

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: P597156

Luminaire Tested: **MSA-SA4C-835-U-T4W**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P597156
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-14)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4C-835-U-T4W
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20113 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G4

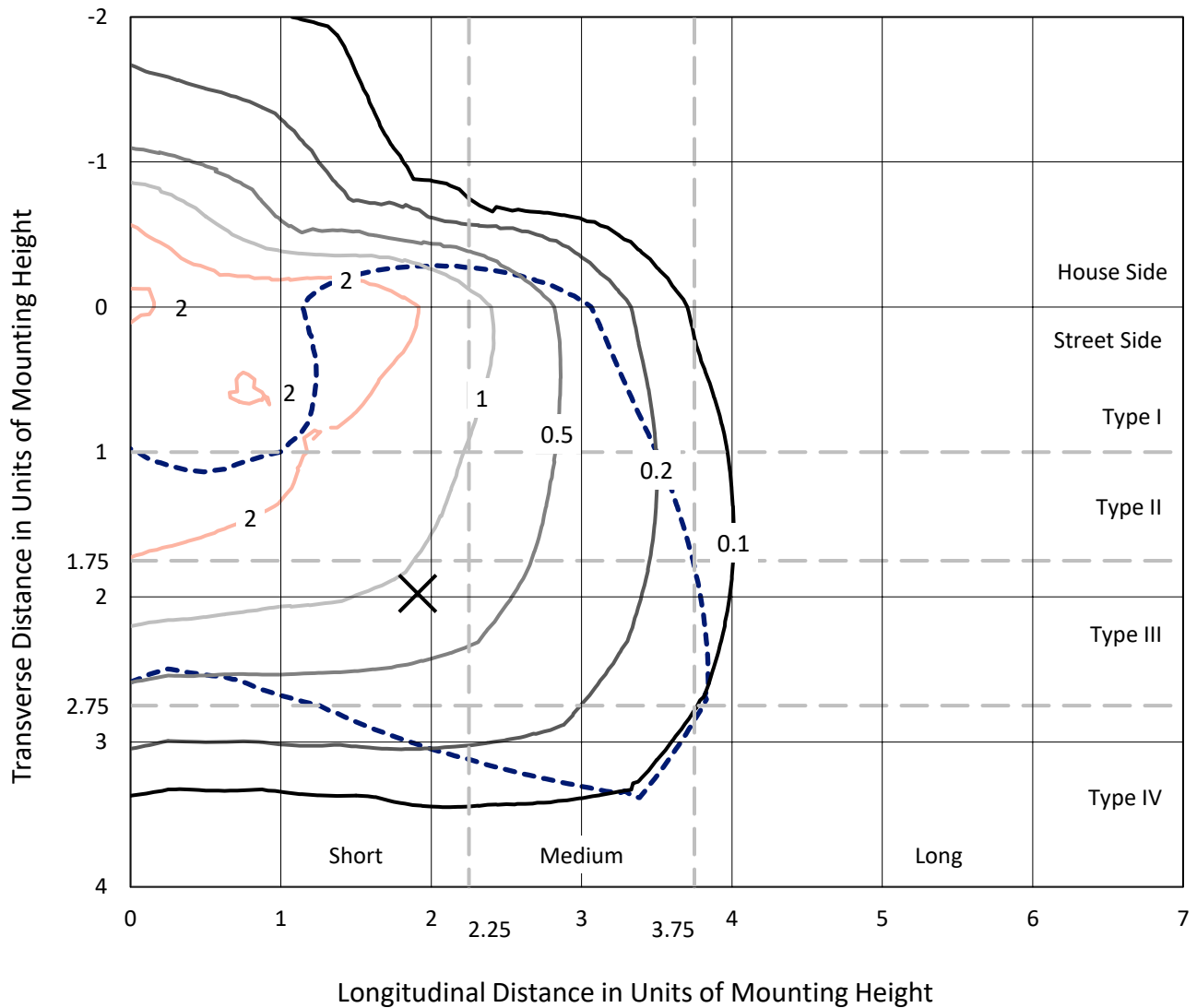
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P597156
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Iso-Footcandle Lines of Horizontal Illumination

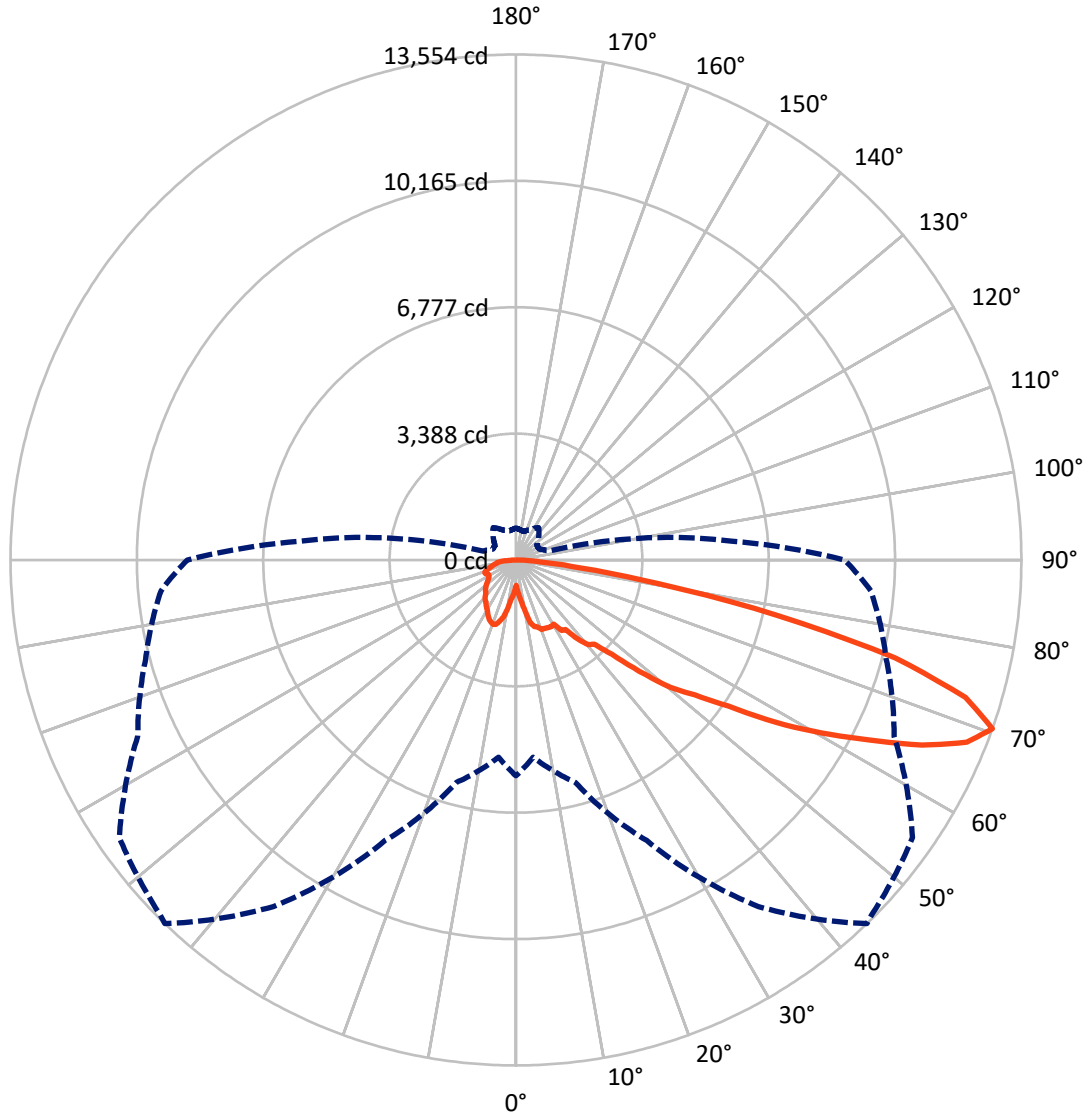
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.9 fc
 Type IV - Short - N/A

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CATALOG NUMBER: MSA-SA4C-835-U-T4W

Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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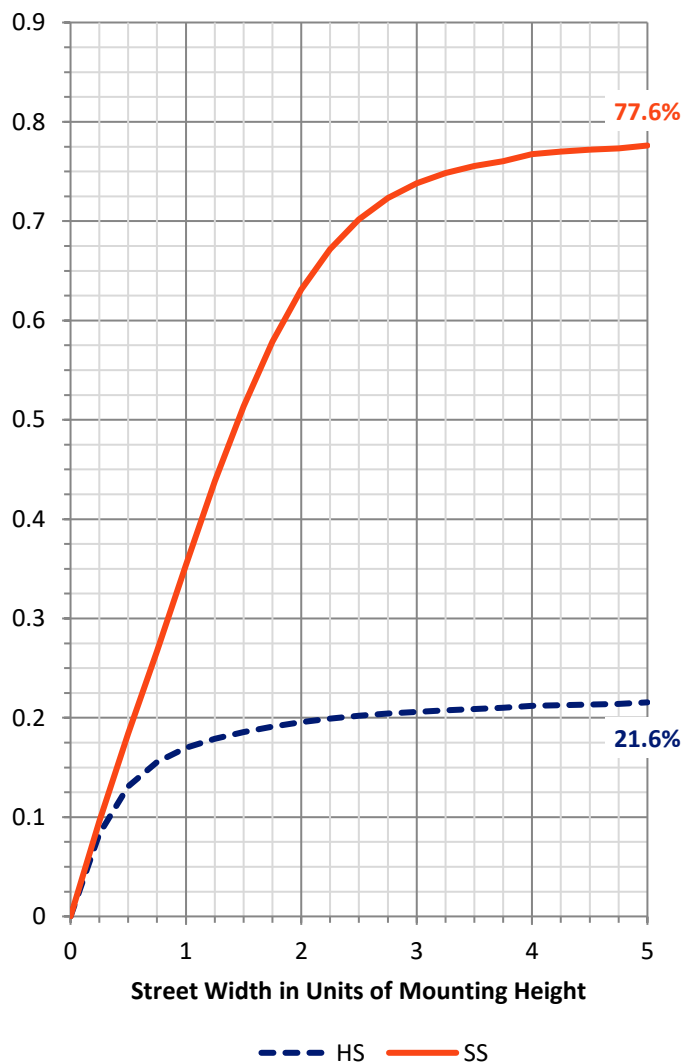
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 4437.7 | 0.0 | 4437.7 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 15675.3 | 0.0 | 15675.3 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 20113.0 | 0.0 | 20113.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 107.2 | 0.5 |
| 10°-20° | 493.6 | 2.5 |
| 20°-30° | 922.4 | 4.6 |
| 30°-40° | 1480.6 | 7.4 |
| 40°-50° | 2499.2 | 12.4 |
| 50°-60° | 4453.5 | 22.1 |
| 60°-70° | 6091.8 | 30.3 |
| 70°-80° | 3582.3 | 17.8 |
| 80°-90° | 482.3 | 2.4 |
| 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° | 20113.0 | 100.0 |
| 0°-180° | 20113.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P597156

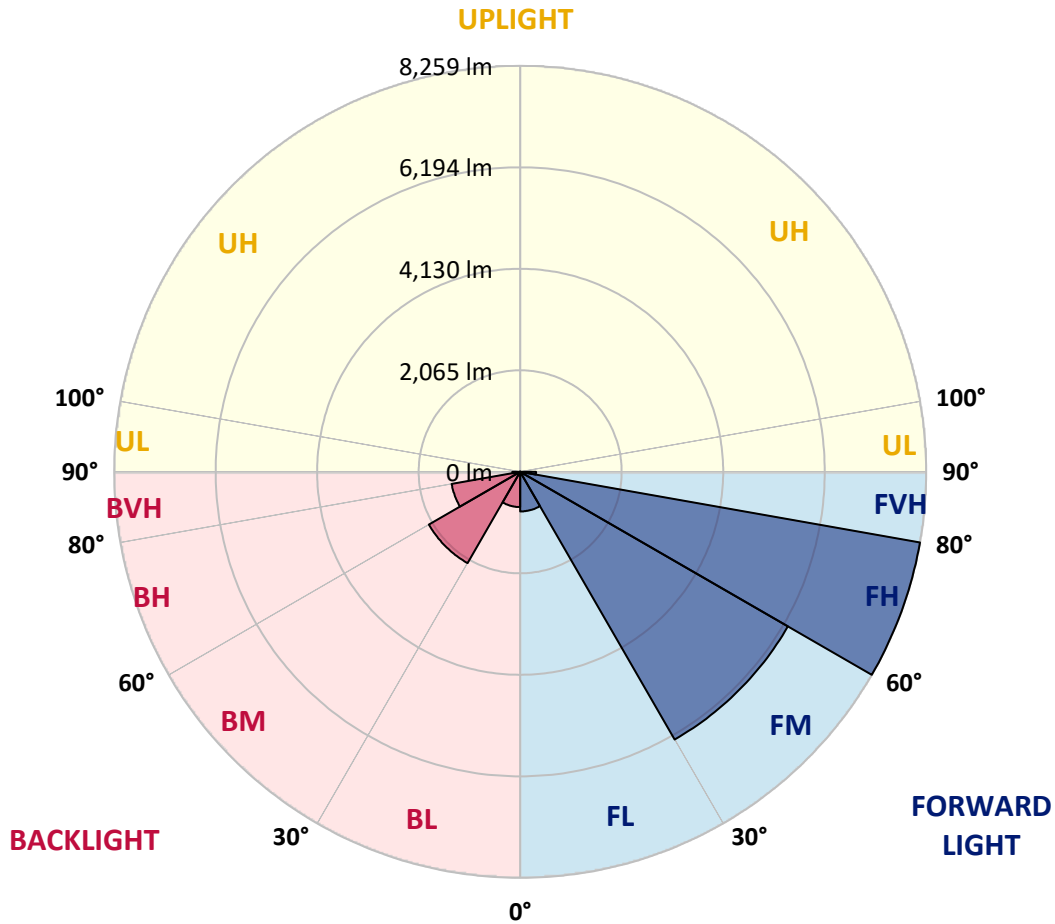
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|----------|
| | | | B | U | G |
| FL (0°-30°) | 806.0 | 4.0 | | | |
| FM (30°-60°) | 6288.8 | 31.3 | | | |
| FH (60°-80°) | 8259.0 | 41.1 | | | G4/12000 |
| FVH (80°-90°) | 321.5 | 1.6 | | | G3/500 |
| BL (0°-30°) | 717.2 | 3.6 | B2/1000 | | |
| BM (30°-60°) | 2144.5 | 10.7 | B2/2500 | | |
| BH (60°-80°) | 1415.1 | 7.0 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 160.9 | 0.8 | | | G2/225 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G4

Type IV Short





REPORT NUMBER: P597156

CATALOG NUMBER: MSA-SA4C-835-U-T4W

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 |
| 2.5° | 829.6 | 813.1 | 773.6 | 786.8 | 803.2 | 809.8 | 808.2 | 806.5 | 781.0 | 771.9 | 817.3 |
| 5° | 1127.4 | 1091.1 | 1062.2 | 1050.7 | 1012.7 | 983.0 | 964.9 | 1012.7 | 1005.3 | 1017.7 | 1049.0 |
| 7.5° | 1407.7 | 1384.7 | 1319.5 | 1296.4 | 1218.9 | 1167.8 | 1162.0 | 1199.9 | 1209.8 | 1190.0 | 1243.6 |
| 10° | 1588.4 | 1548.8 | 1535.6 | 1480.3 | 1426.7 | 1418.5 | 1413.5 | 1396.2 | 1372.3 | 1370.6 | 1322.8 |
| 12.5° | 1728.5 | 1749.2 | 1759.9 | 1696.4 | 1698.0 | 1727.7 | 1712.1 | 1642.0 | 1601.5 | 1530.6 | 1536.4 |
| 15° | 1980.1 | 2009.8 | 1924.8 | 1884.4 | 1806.9 | 1851.4 | 1845.7 | 1787.1 | 1781.3 | 1735.1 | 1681.5 |
| 17.5° | 2199.4 | 2212.6 | 2070.8 | 1978.4 | 1952.0 | 1887.7 | 1905.0 | 1906.7 | 1830.8 | 1913.3 | 1865.4 |
| 20° | 2217.6 | 2264.6 | 2101.3 | 1917.4 | 1996.6 | 1988.3 | 1990.8 | 1974.3 | 1874.5 | 2010.6 | 1992.4 |
| 22.5° | 2306.7 | 2234.9 | 2088.1 | 1953.7 | 1974.3 | 1986.7 | 1998.2 | 1978.4 | 1972.7 | 2048.5 | 2103.8 |
| 25° | 2290.2 | 2267.1 | 2118.6 | 2004.8 | 2007.3 | 2009.8 | 2015.5 | 2074.9 | 2068.3 | 2171.4 | 2200.3 |
| 27.5° | 2444.4 | 2408.9 | 2127.7 | 2099.7 | 2035.3 | 2021.3 | 1981.7 | 2105.4 | 2201.9 | 2199.4 | 2358.6 |
| 30° | 2738.0 | 2701.7 | 2338.8 | 2257.2 | 2140.9 | 1997.4 | 2073.3 | 2238.2 | 2314.1 | 2339.6 | 2541.7 |
| 32.5° | 3196.5 | 3255.9 | 2754.5 | 2425.4 | 2281.1 | 2249.8 | 2241.5 | 2225.0 | 2413.0 | 2539.2 | 2723.1 |
| 35° | 3854.6 | 3807.6 | 3244.3 | 2785.8 | 2428.7 | 2294.3 | 2312.4 | 2413.0 | 2636.5 | 2718.2 | 2888.1 |
| 37.5° | 4608.4 | 4511.1 | 3871.9 | 3194.0 | 2854.2 | 2686.0 | 2625.8 | 2723.1 | 2772.6 | 2836.9 | 3184.1 |
| 40° | 5374.5 | 5137.0 | 4488.0 | 3730.9 | 3109.9 | 2982.9 | 2930.1 | 2810.5 | 2926.8 | 3057.1 | 3498.3 |
| 42.5° | 6114.2 | 5930.3 | 5158.4 | 4371.7 | 3540.4 | 3087.6 | 3058.8 | 2941.7 | 3302.1 | 3439.8 | 3951.9 |
| 45° | 6889.5 | 6463.1 | 5845.4 | 5094.9 | 4169.6 | 3601.4 | 3558.5 | 3348.2 | 3810.1 | 4097.1 | 4591.9 |
| 47.5° | 7410.7 | 7015.6 | 6474.6 | 5682.1 | 4696.6 | 4460.7 | 4379.1 | 4019.5 | 4438.5 | 4811.2 | 5580.7 |
| 50° | 7903.8 | 7497.3 | 6929.0 | 6324.5 | 5650.8 | 5379.4 | 5205.4 | 4606.7 | 5221.1 | 5828.1 | 6848.2 |
| 52.5° | 8609.8 | 8246.1 | 7456.8 | 6971.9 | 6675.9 | 6008.7 | 5879.2 | 5550.2 | 6136.5 | 6955.4 | 8233.7 |
| 55° | 9364.3 | 8868.7 | 8153.7 | 7884.9 | 7765.3 | 6910.9 | 6805.3 | 6595.9 | 7355.4 | 8109.2 | 9580.4 |
| 57.5° | 9697.5 | 9180.4 | 8786.2 | 8625.4 | 8615.5 | 8222.2 | 8100.9 | 7955.0 | 8601.5 | 9098.8 | 10848.0 |
| 60° | 9962.2 | 9407.2 | 9249.7 | 9339.6 | 9666.2 | 9407.2 | 9249.7 | 9121.1 | 9615.9 | 10076.9 | 11882.1 |
| 62.5° | 9913.6 | 9356.9 | 9437.7 | 9711.5 | 10545.3 | 10621.2 | 10499.9 | 10188.2 | 10621.2 | 10878.5 | 12475.1 |
| 65° | 9128.5 | 8613.9 | 9084.8 | 9734.6 | 11362.6 | 11968.7 | 11962.1 | 11146.5 | 11296.6 | 11296.6 | 12412.4 |
| 67.5° | 7752.9 | 7220.2 | 7991.2 | 9530.9 | 11927.5 | 13036.7 | 13038.3 | 12162.5 | 11358.4 | 11254.5 | 11442.6 |
| 70° | 5789.3 | 5306.9 | 6173.6 | 8300.5 | 11344.4 | 13553.8 | 13478.7 | 12982.3 | 11188.6 | 10280.6 | 9558.1 |
| 72.5° | 3457.9 | 3146.2 | 3943.7 | 6042.5 | 9676.9 | 12602.9 | 12802.5 | 12038.0 | 10242.6 | 8549.6 | 6832.6 |
| 75° | 1570.2 | 1435.0 | 1853.1 | 3471.1 | 6908.4 | 10512.3 | 10729.2 | 10159.3 | 8135.6 | 6148.9 | 3948.6 |
| 77.5° | 672.1 | 635.8 | 809.0 | 1539.7 | 3809.2 | 7188.8 | 7633.3 | 7260.6 | 5512.2 | 3573.4 | 1746.7 |
| 80° | 432.1 | 409.0 | 497.3 | 740.6 | 1769.0 | 3884.3 | 4266.9 | 4127.6 | 2808.1 | 1389.6 | 615.2 |
| 82.5° | 258.1 | 250.7 | 332.3 | 465.1 | 964.9 | 1709.6 | 1926.5 | 1977.6 | 1166.1 | 623.5 | 352.1 |
| 85° | 141.0 | 142.7 | 182.3 | 282.0 | 578.9 | 665.5 | 712.5 | 775.2 | 549.2 | 361.2 | 170.7 |
| 87.5° | 47.0 | 54.4 | 73.4 | 114.6 | 206.2 | 188.0 | 188.9 | 219.4 | 231.7 | 150.1 | 54.4 |
| 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° | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 | 683.7 |
| 2.5° | 824.7 | 809.8 | 771.9 | 774.4 | 788.4 | 791.7 | 795.8 | 771.9 | 767.0 | 812.3 | 816.4 |
| 5° | 1054.0 | 1005.3 | 983.0 | 975.6 | 954.2 | 946.7 | 986.3 | 1004.5 | 1022.6 | 1058.1 | 1075.4 |
| 7.5° | 1237.9 | 1183.4 | 1143.0 | 1105.9 | 1074.6 | 1056.4 | 1123.2 | 1174.4 | 1205.7 | 1278.3 | 1311.3 |
| 10° | 1322.0 | 1275.0 | 1260.1 | 1230.4 | 1254.4 | 1308.8 | 1321.2 | 1322.8 | 1392.1 | 1390.4 | 1404.4 |
| 12.5° | 1489.4 | 1458.9 | 1410.2 | 1420.9 | 1483.6 | 1539.7 | 1524.0 | 1547.9 | 1572.7 | 1632.1 | 1604.8 |
| 15° | 1642.0 | 1633.7 | 1588.4 | 1595.8 | 1608.1 | 1678.2 | 1687.3 | 1711.2 | 1749.2 | 1796.2 | 1764.0 |
| 17.5° | 1830.0 | 1826.7 | 1716.2 | 1706.3 | 1735.1 | 1803.6 | 1782.2 | 1740.1 | 1865.4 | 1915.8 | 1902.6 |
| 20° | 1957.8 | 1933.1 | 1791.2 | 1749.2 | 1822.6 | 1831.6 | 1806.9 | 1740.1 | 1849.0 | 1958.6 | 1988.3 |
| 22.5° | 2064.2 | 2035.3 | 1889.4 | 1806.9 | 1792.0 | 1796.2 | 1796.2 | 1783.8 | 1837.4 | 1927.3 | 1926.5 |
| 25° | 2150.0 | 2177.2 | 1991.6 | 1912.5 | 1833.3 | 1734.3 | 1722.0 | 1732.7 | 1763.2 | 1936.4 | 1930.6 |
| 27.5° | 2365.2 | 2290.2 | 2026.3 | 1966.9 | 1804.4 | 1648.6 | 1682.4 | 1698.9 | 1708.8 | 1898.4 | 1929.8 |
| 30° | 2505.4 | 2528.5 | 2150.0 | 1999.0 | 1762.4 | 1552.9 | 1564.4 | 1612.3 | 1670.0 | 1894.3 | 1903.4 |
| 32.5° | 2694.3 | 2644.8 | 2342.9 | 1945.4 | 1650.2 | 1495.2 | 1473.7 | 1538.0 | 1623.8 | 1827.5 | 1852.3 |
| 35° | 2869.9 | 2928.5 | 2424.6 | 1935.5 | 1571.9 | 1408.6 | 1431.7 | 1453.9 | 1543.0 | 1753.3 | 1782.2 |
| 37.5° | 3282.3 | 3148.7 | 2653.9 | 1887.7 | 1506.7 | 1364.9 | 1340.1 | 1373.9 | 1449.8 | 1612.3 | 1679.1 |
| 40° | 3595.6 | 3603.9 | 2703.3 | 1827.5 | 1382.2 | 1302.2 | 1249.4 | 1283.2 | 1315.4 | 1444.9 | 1473.7 |
| 42.5° | 4183.6 | 4003.9 | 2824.6 | 1695.6 | 1303.8 | 1208.2 | 1178.5 | 1193.3 | 1198.3 | 1252.7 | 1300.5 |
| 45° | 4931.6 | 4510.2 | 2872.4 | 1518.3 | 1200.7 | 1169.4 | 1109.2 | 1101.8 | 1074.6 | 1082.0 | 1124.1 |
| 47.5° | 5966.6 | 5300.3 | 2837.8 | 1329.4 | 1109.2 | 1119.1 | 1032.5 | 998.7 | 960.8 | 969.8 | 1009.4 |
| 50° | 7305.1 | 6309.7 | 2835.3 | 1169.4 | 1046.5 | 1053.1 | 982.2 | 921.2 | 883.2 | 902.2 | 936.8 |
| 52.5° | 8806.9 | 7322.4 | 2846.8 | 1059.7 | 978.1 | 974.8 | 949.2 | 875.0 | 844.5 | 864.3 | 903.9 |
| 55° | 10243.5 | 8193.3 | 2932.6 | 990.5 | 907.2 | 912.9 | 922.8 | 860.2 | 826.3 | 844.5 | 885.7 |
| 57.5° | 11493.7 | 8881.1 | 2900.4 | 917.1 | 841.2 | 867.6 | 894.0 | 839.5 | 814.0 | 840.4 | 881.6 |
| 60° | 12367.9 | 9200.2 | 2646.4 | 847.0 | 792.5 | 828.8 | 879.9 | 837.1 | 833.8 | 890.7 | 940.1 |
| 62.5° | 12687.0 | 9082.3 | 2151.6 | 791.7 | 763.7 | 823.9 | 912.1 | 891.5 | 894.8 | 964.9 | 1033.3 |
| 65° | 12221.1 | 8462.1 | 1604.8 | 756.2 | 741.4 | 847.8 | 986.3 | 923.7 | 878.3 | 936.0 | 998.7 |
| 67.5° | 10895.8 | 7359.5 | 1172.7 | 725.7 | 715.8 | 885.7 | 1054.8 | 920.4 | 836.2 | 894.8 | 945.9 |
| 70° | 8815.1 | 5809.1 | 908.0 | 687.0 | 682.0 | 860.2 | 1061.4 | 895.6 | 790.9 | 828.8 | 857.7 |
| 72.5° | 6040.0 | 3977.5 | 752.1 | 649.9 | 623.5 | 762.0 | 1007.8 | 840.4 | 736.4 | 758.7 | 782.6 |
| 75° | 3375.5 | 2232.4 | 632.5 | 603.7 | 545.9 | 678.7 | 945.1 | 807.4 | 696.0 | 702.6 | 735.6 |
| 77.5° | 1515.0 | 965.7 | 536.9 | 542.6 | 475.8 | 600.4 | 863.4 | 754.6 | 634.2 | 619.3 | 652.3 |
| 80° | 573.2 | 470.9 | 435.4 | 458.5 | 400.0 | 520.4 | 778.5 | 706.8 | 569.0 | 550.1 | 569.0 |
| 82.5° | 332.3 | 285.3 | 323.3 | 353.0 | 317.5 | 478.3 | 743.0 | 663.1 | 501.4 | 453.6 | 470.1 |
| 85° | 154.2 | 147.6 | 193.8 | 229.3 | 221.8 | 372.8 | 635.8 | 498.9 | 357.1 | 301.8 | 334.0 |
| 87.5° | 40.4 | 45.4 | 68.4 | 80.8 | 82.5 | 127.8 | 244.9 | 185.6 | 139.4 | 105.6 | 101.4 |
| 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)