

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: P596392

Luminaire Tested: **MSA-SA4A-722-U-SL2**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596392
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-16)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4A-722-U-SL2
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11322 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G3

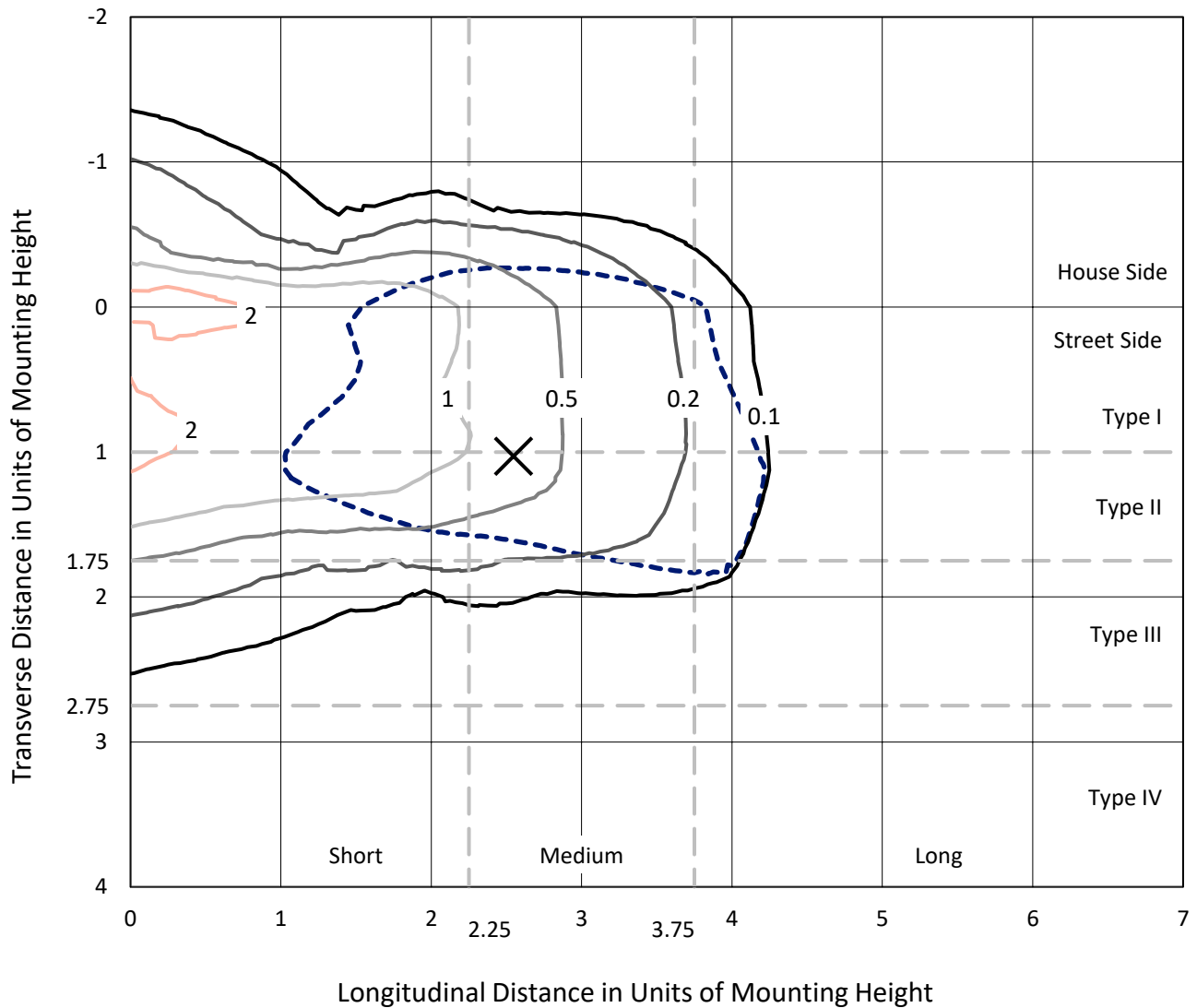
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

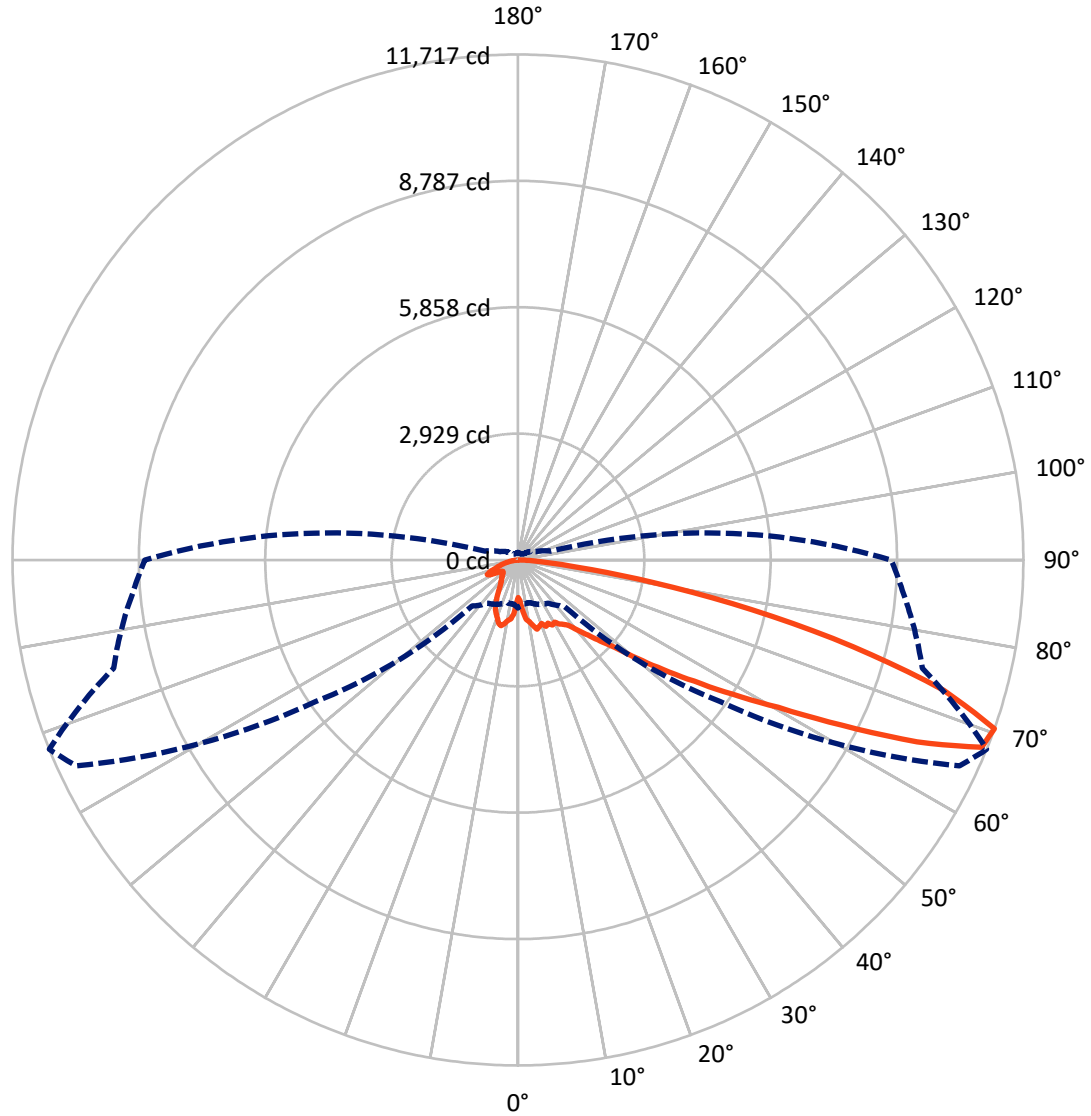
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.7 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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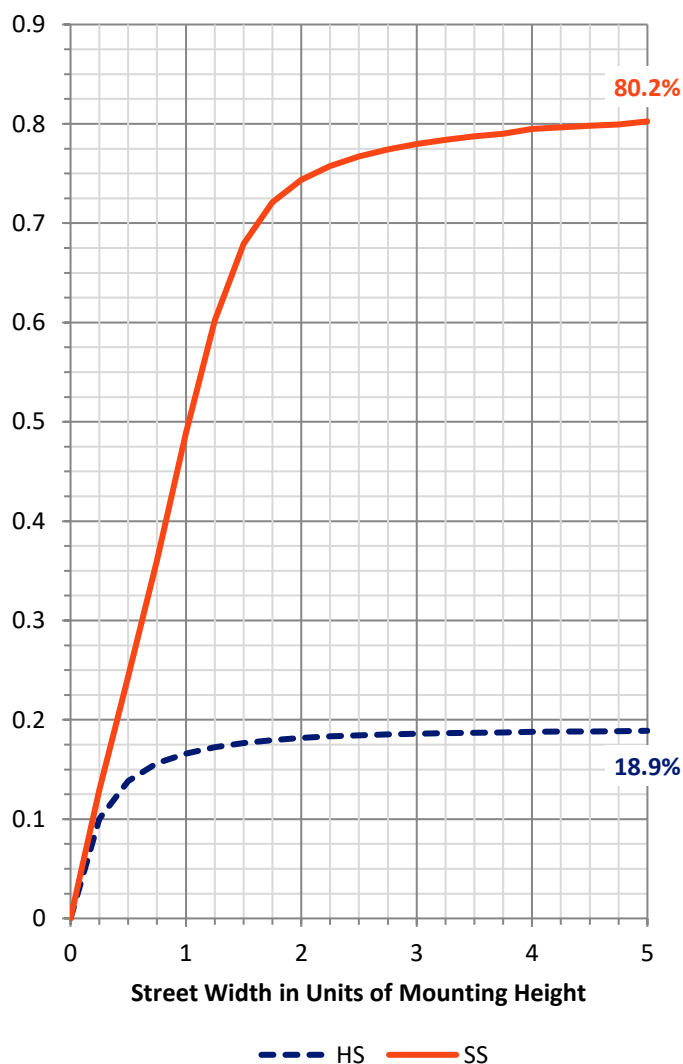
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2161.6 | 0.0 | 2161.6 |
| | % Fixture | 19.1 | 0.0 | 19.1 |
| Street Side | Lumens | 9160.4 | 0.0 | 9160.4 |
| | % Fixture | 80.9 | 0.0 | 80.9 |
| Total | Lumens | 11322.0 | 0.0 | 11322.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 115.9 | 1.0 |
| 10°-20° | 377.9 | 3.3 |
| 20°-30° | 574.8 | 5.1 |
| 30°-40° | 878.0 | 7.8 |
| 40°-50° | 1509.7 | 13.3 |
| 50°-60° | 2498.9 | 22.1 |
| 60°-70° | 3080.8 | 27.2 |
| 70°-80° | 1979.0 | 17.5 |
| 80°-90° | 307.0 | 2.7 |
| 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° | 11322.0 | 100.0 |
| 0°-180° | 11322.0 | 100.0 |

Coefficient of Utilization



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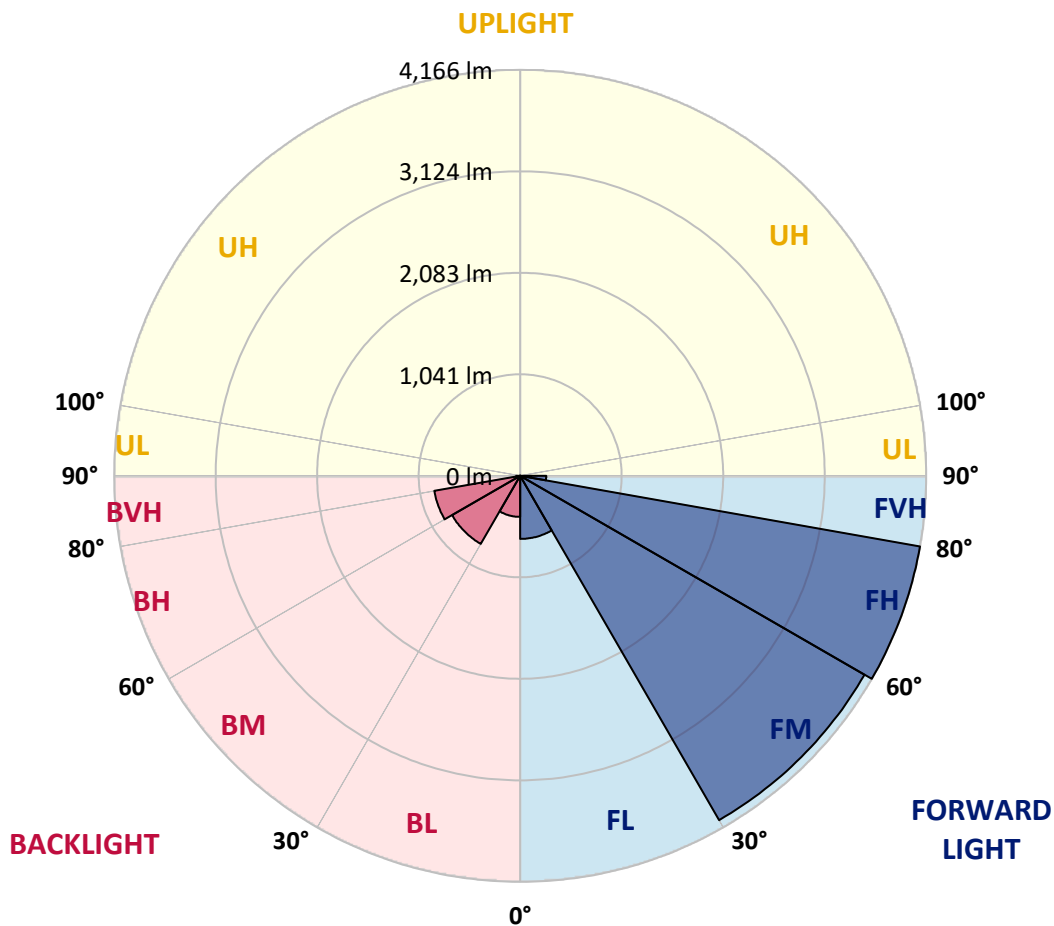
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 647.4 | 5.7 | | | |
| FM (30°-60°) | 4079.8 | 36.0 | | | |
| FH (60°-80°) | 4165.6 | 36.8 | | | G2/5000 |
| FVH (80°-90°) | 267.6 | 2.4 | | | G3/500 |
| BL (0°-30°) | 421.2 | 3.7 | B1/500 | | |
| BM (30°-60°) | 806.9 | 7.1 | B1/1000 | | |
| BH (60°-80°) | 894.2 | 7.9 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 39.4 | 0.3 | | | 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 III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|
| 0° | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 |
| 2.5° | 997.5 | 957.2 | 916.4 | 936.3 | 968.1 | 996.0 | 990.4 | 993.7 | 955.3 | 950.1 | 1051.0 |
| 5° | 1175.2 | 1106.0 | 1104.6 | 1105.5 | 1108.3 | 1076.1 | 1154.8 | 1195.5 | 1204.5 | 1246.2 | 1345.3 |
| 7.5° | 1236.8 | 1208.8 | 1180.4 | 1194.6 | 1158.6 | 1161.9 | 1258.6 | 1364.7 | 1389.8 | 1420.1 | 1555.7 |
| 10° | 1224.0 | 1197.4 | 1206.0 | 1208.3 | 1215.0 | 1268.5 | 1330.6 | 1432.5 | 1453.8 | 1550.4 | 1585.5 |
| 12.5° | 1225.9 | 1221.1 | 1260.9 | 1262.3 | 1333.4 | 1429.6 | 1454.3 | 1548.1 | 1556.6 | 1627.7 | 1774.1 |
| 15° | 1290.8 | 1323.5 | 1301.2 | 1313.0 | 1326.8 | 1441.9 | 1477.5 | 1612.0 | 1663.2 | 1754.7 | 1864.6 |
| 17.5° | 1417.3 | 1426.8 | 1360.0 | 1342.4 | 1387.4 | 1422.5 | 1503.5 | 1561.8 | 1615.4 | 1870.8 | 2022.4 |
| 20° | 1446.7 | 1472.3 | 1392.7 | 1302.1 | 1397.4 | 1446.2 | 1502.6 | 1529.1 | 1570.8 | 1887.8 | 2103.0 |
| 22.5° | 1572.7 | 1519.6 | 1423.5 | 1344.8 | 1376.1 | 1423.5 | 1464.2 | 1564.2 | 1673.6 | 1839.0 | 2183.5 |
| 25° | 1644.3 | 1613.5 | 1527.7 | 1443.4 | 1416.8 | 1418.2 | 1496.9 | 1586.5 | 1624.4 | 1910.6 | 2199.6 |
| 27.5° | 1817.2 | 1767.9 | 1575.1 | 1559.0 | 1459.0 | 1381.3 | 1502.1 | 1641.4 | 1707.8 | 1854.7 | 2278.3 |
| 30° | 2033.8 | 1996.3 | 1743.3 | 1722.0 | 1569.4 | 1433.9 | 1568.5 | 1682.2 | 1672.7 | 1891.1 | 2332.8 |
| 32.5° | 2209.1 | 2271.6 | 2016.2 | 1848.0 | 1739.5 | 1609.7 | 1547.6 | 1675.1 | 1769.4 | 1976.0 | 2425.2 |
| 35° | 2459.3 | 2518.1 | 2229.0 | 2115.3 | 1879.8 | 1691.2 | 1693.1 | 1772.7 | 1831.0 | 2075.0 | 2528.5 |
| 37.5° | 2892.4 | 2840.7 | 2608.1 | 2428.5 | 2277.8 | 1996.3 | 1912.0 | 1884.0 | 1930.9 | 2196.3 | 2730.8 |
| 40° | 3204.7 | 3161.1 | 2887.2 | 2784.8 | 2491.5 | 2328.0 | 2096.8 | 2070.3 | 2153.2 | 2321.4 | 2896.2 |
| 42.5° | 3574.7 | 3497.0 | 3242.1 | 3157.8 | 2851.2 | 2556.4 | 2323.3 | 2338.5 | 2378.7 | 2557.4 | 3119.8 |
| 45° | 3951.5 | 3762.9 | 3618.3 | 3611.7 | 3407.0 | 3000.0 | 2686.7 | 2674.4 | 2675.8 | 2904.7 | 3371.0 |
| 47.5° | 4250.5 | 4080.8 | 3915.4 | 3836.8 | 3733.5 | 3767.1 | 3214.6 | 3070.1 | 3026.5 | 3254.4 | 3747.7 |
| 50° | 4452.8 | 4257.6 | 4070.4 | 4051.9 | 4327.7 | 4509.2 | 3710.3 | 3555.8 | 3582.8 | 3754.8 | 4250.0 |
| 52.5° | 4457.1 | 4225.3 | 4030.1 | 4159.5 | 4809.1 | 5068.8 | 4564.1 | 4132.5 | 4218.7 | 4335.8 | 4905.3 |
| 55° | 4147.2 | 3906.9 | 3779.9 | 4074.7 | 4997.2 | 5732.7 | 5763.9 | 5056.5 | 4957.0 | 5000.1 | 5688.6 |
| 57.5° | 3493.7 | 3251.1 | 3177.2 | 3530.2 | 4640.4 | 6372.8 | 7213.0 | 6160.6 | 5868.7 | 5688.6 | 6491.3 |
| 60° | 2629.9 | 2420.0 | 2374.0 | 2599.1 | 3847.2 | 6184.7 | 8386.2 | 7534.7 | 6940.0 | 6457.7 | 7296.4 |
| 62.5° | 1972.2 | 1821.5 | 1752.3 | 1784.5 | 2662.1 | 5573.0 | 9156.7 | 9270.9 | 8428.9 | 7297.3 | 8083.0 |
| 65° | 1602.6 | 1480.8 | 1419.2 | 1377.5 | 1655.6 | 4309.2 | 9017.4 | 10732.3 | 10167.9 | 8179.2 | 8695.2 |
| 67.5° | 1338.6 | 1230.6 | 1202.2 | 1242.9 | 1308.8 | 2500.0 | 7927.6 | 11549.7 | 11588.1 | 9049.2 | 9053.0 |
| 70° | 1111.2 | 1031.1 | 1020.7 | 1136.3 | 1223.0 | 1508.7 | 5726.0 | 11292.9 | 11716.5 | 9701.7 | 8969.1 |
| 72.5° | 858.6 | 815.5 | 814.1 | 995.6 | 1215.0 | 1286.0 | 3409.8 | 9755.7 | 10324.8 | 9493.2 | 8148.4 |
| 75° | 595.6 | 565.8 | 588.5 | 818.3 | 1187.0 | 1304.5 | 1946.1 | 7598.7 | 8024.7 | 8078.2 | 6527.3 |
| 77.5° | 409.9 | 384.8 | 409.4 | 591.8 | 1060.0 | 1335.8 | 1361.4 | 5494.3 | 5541.7 | 5417.1 | 3738.7 |
| 80° | 285.3 | 267.7 | 286.7 | 418.9 | 825.0 | 1322.0 | 1159.0 | 3459.1 | 3173.9 | 2417.6 | 1197.0 |
| 82.5° | 176.7 | 171.5 | 192.4 | 298.5 | 580.9 | 1202.6 | 1098.4 | 1785.0 | 1362.8 | 667.2 | 427.4 |
| 85° | 92.9 | 85.3 | 111.8 | 194.8 | 363.4 | 943.9 | 1029.2 | 814.6 | 526.0 | 236.9 | 171.5 |
| 87.5° | 27.5 | 24.6 | 43.1 | 78.7 | 154.0 | 423.2 | 589.0 | 345.4 | 196.2 | 69.7 | 53.5 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 | 868.1 |
| 2.5° | 1058.1 | 1052.9 | 982.8 | 991.8 | 1006.9 | 1010.7 | 1010.3 | 984.7 | 957.7 | 1033.0 | 1030.6 |
| 5° | 1347.6 | 1300.7 | 1265.7 | 1258.1 | 1215.0 | 1171.8 | 1187.0 | 1181.8 | 1175.2 | 1209.3 | 1213.5 |
| 7.5° | 1556.1 | 1491.2 | 1450.5 | 1345.7 | 1246.2 | 1160.0 | 1187.5 | 1196.0 | 1178.9 | 1240.5 | 1259.0 |
| 10° | 1611.1 | 1559.9 | 1515.9 | 1381.3 | 1326.3 | 1276.1 | 1201.7 | 1116.9 | 1105.5 | 1070.0 | 1074.2 |
| 12.5° | 1752.8 | 1745.7 | 1595.5 | 1477.0 | 1405.4 | 1305.5 | 1144.8 | 1042.0 | 953.9 | 958.1 | 932.5 |
| 15° | 1864.6 | 1868.4 | 1687.9 | 1522.0 | 1330.1 | 1177.5 | 988.5 | 860.5 | 770.0 | 752.0 | 733.5 |
| 17.5° | 2014.8 | 2007.2 | 1695.4 | 1468.0 | 1224.9 | 1001.3 | 769.5 | 642.5 | 627.4 | 637.8 | 621.7 |
| 20° | 2080.2 | 2013.4 | 1647.1 | 1333.9 | 1060.5 | 760.5 | 581.4 | 514.1 | 543.5 | 585.2 | 586.2 |
| 22.5° | 2139.0 | 2024.8 | 1622.0 | 1225.9 | 841.6 | 553.0 | 466.7 | 454.4 | 489.0 | 545.4 | 550.1 |
| 25° | 2136.6 | 2077.4 | 1577.0 | 1116.9 | 652.5 | 431.7 | 405.6 | 414.6 | 455.8 | 514.6 | 517.9 |
| 27.5° | 2244.2 | 2037.1 | 1459.9 | 973.8 | 491.4 | 369.6 | 376.2 | 392.8 | 412.3 | 468.2 | 479.1 |
| 30° | 2243.2 | 2112.0 | 1401.2 | 799.9 | 394.7 | 338.8 | 355.9 | 370.1 | 386.2 | 437.4 | 443.5 |
| 32.5° | 2296.3 | 2063.2 | 1365.6 | 622.2 | 354.0 | 331.2 | 335.5 | 349.7 | 372.9 | 407.5 | 411.8 |
| 35° | 2360.3 | 2118.6 | 1251.9 | 494.2 | 338.8 | 324.6 | 327.9 | 336.0 | 357.3 | 389.0 | 393.3 |
| 37.5° | 2565.4 | 2129.0 | 1206.9 | 416.5 | 337.9 | 321.7 | 321.3 | 325.5 | 349.7 | 378.6 | 391.4 |
| 40° | 2645.5 | 2224.3 | 1075.6 | 389.0 | 334.5 | 321.7 | 315.1 | 317.5 | 337.4 | 374.3 | 384.3 |
| 42.5° | 2837.4 | 2256.0 | 978.5 | 379.6 | 334.5 | 316.1 | 305.6 | 309.4 | 332.6 | 365.3 | 381.0 |
| 45° | 3035.0 | 2301.0 | 862.9 | 377.7 | 334.1 | 315.6 | 295.7 | 304.2 | 323.2 | 350.7 | 367.7 |
| 47.5° | 3316.5 | 2463.1 | 747.3 | 372.0 | 330.3 | 318.0 | 293.3 | 292.8 | 309.4 | 333.1 | 349.2 |
| 50° | 3775.7 | 2716.1 | 657.7 | 364.9 | 330.7 | 316.1 | 288.6 | 281.9 | 292.8 | 313.7 | 329.3 |
| 52.5° | 4414.9 | 3147.3 | 622.6 | 361.1 | 327.0 | 308.5 | 280.5 | 270.1 | 276.3 | 292.8 | 308.0 |
| 55° | 5156.9 | 3729.7 | 657.2 | 361.1 | 319.4 | 296.6 | 269.1 | 256.8 | 260.1 | 271.5 | 286.2 |
| 57.5° | 6024.1 | 4453.3 | 824.5 | 355.9 | 309.9 | 282.4 | 255.4 | 241.2 | 242.1 | 252.1 | 265.4 |
| 60° | 6929.6 | 5261.7 | 1199.3 | 351.6 | 303.3 | 266.8 | 239.3 | 224.6 | 223.2 | 232.7 | 244.5 |
| 62.5° | 7836.6 | 6007.5 | 1593.6 | 361.5 | 301.4 | 253.5 | 222.2 | 207.5 | 207.1 | 215.6 | 225.6 |
| 65° | 8557.8 | 6517.4 | 1691.7 | 401.8 | 313.7 | 238.3 | 204.7 | 191.0 | 190.0 | 197.1 | 208.0 |
| 67.5° | 8911.7 | 6591.3 | 1285.1 | 452.1 | 339.8 | 224.1 | 187.6 | 174.9 | 173.9 | 181.5 | 191.0 |
| 70° | 8649.7 | 6086.2 | 793.2 | 457.3 | 338.3 | 207.5 | 170.1 | 159.2 | 157.3 | 165.4 | 172.5 |
| 72.5° | 7680.2 | 5323.7 | 602.7 | 404.7 | 292.8 | 183.9 | 152.6 | 143.1 | 140.3 | 147.4 | 154.0 |
| 75° | 6164.3 | 4226.8 | 482.9 | 326.5 | 230.8 | 154.9 | 135.0 | 126.0 | 122.7 | 129.4 | 135.0 |
| 77.5° | 3590.9 | 2377.8 | 353.0 | 254.9 | 174.4 | 126.5 | 115.1 | 107.1 | 103.3 | 110.4 | 114.7 |
| 80° | 1167.6 | 792.3 | 221.8 | 182.9 | 127.5 | 99.0 | 93.3 | 87.7 | 83.9 | 88.6 | 90.0 |
| 82.5° | 419.4 | 294.7 | 122.7 | 112.3 | 84.8 | 71.1 | 70.6 | 67.3 | 62.5 | 64.4 | 64.4 |
| 85° | 185.8 | 134.6 | 73.0 | 60.2 | 50.7 | 37.9 | 44.5 | 42.2 | 37.4 | 36.5 | 35.1 |
| 87.5° | 52.1 | 44.5 | 26.5 | 20.4 | 16.6 | 6.2 | 14.2 | 12.8 | 10.4 | 9.5 | 6.6 |
| 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)