

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: P366706

Luminaire Tested: **MSA-SA1A-760-U-T4FT**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366706
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-12)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA1A-760-U-T4FT
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4051 lumens
Efficiency: N/A
Efficacy: 119.1 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

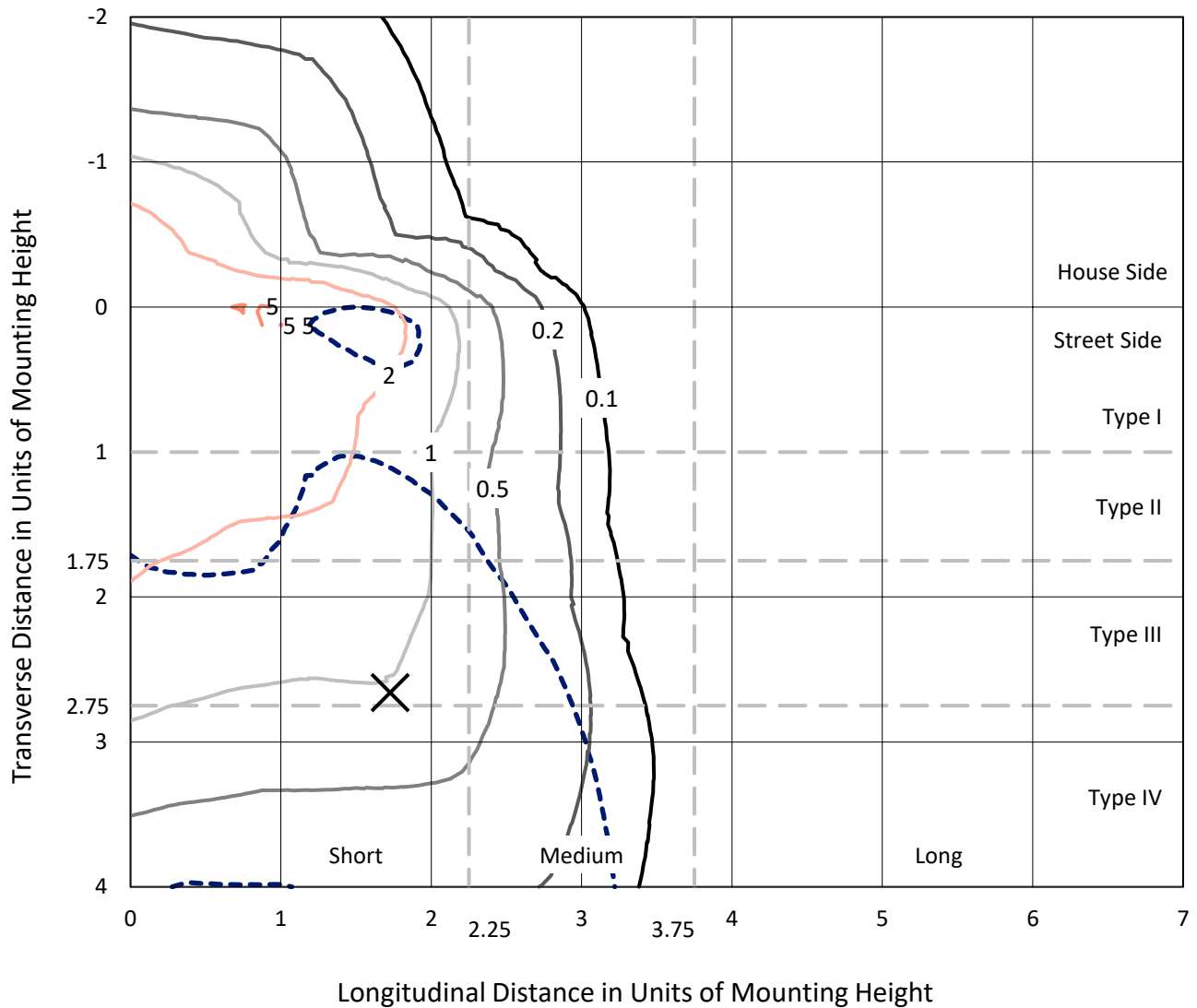
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

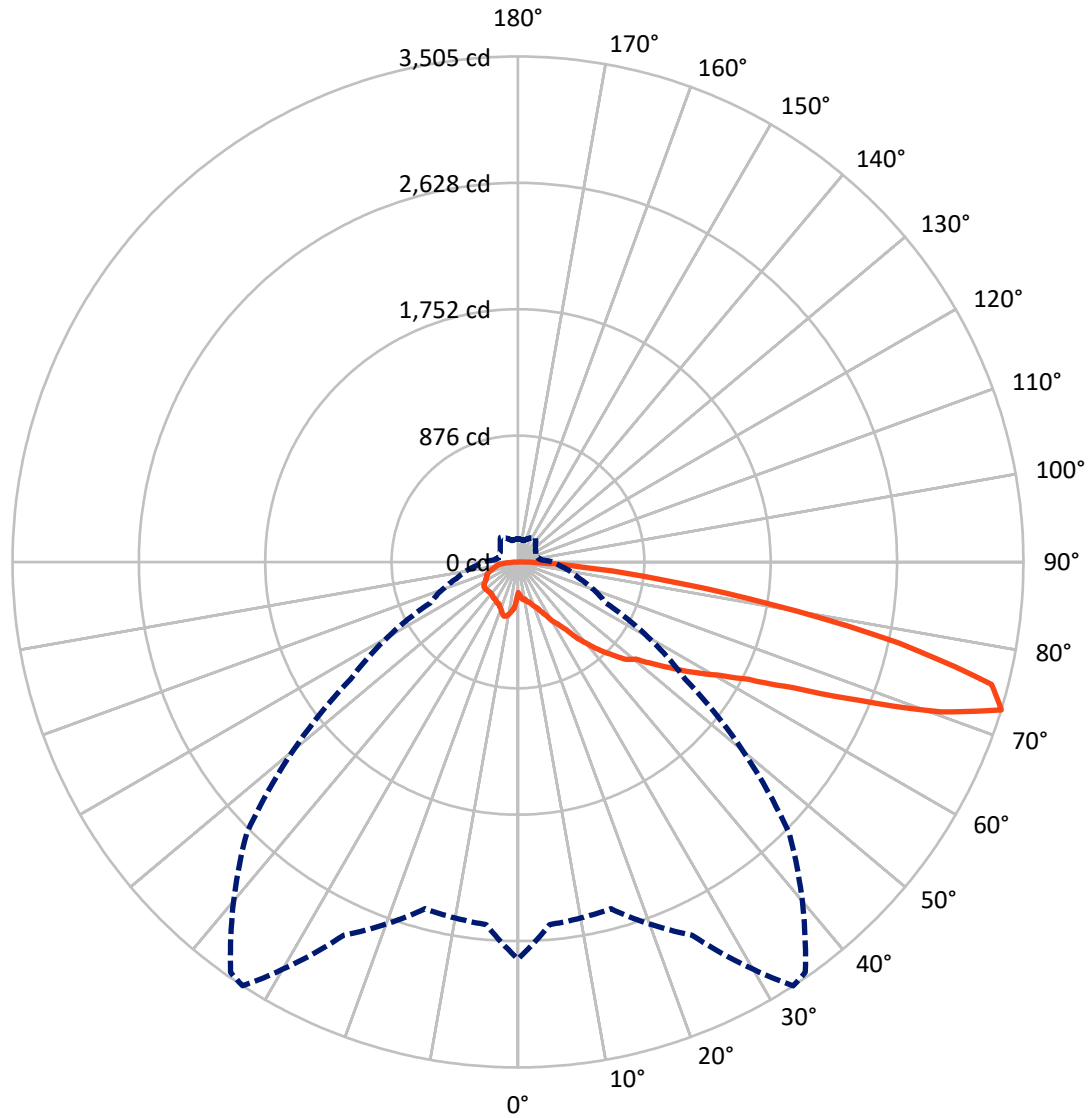
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.2 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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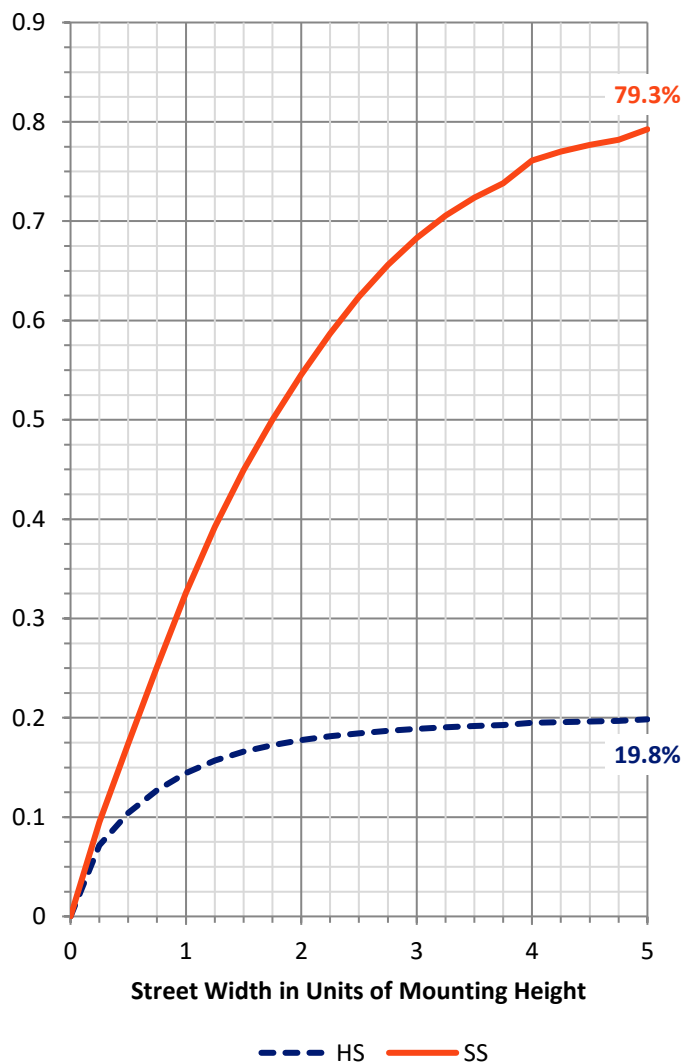
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 819.5 | 0.0 | 819.5 |
| | % Fixture | 20.2 | 0.0 | 20.2 |
| Street Side | Lumens | 3231.5 | 0.0 | 3231.5 |
| | % Fixture | 79.8 | 0.0 | 79.8 |
| Total | Lumens | 4051.0 | 0.0 | 4051.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 29.2 | 0.7 |
| 10°-20° | 107.9 | 2.7 |
| 20°-30° | 196.8 | 4.9 |
| 30°-40° | 333.0 | 8.2 |
| 40°-50° | 554.0 | 13.7 |
| 50°-60° | 813.0 | 20.1 |
| 60°-70° | 1040.0 | 25.7 |
| 70°-80° | 846.1 | 20.9 |
| 80°-90° | 131.1 | 3.2 |
| 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° | 4051.0 | 100.0 |
| 0°-180° | 4051.0 | 100.0 |

Coefficient of Utilization

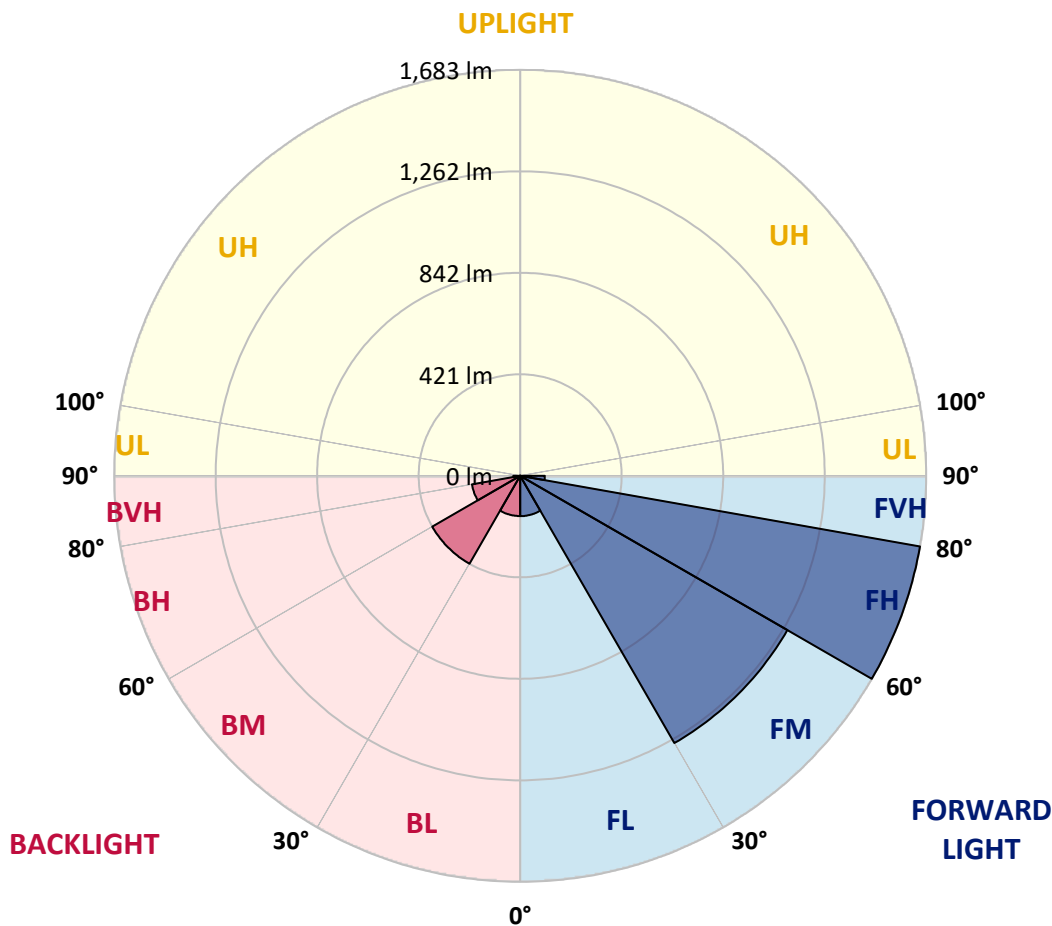


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 167.2 | 4.1 | | | |
| FM (30°-60°) | 1279.0 | 31.6 | | | |
| FH (60°-80°) | 1683.0 | 41.5 | | | G1/1800 |
| FVH (80°-90°) | 102.3 | 2.5 | | | G2/225 |
| BL (0°-30°) | 166.8 | 4.1 | B1/500 | | |
| BM (30°-60°) | 420.9 | 10.4 | B1/1000 | | |
| BH (60°-80°) | 203.1 | 5.0 | B1/500 | | G1/500 |
| BVH (80°-90°) | 28.8 | 0.7 | | | 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° | 33° | 35° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 |
| 2.5° | 240.8 | 233.3 | 220.8 | 220.5 | 227.4 | 228.9 | 233.4 | 233.8 | 235.4 | 232.8 | 251.9 |
| 5° | 265.7 | 257.6 | 252.8 | 254.4 | 251.2 | 255.1 | 255.1 | 266.2 | 281.0 | 298.1 | 322.5 |
| 7.5° | 271.6 | 265.7 | 260.1 | 264.3 | 265.0 | 261.3 | 264.9 | 290.9 | 317.6 | 334.8 | 373.7 |
| 10° | 259.8 | 253.9 | 258.1 | 259.5 | 259.3 | 267.7 | 286.0 | 306.9 | 336.6 | 368.2 | 389.2 |
| 12.5° | 257.6 | 261.8 | 263.8 | 266.2 | 282.2 | 284.7 | 312.4 | 333.9 | 363.8 | 391.6 | 446.2 |
| 15° | 290.1 | 295.6 | 283.2 | 282.3 | 287.5 | 289.9 | 318.6 | 340.3 | 384.0 | 430.6 | 479.6 |
| 17.5° | 336.3 | 338.3 | 315.9 | 304.5 | 308.4 | 310.2 | 322.8 | 350.1 | 376.9 | 463.0 | 524.2 |
| 20° | 381.0 | 382.3 | 340.3 | 314.8 | 328.4 | 330.4 | 342.2 | 357.8 | 379.0 | 481.1 | 554.2 |
| 22.5° | 427.9 | 419.3 | 373.2 | 341.0 | 348.9 | 349.4 | 356.3 | 364.8 | 394.9 | 478.3 | 590.9 |
| 25° | 479.1 | 473.7 | 415.8 | 384.8 | 384.5 | 377.6 | 378.0 | 390.2 | 411.9 | 508.9 | 614.9 |
| 27.5° | 547.2 | 547.9 | 463.7 | 447.0 | 421.0 | 416.4 | 393.7 | 416.6 | 441.3 | 509.2 | 666.8 |
| 30° | 635.4 | 619.1 | 530.4 | 503.5 | 477.8 | 468.2 | 437.4 | 456.9 | 467.7 | 538.3 | 723.3 |
| 32.5° | 707.2 | 702.5 | 599.9 | 559.3 | 517.3 | 528.4 | 494.4 | 477.3 | 496.6 | 588.4 | 808.8 |
| 35° | 775.9 | 760.4 | 673.6 | 620.6 | 576.4 | 569.7 | 547.7 | 550.5 | 562.3 | 651.7 | 920.6 |
| 37.5° | 878.4 | 870.0 | 777.7 | 693.0 | 672.4 | 645.0 | 631.0 | 639.9 | 630.7 | 732.9 | 1088.1 |
| 40° | 993.0 | 944.3 | 864.8 | 789.3 | 750.7 | 731.4 | 736.2 | 727.8 | 720.8 | 824.0 | 1238.4 |
| 42.5° | 1102.8 | 1058.4 | 922.6 | 888.7 | 838.2 | 846.3 | 819.6 | 825.5 | 845.5 | 953.2 | 1377.4 |
| 45° | 1222.2 | 1126.3 | 983.9 | 954.0 | 917.9 | 928.2 | 949.5 | 943.1 | 975.9 | 1105.6 | 1508.3 |
| 47.5° | 1281.9 | 1190.7 | 1059.2 | 1010.5 | 1010.0 | 988.7 | 1118.6 | 1132.7 | 1081.4 | 1218.6 | 1641.2 |
| 50° | 1339.4 | 1249.6 | 1115.2 | 1082.3 | 1058.4 | 1104.1 | 1280.7 | 1248.3 | 1176.9 | 1348.1 | 1787.4 |
| 52.5° | 1419.4 | 1317.0 | 1179.4 | 1144.3 | 1173.8 | 1216.2 | 1410.1 | 1403.7 | 1270.5 | 1481.4 | 1914.5 |
| 55° | 1480.4 | 1377.0 | 1276.0 | 1243.4 | 1299.9 | 1341.4 | 1541.9 | 1503.4 | 1350.6 | 1579.2 | 1995.0 |
| 57.5° | 1587.3 | 1481.2 | 1418.7 | 1346.3 | 1447.8 | 1447.1 | 1668.9 | 1639.2 | 1436.3 | 1659.5 | 2027.4 |
| 60° | 1757.2 | 1632.6 | 1567.3 | 1483.7 | 1592.5 | 1631.3 | 1814.1 | 1728.4 | 1497.0 | 1710.3 | 1968.9 |
| 62.5° | 1995.6 | 1847.7 | 1741.7 | 1659.0 | 1791.6 | 1861.9 | 1993.4 | 1793.5 | 1500.9 | 1695.8 | 1815.1 |
| 65° | 2290.6 | 2110.7 | 1971.8 | 1884.4 | 2103.2 | 2203.5 | 2210.2 | 1833.6 | 1465.3 | 1546.4 | 1491.8 |
| 67.5° | 2578.3 | 2376.1 | 2231.1 | 2247.7 | 2567.2 | 2614.7 | 2445.2 | 1867.2 | 1273.8 | 1241.7 | 1035.9 |
| 70° | 2767.7 | 2548.5 | 2451.9 | 2628.3 | 3113.7 | 3064.9 | 2635.6 | 1778.7 | 1003.1 | 805.0 | 583.3 |
| 72.5° | 2753.4 | 2524.0 | 2489.2 | 2854.5 | 3504.6 | 3474.2 | 2658.8 | 1414.5 | 671.9 | 440.1 | 290.9 |
| 75° | 2243.2 | 2064.9 | 2143.8 | 2702.3 | 3392.0 | 3390.5 | 2308.4 | 875.6 | 344.7 | 226.0 | 183.8 |
| 77.5° | 1240.2 | 1171.0 | 1403.1 | 2046.0 | 2700.8 | 2714.6 | 1559.7 | 397.1 | 185.9 | 160.2 | 138.5 |
| 80° | 434.4 | 428.0 | 608.0 | 1104.1 | 1776.7 | 1780.0 | 725.3 | 181.7 | 135.1 | 121.2 | 101.7 |
| 82.5° | 158.8 | 157.5 | 252.1 | 512.9 | 978.2 | 976.1 | 275.1 | 113.1 | 100.2 | 85.7 | 67.1 |
| 85° | 63.4 | 62.0 | 115.3 | 227.7 | 449.4 | 442.1 | 106.9 | 64.2 | 65.5 | 51.1 | 32.9 |
| 87.5° | 17.5 | 18.1 | 39.2 | 71.3 | 137.6 | 127.6 | 26.9 | 21.7 | 26.6 | 20.8 | 10.4 |
| 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° | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 | 212.4 |
| 2.5° | 255.3 | 257.0 | 240.3 | 246.2 | 253.8 | 257.8 | 259.8 | 251.2 | 254.1 | 266.2 | 265.7 |
| 5° | 327.5 | 320.8 | 314.4 | 321.0 | 316.6 | 310.4 | 320.5 | 320.0 | 326.5 | 333.1 | 334.6 |
| 7.5° | 381.5 | 372.7 | 369.7 | 354.9 | 340.1 | 325.2 | 338.1 | 346.2 | 347.9 | 364.2 | 371.1 |
| 10° | 401.0 | 397.6 | 398.8 | 379.3 | 377.4 | 379.0 | 367.0 | 354.1 | 362.0 | 355.3 | 360.3 |
| 12.5° | 446.0 | 454.4 | 433.6 | 420.3 | 419.1 | 409.9 | 386.0 | 377.6 | 368.7 | 378.0 | 373.2 |
| 15° | 482.1 | 497.8 | 475.4 | 452.1 | 425.7 | 411.4 | 391.1 | 378.3 | 372.4 | 374.4 | 368.7 |
| 17.5° | 535.1 | 549.7 | 492.9 | 457.1 | 429.9 | 408.9 | 377.8 | 350.6 | 365.0 | 366.2 | 359.6 |
| 20° | 570.2 | 571.2 | 498.8 | 444.7 | 420.1 | 383.7 | 353.4 | 329.6 | 346.2 | 363.2 | 370.6 |
| 22.5° | 604.5 | 596.9 | 506.0 | 434.8 | 384.7 | 349.4 | 334.6 | 333.1 | 345.5 | 359.8 | 361.5 |
| 25° | 630.2 | 631.4 | 510.2 | 431.1 | 363.8 | 315.8 | 315.8 | 326.7 | 337.6 | 371.6 | 369.9 |
| 27.5° | 692.5 | 646.7 | 493.9 | 414.1 | 334.9 | 296.1 | 315.9 | 330.6 | 335.8 | 372.6 | 376.3 |
| 30° | 737.9 | 708.0 | 497.3 | 385.0 | 305.7 | 286.9 | 303.2 | 321.5 | 335.9 | 378.5 | 377.1 |
| 32.5° | 814.0 | 733.6 | 505.2 | 344.2 | 283.8 | 283.3 | 297.8 | 317.1 | 334.4 | 372.1 | 374.1 |
| 35° | 898.2 | 808.8 | 483.2 | 313.1 | 278.6 | 281.3 | 300.0 | 307.7 | 328.0 | 369.5 | 371.4 |
| 37.5° | 1054.0 | 848.2 | 469.2 | 289.1 | 275.3 | 283.0 | 290.1 | 302.0 | 322.5 | 356.9 | 369.0 |
| 40° | 1145.4 | 929.2 | 417.4 | 275.1 | 268.2 | 281.7 | 285.2 | 295.3 | 306.4 | 341.8 | 349.5 |
| 42.5° | 1265.8 | 954.7 | 373.2 | 259.6 | 264.7 | 276.1 | 286.7 | 289.2 | 296.6 | 318.0 | 332.1 |
| 45° | 1366.1 | 973.9 | 326.4 | 247.2 | 252.8 | 288.4 | 289.1 | 287.9 | 286.5 | 294.4 | 306.0 |
| 47.5° | 1470.0 | 1025.3 | 283.2 | 233.4 | 248.2 | 298.5 | 290.2 | 279.5 | 273.9 | 274.9 | 285.7 |
| 50° | 1584.6 | 1062.6 | 252.6 | 222.2 | 249.2 | 298.5 | 295.9 | 270.9 | 259.8 | 257.0 | 268.2 |
| 52.5° | 1685.4 | 1067.0 | 229.4 | 213.1 | 245.0 | 288.2 | 299.8 | 265.5 | 246.9 | 240.0 | 250.6 |
| 55° | 1740.4 | 1011.7 | 212.6 | 204.9 | 234.3 | 279.0 | 297.8 | 262.5 | 231.2 | 226.0 | 235.4 |
| 57.5° | 1739.2 | 919.9 | 198.3 | 193.4 | 222.0 | 266.0 | 286.5 | 246.0 | 221.7 | 218.6 | 227.9 |
| 60° | 1676.5 | 812.4 | 187.4 | 184.0 | 209.4 | 247.2 | 266.4 | 235.3 | 212.4 | 210.9 | 221.0 |
| 62.5° | 1534.3 | 701.3 | 176.8 | 174.1 | 197.6 | 233.9 | 256.8 | 223.3 | 202.8 | 202.7 | 212.3 |
| 65° | 1256.5 | 563.0 | 166.9 | 166.2 | 186.7 | 220.8 | 247.7 | 213.3 | 192.9 | 196.3 | 206.0 |
| 67.5° | 865.8 | 395.6 | 156.3 | 158.3 | 176.6 | 208.2 | 240.8 | 206.5 | 182.5 | 189.4 | 198.1 |
| 70° | 475.1 | 244.7 | 144.5 | 148.6 | 163.9 | 193.6 | 230.1 | 195.6 | 168.9 | 179.5 | 185.5 |
| 72.5° | 241.7 | 163.2 | 129.9 | 136.3 | 148.2 | 172.1 | 209.9 | 179.8 | 154.3 | 158.3 | 161.5 |
| 75° | 162.3 | 122.8 | 113.6 | 120.7 | 129.2 | 151.6 | 186.2 | 165.0 | 140.3 | 139.8 | 143.3 |
| 77.5° | 122.7 | 96.0 | 96.5 | 104.5 | 110.1 | 133.3 | 167.4 | 152.6 | 128.6 | 127.4 | 132.6 |
| 80° | 89.7 | 72.8 | 77.6 | 86.0 | 91.1 | 119.7 | 155.1 | 138.8 | 112.6 | 107.9 | 112.3 |
| 82.5° | 59.5 | 51.6 | 57.5 | 65.9 | 69.9 | 100.0 | 140.8 | 117.8 | 91.8 | 79.8 | 80.5 |
| 85° | 28.1 | 27.1 | 34.3 | 38.3 | 43.5 | 62.0 | 105.4 | 81.5 | 58.5 | 48.4 | 50.6 |
| 87.5° | 6.4 | 8.6 | 11.3 | 11.1 | 12.9 | 16.6 | 32.8 | 22.9 | 17.0 | 11.6 | 7.7 |
| 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)