

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: P597074

Luminaire Tested: **MSA-SA3D-835-U-SL2**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P597074  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-16)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3D-835-U-SL2  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16301 lumens  
Efficiency: N/A  
Efficacy: 84.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type III - Medium  
BUG Rating: B3 - U0 - G3

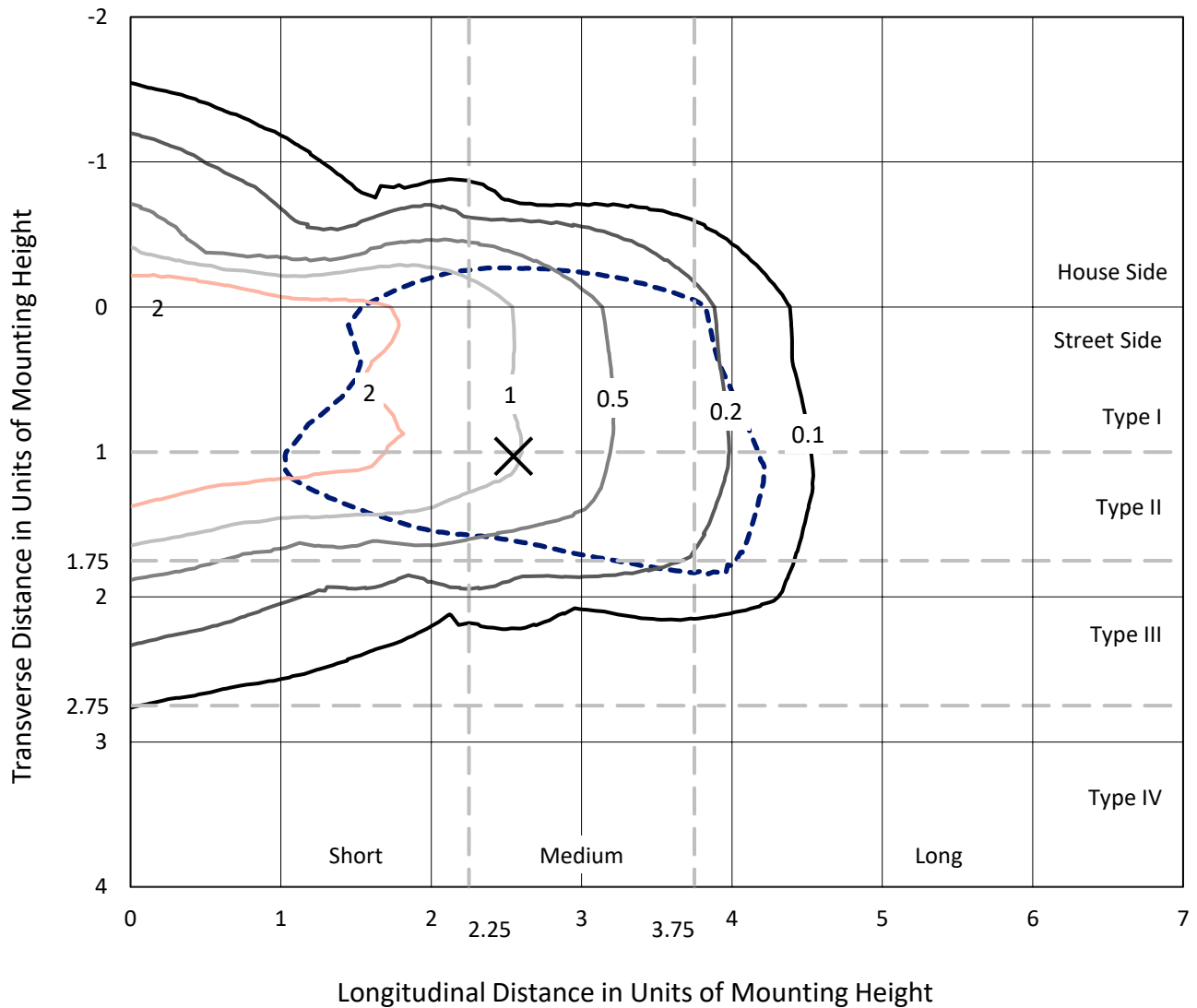
Input Watts (W): 192  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

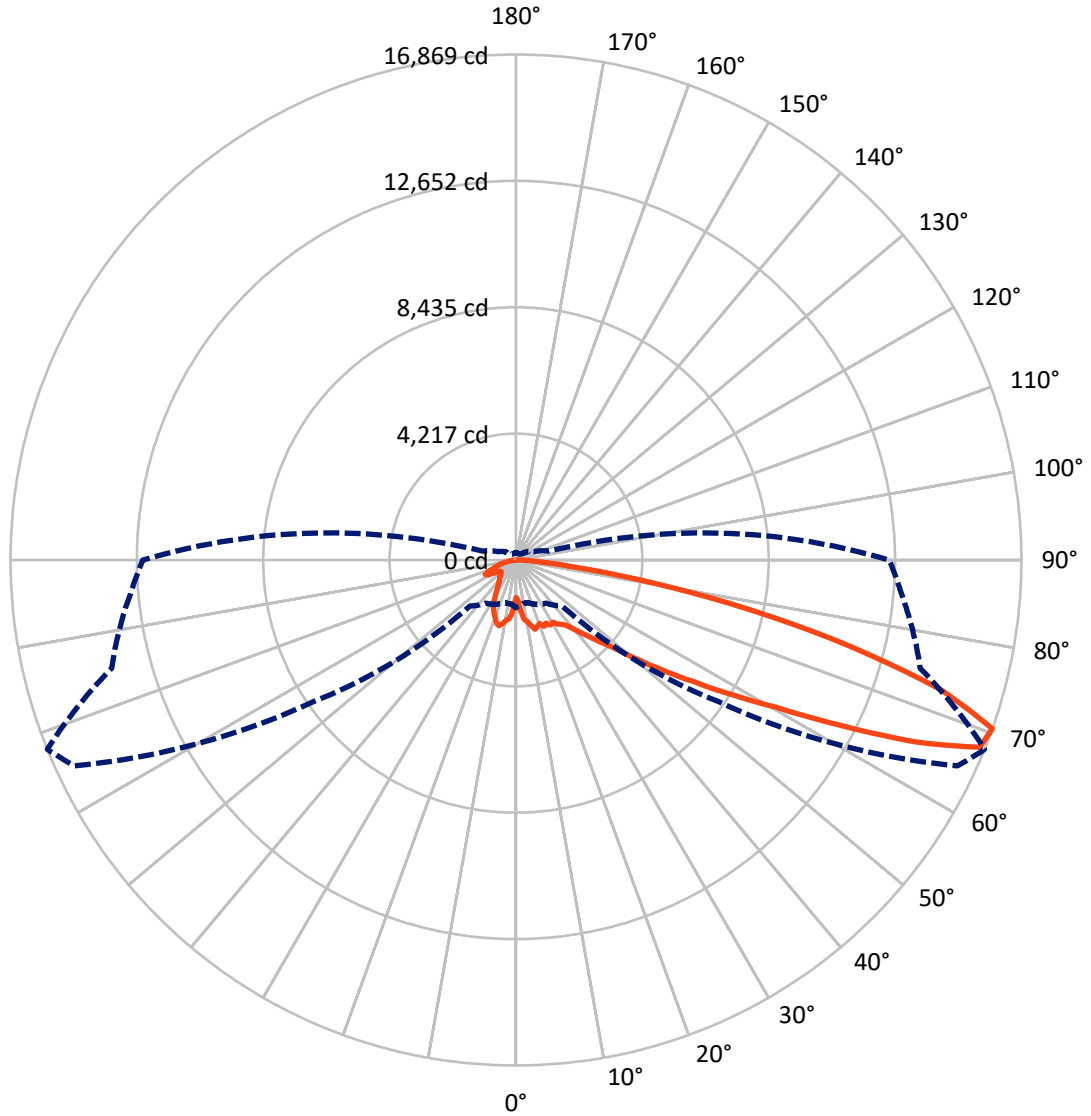
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4 fc  
 Type III - Medium - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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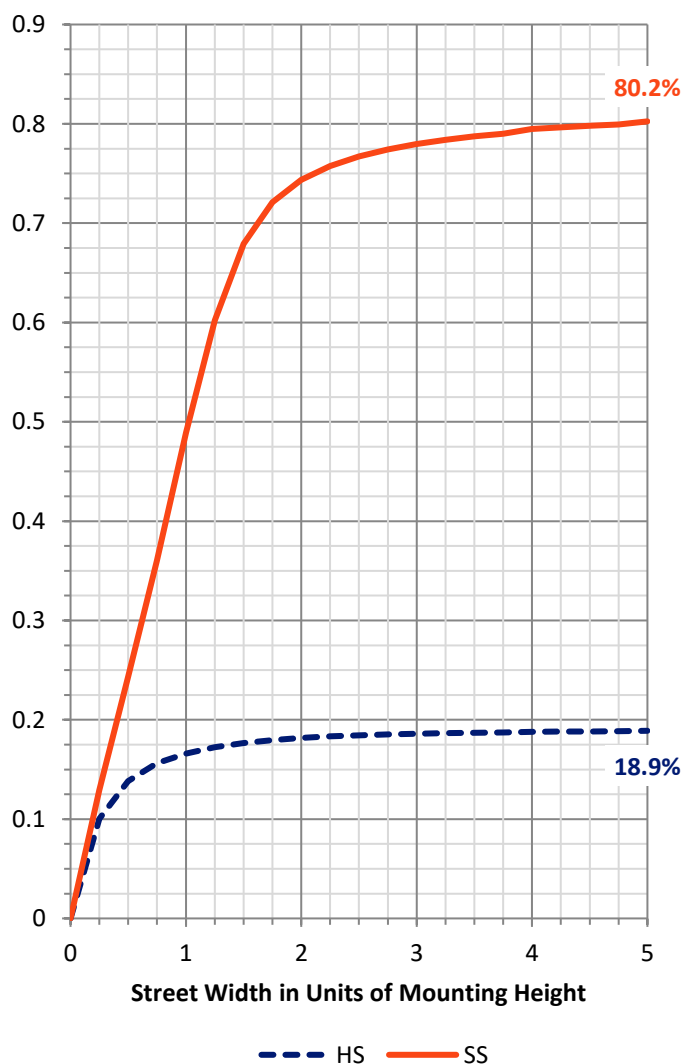
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 3112.3   | 0.0    | 3112.3  |
|                    | % Fixture | 19.1     | 0.0    | 19.1    |
| <b>Street Side</b> | Lumens    | 13188.7  | 0.0    | 13188.7 |
|                    | % Fixture | 80.9     | 0.0    | 80.9    |
| <b>Total</b>       | Lumens    | 16301.0  | 0.0    | 16301.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 166.9   | 1.0       |
| 10°-20°   | 544.1   | 3.3       |
| 20°-30°   | 827.6   | 5.1       |
| 30°-40°   | 1264.1  | 7.8       |
| 40°-50°   | 2173.6  | 13.3      |
| 50°-60°   | 3597.8  | 22.1      |
| 60°-70°   | 4435.6  | 27.2      |
| 70°-80°   | 2849.3  | 17.5      |
| 80°-90°   | 442.0   | 2.7       |
| 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°    | 16301.0 | 100.0     |
| 0°-180°   | 16301.0 | 100.0     |

**Coefficient of Utilization**



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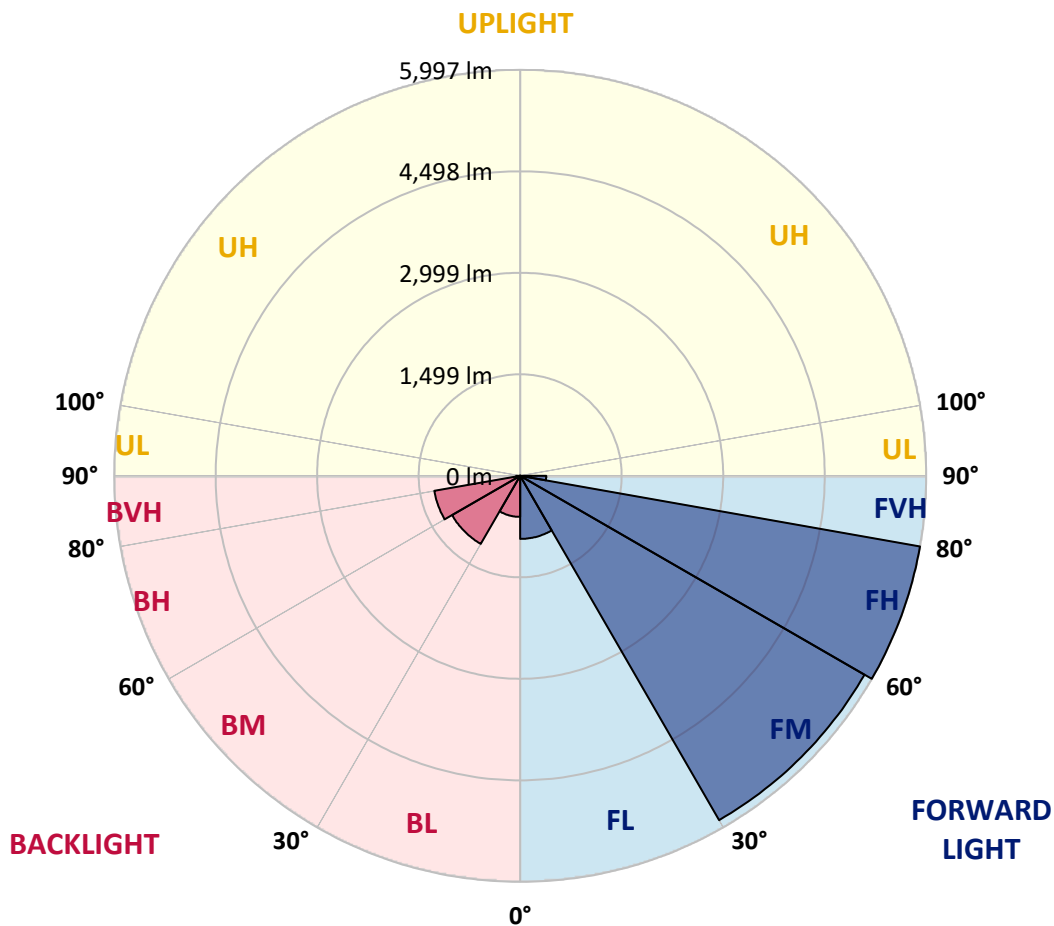
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 932.1  | 5.7       |                         |      |         |
| FM (30°-60°)   | 5873.9 | 36.0      |                         |      |         |
| FH (60°-80°)   | 5997.5 | 36.8      |                         |      | G3/7500 |
| FVH (80°-90°)  | 385.2  | 2.4       |                         |      | G3/500  |
| BL (0°-30°)    | 606.4  | 3.7       | B2/1000                 |      |         |
| BM (30°-60°)   | 1161.7 | 7.1       | B2/2500                 |      |         |
| BH (60°-80°)   | 1287.4 | 7.9       | B3/2500                 |      | G3/2500 |
| BVH (80°-90°)  | 56.7   | 0.3       |                         |      | G1/100  |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B3-U0-G3**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°     | 65°     | 68°     | 75°     | 85°     |
|-------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| 0°    | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9  | 1249.9  | 1249.9  | 1249.9  | 1249.9  |
| 2.5°  | 1436.1 | 1378.1 | 1319.4 | 1348.1 | 1393.8 | 1434.1 | 1425.9  | 1430.6  | 1375.4  | 1367.9  | 1513.2  |
| 5°    | 1691.9 | 1592.3 | 1590.3 | 1591.7 | 1595.7 | 1549.4 | 1662.6  | 1721.3  | 1734.2  | 1794.3  | 1936.9  |
| 7.5°  | 1780.6 | 1740.4 | 1699.4 | 1719.9 | 1668.1 | 1672.8 | 1812.0  | 1964.8  | 2001.0  | 2044.7  | 2239.8  |
| 10°   | 1762.2 | 1724.0 | 1736.3 | 1739.7 | 1749.3 | 1826.3 | 1915.7  | 2062.4  | 2093.1  | 2232.3  | 2282.8  |
| 12.5° | 1764.9 | 1758.1 | 1815.4 | 1817.5 | 1919.8 | 2058.3 | 2093.8  | 2228.9  | 2241.1  | 2343.5  | 2554.3  |
| 15°   | 1858.4 | 1905.5 | 1873.4 | 1890.5 | 1910.3 | 2076.0 | 2127.2  | 2321.0  | 2394.6  | 2526.3  | 2684.6  |
| 17.5° | 2040.6 | 2054.2 | 1958.0 | 1932.8 | 1997.6 | 2048.1 | 2164.7  | 2248.6  | 2325.7  | 2693.5  | 2911.8  |
| 20°   | 2082.9 | 2119.7 | 2005.1 | 1874.8 | 2011.9 | 2082.2 | 2163.4  | 2201.6  | 2261.6  | 2718.0  | 3027.8  |
| 22.5° | 2264.3 | 2187.9 | 2049.4 | 1936.2 | 1981.2 | 2049.4 | 2108.1  | 2252.1  | 2409.7  | 2647.8  | 3143.7  |
| 25°   | 2367.4 | 2323.0 | 2199.5 | 2078.1 | 2039.9 | 2041.9 | 2155.2  | 2284.1  | 2338.7  | 2750.8  | 3166.9  |
| 27.5° | 2616.4 | 2545.4 | 2267.8 | 2244.6 | 2100.6 | 1988.7 | 2162.7  | 2363.3  | 2458.8  | 2670.3  | 3280.2  |
| 30°   | 2928.2 | 2874.3 | 2509.9 | 2479.2 | 2259.6 | 2064.4 | 2258.2  | 2421.9  | 2408.3  | 2722.8  | 3358.6  |
| 32.5° | 3180.6 | 3270.6 | 2902.9 | 2660.7 | 2504.5 | 2317.6 | 2228.2  | 2411.7  | 2547.5  | 2844.9  | 3491.7  |
| 35°   | 3540.8 | 3625.4 | 3209.2 | 3045.5 | 2706.4 | 2434.9 | 2437.6  | 2552.2  | 2636.2  | 2987.5  | 3640.4  |
| 37.5° | 4164.4 | 4090.0 | 3755.0 | 3496.5 | 3279.5 | 2874.3 | 2752.8  | 2712.6  | 2780.1  | 3162.2  | 3931.7  |
| 40°   | 4614.0 | 4551.2 | 4156.9 | 4009.5 | 3587.2 | 3351.8 | 3018.9  | 2980.7  | 3100.1  | 3342.3  | 4169.8  |
| 42.5° | 5146.8 | 5034.9 | 4667.9 | 4546.4 | 4105.0 | 3680.7 | 3345.0  | 3366.8  | 3424.8  | 3682.0  | 4491.8  |
| 45°   | 5689.2 | 5417.6 | 5209.6 | 5200.0 | 4905.3 | 4319.2 | 3868.3  | 3850.5  | 3852.6  | 4182.1  | 4853.4  |
| 47.5° | 6119.7 | 5875.4 | 5637.3 | 5524.1 | 5375.3 | 5423.8 | 4628.3  | 4420.2  | 4357.4  | 4685.6  | 5395.8  |
| 50°   | 6411.0 | 6129.9 | 5860.4 | 5833.8 | 6230.9 | 6492.2 | 5341.9  | 5119.5  | 5158.4  | 5406.0  | 6119.0  |
| 52.5° | 6417.1 | 6083.5 | 5802.4 | 5988.7 | 6924.0 | 7297.9 | 6571.3  | 5949.8  | 6073.9  | 6242.5  | 7062.5  |
| 55°   | 5970.9 | 5625.0 | 5442.2 | 5866.5 | 7194.9 | 8253.7 | 8298.7  | 7280.1  | 7136.9  | 7198.9  | 8190.2  |
| 57.5° | 5030.1 | 4680.8 | 4574.4 | 5082.7 | 6681.1 | 9175.4 | 10385.0 | 8869.7  | 8449.5  | 8190.2  | 9345.9  |
| 60°   | 3786.4 | 3484.2 | 3418.0 | 3742.1 | 5539.1 | 8904.5 | 12074.2 | 10848.2 | 9992.0  | 9297.5  | 10505.1 |
| 62.5° | 2839.5 | 2622.5 | 2522.9 | 2569.3 | 3832.8 | 8023.8 | 13183.5 | 13347.9 | 12135.6 | 10506.4 | 11637.6 |
| 65°   | 2307.3 | 2132.0 | 2043.3 | 1983.3 | 2383.7 | 6204.2 | 12982.9 | 15452.0 | 14639.4 | 11776.1 | 12519.0 |
| 67.5° | 1927.3 | 1771.8 | 1730.8 | 1789.5 | 1884.3 | 3599.5 | 11413.8 | 16628.8 | 16684.1 | 13028.7 | 13034.1 |
| 70°   | 1599.8 | 1484.5 | 1469.5 | 1636.0 | 1760.8 | 2172.2 | 8244.1  | 16259.0 | 16869.0 | 13968.1 | 12913.4 |
| 72.5° | 1236.2 | 1174.1 | 1172.1 | 1433.4 | 1749.3 | 1851.6 | 4909.4  | 14045.9 | 14865.2 | 13667.9 | 11731.7 |
| 75°   | 857.6  | 814.6  | 847.3  | 1178.2 | 1709.0 | 1878.2 | 2801.9  | 10940.3 | 11553.7 | 11630.8 | 9397.8  |
| 77.5° | 590.1  | 554.0  | 589.5  | 852.1  | 1526.2 | 1923.2 | 1960.1  | 7910.5  | 7978.7  | 7799.3  | 5382.8  |
| 80°   | 410.7  | 385.5  | 412.8  | 603.1  | 1187.8 | 1903.4 | 1668.7  | 4980.3  | 4569.6  | 3480.8  | 1723.3  |
| 82.5° | 254.5  | 247.0  | 277.0  | 429.8  | 836.4  | 1731.5 | 1581.4  | 2570.0  | 1962.1  | 960.6   | 615.4   |
| 85°   | 133.7  | 122.8  | 161.0  | 280.4  | 523.3  | 1359.0 | 1481.8  | 1172.8  | 757.3   | 341.1   | 247.0   |
| 87.5° | 39.6   | 35.5   | 62.1   | 113.3  | 221.7  | 609.2  | 848.0   | 497.3   | 282.4   | 100.3   | 77.1    |
| 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°    | 1249.9  | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 | 1249.9 |
| 2.5°  | 1523.4  | 1515.9 | 1415.0 | 1427.9 | 1449.8 | 1455.2 | 1454.5 | 1417.7 | 1378.8 | 1487.3 | 1483.9 |
| 5°    | 1940.3  | 1872.7 | 1822.3 | 1811.3 | 1749.3 | 1687.2 | 1709.0 | 1701.5 | 1691.9 | 1741.1 | 1747.2 |
| 7.5°  | 2240.5  | 2147.0 | 2088.3 | 1937.5 | 1794.3 | 1670.1 | 1709.7 | 1722.0 | 1697.4 | 1786.1 | 1812.7 |
| 10°   | 2319.6  | 2245.9 | 2182.5 | 1988.7 | 1909.6 | 1837.3 | 1730.1 | 1608.0 | 1591.7 | 1540.5 | 1546.6 |
| 12.5° | 2523.6  | 2513.4 | 2297.1 | 2126.5 | 2023.5 | 1879.6 | 1648.3 | 1500.2 | 1373.3 | 1379.5 | 1342.6 |
| 15°   | 2684.6  | 2690.1 | 2430.1 | 2191.3 | 1915.0 | 1695.4 | 1423.1 | 1238.9 | 1108.6 | 1082.7 | 1056.1 |
| 17.5° | 2900.9  | 2889.9 | 2441.0 | 2113.6 | 1763.6 | 1441.6 | 1108.0 | 925.1  | 903.3  | 918.3  | 895.1  |
| 20°   | 2995.0  | 2898.8 | 2371.5 | 1920.5 | 1526.8 | 1095.0 | 837.1  | 740.2  | 782.5  | 842.6  | 843.9  |
| 22.5° | 3079.6  | 2915.2 | 2335.3 | 1764.9 | 1211.7 | 796.2  | 672.0  | 654.3  | 704.1  | 785.3  | 792.1  |
| 25°   | 3076.2  | 2990.9 | 2270.5 | 1608.0 | 939.4  | 621.5  | 584.0  | 597.0  | 656.3  | 740.9  | 745.7  |
| 27.5° | 3231.1  | 2932.9 | 2102.0 | 1402.0 | 707.5  | 532.1  | 541.7  | 565.6  | 593.5  | 674.0  | 689.7  |
| 30°   | 3229.7  | 3040.7 | 2017.4 | 1151.6 | 568.3  | 487.8  | 512.4  | 532.8  | 556.0  | 629.7  | 638.6  |
| 32.5° | 3306.1  | 2970.5 | 1966.2 | 895.8  | 509.6  | 476.9  | 483.0  | 503.5  | 536.9  | 586.7  | 592.9  |
| 35°   | 3398.2  | 3050.3 | 1802.5 | 711.6  | 487.8  | 467.3  | 472.1  | 483.7  | 514.4  | 560.1  | 566.3  |
| 37.5° | 3693.6  | 3065.3 | 1737.7 | 599.7  | 486.4  | 463.2  | 462.6  | 468.7  | 503.5  | 545.1  | 563.5  |
| 40°   | 3808.9  | 3202.4 | 1548.7 | 560.1  | 481.7  | 463.2  | 453.7  | 457.1  | 485.8  | 539.0  | 553.3  |
| 42.5° | 4085.2  | 3248.1 | 1408.8 | 546.5  | 481.7  | 455.1  | 440.0  | 445.5  | 478.9  | 526.0  | 548.5  |
| 45°   | 4369.7  | 3312.9 | 1242.4 | 543.7  | 481.0  | 454.4  | 425.7  | 438.0  | 465.3  | 504.9  | 529.4  |
| 47.5° | 4775.0  | 3546.3 | 1075.9 | 535.6  | 475.5  | 457.8  | 422.3  | 421.6  | 445.5  | 479.6  | 502.8  |
| 50°   | 5436.1  | 3910.6 | 946.9  | 525.3  | 476.2  | 455.1  | 415.5  | 405.9  | 421.6  | 451.6  | 474.2  |
| 52.5° | 6356.4  | 4531.4 | 896.5  | 519.9  | 470.7  | 444.1  | 403.9  | 388.9  | 397.7  | 421.6  | 443.5  |
| 55°   | 7424.8  | 5369.9 | 946.3  | 519.9  | 459.8  | 427.1  | 387.5  | 369.8  | 374.5  | 390.9  | 412.1  |
| 57.5° | 8673.3  | 6411.6 | 1187.1 | 512.4  | 446.2  | 406.6  | 367.7  | 347.3  | 348.6  | 362.9  | 382.1  |
| 60°   | 9977.0  | 7575.5 | 1726.7 | 506.2  | 436.6  | 384.1  | 344.5  | 323.4  | 321.3  | 335.0  | 352.0  |
| 62.5° | 11282.8 | 8649.4 | 2294.4 | 520.5  | 433.9  | 365.0  | 320.0  | 298.8  | 298.1  | 310.4  | 324.7  |
| 65°   | 12321.2 | 9383.5 | 2435.6 | 578.5  | 451.6  | 343.2  | 294.7  | 274.9  | 273.6  | 283.8  | 299.5  |
| 67.5° | 12830.8 | 9489.9 | 1850.2 | 650.9  | 489.2  | 322.7  | 270.2  | 251.7  | 250.4  | 261.3  | 274.9  |
| 70°   | 12453.5 | 8762.6 | 1142.1 | 658.4  | 487.1  | 298.8  | 244.9  | 229.2  | 226.5  | 238.1  | 248.3  |
| 72.5° | 11057.7 | 7664.9 | 867.8  | 582.6  | 421.6  | 264.7  | 219.7  | 206.0  | 201.9  | 212.2  | 221.7  |
| 75°   | 8875.2  | 6085.5 | 695.2  | 470.1  | 332.2  | 223.1  | 194.4  | 181.5  | 176.7  | 186.3  | 194.4  |
| 77.5° | 5170.0  | 3423.5 | 508.3  | 367.0  | 251.1  | 182.2  | 165.8  | 154.2  | 148.7  | 159.0  | 165.1  |
| 80°   | 1681.0  | 1140.7 | 319.3  | 263.3  | 183.5  | 142.6  | 134.4  | 126.2  | 120.8  | 127.6  | 129.6  |
| 82.5° | 603.8   | 424.4  | 176.7  | 161.7  | 122.1  | 102.3  | 101.7  | 96.9   | 90.1   | 92.8   | 92.8   |
| 85°   | 267.4   | 193.8  | 105.1  | 86.6   | 73.0   | 54.6   | 64.1   | 60.7   | 53.9   | 52.5   | 50.5   |
| 87.5° | 75.0    | 64.1   | 38.2   | 29.3   | 23.9   | 8.9    | 20.5   | 18.4   | 15.0   | 13.6   | 9.6    |
| 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)