

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: P596122

Luminaire Tested: **MSA-SA4A-AMB-U-T4W**

Issue Date: 4/29/2022

Test Information

Test Method: LM-79-08
Report Number: P596122
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2109-400-15)
Test Lab: INNOVATIONS CENTER
Issue Date: 4/29/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4A-AMB-U-T4W
Description: POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH
AND TYPE IV WIDE OPTICS.
Light Source: (64) 1549K CCT, -21.5 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3009.9 lumens
Efficiency: N/A
Efficacy: 38.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short
BUG Rating: B1 - U0 - G1

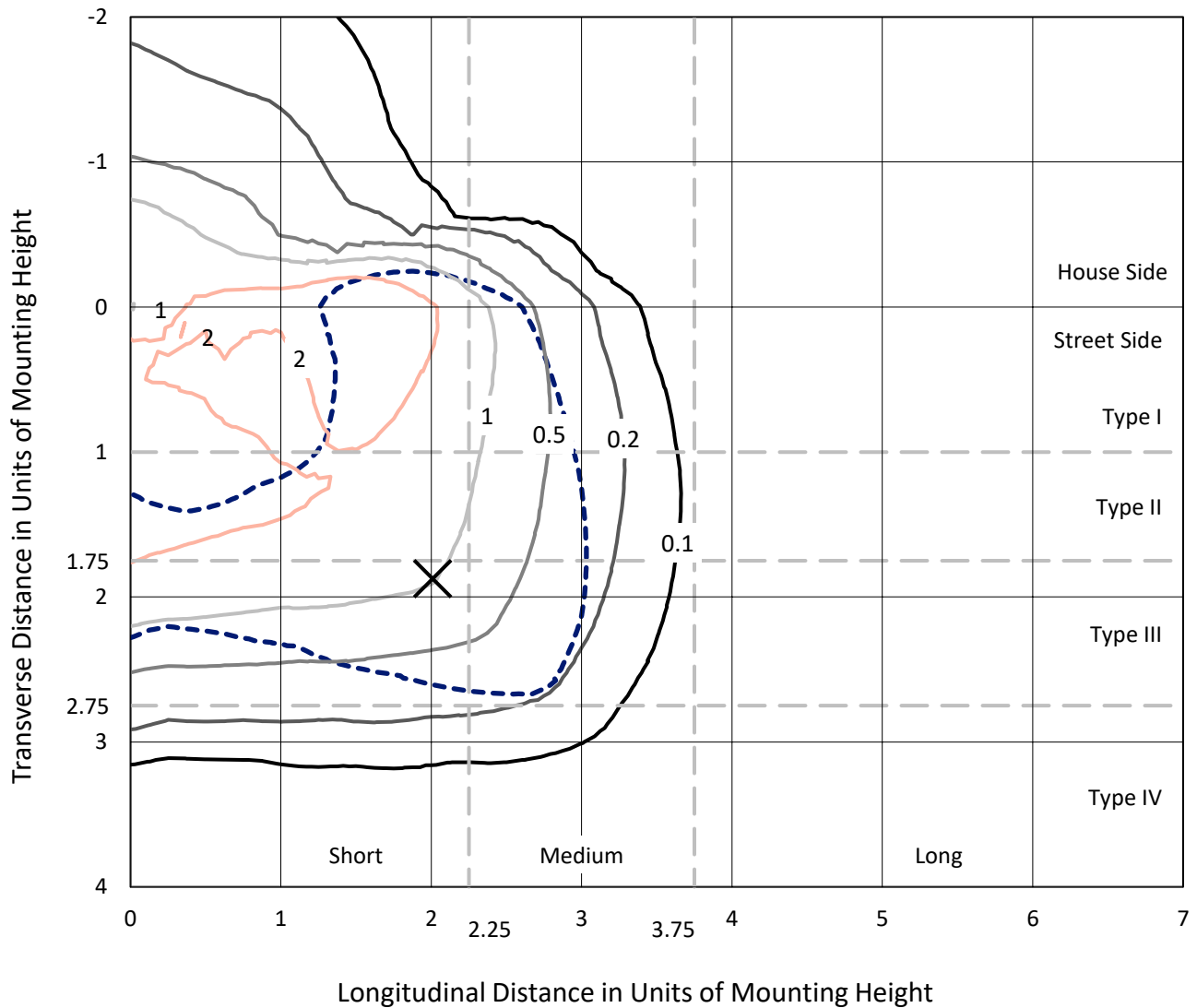
Input Watts (W): 79
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

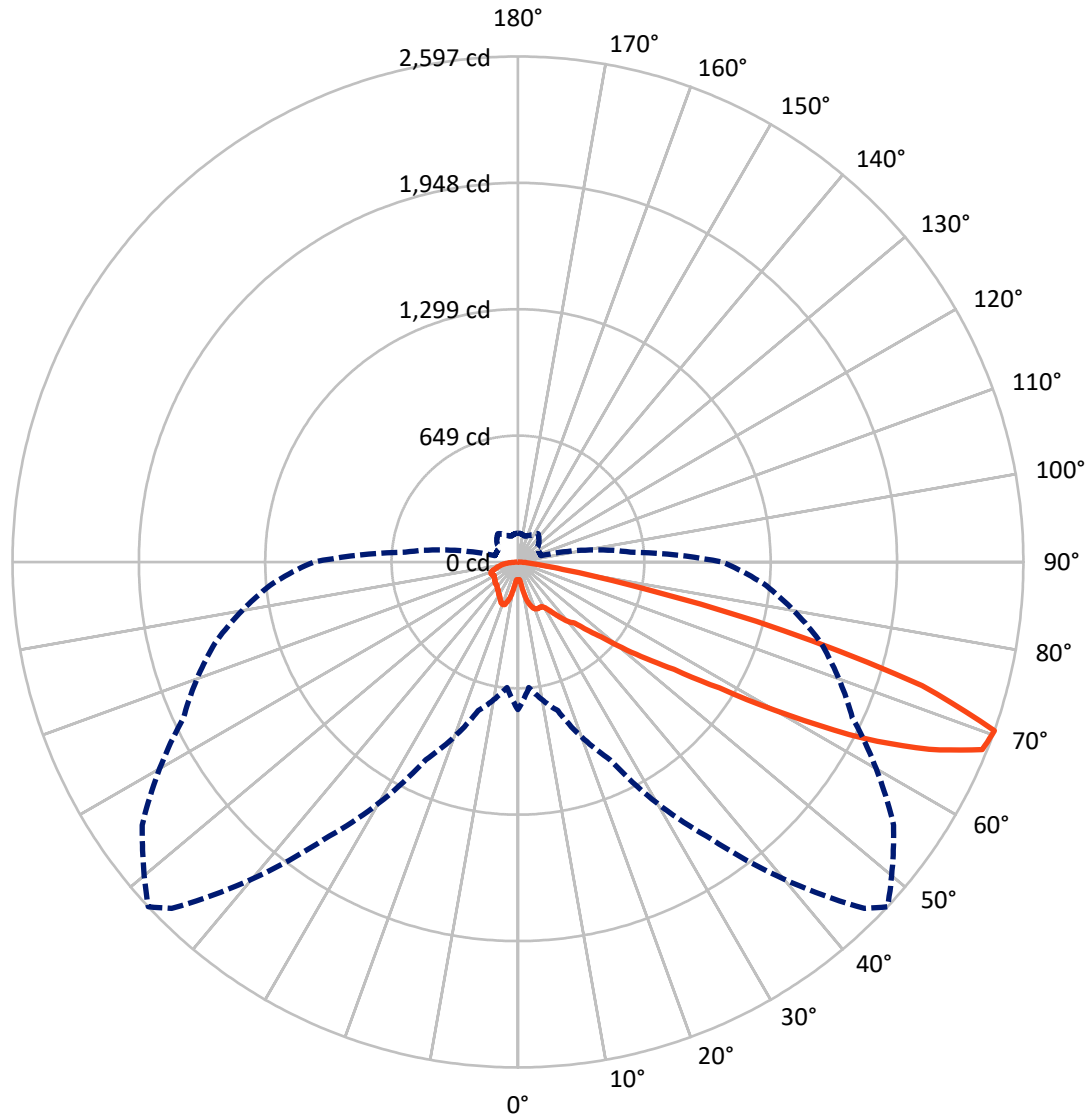
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.7 fc
 Type III - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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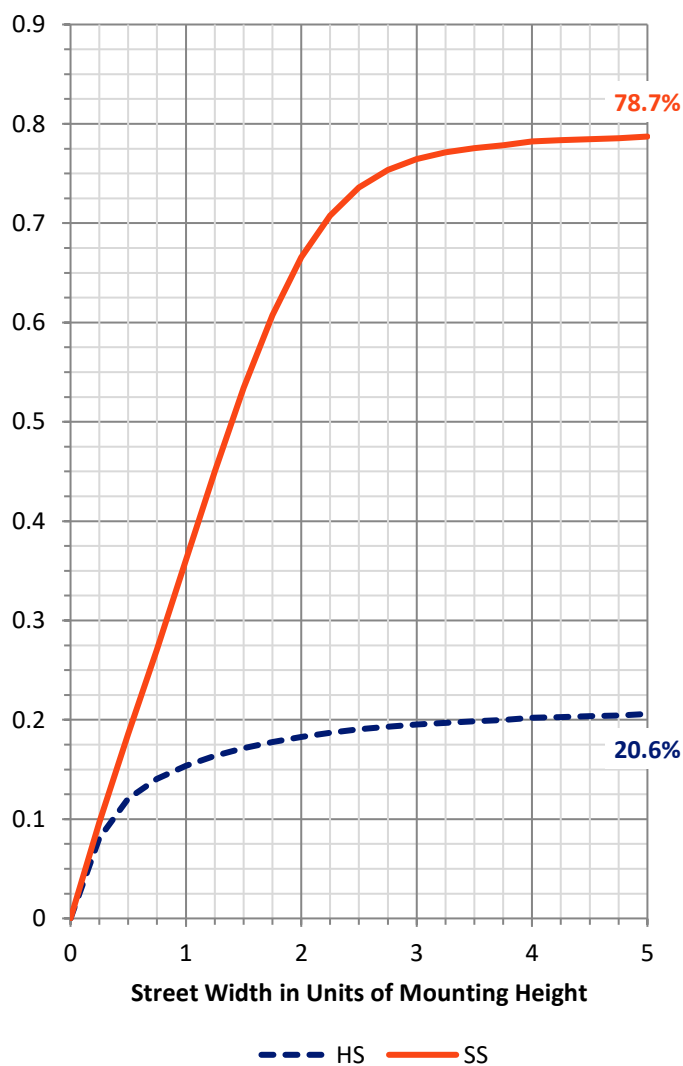
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 631.8 | 0.0 | 631.8 |
| | % Fixture | 21.0 | 0.0 | 21.0 |
| Street Side | Lumens | 2378.1 | 0.0 | 2378.1 |
| | % Fixture | 79.0 | 0.0 | 79.0 |
| Total | Lumens | 3009.9 | 0.0 | 3009.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 12.3 | 0.4 |
| 10°-20° | 60.1 | 2.0 |
| 20°-30° | 117.6 | 3.9 |
| 30°-40° | 200.6 | 6.7 |
| 40°-50° | 344.4 | 11.4 |
| 50°-60° | 712.5 | 23.7 |
| 60°-70° | 1061.9 | 35.3 |
| 70°-80° | 449.4 | 14.9 |
| 80°-90° | 51.1 | 1.7 |
| 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° | 3009.9 | 100.0 |
| 0°-180° | 3009.9 | 100.0 |

Coefficient of Utilization



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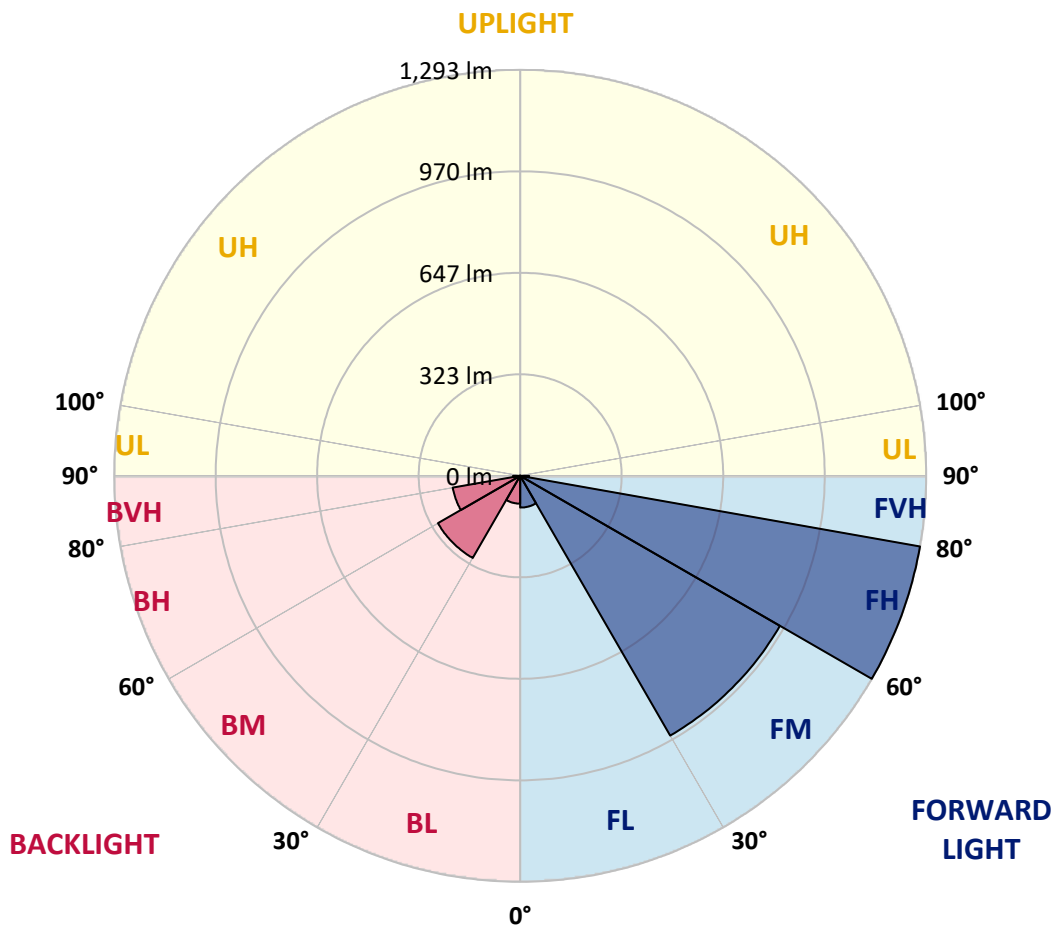
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 101.2 | 3.4 | | | |
| FM (30°-60°) | 955.3 | 31.7 | | | |
| FH (60°-80°) | 1293.2 | 43.0 | | | G1/1800 |
| FVH (80°-90°) | 28.4 | 0.9 | | | G1/100 |
| BL (0°-30°) | 88.8 | 3.0 | B0/110 | | |
| BM (30°-60°) | 302.2 | 10.0 | B1/1000 | | |
| BH (60°-80°) | 218.1 | 7.2 | B1/500 | | G1/500 |
| BVH (80°-90°) | 22.7 | 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-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 47° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 |
| 2.5° | 112.0 | 101.0 | 98.0 | 93.0 | 93.0 | 93.0 | 94.0 | 92.0 | 90.0 | 97.0 | 100.0 |
| 5° | 152.0 | 131.0 | 134.0 | 116.0 | 100.0 | 95.0 | 91.0 | 95.0 | 105.0 | 123.0 | 123.0 |
| 7.5° | 186.0 | 172.0 | 169.0 | 144.0 | 124.0 | 118.0 | 113.0 | 118.0 | 131.0 | 143.0 | 144.0 |
| 10° | 202.0 | 195.0 | 183.0 | 161.0 | 160.0 | 160.0 | 159.0 | 153.0 | 150.0 | 159.0 | 158.0 |
| 12.5° | 211.0 | 210.0 | 217.0 | 200.0 | 202.0 | 203.0 | 202.0 | 197.0 | 190.0 | 181.0 | 173.0 |
| 15° | 237.0 | 236.0 | 232.0 | 226.0 | 226.0 | 233.0 | 227.0 | 226.0 | 216.0 | 209.0 | 195.0 |
| 17.5° | 258.0 | 259.0 | 248.0 | 246.0 | 248.0 | 249.0 | 248.0 | 245.0 | 237.0 | 231.0 | 223.0 |
| 20° | 272.0 | 271.0 | 259.0 | 242.0 | 254.0 | 259.0 | 257.0 | 257.0 | 246.0 | 249.0 | 246.0 |
| 22.5° | 286.0 | 279.0 | 255.0 | 245.0 | 250.0 | 259.0 | 261.0 | 259.0 | 253.0 | 260.0 | 271.0 |
| 25° | 296.0 | 288.0 | 267.0 | 253.0 | 256.0 | 263.0 | 259.0 | 267.0 | 270.0 | 279.0 | 283.0 |
| 27.5° | 317.0 | 313.0 | 275.0 | 270.0 | 263.0 | 257.0 | 259.0 | 274.0 | 286.0 | 285.0 | 307.0 |
| 30° | 378.0 | 366.0 | 313.0 | 293.0 | 278.0 | 266.0 | 272.0 | 290.0 | 305.0 | 310.0 | 345.0 |
| 32.5° | 481.0 | 474.0 | 385.0 | 329.0 | 302.0 | 299.0 | 296.0 | 301.0 | 333.0 | 360.0 | 380.0 |
| 35° | 584.1 | 566.1 | 482.0 | 404.0 | 337.0 | 321.0 | 330.0 | 340.0 | 382.0 | 390.0 | 392.0 |
| 37.5° | 709.1 | 681.1 | 566.1 | 463.0 | 409.0 | 378.0 | 367.0 | 397.0 | 409.0 | 399.0 | 424.0 |
| 40° | 821.1 | 763.1 | 666.1 | 538.0 | 444.0 | 424.0 | 406.0 | 394.0 | 407.0 | 430.0 | 470.0 |
| 42.5° | 916.1 | 882.1 | 763.1 | 634.1 | 505.0 | 425.0 | 429.0 | 398.0 | 445.0 | 475.0 | 523.0 |
| 45° | 1007.1 | 952.1 | 843.1 | 742.1 | 595.1 | 502.0 | 497.0 | 445.0 | 504.0 | 537.0 | 584.1 |
| 47.5° | 1078.1 | 1015.1 | 943.1 | 830.1 | 684.1 | 605.1 | 573.1 | 514.0 | 579.1 | 631.1 | 693.1 |
| 50° | 1165.1 | 1098.1 | 1015.1 | 936.1 | 830.1 | 737.1 | 692.1 | 607.1 | 677.1 | 782.1 | 918.1 |
| 52.5° | 1320.1 | 1243.1 | 1115.1 | 1051.1 | 996.1 | 859.1 | 823.1 | 752.1 | 838.1 | 1033.1 | 1289.1 |
| 55° | 1471.1 | 1377.1 | 1261.1 | 1216.1 | 1199.1 | 1013.1 | 973.1 | 962.1 | 1150.1 | 1343.1 | 1709.2 |
| 57.5° | 1597.1 | 1494.1 | 1416.1 | 1394.1 | 1404.1 | 1275.1 | 1221.1 | 1261.1 | 1468.1 | 1665.1 | 2107.2 |
| 60° | 1666.1 | 1560.1 | 1513.1 | 1557.1 | 1657.1 | 1611.1 | 1601.1 | 1591.1 | 1768.2 | 1951.2 | 2400.2 |
| 62.5° | 1660.1 | 1553.1 | 1563.1 | 1644.1 | 1859.2 | 1985.2 | 1998.2 | 1925.2 | 2000.2 | 2148.2 | 2484.2 |
| 65° | 1495.1 | 1373.1 | 1477.1 | 1643.1 | 2021.2 | 2319.2 | 2322.2 | 2212.2 | 2145.2 | 2141.2 | 2283.2 |
| 67.5° | 1117.1 | 1043.1 | 1216.1 | 1471.1 | 2028.2 | 2575.2 | 2573.2 | 2435.2 | 2144.2 | 1956.2 | 1874.2 |
| 70° | 759.1 | 647.1 | 791.1 | 1121.1 | 1740.2 | 2517.2 | 2597.2 | 2356.2 | 1896.2 | 1613.1 | 1265.1 |
| 72.5° | 338.0 | 313.0 | 413.0 | 668.1 | 1215.1 | 2053.2 | 2172.2 | 1881.2 | 1473.1 | 1097.1 | 696.1 |
| 75° | 164.0 | 153.0 | 193.0 | 343.0 | 663.1 | 1340.1 | 1412.1 | 1232.1 | 894.1 | 603.1 | 309.0 |
| 77.5° | 92.0 | 85.0 | 103.0 | 157.0 | 306.0 | 623.1 | 662.1 | 597.1 | 405.0 | 264.0 | 142.0 |
| 80° | 63.0 | 58.0 | 70.0 | 97.0 | 167.0 | 194.0 | 233.0 | 262.0 | 199.0 | 139.0 | 86.0 |
| 82.5° | 36.0 | 33.0 | 44.0 | 61.0 | 108.0 | 93.0 | 97.0 | 127.0 | 116.0 | 91.0 | 53.0 |
| 85° | 19.0 | 18.0 | 25.0 | 34.0 | 57.0 | 48.0 | 45.0 | 60.0 | 69.0 | 61.0 | 31.0 |
| 87.5° | 5.0 | 5.0 | 8.0 | 11.0 | 14.0 | 11.0 | 13.0 | 15.0 | 20.0 | 20.0 | 10.0 |
| 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° | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 |
| 2.5° | 103.0 | 96.0 | 97.0 | 89.0 | 88.0 | 92.0 | 92.0 | 93.0 | 99.0 | 100.0 | 106.0 |
| 5° | 132.0 | 122.0 | 117.0 | 106.0 | 95.0 | 91.0 | 98.0 | 115.0 | 128.0 | 132.0 | 139.0 |
| 7.5° | 152.0 | 143.0 | 138.0 | 123.0 | 109.0 | 110.0 | 119.0 | 134.0 | 150.0 | 160.0 | 171.0 |
| 10° | 158.0 | 153.0 | 148.0 | 138.0 | 143.0 | 145.0 | 145.0 | 151.0 | 166.0 | 170.0 | 175.0 |
| 12.5° | 176.0 | 168.0 | 166.0 | 169.0 | 177.0 | 184.0 | 181.0 | 183.0 | 188.0 | 191.0 | 193.0 |
| 15° | 190.0 | 187.0 | 190.0 | 191.0 | 204.0 | 207.0 | 206.0 | 204.0 | 211.0 | 209.0 | 207.0 |
| 17.5° | 216.0 | 219.0 | 208.0 | 216.0 | 224.0 | 230.0 | 223.0 | 219.0 | 223.0 | 227.0 | 221.0 |
| 20° | 240.0 | 238.0 | 228.0 | 230.0 | 234.0 | 233.0 | 224.0 | 217.0 | 224.0 | 235.0 | 238.0 |
| 22.5° | 266.0 | 259.0 | 244.0 | 235.0 | 227.0 | 228.0 | 222.0 | 216.0 | 225.0 | 241.0 | 242.0 |
| 25° | 284.0 | 278.0 | 262.0 | 248.0 | 231.0 | 213.0 | 212.0 | 214.0 | 222.0 | 245.0 | 244.0 |
| 27.5° | 309.0 | 298.0 | 270.0 | 257.0 | 226.0 | 198.0 | 205.0 | 209.0 | 211.0 | 237.0 | 243.0 |
| 30° | 337.0 | 340.0 | 288.0 | 259.0 | 215.0 | 190.0 | 190.0 | 195.0 | 202.0 | 232.0 | 235.0 |
| 32.5° | 373.0 | 356.0 | 316.0 | 251.0 | 201.0 | 185.0 | 182.0 | 186.0 | 192.0 | 216.0 | 220.0 |
| 35° | 387.0 | 393.0 | 331.0 | 240.0 | 191.0 | 176.0 | 175.0 | 173.0 | 178.0 | 200.0 | 205.0 |
| 37.5° | 444.0 | 436.0 | 351.0 | 234.0 | 183.0 | 171.0 | 162.0 | 163.0 | 168.0 | 182.0 | 187.0 |
| 40° | 491.0 | 491.0 | 361.0 | 219.0 | 175.0 | 166.0 | 155.0 | 155.0 | 156.0 | 166.0 | 171.0 |
| 42.5° | 552.0 | 561.0 | 371.0 | 203.0 | 172.0 | 157.0 | 150.0 | 148.0 | 148.0 | 152.0 | 158.0 |
| 45° | 642.1 | 626.1 | 363.0 | 183.0 | 163.0 | 159.0 | 146.0 | 144.0 | 142.0 | 145.0 | 150.0 |
| 47.5° | 781.1 | 717.1 | 349.0 | 167.0 | 156.0 | 160.0 | 144.0 | 139.0 | 138.0 | 142.0 | 148.0 |
| 50° | 1033.1 | 885.1 | 318.0 | 155.0 | 151.0 | 155.0 | 145.0 | 139.0 | 137.0 | 142.0 | 147.0 |
| 52.5° | 1452.1 | 1149.1 | 292.0 | 147.0 | 144.0 | 152.0 | 149.0 | 140.0 | 137.0 | 143.0 | 148.0 |
| 55° | 1883.2 | 1434.1 | 268.0 | 142.0 | 139.0 | 150.0 | 150.0 | 143.0 | 139.0 | 144.0 | 151.0 |
| 57.5° | 2266.2 | 1642.1 | 259.0 | 138.0 | 135.0 | 147.0 | 150.0 | 143.0 | 141.0 | 152.0 | 158.0 |
| 60° | 2510.2 | 1732.2 | 237.0 | 134.0 | 133.0 | 144.0 | 154.0 | 145.0 | 147.0 | 164.0 | 175.0 |
| 62.5° | 2487.2 | 1644.1 | 199.0 | 130.0 | 131.0 | 146.0 | 160.0 | 154.0 | 153.0 | 172.0 | 183.0 |
| 65° | 2196.2 | 1351.1 | 161.0 | 128.0 | 128.0 | 152.0 | 173.0 | 156.0 | 149.0 | 167.0 | 175.0 |
| 67.5° | 1656.1 | 968.1 | 135.0 | 125.0 | 125.0 | 158.0 | 183.0 | 156.0 | 144.0 | 161.0 | 166.0 |
| 70° | 1048.1 | 581.1 | 123.0 | 120.0 | 120.0 | 154.0 | 179.0 | 151.0 | 137.0 | 147.0 | 147.0 |
| 72.5° | 588.1 | 281.0 | 113.0 | 116.0 | 112.0 | 136.0 | 169.0 | 143.0 | 129.0 | 134.0 | 136.0 |
| 75° | 243.0 | 145.0 | 104.0 | 108.0 | 100.0 | 120.0 | 160.0 | 135.0 | 121.0 | 121.0 | 125.0 |
| 77.5° | 117.0 | 96.0 | 92.0 | 98.0 | 88.0 | 105.0 | 144.0 | 124.0 | 107.0 | 105.0 | 107.0 |
| 80° | 80.0 | 69.0 | 75.0 | 83.0 | 75.0 | 90.0 | 128.0 | 114.0 | 92.0 | 88.0 | 87.0 |
| 82.5° | 49.0 | 44.0 | 56.0 | 60.0 | 56.0 | 77.0 | 114.0 | 94.0 | 70.0 | 61.0 | 66.0 |
| 85° | 25.0 | 26.0 | 33.0 | 37.0 | 34.0 | 49.0 | 76.0 | 56.0 | 40.0 | 36.0 | 39.0 |
| 87.5° | 6.0 | 9.0 | 11.0 | 12.0 | 9.0 | 5.0 | 6.0 | 7.0 | 7.0 | 6.0 | 3.0 |
| 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)