 | 4003.6 | 4178.6 | 4233.2 | 4556.7 |
| 72.5° | 337.8 | 315.6 | 303.1 | 339.2 | 491.5 | 951.0 | 2193.2 | 3393.7 | 4108.7 | 4191.5 | 4518.7 |
| 75° | 292.0 | 270.7 | 255.9 | 259.2 | 292.5 | 451.7 | 1188.9 | 2427.4 | 3501.0 | 3816.7 | 4174.0 |
| 77.5° | 250.8 | 231.9 | 221.2 | 220.3 | 224.5 | 248.1 | 497.0 | 1316.2 | 2192.7 | 2743.5 | 3009.1 |
| 80° | 200.9 | 186.0 | 183.7 | 183.7 | 177.7 | 175.9 | 247.1 | 500.7 | 834.4 | 989.5 | 948.7 |
| 82.5° | 146.7 | 131.9 | 146.7 | 144.9 | 135.6 | 128.2 | 157.4 | 216.6 | 257.3 | 203.2 | 160.6 |
| 85° | 99.0 | 85.6 | 96.7 | 98.6 | 89.8 | 66.6 | 94.4 | 108.3 | 111.1 | 69.4 | 57.4 |
| 87.5° | 34.7 | 33.8 | 54.6 | 47.7 | 38.9 | 22.7 | 34.7 | 37.5 | 39.3 | 24.5 | 16.7 |
| 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):

| | 91° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 | 400.8 |
| 2.5° | 485.9 | 480.4 | 452.6 | 456.8 | 467.4 | 472.5 | 477.6 | 456.8 | 446.6 | 479.0 | 475.8 |
| 5° | 636.3 | 616.0 | 593.3 | 590.1 | 591.5 | 571.6 | 583.1 | 578.0 | 580.3 | 601.2 | 605.3 |
| 7.5° | 762.2 | 737.7 | 707.6 | 684.0 | 643.3 | 610.9 | 638.2 | 652.1 | 656.2 | 693.3 | 707.2 |
| 10° | 830.3 | 809.4 | 800.6 | 756.2 | 742.8 | 738.6 | 732.1 | 709.9 | 734.5 | 725.7 | 732.6 |
| 12.5° | 963.5 | 959.4 | 913.6 | 884.4 | 887.2 | 895.0 | 854.3 | 832.1 | 800.2 | 850.2 | 832.1 |
| 15° | 1076.9 | 1095.0 | 1049.2 | 995.9 | 969.6 | 983.0 | 952.0 | 919.6 | 890.9 | 906.2 | 886.7 |
| 17.5° | 1221.8 | 1221.3 | 1132.0 | 1075.1 | 1072.8 | 1071.8 | 1026.0 | 954.7 | 989.0 | 978.4 | 979.3 |
| 20° | 1298.6 | 1286.1 | 1175.0 | 1109.3 | 1165.3 | 1145.4 | 1104.2 | 1012.6 | 1052.4 | 1065.4 | 1073.7 |
| 22.5° | 1362.9 | 1356.0 | 1221.3 | 1173.2 | 1209.3 | 1209.7 | 1168.6 | 1120.4 | 1115.3 | 1155.6 | 1133.8 |
| 25° | 1407.8 | 1435.6 | 1308.8 | 1297.2 | 1313.0 | 1297.2 | 1257.0 | 1225.5 | 1205.1 | 1265.3 | 1205.1 |
| 27.5° | 1514.3 | 1474.9 | 1322.2 | 1387.9 | 1397.6 | 1318.5 | 1368.9 | 1331.9 | 1275.5 | 1350.0 | 1374.5 |
| 30° | 1590.2 | 1613.3 | 1416.6 | 1515.7 | 1504.1 | 1431.0 | 1451.8 | 1450.4 | 1382.8 | 1528.2 | 1511.0 |
| 32.5° | 1720.7 | 1692.9 | 1570.7 | 1562.9 | 1590.6 | 1587.4 | 1552.2 | 1569.3 | 1586.0 | 1691.5 | 1717.0 |
| 35° | 1854.4 | 1884.0 | 1669.3 | 1722.5 | 1714.7 | 1664.7 | 1756.8 | 1746.1 | 1795.6 | 2012.2 | 1940.5 |
| 37.5° | 2156.2 | 2015.0 | 1890.5 | 1883.6 | 1936.3 | 1944.2 | 1914.6 | 1961.3 | 2068.2 | 2234.8 | 2311.7 |
| 40° | 2353.8 | 2289.5 | 2078.0 | 2086.3 | 2013.2 | 2139.0 | 2055.7 | 2206.1 | 2287.6 | 2568.5 | 2541.2 |
| 42.5° | 2652.7 | 2495.9 | 2292.7 | 2320.5 | 2305.6 | 2245.0 | 2354.7 | 2432.0 | 2548.6 | 2762.9 | 2901.3 |
| 45° | 2875.3 | 2660.1 | 2563.9 | 2546.8 | 2544.9 | 2650.4 | 2636.5 | 2760.1 | 2801.8 | 2962.8 | 3077.6 |
| 47.5° | 3044.3 | 2861.5 | 2718.9 | 2738.4 | 2681.9 | 2983.2 | 2822.6 | 2861.0 | 2945.2 | 3097.0 | 3230.8 |
| 50° | 3244.7 | 3041.0 | 2879.1 | 2927.2 | 3064.6 | 3180.3 | 3035.0 | 2969.3 | 3010.5 | 3189.6 | 3338.6 |
| 52.5° | 3430.2 | 3216.0 | 3037.8 | 3078.1 | 3302.5 | 3249.8 | 3234.0 | 3067.9 | 3062.8 | 3206.7 | 3376.1 |
| 55° | 3647.3 | 3405.7 | 3248.4 | 3376.1 | 3455.7 | 3390.4 | 3365.5 | 3163.2 | 3038.3 | 3118.3 | 3278.0 |
| 57.5° | 3860.2 | 3593.6 | 3437.2 | 3463.6 | 3564.5 | 3499.7 | 3312.2 | 3000.8 | 2844.8 | 2860.5 | 3022.1 |
| 60° | 4059.6 | 3766.2 | 3637.1 | 3611.7 | 3692.2 | 3438.1 | 3110.0 | 2703.2 | 2496.3 | 2458.4 | 2598.1 |
| 62.5° | 4230.4 | 3910.6 | 3788.4 | 3719.0 | 3795.9 | 3440.4 | 2794.8 | 2225.6 | 1998.4 | 1869.7 | 1978.5 |
| 65° | 4366.0 | 4030.5 | 3943.5 | 3907.4 | 3935.2 | 3231.2 | 2303.8 | 1634.1 | 1355.5 | 1213.0 | 1276.4 |
| 67.5° | 4456.3 | 4097.6 | 4057.8 | 4105.0 | 3734.8 | 2691.2 | 1706.8 | 1045.9 | 788.1 | 710.4 | 750.2 |
| 70° | 4549.7 | 4156.8 | 4155.4 | 3994.9 | 3166.9 | 1855.3 | 996.9 | 603.0 | 458.6 | 428.5 | 453.5 |
| 72.5° | 4518.3 | 4086.5 | 4107.3 | 3493.6 | 2194.6 | 991.8 | 526.2 | 341.1 | 310.5 | 321.2 | 343.4 |
| 75° | 4184.1 | 3715.3 | 3614.9 | 2511.6 | 1244.9 | 460.9 | 303.1 | 258.2 | 256.4 | 272.6 | 294.3 |
| 77.5° | 3035.0 | 2587.5 | 2321.8 | 1423.6 | 533.6 | 249.4 | 223.1 | 215.7 | 215.7 | 228.6 | 248.1 |
| 80° | 1000.6 | 865.9 | 902.5 | 550.7 | 252.2 | 172.2 | 174.0 | 177.3 | 176.3 | 179.6 | 195.8 |
| 82.5° | 164.3 | 170.3 | 263.3 | 224.9 | 152.3 | 117.6 | 131.4 | 137.9 | 139.8 | 125.0 | 142.1 |
| 85° | 58.3 | 65.7 | 112.0 | 104.1 | 87.9 | 59.2 | 86.5 | 96.7 | 95.3 | 83.3 | 92.1 |
| 87.5° | 18.0 | 23.1 | 40.7 | 31.5 | 26.4 | 16.2 | 32.4 | 37.9 | 47.7 | 19.4 | 17.6 |
| 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)