

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: P366827

Luminaire Tested: **MSA-SA1B-760-U-SL4-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366827
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-21)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1B-760-U-SL4-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4188 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G2

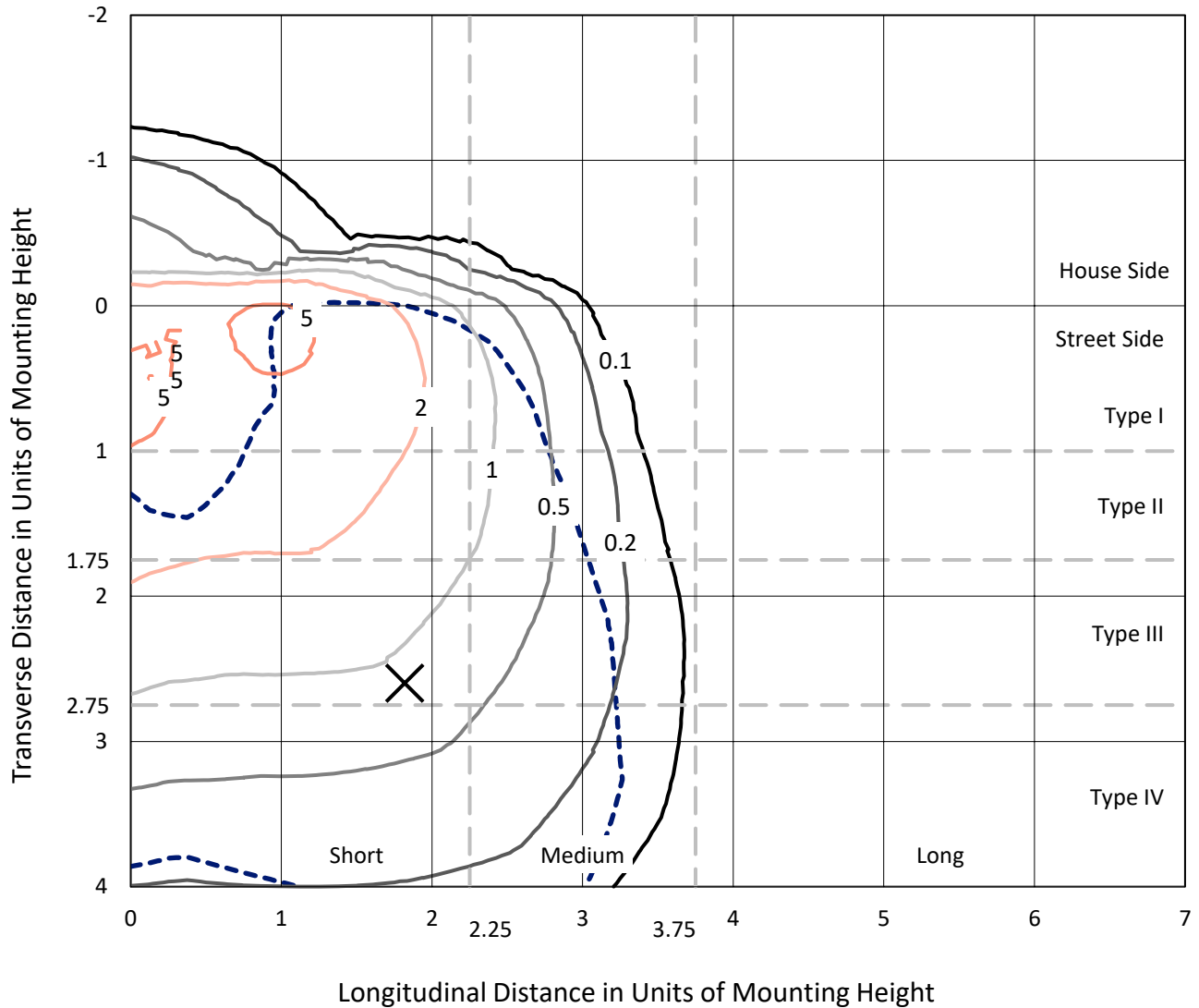
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

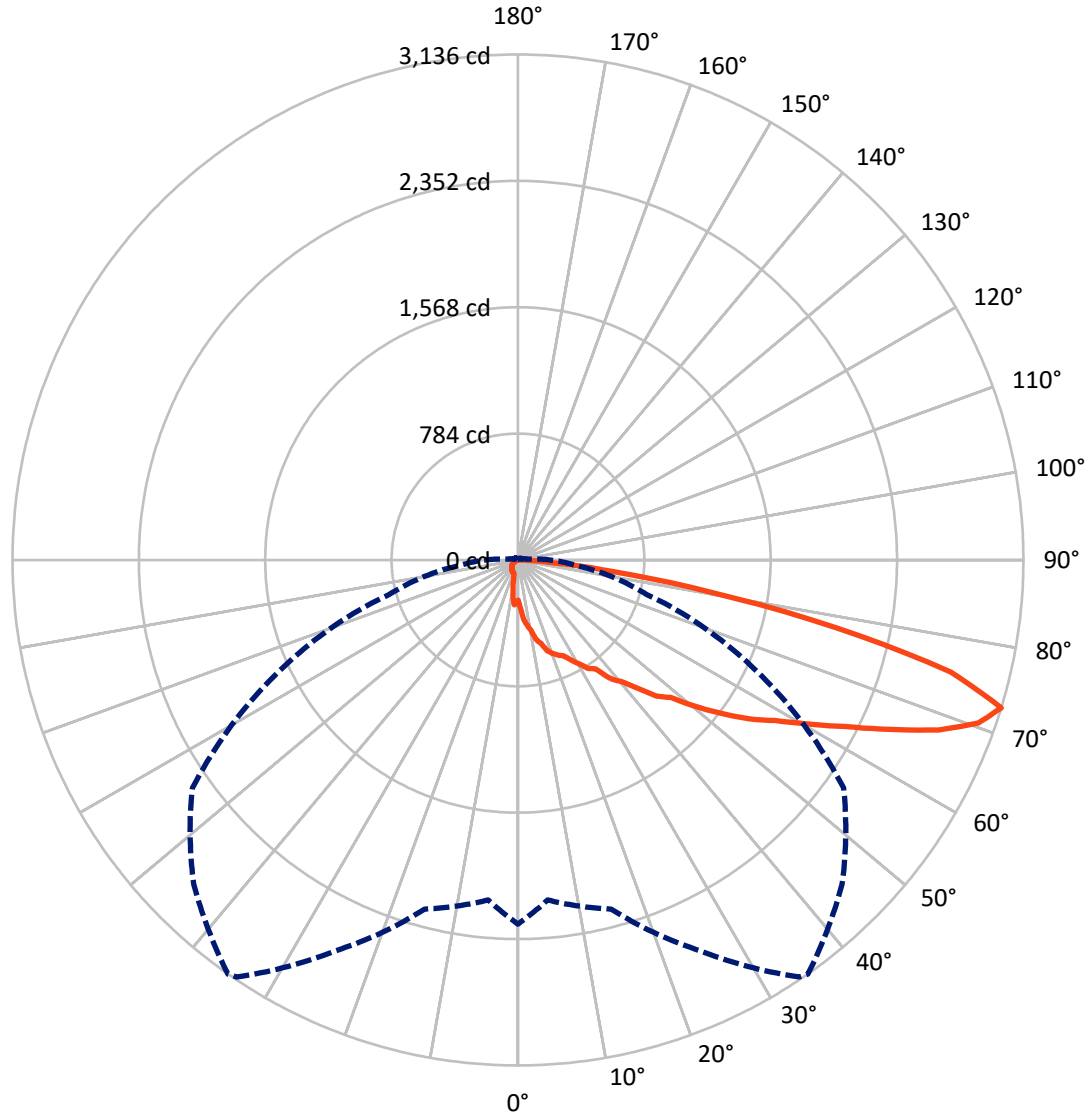
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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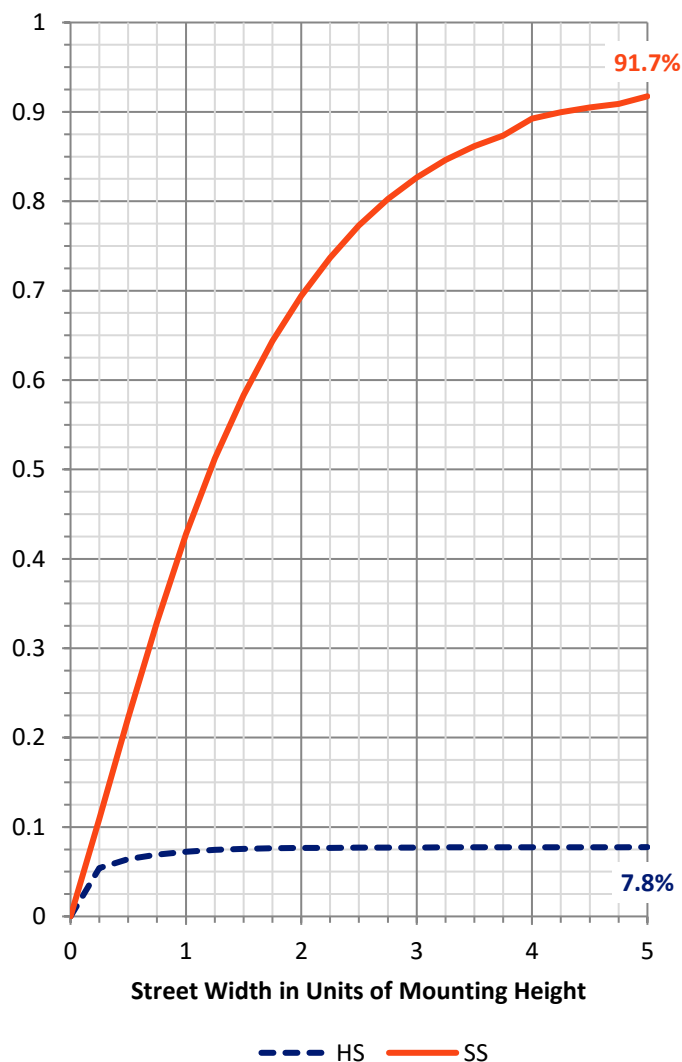
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 326.6 | 0.0 | 326.6 |
| | % Fixture | 7.8 | 0.0 | 7.8 |
| Street Side | Lumens | 3861.3 | 0.0 | 3861.3 |
| | % Fixture | 92.2 | 0.0 | 92.2 |
| Total | Lumens | 4188.0 | 0.0 | 4188.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 31.8 | 0.8 |
| 10°-20° | 107.2 | 2.6 |
| 20°-30° | 195.2 | 4.7 |
| 30°-40° | 336.7 | 8.0 |
| 40°-50° | 598.5 | 14.3 |
| 50°-60° | 893.1 | 21.3 |
| 60°-70° | 1141.0 | 27.2 |
| 70°-80° | 793.8 | 19.0 |
| 80°-90° | 90.8 | 2.2 |
| 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° | 4188.0 | 100.0 |
| 0°-180° | 4188.0 | 100.0 |

Coefficient of Utilization



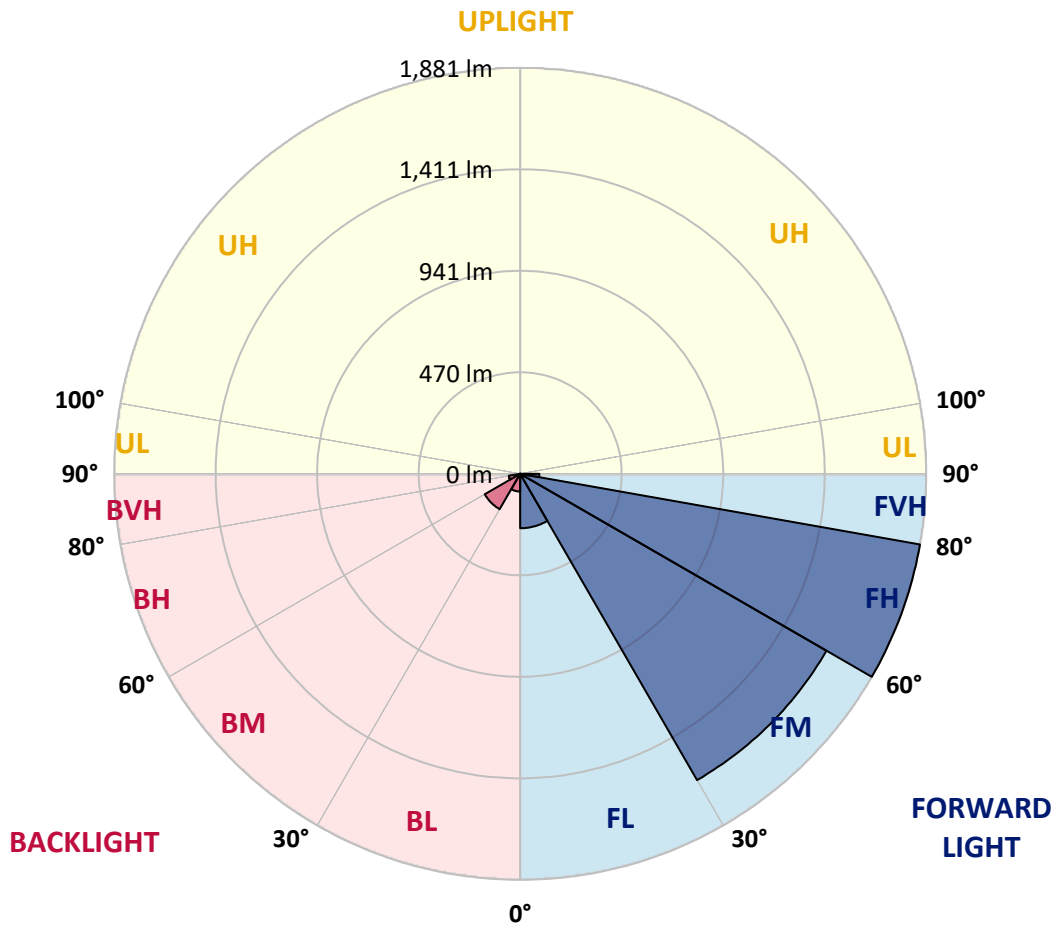
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 252.0 | 6.0 | | | |
| FM (30°-60°) | 1638.8 | 39.1 | | | |
| FH (60°-80°) | 1881.3 | 44.9 | | | G2/5000 |
| FVH (80°-90°) | 89.3 | 2.1 | | | G1/100 |
| BL (0°-30°) | 82.2 | 2.0 | B0/110 | | |
| BM (30°-60°) | 189.4 | 4.5 | B0/220 | | |
| BH (60°-80°) | 53.6 | 1.3 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.5 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 34° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 |
| 2.5° | 317.5 | 305.1 | 284.8 | 286.3 | 295.4 | 297.3 | 300.0 | 292.8 | 286.5 | 275.4 | 297.1 |
| 5° | 406.7 | 388.8 | 377.5 | 373.9 | 368.6 | 369.1 | 356.2 | 360.8 | 359.6 | 367.8 | 377.7 |
| 7.5° | 457.1 | 447.2 | 432.9 | 428.9 | 409.5 | 407.4 | 391.6 | 412.9 | 415.0 | 412.0 | 428.2 |
| 10° | 477.1 | 464.0 | 465.7 | 450.7 | 441.1 | 443.6 | 446.1 | 447.8 | 450.5 | 453.3 | 433.5 |
| 12.5° | 488.9 | 491.2 | 514.1 | 498.5 | 508.2 | 508.2 | 525.3 | 507.2 | 507.8 | 488.0 | 491.4 |
| 15° | 541.9 | 554.7 | 544.4 | 544.2 | 533.7 | 536.4 | 556.2 | 541.9 | 549.3 | 543.4 | 520.6 |
| 17.5° | 608.4 | 611.0 | 591.4 | 582.7 | 592.2 | 592.4 | 584.0 | 583.4 | 557.7 | 601.1 | 573.5 |
| 20° | 629.7 | 644.0 | 616.2 | 582.5 | 621.9 | 620.0 | 619.4 | 609.5 | 566.7 | 627.0 | 604.2 |
| 22.5° | 687.6 | 667.2 | 648.2 | 626.1 | 641.5 | 641.5 | 639.2 | 617.5 | 600.9 | 624.6 | 634.3 |
| 25° | 705.7 | 708.2 | 683.6 | 676.4 | 676.9 | 657.9 | 656.2 | 647.0 | 631.0 | 671.6 | 652.2 |
| 27.5° | 768.0 | 767.0 | 707.8 | 727.8 | 702.3 | 702.5 | 656.0 | 676.9 | 679.6 | 673.9 | 695.6 |
| 30° | 829.3 | 846.3 | 757.1 | 782.3 | 755.6 | 747.6 | 702.1 | 720.6 | 725.5 | 719.0 | 746.3 |
| 32.5° | 907.4 | 932.4 | 845.7 | 820.9 | 780.0 | 802.8 | 771.4 | 727.6 | 751.6 | 809.9 | 825.3 |
| 35° | 990.1 | 1002.3 | 909.9 | 875.2 | 829.1 | 828.9 | 827.8 | 831.4 | 857.9 | 923.6 | 936.6 |
| 37.5° | 1138.8 | 1109.9 | 1026.3 | 946.8 | 957.1 | 934.1 | 918.1 | 935.0 | 962.5 | 1070.8 | 1126.5 |
| 40° | 1221.7 | 1200.9 | 1083.2 | 1036.0 | 984.9 | 993.3 | 1036.7 | 1034.8 | 1108.2 | 1221.5 | 1305.1 |
| 42.5° | 1302.3 | 1282.6 | 1166.8 | 1128.7 | 1063.0 | 1085.9 | 1104.9 | 1128.9 | 1279.4 | 1462.1 | 1508.0 |
| 45° | 1374.1 | 1316.0 | 1234.3 | 1235.8 | 1201.7 | 1204.4 | 1237.9 | 1260.0 | 1477.7 | 1665.1 | 1697.3 |
| 47.5° | 1417.5 | 1369.7 | 1291.4 | 1289.9 | 1287.8 | 1275.0 | 1432.7 | 1452.9 | 1635.8 | 1858.4 | 1861.3 |
| 50° | 1478.6 | 1418.8 | 1350.1 | 1351.4 | 1400.0 | 1427.2 | 1615.4 | 1613.3 | 1788.5 | 2019.6 | 1951.6 |
| 52.5° | 1554.6 | 1481.5 | 1405.9 | 1462.1 | 1537.3 | 1581.5 | 1734.3 | 1796.7 | 1952.5 | 2120.9 | 1987.0 |
| 55° | 1651.8 | 1560.5 | 1487.6 | 1559.6 | 1723.6 | 1740.7 | 1850.8 | 1982.4 | 2131.2 | 2224.3 | 1998.4 |
| 57.5° | 1765.9 | 1656.9 | 1597.9 | 1713.9 | 1877.5 | 1877.9 | 2020.3 | 2180.3 | 2240.9 | 2266.4 | 1985.5 |
| 60° | 1888.9 | 1761.7 | 1702.3 | 1806.8 | 2047.2 | 2064.5 | 2208.7 | 2289.5 | 2352.3 | 2287.6 | 1962.6 |
| 62.5° | 1997.1 | 1856.7 | 1810.6 | 1933.3 | 2233.3 | 2274.1 | 2372.9 | 2361.3 | 2432.7 | 2314.4 | 1904.2 |
| 65° | 2125.9 | 1979.6 | 1949.3 | 2130.6 | 2476.3 | 2532.5 | 2557.3 | 2488.7 | 2459.6 | 2293.7 | 1752.5 |
| 67.5° | 2253.5 | 2116.7 | 2115.8 | 2349.3 | 2794.8 | 2814.2 | 2788.1 | 2668.3 | 2428.3 | 2111.8 | 1474.3 |
| 70° | 2343.4 | 2196.5 | 2251.8 | 2588.9 | 3084.3 | 3030.0 | 2920.1 | 2753.1 | 2201.7 | 1618.6 | 963.2 |
| 72.5° | 2259.0 | 2117.3 | 2242.1 | 2674.2 | 3120.1 | 3135.6 | 2843.6 | 2466.2 | 1635.8 | 827.8 | 348.6 |
| 75° | 1716.7 | 1629.9 | 1946.8 | 2372.5 | 2770.2 | 2773.7 | 2373.5 | 1739.4 | 805.5 | 224.8 | 96.4 |
| 77.5° | 864.6 | 837.1 | 1232.2 | 1684.2 | 2021.1 | 2015.2 | 1630.8 | 931.8 | 259.2 | 74.7 | 48.6 |
| 80° | 437.7 | 415.6 | 524.4 | 908.6 | 1200.2 | 1209.1 | 931.2 | 417.3 | 130.7 | 40.6 | 33.7 |
| 82.5° | 268.8 | 255.2 | 287.0 | 411.2 | 582.5 | 596.6 | 353.3 | 264.2 | 81.1 | 24.0 | 30.7 |
| 85° | 52.0 | 54.7 | 164.8 | 205.9 | 232.6 | 227.2 | 104.6 | 217.5 | 24.4 | 14.3 | 22.3 |
| 87.5° | 0.0 | 0.8 | 38.1 | 67.2 | 67.4 | 59.8 | 23.8 | 48.2 | 3.4 | 4.0 | 2.7 |
| 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):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 | 249.5 |
| 2.5° | 300.6 | 297.5 | 271.2 | 268.2 | 268.8 | 264.4 | 263.0 | 253.7 | 251.4 | 265.7 | 268.2 |
| 5° | 373.5 | 352.4 | 328.0 | 319.2 | 305.5 | 282.3 | 279.0 | 273.1 | 266.5 | 269.1 | 267.2 |
| 7.5° | 418.1 | 390.1 | 364.0 | 317.5 | 279.0 | 245.3 | 239.8 | 229.7 | 219.6 | 219.8 | 226.3 |
| 10° | 425.3 | 401.7 | 365.7 | 309.1 | 265.1 | 223.0 | 186.3 | 159.8 | 147.8 | 137.1 | 140.2 |
| 12.5° | 466.7 | 444.9 | 378.5 | 306.5 | 244.8 | 179.2 | 131.2 | 105.3 | 93.9 | 90.1 | 89.7 |
| 15° | 500.0 | 482.7 | 400.4 | 298.7 | 200.0 | 126.1 | 93.9 | 86.3 | 84.2 | 87.8 | 86.7 |
| 17.5° | 549.5 | 518.3 | 398.1 | 266.5 | 152.4 | 95.8 | 86.5 | 85.5 | 88.0 | 90.1 | 90.7 |
| 20° | 571.2 | 526.3 | 382.3 | 216.0 | 114.1 | 87.8 | 84.4 | 82.3 | 86.9 | 93.3 | 92.0 |
| 22.5° | 593.1 | 540.0 | 363.8 | 176.8 | 91.8 | 84.0 | 82.1 | 80.4 | 84.0 | 90.1 | 91.6 |
| 25° | 603.0 | 561.9 | 343.2 | 138.1 | 85.3 | 79.6 | 78.3 | 78.9 | 81.9 | 87.4 | 86.7 |
| 27.5° | 652.9 | 564.4 | 303.8 | 109.1 | 82.5 | 76.4 | 76.4 | 77.9 | 77.9 | 85.3 | 84.6 |
| 30° | 684.0 | 607.2 | 271.8 | 91.8 | 79.4 | 72.0 | 74.5 | 75.2 | 74.1 | 82.1 | 82.7 |
| 32.5° | 738.8 | 619.0 | 240.6 | 84.2 | 74.3 | 71.4 | 70.9 | 71.4 | 72.2 | 80.0 | 80.2 |
| 35° | 823.0 | 677.1 | 198.1 | 81.3 | 71.8 | 68.2 | 65.3 | 67.6 | 69.7 | 75.4 | 76.4 |
| 37.5° | 987.6 | 736.6 | 161.5 | 78.9 | 70.5 | 65.3 | 64.2 | 63.8 | 67.6 | 74.1 | 76.2 |
| 40° | 1120.9 | 842.1 | 131.4 | 77.1 | 68.0 | 63.6 | 60.8 | 61.1 | 64.4 | 69.3 | 72.4 |
| 42.5° | 1309.5 | 918.3 | 111.4 | 74.1 | 64.4 | 60.0 | 56.8 | 58.7 | 60.2 | 65.3 | 67.4 |
| 45° | 1467.0 | 977.5 | 98.1 | 72.2 | 60.8 | 56.6 | 54.1 | 56.2 | 54.7 | 57.3 | 60.2 |
| 47.5° | 1592.2 | 1029.1 | 88.2 | 67.6 | 58.5 | 54.7 | 51.6 | 50.9 | 48.4 | 49.1 | 51.8 |
| 50° | 1661.1 | 1020.4 | 80.0 | 62.9 | 55.6 | 52.8 | 48.4 | 44.0 | 40.6 | 40.4 | 42.1 |
| 52.5° | 1685.5 | 974.3 | 73.3 | 58.9 | 52.0 | 48.6 | 43.6 | 37.5 | 34.1 | 33.1 | 34.5 |
| 55° | 1692.2 | 908.0 | 67.2 | 54.5 | 48.6 | 43.4 | 38.1 | 31.6 | 28.0 | 26.3 | 27.8 |
| 57.5° | 1670.3 | 805.9 | 61.3 | 50.3 | 44.6 | 38.3 | 32.6 | 25.9 | 22.5 | 20.4 | 21.7 |
| 60° | 1616.2 | 676.2 | 56.0 | 45.1 | 40.4 | 33.9 | 27.6 | 20.8 | 17.3 | 15.4 | 16.0 |
| 62.5° | 1496.5 | 530.1 | 50.3 | 40.2 | 36.0 | 29.7 | 23.2 | 16.4 | 13.1 | 11.4 | 11.6 |
| 65° | 1314.1 | 395.2 | 43.8 | 35.6 | 32.0 | 25.7 | 18.5 | 12.6 | 9.9 | 8.4 | 8.2 |
| 67.5° | 1047.0 | 267.8 | 37.3 | 30.7 | 28.4 | 21.7 | 14.7 | 9.9 | 7.8 | 6.7 | 6.3 |
| 70° | 615.4 | 135.0 | 30.9 | 26.5 | 24.4 | 18.1 | 11.6 | 8.0 | 7.2 | 6.3 | 5.9 |
| 72.5° | 203.0 | 58.3 | 24.2 | 21.9 | 20.2 | 14.5 | 9.1 | 7.4 | 6.9 | 6.1 | 5.7 |
| 75° | 70.7 | 33.7 | 17.9 | 16.8 | 16.0 | 10.9 | 7.6 | 6.7 | 6.7 | 5.9 | 5.3 |
| 77.5° | 46.3 | 26.1 | 13.3 | 12.2 | 12.0 | 8.0 | 6.5 | 6.3 | 5.9 | 4.8 | 4.0 |
| 80° | 38.5 | 14.7 | 9.3 | 8.6 | 8.4 | 5.1 | 5.3 | 4.6 | 3.6 | 2.1 | 0.8 |
| 82.5° | 35.6 | 8.8 | 4.8 | 5.3 | 4.8 | 1.9 | 2.9 | 2.5 | 1.9 | 0.8 | 0.0 |
| 85° | 20.8 | 4.0 | 2.7 | 2.7 | 2.1 | 0.4 | 1.5 | 1.5 | 0.8 | 0.2 | 0.0 |
| 87.5° | 2.3 | 1.9 | 1.5 | 1.5 | 1.1 | 0.0 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 |
| 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)