

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: P366605

Luminaire Tested: **MSA-SA1A-727-U-SL3-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366605
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-727-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: 2775 lumens
Efficiency: N/A
Efficacy: 81.6 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

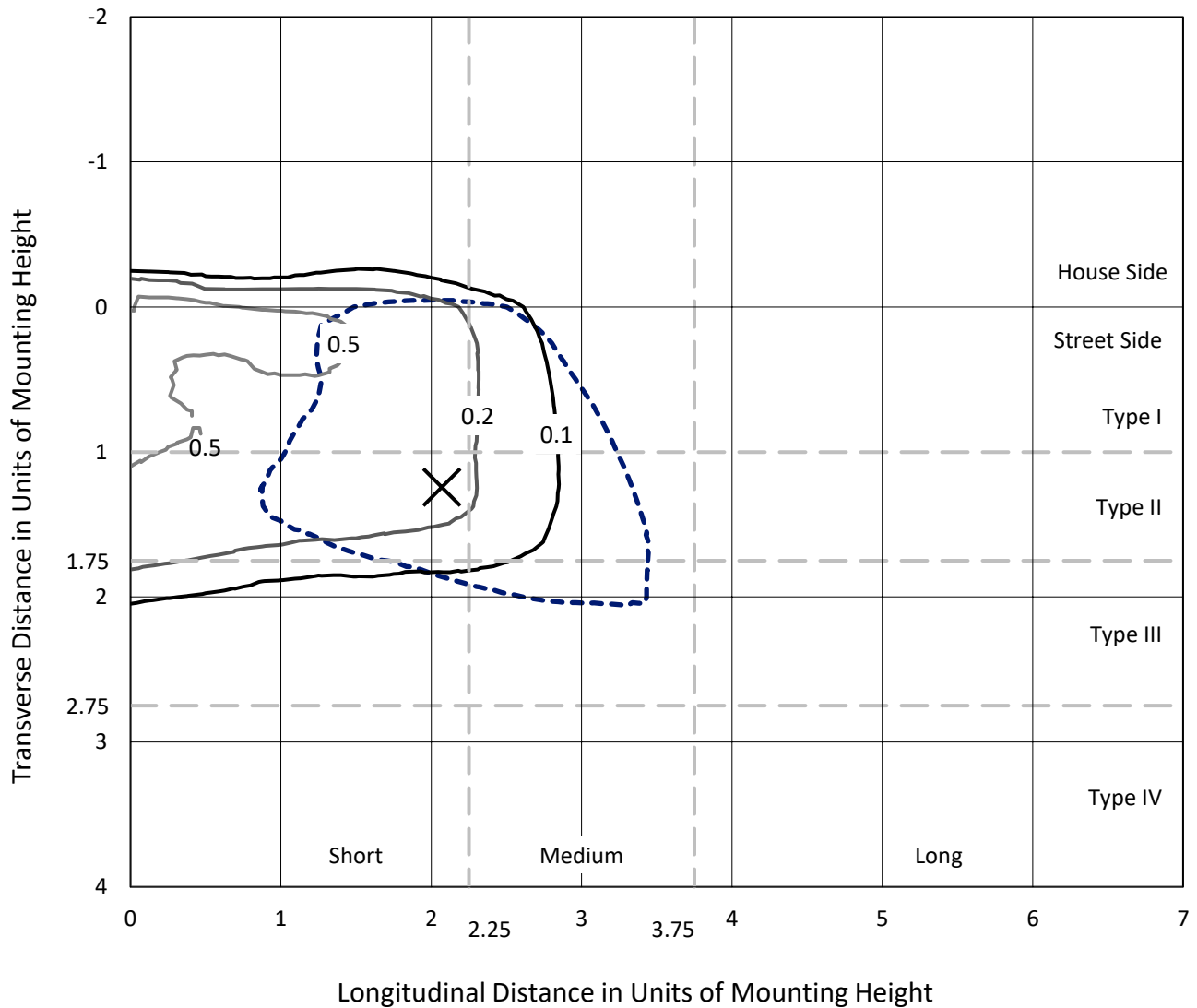
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

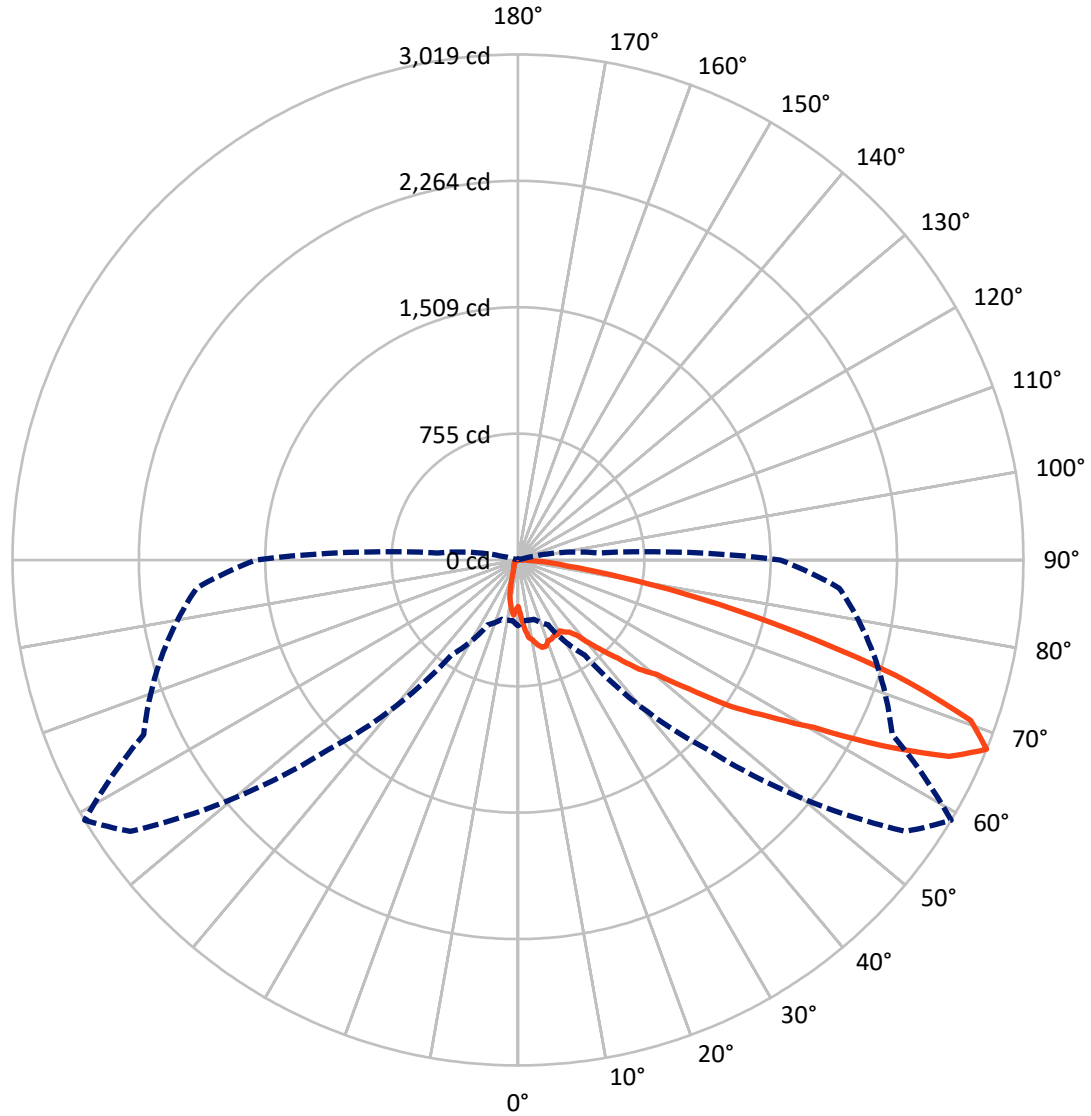
✕ Max cd
 - - - 1/2 Max cd



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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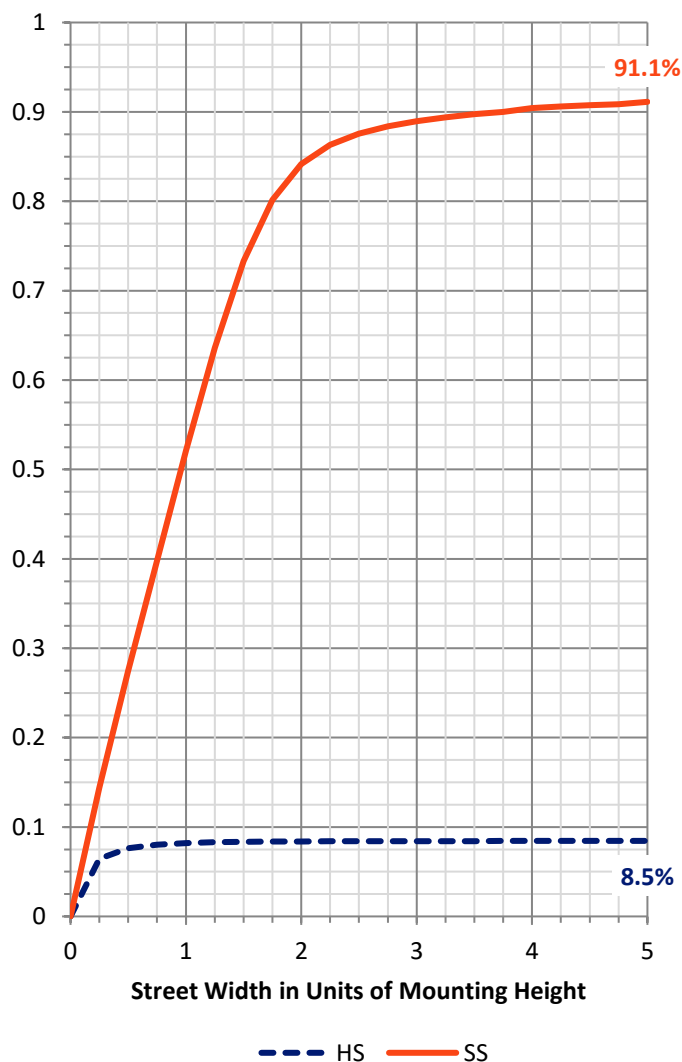
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 236.0 | 0.0 | 236.0 |
| | % Fixture | 8.5 | 0.0 | 8.5 |
| Street Side | Lumens | 2539.0 | 0.0 | 2539.0 |
| | % Fixture | 91.5 | 0.0 | 91.5 |
| Total | Lumens | 2775.0 | 0.0 | 2775.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 33.8 | 1.2 |
| 10°-20° | 95.1 | 3.4 |
| 20°-30° | 141.4 | 5.1 |
| 30°-40° | 218.1 | 7.9 |
| 40°-50° | 389.3 | 14.0 |
| 50°-60° | 692.8 | 25.0 |
| 60°-70° | 806.8 | 29.1 |
| 70°-80° | 358.8 | 12.9 |
| 80°-90° | 39.0 | 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° | 2775.0 | 100.0 |
| 0°-180° | 2775.0 | 100.0 |

Coefficient of Utilization



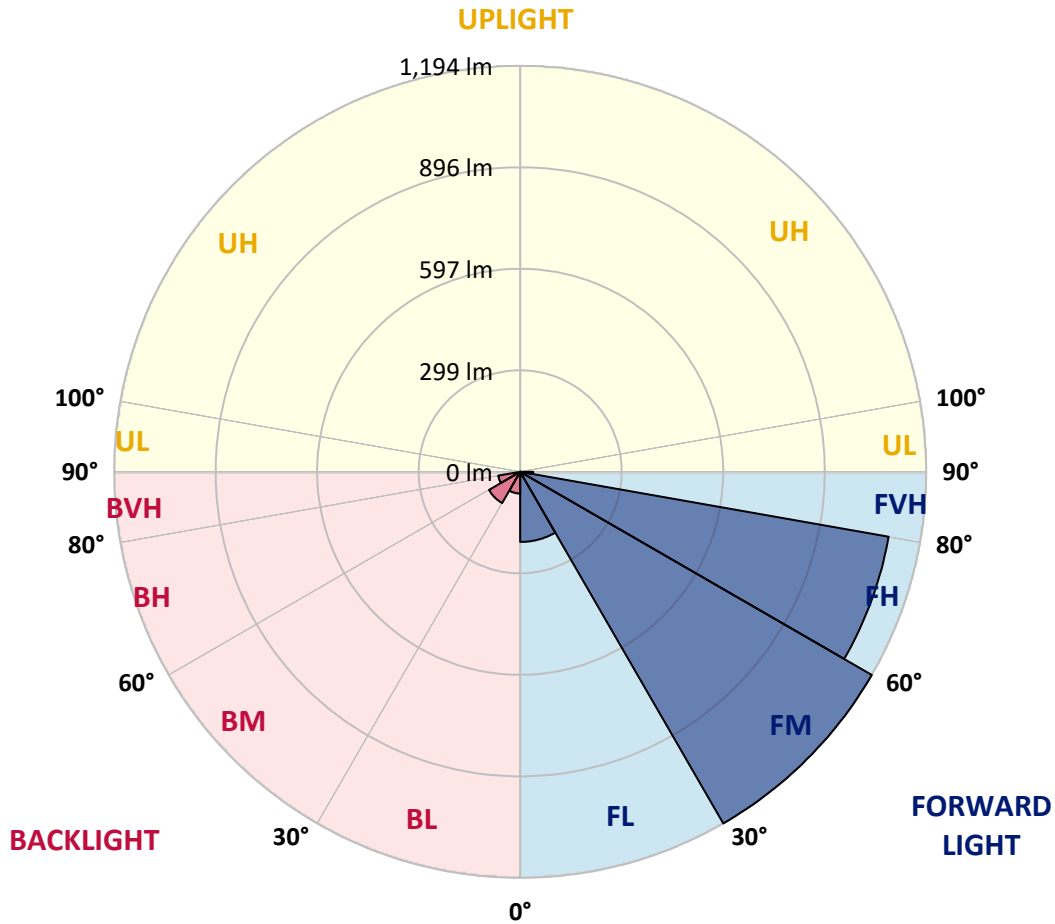
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 206.4 | 7.4 | | | |
| FM (30°-60°) | 1194.1 | 43.0 | | | |
| FH (60°-80°) | 1100.3 | 39.6 | | | G1/1800 |
| FVH (80°-90°) | 38.3 | 1.4 | | | G1/100 |
| BL (0°-30°) | 63.8 | 2.3 | B0/110 | | |
| BM (30°-60°) | 106.1 | 3.8 | B0/220 | | |
| BH (60°-80°) | 65.4 | 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° | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 |
| 2.5° | 362.0 | 348.3 | 328.9 | 334.7 | 339.9 | 344.8 | 336.7 | 332.0 | 329.8 | 309.8 | 334.8 |
| 5° | 444.4 | 427.4 | 418.6 | 416.3 | 410.7 | 398.2 | 419.0 | 409.7 | 412.8 | 416.8 | 424.9 |
| 7.5° | 469.6 | 461.9 | 449.1 | 453.8 | 432.5 | 430.7 | 459.5 | 467.5 | 478.0 | 470.8 | 480.7 |
| 10° | 456.7 | 443.3 | 449.4 | 447.7 | 446.8 | 465.6 | 485.9 | 486.3 | 502.0 | 509.6 | 476.3 |
| 12.5° | 431.1 | 432.6 | 454.3 | 452.6 | 480.7 | 518.3 | 523.0 | 518.1 | 543.8 | 530.6 | 525.5 |
| 15° | 448.1 | 460.7 | 448.8 | 452.9 | 462.8 | 509.9 | 526.4 | 541.5 | 565.8 | 573.7 | 539.6 |
| 17.5° | 468.6 | 469.9 | 448.1 | 443.0 | 468.2 | 490.1 | 528.9 | 541.4 | 543.8 | 612.8 | 571.2 |
| 20° | 457.5 | 468.3 | 442.3 | 410.4 | 449.5 | 479.3 | 518.6 | 514.7 | 530.7 | 624.3 | 578.3 |
| 22.5° | 487.0 | 471.6 | 438.3 | 414.2 | 427.4 | 454.5 | 487.9 | 513.6 | 537.6 | 596.7 | 587.6 |
| 25° | 489.8 | 484.2 | 454.5 | 433.2 | 430.9 | 437.8 | 484.2 | 500.8 | 538.4 | 621.5 | 579.7 |
| 27.5° | 521.4 | 515.0 | 454.3 | 456.4 | 435.3 | 414.1 | 466.5 | 505.4 | 553.7 | 606.4 | 596.5 |
| 30° | 562.2 | 562.7 | 484.5 | 491.1 | 461.0 | 426.9 | 481.0 | 491.6 | 564.1 | 630.5 | 608.8 |
| 32.5° | 603.5 | 620.5 | 544.2 | 509.2 | 499.8 | 475.3 | 463.0 | 512.3 | 552.8 | 671.5 | 639.7 |
| 35° | 666.3 | 677.8 | 593.4 | 562.0 | 525.1 | 497.3 | 511.9 | 529.6 | 593.7 | 725.9 | 680.3 |
| 37.5° | 772.7 | 751.9 | 681.6 | 627.1 | 618.2 | 577.2 | 584.5 | 568.6 | 635.4 | 789.9 | 760.7 |
| 40° | 832.5 | 813.7 | 740.6 | 714.1 | 657.6 | 663.9 | 640.9 | 650.1 | 695.9 | 856.7 | 833.9 |
| 42.5° | 894.9 | 876.9 | 812.9 | 794.0 | 740.2 | 714.1 | 703.7 | 737.0 | 788.8 | 967.8 | 938.9 |
| 45° | 957.6 | 911.9 | 884.8 | 894.2 | 870.0 | 818.3 | 806.2 | 835.9 | 890.3 | 1104.4 | 1049.6 |
| 47.5° | 1010.4 | 971.9 | 951.5 | 947.2 | 937.8 | 1009.6 | 960.4 | 973.5 | 997.5 | 1225.2 | 1187.6 |
| 50° | 1105.7 | 1067.7 | 1035.8 | 1027.0 | 1072.8 | 1174.7 | 1098.8 | 1073.5 | 1121.6 | 1371.2 | 1347.5 |
| 52.5° | 1243.2 | 1194.9 | 1144.2 | 1144.3 | 1230.7 | 1286.6 | 1322.6 | 1278.2 | 1287.2 | 1531.8 | 1521.3 |
| 55° | 1353.8 | 1292.4 | 1250.4 | 1283.6 | 1412.4 | 1443.7 | 1581.0 | 1542.1 | 1530.4 | 1680.8 | 1667.9 |
| 57.5° | 1369.0 | 1295.4 | 1275.4 | 1333.6 | 1509.9 | 1710.0 | 1857.7 | 1760.4 | 1742.6 | 1805.4 | 1831.1 |
| 60° | 1227.4 | 1149.2 | 1164.3 | 1257.8 | 1541.7 | 1872.3 | 2111.7 | 2032.3 | 1918.9 | 1951.4 | 1969.1 |
| 62.5° | 915.4 | 853.0 | 895.2 | 1019.1 | 1419.3 | 1981.0 | 2405.8 | 2442.6 | 2123.5 | 2061.0 | 2057.2 |
| 65° | 593.9 | 554.9 | 582.6 | 684.1 | 1074.1 | 1968.7 | 2668.6 | 2828.2 | 2284.7 | 2150.4 | 2084.9 |
| 67.5° | 392.9 | 363.2 | 367.2 | 427.3 | 694.5 | 1601.1 | 2825.7 | 3018.6 | 2465.9 | 2201.1 | 1926.3 |
| 70° | 292.8 | 269.5 | 270.9 | 303.5 | 412.3 | 1055.9 | 2606.6 | 2868.4 | 2532.1 | 2025.3 | 1554.7 |
| 72.5° | 211.2 | 195.6 | 208.7 | 244.9 | 328.5 | 558.4 | 1942.8 | 2362.3 | 2208.0 | 1597.5 | 1047.5 |
| 75° | 146.3 | 136.0 | 157.4 | 204.9 | 299.8 | 346.6 | 1283.8 | 1700.5 | 1547.6 | 1002.3 | 473.5 |
| 77.5° | 81.1 | 78.0 | 108.8 | 166.9 | 272.2 | 284.1 | 786.4 | 1117.3 | 858.4 | 359.3 | 112.7 |
| 80° | 35.4 | 34.3 | 52.7 | 125.3 | 228.8 | 256.7 | 442.7 | 619.5 | 337.6 | 64.1 | 36.4 |
| 82.5° | 15.2 | 14.6 | 22.5 | 75.5 | 166.2 | 214.7 | 273.0 | 298.2 | 116.2 | 19.8 | 20.7 |
| 85° | 2.7 | 3.0 | 9.0 | 39.8 | 101.2 | 109.0 | 197.7 | 176.5 | 58.5 | 9.4 | 14.8 |
| 87.5° | 0.0 | 0.0 | 1.4 | 7.7 | 19.0 | 31.2 | 85.7 | 61.8 | 11.1 | 3.1 | 2.5 |
| 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° | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 | 277.6 |
| 2.5° | 338.3 | 330.5 | 300.6 | 296.8 | 292.7 | 286.6 | 284.4 | 271.5 | 269.8 | 286.4 | 286.4 |
| 5° | 421.1 | 393.0 | 364.5 | 342.0 | 321.9 | 294.1 | 286.2 | 278.1 | 271.5 | 269.8 | 275.0 |
| 7.5° | 464.8 | 430.5 | 385.7 | 328.5 | 282.1 | 241.8 | 225.0 | 213.2 | 199.9 | 203.9 | 206.0 |
| 10° | 462.4 | 426.0 | 368.8 | 295.4 | 243.9 | 199.4 | 156.5 | 131.5 | 117.6 | 110.7 | 109.9 |
| 12.5° | 485.9 | 451.6 | 357.5 | 268.9 | 203.3 | 141.8 | 98.5 | 80.7 | 70.4 | 70.5 | 69.7 |
| 15° | 499.5 | 462.1 | 344.2 | 235.5 | 143.2 | 91.2 | 68.3 | 64.4 | 62.9 | 64.5 | 63.7 |
| 17.5° | 523.5 | 473.2 | 314.3 | 185.6 | 98.5 | 68.8 | 62.8 | 61.3 | 63.1 | 66.3 | 65.5 |
| 20° | 521.7 | 454.0 | 271.7 | 130.8 | 72.8 | 62.0 | 59.4 | 57.0 | 60.8 | 64.2 | 63.7 |
| 22.5° | 520.0 | 435.2 | 231.7 | 96.5 | 60.8 | 56.5 | 54.4 | 53.4 | 55.4 | 59.3 | 60.1 |
| 25° | 505.1 | 425.9 | 191.1 | 72.5 | 55.1 | 51.3 | 50.3 | 49.5 | 50.2 | 53.4 | 53.3 |
| 27.5° | 523.4 | 402.4 | 147.5 | 60.8 | 51.0 | 46.5 | 45.7 | 44.3 | 42.9 | 45.7 | 46.1 |
| 30° | 519.6 | 405.7 | 115.6 | 53.5 | 46.9 | 40.9 | 41.2 | 38.2 | 35.7 | 38.2 | 38.2 |
| 32.5° | 533.4 | 382.0 | 92.6 | 48.6 | 42.9 | 38.5 | 35.0 | 31.9 | 30.1 | 31.6 | 31.9 |
| 35° | 553.5 | 383.0 | 72.5 | 45.5 | 39.3 | 34.3 | 30.1 | 27.0 | 25.3 | 26.0 | 26.4 |
| 37.5° | 620.8 | 376.3 | 60.6 | 43.1 | 38.1 | 31.8 | 27.4 | 23.3 | 22.2 | 23.0 | 23.5 |
| 40° | 664.6 | 394.3 | 53.4 | 41.9 | 34.8 | 29.2 | 23.5 | 20.5 | 19.5 | 20.0 | 20.7 |
| 42.5° | 747.2 | 404.2 | 49.9 | 40.5 | 31.9 | 25.0 | 20.1 | 18.4 | 17.0 | 17.6 | 18.1 |
| 45° | 835.6 | 421.2 | 47.2 | 38.9 | 29.6 | 21.9 | 17.7 | 16.3 | 14.5 | 14.6 | 15.2 |
| 47.5° | 944.2 | 461.7 | 44.1 | 36.3 | 26.6 | 20.0 | 15.7 | 13.6 | 11.9 | 11.8 | 12.5 |
| 50° | 1090.1 | 515.8 | 41.3 | 32.9 | 24.6 | 18.3 | 13.8 | 11.1 | 9.7 | 9.3 | 9.8 |
| 52.5° | 1245.8 | 585.8 | 38.4 | 30.5 | 22.2 | 16.0 | 11.8 | 9.0 | 7.7 | 7.4 | 7.9 |
| 55° | 1400.0 | 652.9 | 35.5 | 28.9 | 19.7 | 13.8 | 10.0 | 7.4 | 6.3 | 6.0 | 6.3 |
| 57.5° | 1575.8 | 725.6 | 31.9 | 25.9 | 17.3 | 11.9 | 8.3 | 6.2 | 5.2 | 4.9 | 5.1 |
| 60° | 1708.2 | 751.2 | 28.8 | 22.5 | 15.0 | 10.5 | 7.0 | 4.9 | 4.2 | 3.9 | 4.1 |
| 62.5° | 1771.0 | 709.4 | 25.9 | 19.5 | 13.2 | 9.1 | 5.9 | 4.1 | 3.5 | 3.2 | 3.2 |
| 65° | 1754.7 | 617.0 | 22.9 | 16.7 | 11.4 | 7.6 | 4.6 | 3.5 | 3.1 | 2.7 | 2.5 |
| 67.5° | 1566.4 | 482.8 | 19.5 | 14.1 | 9.6 | 6.2 | 3.9 | 3.4 | 2.8 | 2.5 | 2.1 |
| 70° | 1242.2 | 349.6 | 15.9 | 11.7 | 8.0 | 5.1 | 3.1 | 3.1 | 2.7 | 2.5 | 2.0 |
| 72.5° | 814.3 | 220.0 | 12.9 | 9.4 | 6.6 | 3.9 | 2.4 | 2.8 | 2.5 | 2.5 | 1.8 |
| 75° | 352.8 | 78.7 | 10.4 | 7.6 | 5.5 | 2.7 | 2.1 | 2.5 | 2.7 | 2.5 | 2.1 |
| 77.5° | 82.6 | 24.4 | 8.1 | 6.0 | 4.5 | 1.8 | 2.1 | 2.5 | 2.7 | 2.4 | 1.8 |
| 80° | 31.1 | 10.4 | 5.3 | 3.9 | 3.5 | 1.1 | 1.8 | 1.5 | 1.4 | 1.0 | 0.3 |
| 82.5° | 18.8 | 4.4 | 2.8 | 2.0 | 1.7 | 0.3 | 0.8 | 0.6 | 0.3 | 0.3 | 0.0 |
| 85° | 13.3 | 2.1 | 1.5 | 1.4 | 0.8 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 |
| 87.5° | 1.8 | 0.6 | 0.7 | 0.7 | 0.6 | 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)