

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: P596540

Luminaire Tested: **MSA-SA1C-827-U-T4W**

Issue Date: 5/27/2021

Test Information

Test Method: LM-79-08
Report Number: P596540
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-14)
Test Lab: INNOVATIONS CENTER
Issue Date: 5/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1C-827-U-T4W
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4675 lumens
Efficiency: N/A
Efficacy: 79.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

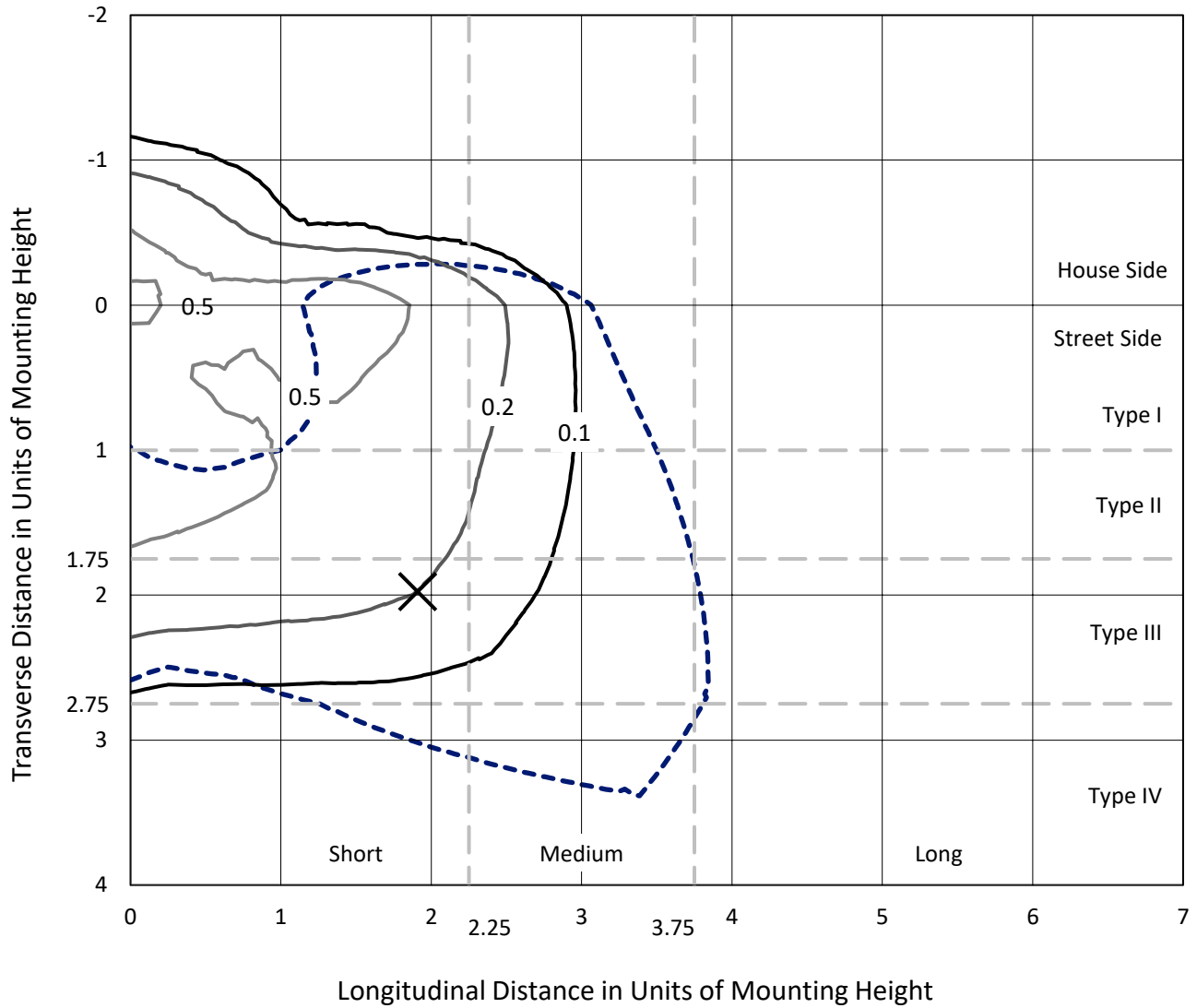
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

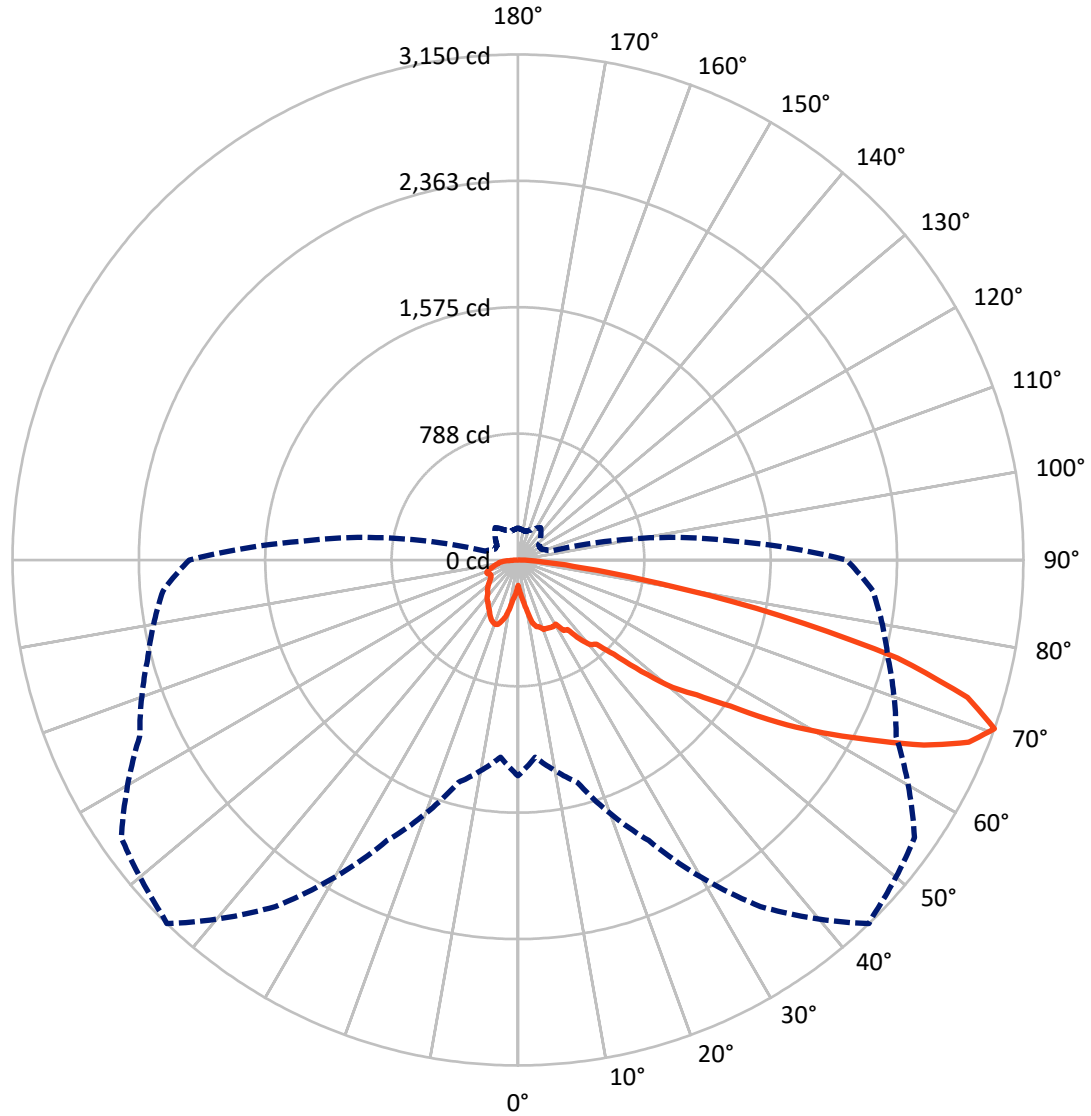
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.9 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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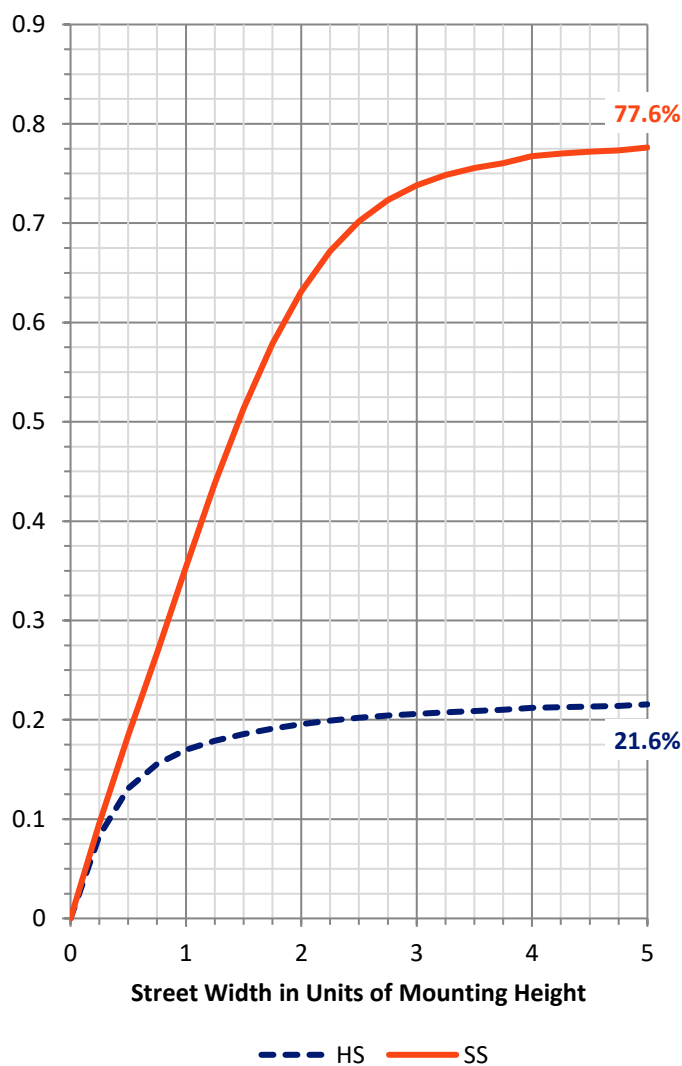
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 1031.5 | 0.0 | 1031.5 |
| | % Fixture | 22.1 | 0.0 | 22.1 |
| Street Side | Lumens | 3643.5 | 0.0 | 3643.5 |
| | % Fixture | 77.9 | 0.0 | 77.9 |
| Total | Lumens | 4675.0 | 0.0 | 4675.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 24.9 | 0.5 |
| 10°-20° | 114.7 | 2.5 |
| 20°-30° | 214.4 | 4.6 |
| 30°-40° | 344.2 | 7.4 |
| 40°-50° | 580.9 | 12.4 |
| 50°-60° | 1035.2 | 22.1 |
| 60°-70° | 1416.0 | 30.3 |
| 70°-80° | 832.7 | 17.8 |
| 80°-90° | 112.1 | 2.4 |
| 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° | 4675.0 | 100.0 |
| 0°-180° | 4675.0 | 100.0 |

Coefficient of Utilization

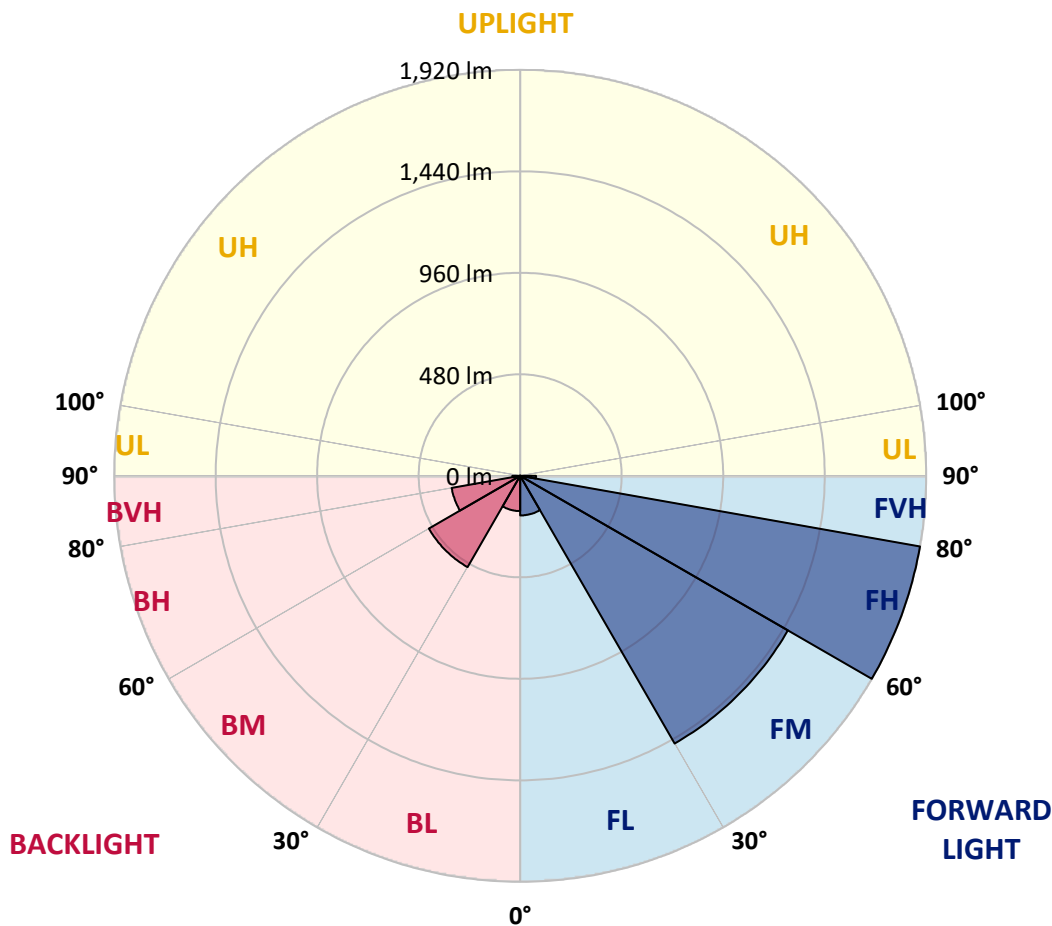


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 187.3 | 4.0 | | | |
| FM (30°-60°) | 1461.7 | 31.3 | | | |
| FH (60°-80°) | 1919.7 | 41.1 | | | G2/5000 |
| FVH (80°-90°) | 74.7 | 1.6 | | | G1/100 |
| BL (0°-30°) | 166.7 | 3.6 | B1/500 | | |
| BM (30°-60°) | 498.5 | 10.7 | B1/1000 | | |
| BH (60°-80°) | 328.9 | 7.0 | B1/500 | | G1/500 |
| BVH (80°-90°) | 37.4 | 0.8 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 |
| 2.5° | 192.8 | 189.0 | 179.8 | 182.9 | 186.7 | 188.2 | 187.9 | 187.5 | 181.5 | 179.4 | 190.0 |
| 5° | 262.0 | 253.6 | 246.9 | 244.2 | 235.4 | 228.5 | 224.3 | 235.4 | 233.7 | 236.5 | 243.8 |
| 7.5° | 327.2 | 321.8 | 306.7 | 301.3 | 283.3 | 271.4 | 270.1 | 278.9 | 281.2 | 276.6 | 289.1 |
| 10° | 369.2 | 360.0 | 356.9 | 344.1 | 331.6 | 329.7 | 328.6 | 324.5 | 319.0 | 318.6 | 307.5 |
| 12.5° | 401.8 | 406.6 | 409.1 | 394.3 | 394.7 | 401.6 | 397.9 | 381.7 | 372.3 | 355.8 | 357.1 |
| 15° | 460.2 | 467.1 | 447.4 | 438.0 | 420.0 | 430.3 | 429.0 | 415.4 | 414.0 | 403.3 | 390.9 |
| 17.5° | 511.2 | 514.3 | 481.3 | 459.9 | 453.7 | 438.8 | 442.8 | 443.2 | 425.5 | 444.7 | 433.6 |
| 20° | 515.4 | 526.4 | 488.4 | 445.7 | 464.1 | 462.2 | 462.7 | 458.9 | 435.7 | 467.3 | 463.1 |
| 22.5° | 536.2 | 519.5 | 485.4 | 454.1 | 458.9 | 461.8 | 464.5 | 459.9 | 458.5 | 476.2 | 489.0 |
| 25° | 532.3 | 527.0 | 492.4 | 466.0 | 466.6 | 467.1 | 468.5 | 482.3 | 480.8 | 504.7 | 511.4 |
| 27.5° | 568.2 | 559.9 | 494.6 | 488.0 | 473.1 | 469.8 | 460.6 | 489.4 | 511.8 | 511.2 | 548.2 |
| 30° | 636.4 | 628.0 | 543.6 | 524.7 | 497.6 | 464.3 | 481.9 | 520.2 | 537.9 | 543.8 | 590.8 |
| 32.5° | 743.0 | 756.8 | 640.2 | 563.8 | 530.2 | 522.9 | 521.0 | 517.2 | 560.9 | 590.2 | 633.0 |
| 35° | 896.0 | 885.0 | 754.1 | 647.5 | 564.5 | 533.3 | 537.5 | 560.9 | 612.8 | 631.8 | 671.3 |
| 37.5° | 1071.2 | 1048.5 | 900.0 | 742.4 | 663.4 | 624.3 | 610.3 | 633.0 | 644.5 | 659.4 | 740.1 |
| 40° | 1249.2 | 1194.0 | 1043.2 | 867.2 | 722.9 | 693.3 | 681.1 | 653.3 | 680.3 | 710.6 | 813.1 |
| 42.5° | 1421.2 | 1378.4 | 1199.0 | 1016.1 | 822.9 | 717.7 | 711.0 | 683.8 | 767.5 | 799.5 | 918.6 |
| 45° | 1601.4 | 1502.3 | 1358.7 | 1184.2 | 969.2 | 837.1 | 827.1 | 778.3 | 885.6 | 952.3 | 1067.3 |
| 47.5° | 1722.5 | 1630.7 | 1504.9 | 1320.7 | 1091.7 | 1036.8 | 1017.9 | 934.3 | 1031.7 | 1118.3 | 1297.2 |
| 50° | 1837.1 | 1742.6 | 1610.6 | 1470.1 | 1313.4 | 1250.4 | 1209.9 | 1070.8 | 1213.6 | 1354.7 | 1591.8 |
| 52.5° | 2001.2 | 1916.7 | 1733.2 | 1620.5 | 1551.7 | 1396.6 | 1366.5 | 1290.1 | 1426.4 | 1616.7 | 1913.8 |
| 55° | 2176.6 | 2061.4 | 1895.2 | 1832.7 | 1804.9 | 1606.3 | 1581.8 | 1533.1 | 1709.7 | 1884.9 | 2226.8 |
| 57.5° | 2254.1 | 2133.9 | 2042.2 | 2004.9 | 2002.6 | 1911.1 | 1883.0 | 1849.0 | 1999.3 | 2114.9 | 2521.5 |
| 60° | 2315.6 | 2186.6 | 2150.0 | 2170.9 | 2246.8 | 2186.6 | 2150.0 | 2120.1 | 2235.1 | 2342.2 | 2761.8 |
| 62.5° | 2304.3 | 2174.9 | 2193.7 | 2257.3 | 2451.1 | 2468.8 | 2440.6 | 2368.1 | 2468.8 | 2528.6 | 2899.7 |
| 65° | 2121.8 | 2002.2 | 2111.6 | 2262.7 | 2641.1 | 2782.0 | 2780.4 | 2590.9 | 2625.7 | 2625.7 | 2885.1 |
| 67.5° | 1802.1 | 1678.2 | 1857.5 | 2215.3 | 2772.4 | 3030.2 | 3030.6 | 2827.0 | 2640.1 | 2616.0 | 2659.7 |
| 70° | 1345.7 | 1233.5 | 1435.0 | 1929.3 | 2636.9 | 3150.4 | 3132.9 | 3017.6 | 2600.6 | 2389.6 | 2221.7 |
| 72.5° | 803.7 | 731.3 | 916.7 | 1404.5 | 2249.3 | 2929.4 | 2975.8 | 2798.1 | 2380.8 | 1987.2 | 1588.1 |
| 75° | 365.0 | 333.5 | 430.7 | 806.8 | 1605.8 | 2443.4 | 2493.9 | 2361.4 | 1891.0 | 1429.2 | 917.8 |
| 77.5° | 156.2 | 147.8 | 188.0 | 357.9 | 885.4 | 1670.9 | 1774.3 | 1687.6 | 1281.2 | 830.6 | 406.0 |
| 80° | 100.4 | 95.1 | 115.6 | 172.1 | 411.2 | 902.9 | 991.8 | 959.4 | 652.7 | 323.0 | 143.0 |
| 82.5° | 60.0 | 58.3 | 77.3 | 108.1 | 224.3 | 397.4 | 447.8 | 459.7 | 271.0 | 144.9 | 81.9 |
| 85° | 32.8 | 33.2 | 42.4 | 65.6 | 134.6 | 154.7 | 165.6 | 180.2 | 127.7 | 84.0 | 39.7 |
| 87.5° | 10.9 | 12.7 | 17.1 | 26.6 | 47.9 | 43.7 | 43.9 | 51.0 | 53.9 | 34.9 | 12.7 |
| 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° | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 | 158.9 |
| 2.5° | 191.7 | 188.2 | 179.4 | 180.0 | 183.3 | 184.0 | 185.0 | 179.4 | 178.3 | 188.8 | 189.8 |
| 5° | 245.0 | 233.7 | 228.5 | 226.8 | 221.8 | 220.1 | 229.3 | 233.5 | 237.7 | 245.9 | 250.0 |
| 7.5° | 287.7 | 275.1 | 265.7 | 257.1 | 249.8 | 245.6 | 261.1 | 273.0 | 280.2 | 297.1 | 304.8 |
| 10° | 307.3 | 296.3 | 292.9 | 286.0 | 291.6 | 304.2 | 307.1 | 307.5 | 323.6 | 323.2 | 326.4 |
| 12.5° | 346.2 | 339.1 | 327.8 | 330.3 | 344.8 | 357.9 | 354.2 | 359.8 | 365.5 | 379.4 | 373.0 |
| 15° | 381.7 | 379.7 | 369.2 | 370.9 | 373.8 | 390.1 | 392.2 | 397.8 | 406.6 | 417.5 | 410.0 |
| 17.5° | 425.4 | 424.6 | 398.9 | 396.6 | 403.3 | 419.2 | 414.2 | 404.5 | 433.6 | 445.3 | 442.2 |
| 20° | 455.1 | 449.3 | 416.3 | 406.6 | 423.6 | 425.7 | 420.0 | 404.5 | 429.8 | 455.3 | 462.2 |
| 22.5° | 479.8 | 473.1 | 439.2 | 420.0 | 416.5 | 417.5 | 417.5 | 414.6 | 427.1 | 448.0 | 447.8 |
| 25° | 499.7 | 506.1 | 462.9 | 444.5 | 426.1 | 403.1 | 400.2 | 402.7 | 409.8 | 450.1 | 448.7 |
| 27.5° | 549.8 | 532.3 | 471.0 | 457.2 | 419.4 | 383.2 | 391.0 | 394.9 | 397.2 | 441.3 | 448.6 |
| 30° | 582.3 | 587.7 | 499.7 | 464.7 | 409.6 | 360.9 | 363.6 | 374.8 | 388.2 | 440.3 | 442.4 |
| 32.5° | 626.2 | 614.7 | 544.6 | 452.2 | 383.6 | 347.5 | 342.5 | 357.5 | 377.4 | 424.8 | 430.5 |
| 35° | 667.1 | 680.7 | 563.6 | 449.9 | 365.4 | 327.4 | 332.8 | 337.9 | 358.6 | 407.5 | 414.2 |
| 37.5° | 762.9 | 731.9 | 616.9 | 438.8 | 350.2 | 317.2 | 311.5 | 319.4 | 337.0 | 374.8 | 390.3 |
| 40° | 835.8 | 837.7 | 628.4 | 424.8 | 321.3 | 302.7 | 290.4 | 298.3 | 305.7 | 335.8 | 342.5 |
| 42.5° | 972.4 | 930.6 | 656.5 | 394.1 | 303.1 | 280.8 | 273.9 | 277.4 | 278.5 | 291.2 | 302.3 |
| 45° | 1146.3 | 1048.3 | 667.6 | 352.9 | 279.1 | 271.8 | 257.8 | 256.1 | 249.8 | 251.5 | 261.3 |
| 47.5° | 1386.9 | 1232.0 | 659.6 | 309.0 | 257.8 | 260.1 | 240.0 | 232.1 | 223.3 | 225.4 | 234.6 |
| 50° | 1698.0 | 1466.6 | 659.0 | 271.8 | 243.3 | 244.8 | 228.3 | 214.1 | 205.3 | 209.7 | 217.8 |
| 52.5° | 2047.0 | 1702.0 | 661.7 | 246.3 | 227.3 | 226.6 | 220.6 | 203.4 | 196.3 | 200.9 | 210.1 |
| 55° | 2381.0 | 1904.4 | 681.6 | 230.2 | 210.9 | 212.2 | 214.5 | 199.9 | 192.1 | 196.3 | 205.9 |
| 57.5° | 2671.6 | 2064.3 | 674.2 | 213.2 | 195.5 | 201.7 | 207.8 | 195.1 | 189.2 | 195.3 | 204.9 |
| 60° | 2874.7 | 2138.5 | 615.1 | 196.9 | 184.2 | 192.6 | 204.5 | 194.6 | 193.8 | 207.0 | 218.5 |
| 62.5° | 2948.9 | 2111.1 | 500.1 | 184.0 | 177.5 | 191.5 | 212.0 | 207.2 | 208.0 | 224.3 | 240.2 |
| 65° | 2840.6 | 1966.9 | 373.0 | 175.8 | 172.3 | 197.1 | 229.3 | 214.7 | 204.1 | 217.6 | 232.1 |
| 67.5° | 2532.6 | 1710.6 | 272.6 | 168.7 | 166.4 | 205.9 | 245.2 | 213.9 | 194.4 | 208.0 | 219.9 |
| 70° | 2049.0 | 1350.3 | 211.0 | 159.7 | 158.5 | 199.9 | 246.7 | 208.2 | 183.8 | 192.6 | 199.4 |
| 72.5° | 1403.9 | 924.5 | 174.8 | 151.1 | 144.9 | 177.1 | 234.2 | 195.3 | 171.2 | 176.4 | 181.9 |
| 75° | 784.6 | 518.9 | 147.0 | 140.3 | 126.9 | 157.8 | 219.7 | 187.7 | 161.8 | 163.3 | 171.0 |
| 77.5° | 352.1 | 224.5 | 124.8 | 126.1 | 110.6 | 139.5 | 200.7 | 175.4 | 147.4 | 144.0 | 151.6 |
| 80° | 133.2 | 109.5 | 101.2 | 106.6 | 93.0 | 121.0 | 181.0 | 164.3 | 132.3 | 127.9 | 132.3 |
| 82.5° | 77.3 | 66.3 | 75.1 | 82.0 | 73.8 | 111.2 | 172.7 | 154.1 | 116.5 | 105.4 | 109.3 |
| 85° | 35.8 | 34.3 | 45.0 | 53.3 | 51.6 | 86.6 | 147.8 | 116.0 | 83.0 | 70.2 | 77.6 |
| 87.5° | 9.4 | 10.5 | 15.9 | 18.8 | 19.2 | 29.7 | 56.9 | 43.1 | 32.4 | 24.5 | 23.6 |
| 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)