

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: P366715

Luminaire Tested: **MSA-SA1A-830-U-SL3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366715
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-19)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1A-830-U-SL3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2637 lumens
Efficiency: N/A
Efficacy: 77.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short
BUG Rating: B0 - U0 - G1

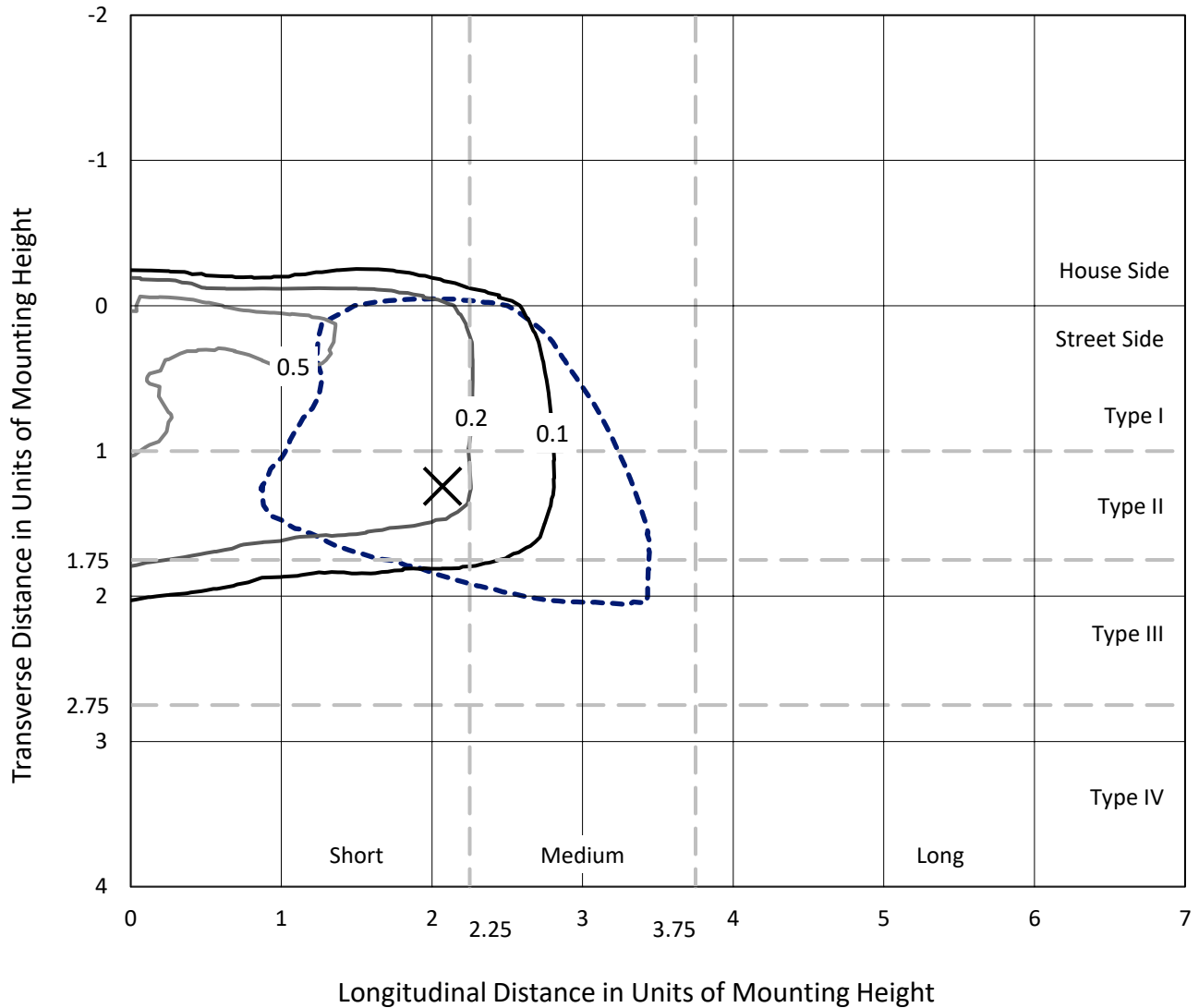
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

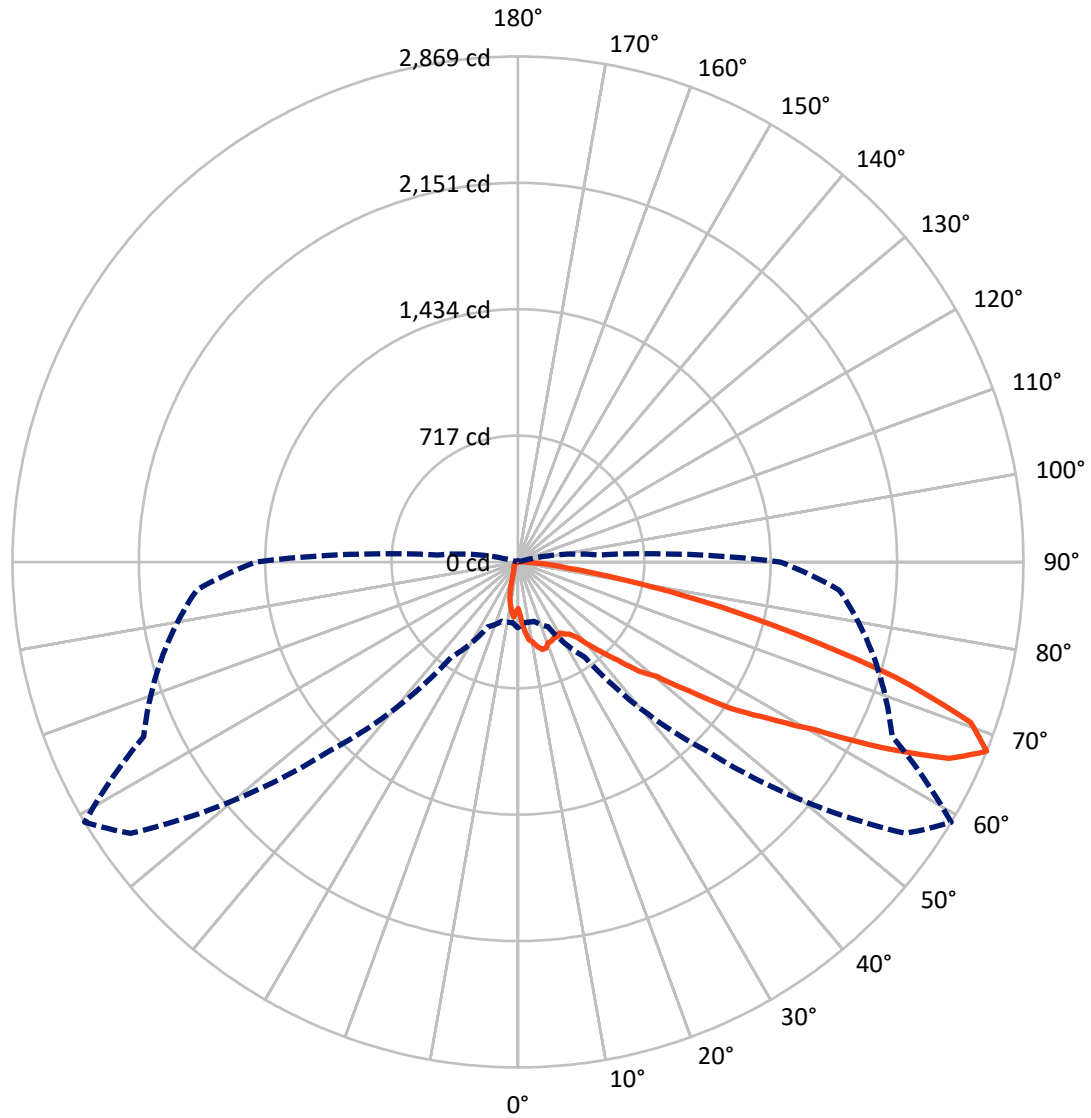
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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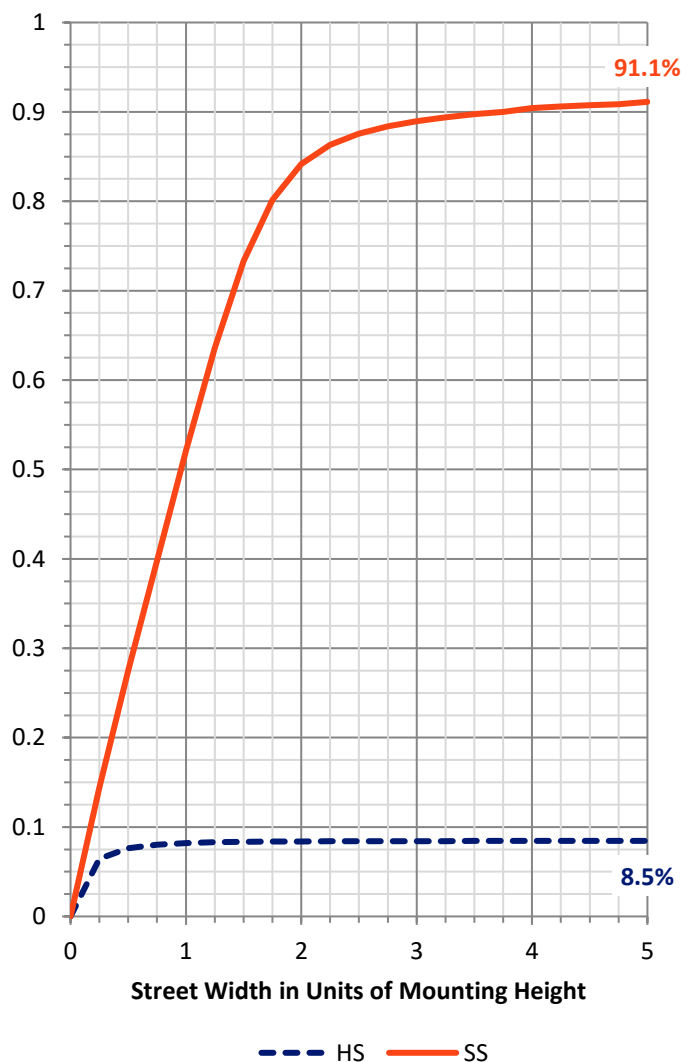
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 224.3 | 0.0 | 224.3 |
| | % Fixture | 8.5 | 0.0 | 8.5 |
| Street Side | Lumens | 2412.7 | 0.0 | 2412.7 |
| | % Fixture | 91.5 | 0.0 | 91.5 |
| Total | Lumens | 2637.0 | 0.0 | 2637.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 32.1 | 1.2 |
| 10°-20° | 90.3 | 3.4 |
| 20°-30° | 134.4 | 5.1 |
| 30°-40° | 207.3 | 7.9 |
| 40°-50° | 369.9 | 14.0 |
| 50°-60° | 658.3 | 25.0 |
| 60°-70° | 766.7 | 29.1 |
| 70°-80° | 341.0 | 12.9 |
| 80°-90° | 37.0 | 1.4 |
| 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° | 2637.0 | 100.0 |
| 0°-180° | 2637.0 | 100.0 |

Coefficient of Utilization



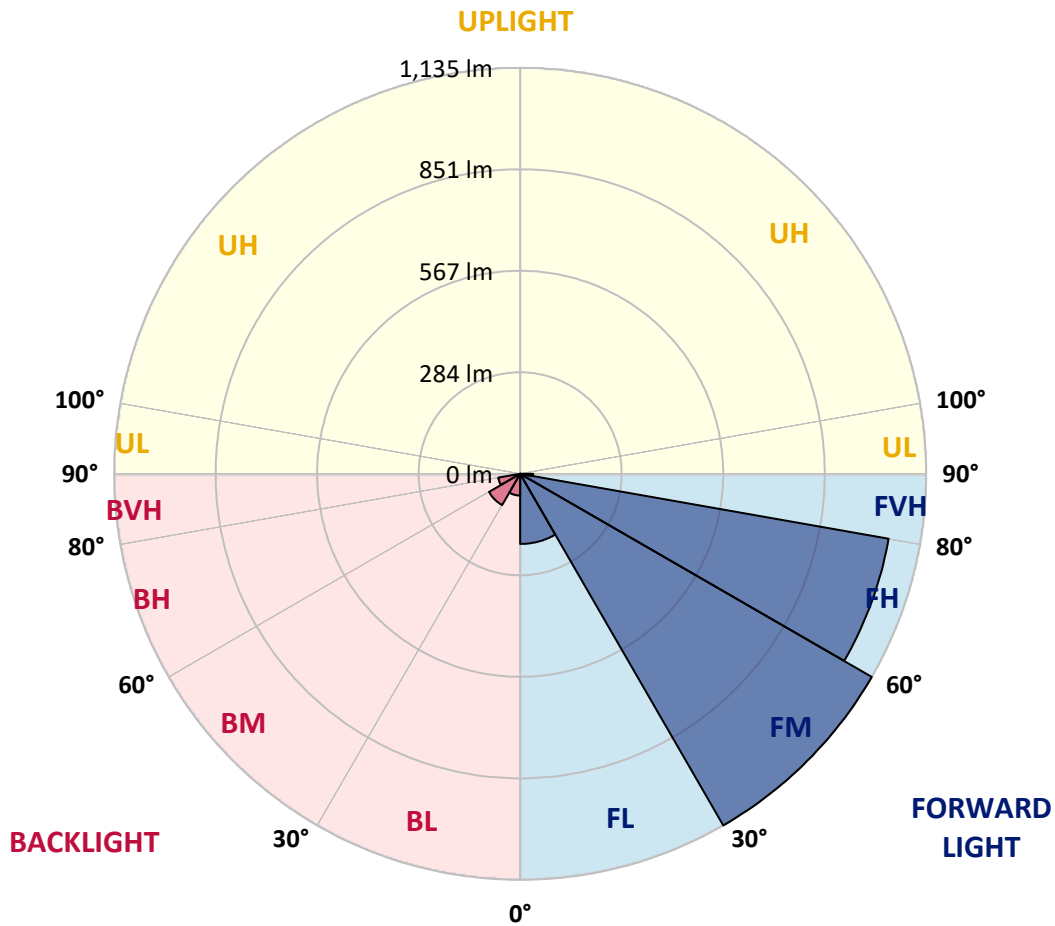
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 196.1 | 7.4 | | | |
| FM (30°-60°) | 1134.7 | 43.0 | | | |
| FH (60°-80°) | 1045.5 | 39.6 | | | G1/1800 |
| FVH (80°-90°) | 36.4 | 1.4 | | | G1/100 |
| BL (0°-30°) | 60.6 | 2.3 | B0/110 | | |
| BM (30°-60°) | 100.8 | 3.8 | B0/220 | | |
| BH (60°-80°) | 62.1 | 2.4 | B0/110 | | G0/110 |
| BVH (80°-90°) | 0.7 | 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-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 59° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 |
| 2.5° | 344.0 | 331.0 | 312.6 | 318.1 | 323.0 | 327.7 | 319.9 | 315.5 | 313.4 | 294.4 | 318.2 |
| 5° | 422.3 | 406.2 | 397.8 | 395.6 | 390.3 | 378.4 | 398.2 | 389.4 | 392.3 | 396.0 | 403.8 |
| 7.5° | 446.2 | 438.9 | 426.7 | 431.3 | 411.0 | 409.2 | 436.6 | 444.2 | 454.2 | 447.4 | 456.8 |
| 10° | 433.9 | 421.3 | 427.0 | 425.4 | 424.6 | 442.5 | 461.7 | 462.1 | 477.1 | 484.3 | 452.6 |
| 12.5° | 409.6 | 411.1 | 431.7 | 430.1 | 456.8 | 492.6 | 497.0 | 492.3 | 516.7 | 504.2 | 499.4 |
| 15° | 425.8 | 437.8 | 426.5 | 430.3 | 439.8 | 484.6 | 500.2 | 514.6 | 537.7 | 545.2 | 512.7 |
| 17.5° | 445.3 | 446.5 | 425.8 | 421.0 | 444.9 | 465.7 | 502.6 | 514.5 | 516.7 | 582.3 | 542.8 |
| 20° | 434.7 | 445.0 | 420.3 | 390.0 | 427.1 | 455.4 | 492.8 | 489.1 | 504.3 | 593.2 | 549.6 |
| 22.5° | 462.8 | 448.1 | 416.5 | 393.6 | 406.2 | 431.9 | 463.6 | 488.0 | 510.9 | 567.1 | 558.4 |
| 25° | 465.5 | 460.1 | 431.9 | 411.6 | 409.5 | 416.1 | 460.1 | 475.9 | 511.7 | 590.6 | 550.9 |
| 27.5° | 495.5 | 489.4 | 431.7 | 433.7 | 413.7 | 393.5 | 443.3 | 480.3 | 526.2 | 576.3 | 566.8 |
| 30° | 534.2 | 534.8 | 460.4 | 466.7 | 438.1 | 405.6 | 457.0 | 467.2 | 536.1 | 599.1 | 578.6 |
| 32.5° | 573.5 | 589.6 | 517.1 | 483.9 | 474.9 | 451.7 | 440.0 | 486.8 | 525.3 | 638.1 | 607.9 |
| 35° | 633.2 | 644.1 | 563.9 | 534.1 | 499.0 | 472.5 | 486.4 | 503.2 | 564.1 | 689.8 | 646.5 |
| 37.5° | 734.2 | 714.5 | 647.7 | 595.9 | 587.5 | 548.5 | 555.5 | 540.4 | 603.8 | 750.7 | 722.9 |
| 40° | 791.1 | 773.2 | 703.8 | 678.6 | 624.9 | 630.9 | 609.0 | 617.8 | 661.3 | 814.1 | 792.5 |
| 42.5° | 850.4 | 833.3 | 772.4 | 754.5 | 703.4 | 678.6 | 668.7 | 700.3 | 749.6 | 919.7 | 892.2 |
| 45° | 910.0 | 866.6 | 840.8 | 849.7 | 826.8 | 777.6 | 766.2 | 794.3 | 846.0 | 1049.5 | 997.4 |
| 47.5° | 960.2 | 923.6 | 904.2 | 900.1 | 891.1 | 959.4 | 912.6 | 925.0 | 947.9 | 1164.3 | 1128.5 |
| 50° | 1050.7 | 1014.6 | 984.3 | 975.9 | 1019.4 | 1116.2 | 1044.1 | 1020.1 | 1065.8 | 1303.0 | 1280.5 |
| 52.5° | 1181.4 | 1135.5 | 1087.3 | 1087.4 | 1169.5 | 1222.7 | 1256.8 | 1214.7 | 1223.2 | 1455.7 | 1445.6 |
| 55° | 1286.5 | 1228.1 | 1188.2 | 1219.7 | 1342.2 | 1371.9 | 1502.4 | 1465.4 | 1454.3 | 1597.2 | 1584.9 |
| 57.5° | 1300.9 | 1230.9 | 1212.0 | 1267.3 | 1434.8 | 1625.0 | 1765.3 | 1672.9 | 1655.9 | 1715.6 | 1740.1 |
| 60° | 1166.3 | 1092.1 | 1106.4 | 1195.3 | 1465.0 | 1779.2 | 2006.7 | 1931.3 | 1823.5 | 1854.4 | 1871.2 |
| 62.5° | 869.9 | 810.6 | 850.7 | 968.4 | 1348.7 | 1882.5 | 2286.2 | 2321.2 | 2017.9 | 1958.5 | 1954.9 |
| 65° | 564.4 | 527.3 | 553.6 | 650.1 | 1020.6 | 1870.8 | 2535.9 | 2687.5 | 2171.1 | 2043.4 | 1981.2 |
| 67.5° | 373.3 | 345.2 | 348.9 | 406.0 | 660.0 | 1521.5 | 2685.1 | 2868.5 | 2343.3 | 2091.6 | 1830.5 |
| 70° | 278.3 | 256.1 | 257.4 | 288.4 | 391.8 | 1003.4 | 2477.0 | 2725.7 | 2406.2 | 1924.6 | 1477.4 |
| 72.5° | 200.7 | 185.9 | 198.3 | 232.7 | 312.2 | 530.6 | 1846.2 | 2244.8 | 2098.2 | 1518.0 | 995.4 |
| 75° | 139.0 | 129.2 | 149.5 | 194.7 | 284.9 | 329.4 | 1220.0 | 1615.9 | 1470.6 | 952.4 | 450.0 |
| 77.5° | 77.0 | 74.1 | 103.3 | 158.6 | 258.6 | 270.0 | 747.3 | 1061.8 | 815.7 | 341.4 | 107.1 |
| 80° | 33.6 | 32.6 | 50.1 | 119.1 | 217.4 | 243.9 | 420.7 | 588.7 | 320.9 | 60.9 | 34.6 |
| 82.5° | 14.4 | 13.9 | 21.4 | 71.7 | 158.0 | 204.0 | 259.4 | 283.3 | 110.4 | 18.8 | 19.6 |
| 85° | 2.5 | 2.8 | 8.5 | 37.8 | 96.1 | 103.6 | 187.9 | 167.7 | 55.5 | 8.9 | 14.0 |
| 87.5° | 0.0 | 0.0 | 1.3 | 7.3 | 18.0 | 29.6 | 81.4 | 58.7 | 10.5 | 2.9 | 2.4 |
| 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° | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 | 263.8 |
| 2.5° | 321.5 | 314.0 | 285.6 | 282.0 | 278.1 | 272.4 | 270.2 | 258.0 | 256.4 | 272.1 | 272.1 |
| 5° | 400.2 | 373.5 | 346.4 | 325.0 | 305.9 | 279.5 | 272.0 | 264.2 | 258.0 | 256.4 | 261.3 |
| 7.5° | 441.7 | 409.1 | 366.5 | 312.2 | 268.1 | 229.8 | 213.8 | 202.6 | 190.0 | 193.7 | 195.7 |
| 10° | 439.4 | 404.8 | 350.5 | 280.7 | 231.8 | 189.5 | 148.7 | 125.0 | 111.8 | 105.2 | 104.4 |
| 12.5° | 461.7 | 429.1 | 339.7 | 255.6 | 193.2 | 134.7 | 93.6 | 76.6 | 66.9 | 67.0 | 66.2 |
| 15° | 474.7 | 439.2 | 327.1 | 223.8 | 136.1 | 86.7 | 64.9 | 61.2 | 59.8 | 61.3 | 60.5 |
| 17.5° | 497.5 | 449.7 | 298.7 | 176.4 | 93.6 | 65.4 | 59.7 | 58.2 | 60.0 | 63.0 | 62.2 |
| 20° | 495.8 | 431.4 | 258.2 | 124.3 | 69.2 | 58.9 | 56.5 | 54.2 | 57.8 | 61.0 | 60.5 |
| 22.5° | 494.2 | 413.5 | 220.2 | 91.7 | 57.8 | 53.7 | 51.7 | 50.7 | 52.6 | 56.3 | 57.1 |
| 25° | 480.0 | 404.7 | 181.6 | 68.9 | 52.3 | 48.7 | 47.8 | 47.0 | 47.7 | 50.7 | 50.6 |
| 27.5° | 497.4 | 382.4 | 140.2 | 57.8 | 48.5 | 44.2 | 43.4 | 42.1 | 40.7 | 43.4 | 43.8 |
| 30° | 493.8 | 385.5 | 109.9 | 50.9 | 44.6 | 38.9 | 39.1 | 36.3 | 33.9 | 36.3 | 36.3 |
| 32.5° | 506.9 | 363.0 | 88.0 | 46.2 | 40.7 | 36.6 | 33.2 | 30.3 | 28.6 | 30.0 | 30.3 |
| 35° | 525.9 | 364.0 | 68.9 | 43.3 | 37.4 | 32.6 | 28.6 | 25.6 | 24.0 | 24.7 | 25.1 |
| 37.5° | 589.9 | 357.6 | 57.5 | 41.0 | 36.2 | 30.2 | 26.0 | 22.2 | 21.1 | 21.9 | 22.3 |
| 40° | 631.6 | 374.7 | 50.7 | 39.8 | 33.1 | 27.8 | 22.3 | 19.5 | 18.6 | 19.0 | 19.6 |
| 42.5° | 710.1 | 384.1 | 47.4 | 38.5 | 30.3 | 23.8 | 19.1 | 17.5 | 16.2 | 16.7 | 17.2 |
| 45° | 794.1 | 400.3 | 44.9 | 37.0 | 28.2 | 20.8 | 16.8 | 15.5 | 13.8 | 13.9 | 14.4 |
| 47.5° | 897.3 | 438.8 | 41.9 | 34.4 | 25.2 | 19.0 | 15.0 | 13.0 | 11.3 | 11.2 | 11.9 |
| 50° | 1035.9 | 490.2 | 39.3 | 31.2 | 23.4 | 17.4 | 13.1 | 10.5 | 9.2 | 8.8 | 9.3 |
| 52.5° | 1183.8 | 556.7 | 36.5 | 29.0 | 21.1 | 15.2 | 11.2 | 8.5 | 7.3 | 7.1 | 7.5 |
| 55° | 1330.4 | 620.5 | 33.8 | 27.5 | 18.7 | 13.1 | 9.5 | 7.1 | 6.0 | 5.7 | 6.0 |
| 57.5° | 1497.5 | 689.5 | 30.3 | 24.6 | 16.4 | 11.3 | 7.9 | 5.9 | 4.9 | 4.7 | 4.8 |
| 60° | 1623.2 | 713.8 | 27.4 | 21.4 | 14.3 | 10.0 | 6.7 | 4.7 | 4.0 | 3.7 | 3.9 |
| 62.5° | 1682.9 | 674.2 | 24.6 | 18.6 | 12.6 | 8.7 | 5.6 | 3.9 | 3.3 | 3.1 | 3.1 |
| 65° | 1667.4 | 586.3 | 21.8 | 15.9 | 10.8 | 7.2 | 4.4 | 3.3 | 2.9 | 2.5 | 2.4 |
| 67.5° | 1488.5 | 458.8 | 18.6 | 13.4 | 9.1 | 5.9 | 3.7 | 3.2 | 2.7 | 2.4 | 2.0 |
| 70° | 1180.5 | 332.2 | 15.1 | 11.1 | 7.6 | 4.8 | 2.9 | 2.9 | 2.5 | 2.4 | 1.9 |
| 72.5° | 773.8 | 209.1 | 12.3 | 8.9 | 6.3 | 3.7 | 2.3 | 2.7 | 2.4 | 2.4 | 1.7 |
| 75° | 335.3 | 74.8 | 9.9 | 7.2 | 5.2 | 2.5 | 2.0 | 2.4 | 2.5 | 2.4 | 2.0 |
| 77.5° | 78.5 | 23.2 | 7.7 | 5.7 | 4.3 | 1.7 | 2.0 | 2.4 | 2.5 | 2.3 | 1.7 |
| 80° | 29.5 | 9.9 | 5.1 | 3.7 | 3.3 | 1.1 | 1.7 | 1.5 | 1.3 | 0.9 | 0.3 |
| 82.5° | 17.9 | 4.1 | 2.7 | 1.9 | 1.6 | 0.3 | 0.8 | 0.5 | 0.3 | 0.3 | 0.0 |
| 85° | 12.7 | 2.0 | 1.5 | 1.3 | 0.8 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 |
| 87.5° | 1.7 | 0.5 | 0.7 | 0.7 | 0.5 | 0.0 | 0.0 | 0.0 | 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)