

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: P596667

Luminaire Tested: **MSA-SA3A-827-U-T3-HSS**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596667
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-11)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA3A-827-U-T3-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6368 lumens
Efficiency: N/A
Efficacy: 66.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G2

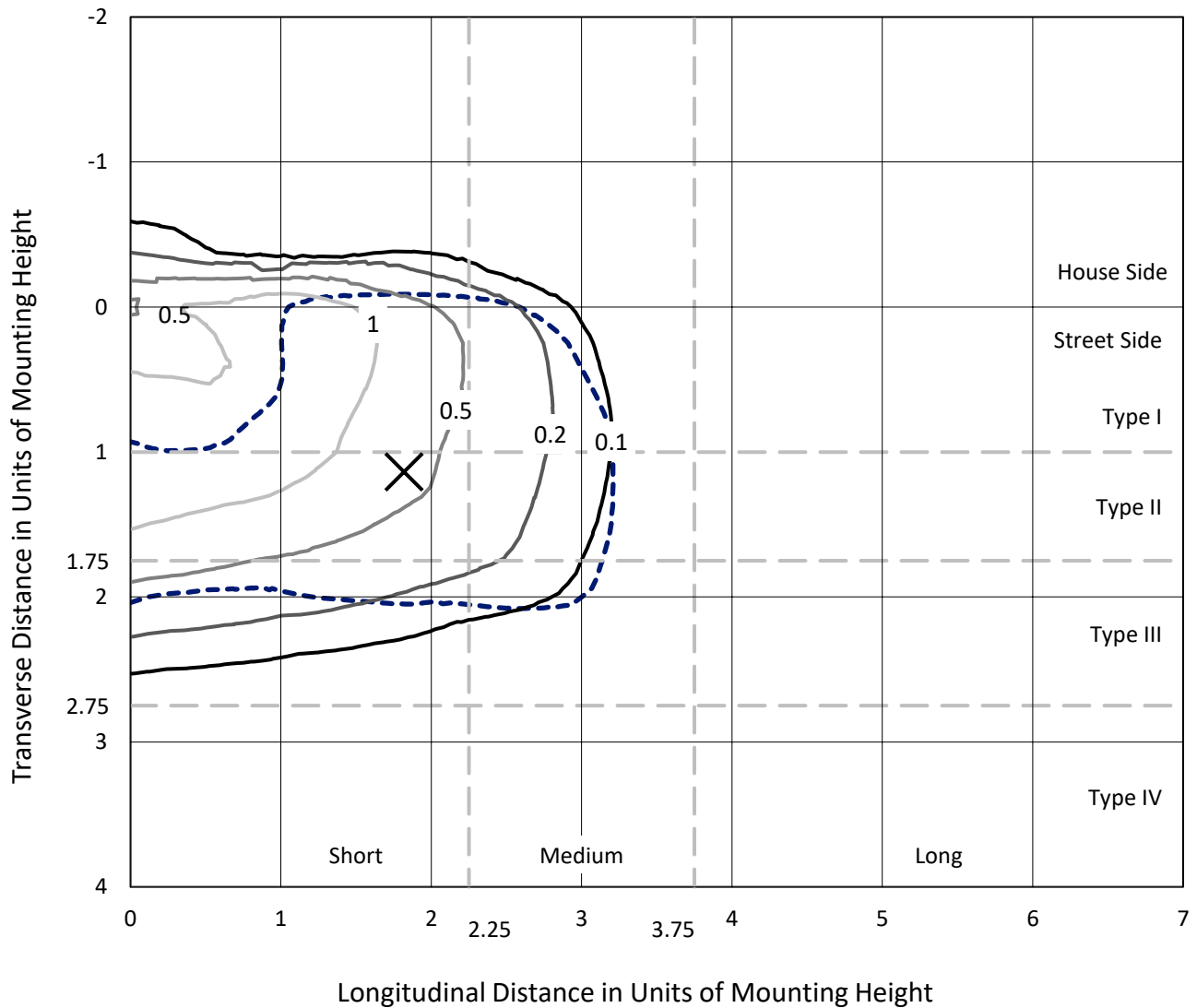
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

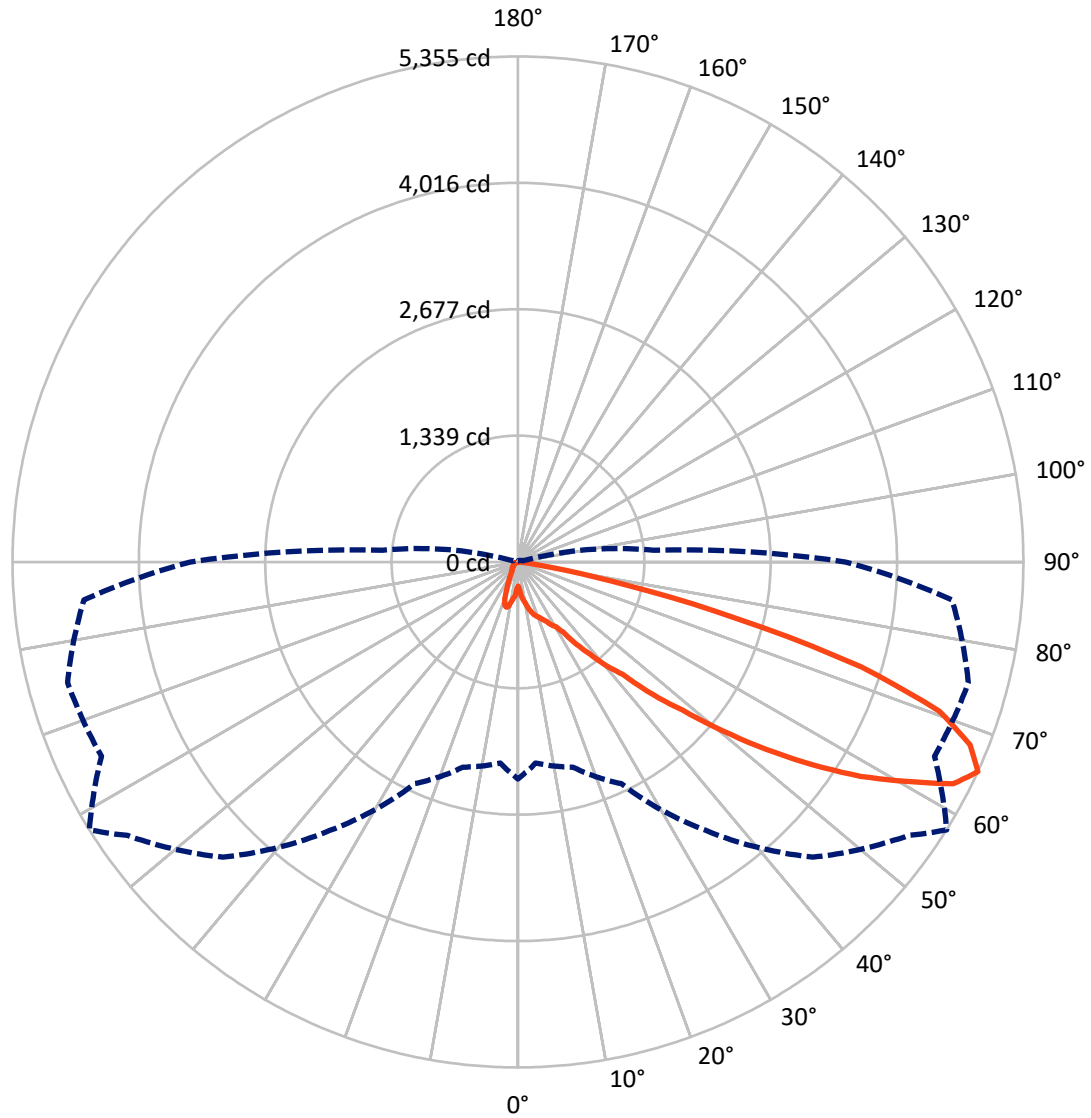
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.7 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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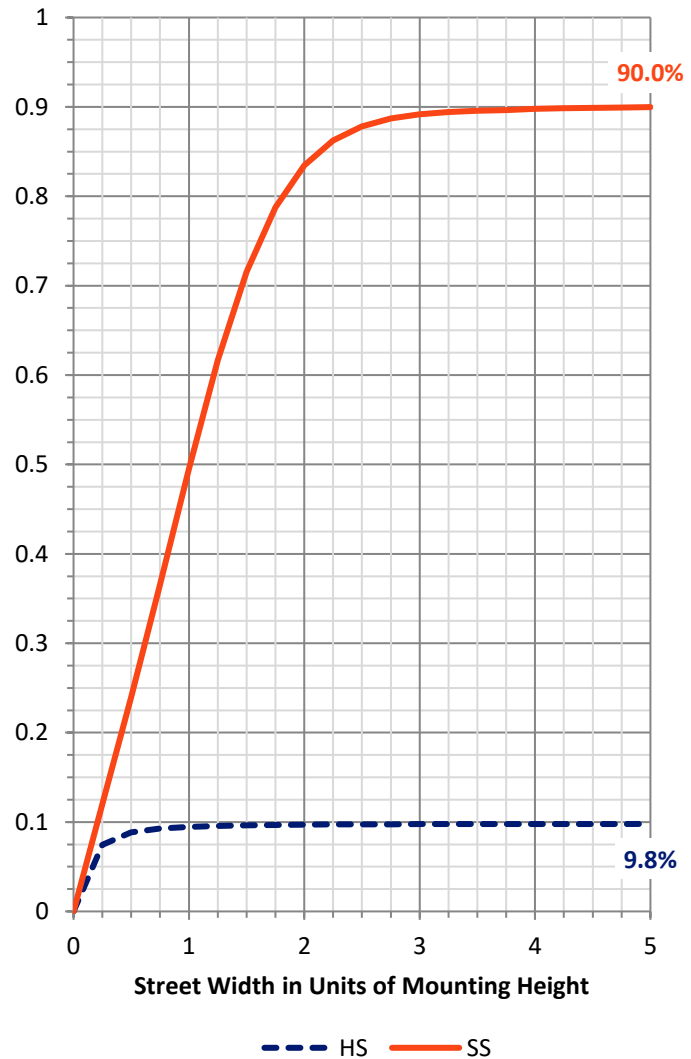
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 628.3 | 0.0 | 628.3 |
| | % Fixture | 9.9 | 0.0 | 9.9 |
| Street Side | Lumens | 5739.6 | 0.0 | 5739.6 |
| | % Fixture | 90.1 | 0.0 | 90.1 |
| Total | Lumens | 6368.0 | 0.0 | 6368.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 35.8 | 0.6 |
| 10°-20° | 130.7 | 2.1 |
| 20°-30° | 253.0 | 4.0 |
| 30°-40° | 504.8 | 7.9 |
| 40°-50° | 1032.0 | 16.2 |
| 50°-60° | 1830.5 | 28.7 |
| 60°-70° | 1929.8 | 30.3 |
| 70°-80° | 625.7 | 9.8 |
| 80°-90° | 25.6 | 0.4 |
| 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° | 6368.0 | 100.0 |
| 0°-180° | 6368.0 | 100.0 |

Coefficient of Utilization



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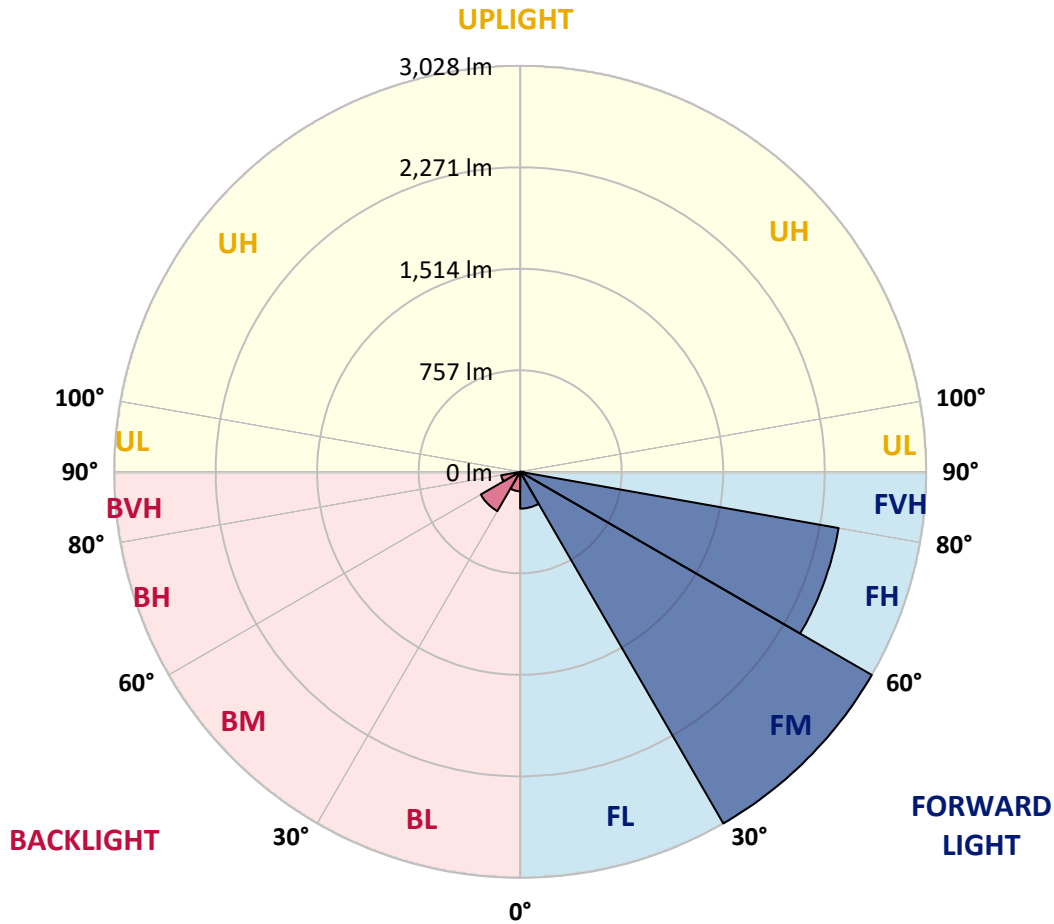
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 274.7 | 4.3 | | | |
| FM (30°-60°) | 3028.3 | 47.6 | | | |
| FH (60°-80°) | 2412.1 | 37.9 | | | G2/5000 |
| FVH (80°-90°) | 24.5 | 0.4 | | | G1/100 |
| BL (0°-30°) | 144.8 | 2.3 | B1/500 | | |
| BM (30°-60°) | 339.0 | 5.3 | B1/1000 | | |
| BH (60°-80°) | 143.4 | 2.3 | B1/500 | | G1/500 |
| BVH (80°-90°) | 1.1 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 58° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 |
| 2.5° | 311.2 | 301.9 | 287.2 | 289.7 | 292.6 | 298.3 | 293.6 | 289.3 | 284.7 | 278.6 | 301.9 |
| 5° | 375.7 | 360.3 | 358.9 | 355.7 | 353.2 | 352.8 | 358.5 | 356.7 | 359.3 | 370.7 | 382.6 |
| 7.5° | 399.4 | 393.0 | 380.8 | 385.8 | 377.9 | 371.8 | 397.3 | 405.5 | 421.3 | 426.7 | 457.5 |
| 10° | 396.9 | 387.6 | 392.6 | 395.1 | 400.5 | 422.7 | 438.9 | 447.8 | 461.4 | 490.8 | 484.7 |
| 12.5° | 408.4 | 416.6 | 422.0 | 422.4 | 450.0 | 490.8 | 502.3 | 509.8 | 534.2 | 545.7 | 575.8 |
| 15° | 446.7 | 460.4 | 451.8 | 455.3 | 464.3 | 514.1 | 541.0 | 557.5 | 591.9 | 629.2 | 636.8 |
| 17.5° | 501.6 | 510.2 | 492.3 | 479.4 | 504.1 | 531.4 | 580.1 | 597.3 | 619.2 | 706.3 | 722.5 |
| 20° | 570.8 | 585.5 | 546.8 | 495.5 | 528.1 | 560.4 | 613.5 | 621.7 | 645.0 | 758.7 | 784.1 |
| 22.5° | 732.5 | 710.6 | 651.5 | 571.5 | 561.8 | 576.2 | 626.7 | 659.0 | 698.4 | 788.1 | 847.2 |
| 25° | 892.0 | 884.5 | 797.4 | 708.1 | 643.6 | 611.3 | 678.4 | 696.3 | 760.8 | 858.0 | 890.6 |
| 27.5° | 1069.5 | 1084.6 | 939.0 | 884.9 | 758.3 | 652.9 | 710.6 | 755.4 | 831.8 | 883.4 | 962.0 |
| 30° | 1303.6 | 1279.6 | 1109.0 | 1054.8 | 910.3 | 767.3 | 794.2 | 797.0 | 909.3 | 967.3 | 1041.9 |
| 32.5° | 1487.2 | 1502.6 | 1288.2 | 1205.0 | 1089.6 | 943.3 | 856.9 | 894.2 | 974.5 | 1103.9 | 1174.6 |
| 35° | 1685.8 | 1684.4 | 1475.4 | 1363.5 | 1212.6 | 1087.1 | 1043.0 | 1070.2 | 1171.0 | 1317.6 | 1336.3 |
| 37.5° | 1982.7 | 1957.3 | 1710.6 | 1546.7 | 1418.4 | 1311.2 | 1277.5 | 1241.3 | 1345.2 | 1485.1 | 1555.0 |
| 40° | 2262.7 | 2174.9 | 1946.9 | 1752.5 | 1588.3 | 1544.6 | 1422.7 | 1444.9 | 1475.7 | 1660.4 | 1853.6 |
| 42.5° | 2545.6 | 2491.1 | 2186.4 | 2023.6 | 1821.7 | 1717.8 | 1638.2 | 1627.8 | 1774.4 | 1993.1 | 2192.8 |
| 45° | 2918.9 | 2752.1 | 2508.3 | 2365.3 | 2131.5 | 2027.2 | 1963.0 | 2001.4 | 2133.3 | 2452.8 | 2585.8 |
| 47.5° | 3232.2 | 3078.8 | 2869.4 | 2652.1 | 2406.9 | 2524.1 | 2403.6 | 2343.0 | 2524.1 | 2854.3 | 3031.1 |
| 50° | 3501.5 | 3330.5 | 3118.6 | 2957.6 | 2917.8 | 3030.4 | 2786.6 | 2808.8 | 2926.4 | 3314.3 | 3414.0 |
| 52.5° | 3697.2 | 3517.3 | 3332.3 | 3254.5 | 3417.6 | 3474.2 | 3352.0 | 3302.9 | 3409.7 | 3706.6 | 3755.0 |
| 55° | 3844.6 | 3660.3 | 3515.8 | 3623.0 | 3938.5 | 3919.9 | 3962.9 | 3795.1 | 3897.3 | 4115.7 | 4092.7 |
| 57.5° | 3853.6 | 3635.2 | 3550.6 | 3723.1 | 4156.2 | 4444.8 | 4570.6 | 4285.3 | 4343.3 | 4435.5 | 4383.9 |
| 60° | 3571.8 | 3354.5 | 3347.7 | 3592.6 | 4219.3 | 4580.7 | 4856.0 | 4716.9 | 4639.1 | 4707.6 | 4609.7 |
| 62.5° | 3010.3 | 2858.3 | 2929.3 | 3200.0 | 3984.4 | 4505.8 | 5008.1 | 5175.5 | 4872.5 | 4888.0 | 4748.8 |
| 65° | 2298.6 | 2139.0 | 2250.2 | 2591.2 | 3471.0 | 4421.9 | 5051.1 | 5354.8 | 4868.2 | 4939.2 | 4615.5 |
| 67.5° | 1522.4 | 1429.9 | 1555.7 | 1931.4 | 2759.7 | 3903.4 | 5028.9 | 5166.5 | 4713.7 | 4738.8 | 4120.3 |
| 70° | 785.9 | 763.3 | 865.2 | 1161.7 | 1855.4 | 2998.8 | 4810.5 | 4735.2 | 4400.0 | 4082.3 | 3178.1 |
| 72.5° | 251.7 | 252.8 | 350.7 | 530.6 | 1000.3 | 1825.7 | 3697.6 | 3800.9 | 3520.8 | 2986.3 | 1940.4 |
| 75° | 111.5 | 109.7 | 146.6 | 222.7 | 417.0 | 818.5 | 2297.2 | 2408.7 | 2192.1 | 1642.8 | 815.7 |
| 77.5° | 80.3 | 77.8 | 93.9 | 130.1 | 206.5 | 277.5 | 1077.0 | 1162.4 | 993.9 | 569.4 | 186.8 |
| 80° | 56.6 | 56.3 | 68.1 | 91.4 | 129.1 | 123.3 | 340.3 | 381.5 | 305.5 | 138.0 | 54.9 |
| 82.5° | 31.9 | 33.0 | 47.3 | 64.5 | 78.5 | 61.7 | 95.7 | 105.4 | 102.9 | 73.5 | 24.0 |
| 85° | 15.4 | 17.2 | 30.8 | 46.6 | 41.2 | 24.0 | 34.1 | 36.9 | 43.0 | 42.7 | 12.2 |
| 87.5° | 0.0 | 0.0 | 12.5 | 21.2 | 11.1 | 3.6 | 10.4 | 11.8 | 11.5 | 13.6 | 2.9 |
| 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° | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 | 254.9 |
| 2.5° | 306.6 | 304.4 | 277.2 | 279.3 | 285.4 | 282.9 | 285.0 | 280.0 | 274.3 | 297.6 | 297.2 |
| 5° | 387.6 | 371.4 | 362.8 | 355.0 | 356.4 | 340.3 | 349.6 | 353.9 | 353.2 | 366.4 | 370.0 |
| 7.5° | 458.6 | 437.1 | 419.8 | 403.4 | 378.3 | 355.7 | 369.7 | 378.6 | 384.7 | 407.7 | 416.6 |
| 10° | 491.9 | 474.3 | 467.5 | 435.3 | 417.3 | 403.4 | 386.5 | 374.3 | 379.3 | 373.2 | 379.3 |
| 12.5° | 565.1 | 553.2 | 527.1 | 494.4 | 472.9 | 444.2 | 381.5 | 329.1 | 296.9 | 297.2 | 295.1 |
| 15° | 631.7 | 631.0 | 591.9 | 537.8 | 475.4 | 393.7 | 295.8 | 229.8 | 199.3 | 190.7 | 187.9 |
| 17.5° | 718.9 | 708.1 | 636.8 | 556.8 | 444.6 | 304.8 | 201.5 | 157.4 | 154.5 | 159.5 | 157.4 |
| 20° | 774.4 | 758.7 | 659.0 | 529.2 | 366.4 | 206.2 | 152.0 | 139.5 | 148.1 | 155.2 | 153.5 |
| 22.5° | 830.0 | 806.4 | 675.8 | 495.5 | 260.7 | 150.9 | 137.3 | 135.2 | 140.5 | 149.5 | 150.9 |
| 25° | 860.5 | 855.8 | 708.8 | 432.4 | 178.6 | 132.3 | 132.3 | 131.6 | 133.4 | 139.8 | 138.8 |
| 27.5° | 949.1 | 885.9 | 684.1 | 337.4 | 138.0 | 121.5 | 123.3 | 122.6 | 116.2 | 122.6 | 123.0 |
| 30° | 1004.3 | 975.2 | 685.9 | 240.2 | 121.5 | 107.6 | 112.2 | 106.5 | 96.8 | 102.2 | 101.1 |
| 32.5° | 1115.4 | 1043.0 | 680.5 | 162.1 | 110.8 | 102.5 | 95.4 | 87.1 | 80.0 | 82.1 | 80.3 |
| 35° | 1244.8 | 1189.6 | 607.7 | 130.1 | 103.3 | 90.7 | 79.2 | 71.0 | 63.5 | 65.3 | 64.9 |
| 37.5° | 1502.3 | 1327.0 | 547.5 | 117.2 | 98.2 | 83.2 | 69.9 | 58.4 | 54.5 | 55.6 | 56.6 |
| 40° | 1740.7 | 1556.1 | 435.3 | 111.5 | 89.6 | 74.2 | 57.7 | 49.5 | 47.0 | 47.7 | 48.8 |
| 42.5° | 2097.1 | 1738.2 | 328.8 | 105.8 | 81.0 | 62.7 | 48.0 | 42.7 | 40.2 | 41.6 | 42.3 |
| 45° | 2442.0 | 1893.1 | 245.6 | 100.7 | 73.9 | 54.1 | 40.5 | 36.9 | 34.1 | 35.1 | 36.6 |
| 47.5° | 2786.6 | 2065.2 | 183.2 | 92.9 | 66.0 | 46.6 | 34.8 | 32.3 | 30.5 | 30.8 | 32.6 |
| 50° | 3094.9 | 2145.5 | 144.1 | 83.2 | 59.5 | 40.5 | 31.6 | 29.0 | 28.3 | 28.7 | 30.1 |
| 52.5° | 3321.5 | 2146.2 | 121.5 | 74.6 | 53.4 | 35.9 | 29.8 | 26.9 | 26.5 | 27.2 | 28.7 |
| 55° | 3526.2 | 2088.8 | 105.4 | 67.0 | 48.0 | 32.6 | 28.3 | 25.8 | 25.8 | 26.5 | 28.0 |
| 57.5° | 3662.1 | 1983.4 | 91.4 | 59.2 | 43.4 | 30.8 | 27.2 | 24.7 | 24.4 | 24.0 | 25.1 |
| 60° | 3728.4 | 1839.7 | 77.4 | 52.0 | 39.1 | 29.8 | 26.5 | 21.9 | 21.5 | 20.8 | 21.5 |
| 62.5° | 3686.5 | 1659.7 | 64.9 | 44.8 | 34.8 | 28.3 | 23.3 | 19.0 | 18.3 | 16.9 | 17.9 |
| 65° | 3472.1 | 1441.0 | 54.9 | 38.4 | 30.1 | 24.0 | 19.7 | 16.1 | 14.3 | 12.5 | 12.2 |
| 67.5° | 3033.6 | 1170.6 | 45.9 | 33.0 | 25.8 | 19.7 | 16.1 | 14.3 | 11.1 | 9.7 | 9.3 |
| 70° | 2273.5 | 799.2 | 38.0 | 28.3 | 21.5 | 16.9 | 13.6 | 12.9 | 10.4 | 9.3 | 8.6 |
| 72.5° | 1333.8 | 431.3 | 31.9 | 24.7 | 18.3 | 14.0 | 11.1 | 11.8 | 10.4 | 8.6 | 7.9 |
| 75° | 532.8 | 143.4 | 25.5 | 19.7 | 14.7 | 10.0 | 9.3 | 9.7 | 9.3 | 7.9 | 6.5 |
| 77.5° | 121.5 | 45.2 | 19.7 | 15.4 | 11.5 | 6.5 | 7.5 | 8.2 | 8.2 | 6.5 | 4.7 |
| 80° | 38.0 | 17.9 | 11.5 | 9.7 | 8.2 | 3.6 | 5.4 | 5.7 | 3.9 | 1.8 | 0.0 |
| 82.5° | 12.2 | 5.0 | 3.9 | 3.9 | 3.6 | 0.7 | 1.1 | 0.7 | 0.0 | 0.0 | 0.0 |
| 85° | 4.7 | 3.2 | 2.5 | 2.5 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 1.8 | 1.4 | 1.1 | 1.4 | 0.7 | 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)