

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: P368049

Luminaire Tested: **MSA-SA3C-830-U-T4W-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368049  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA3C-830-U-T4W-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10906 lumens  
Efficiency: N/A  
Efficacy: 65.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3

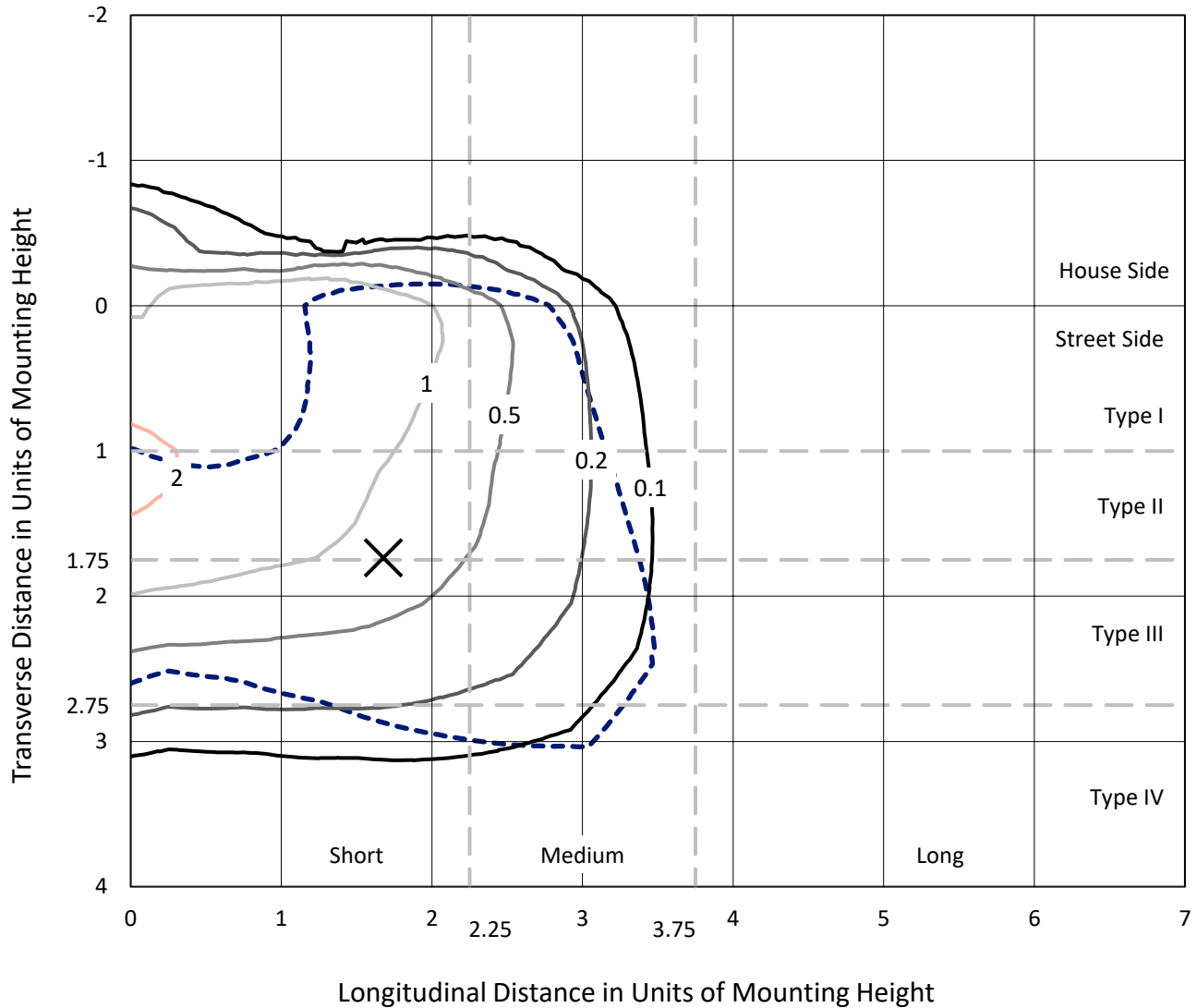
Input Watts (W): 166  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

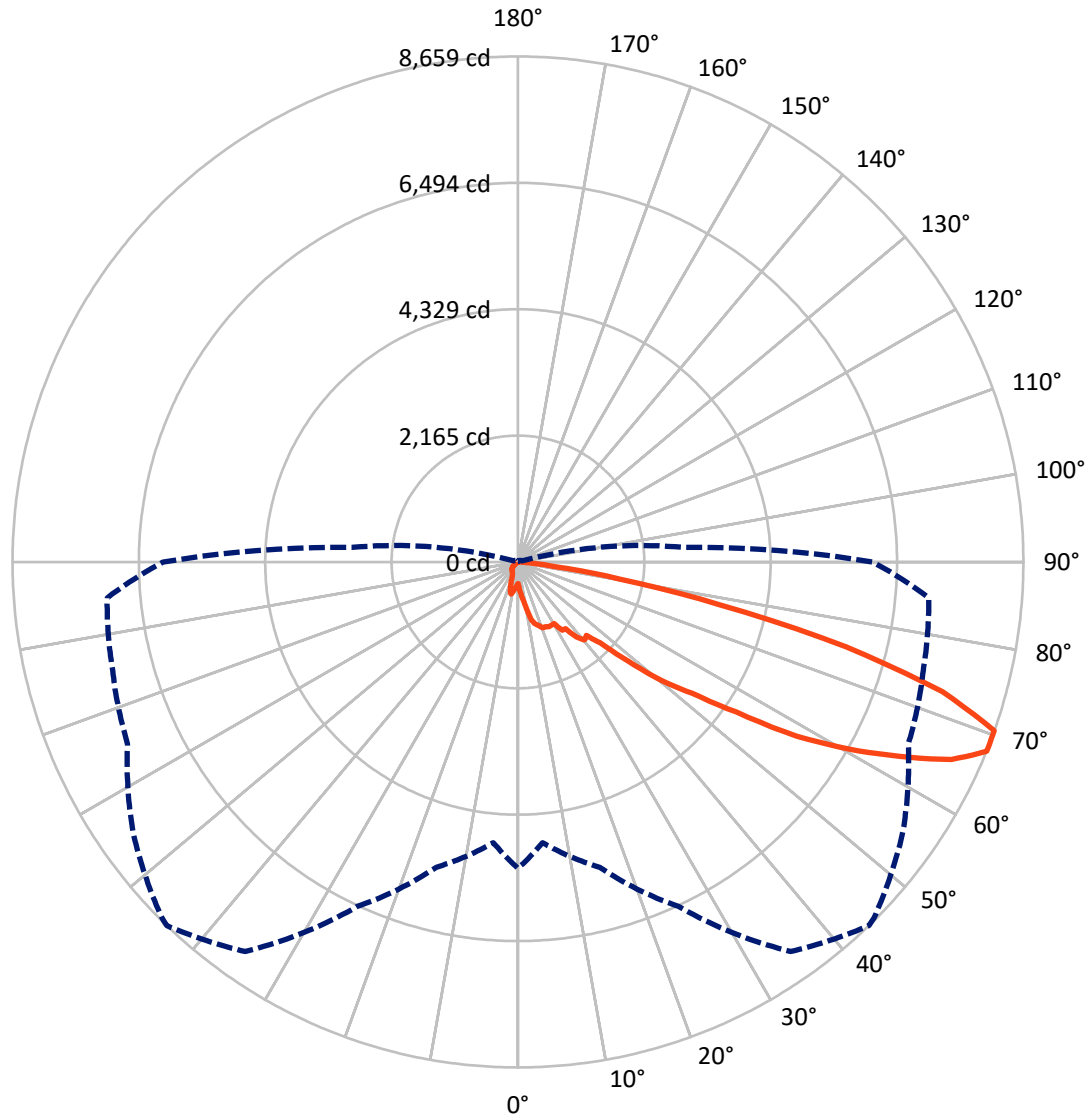
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.5 fc  
 Type IV - Short - N/A

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CATALOG NUMBER: MSA-SA3C-830-U-T4W-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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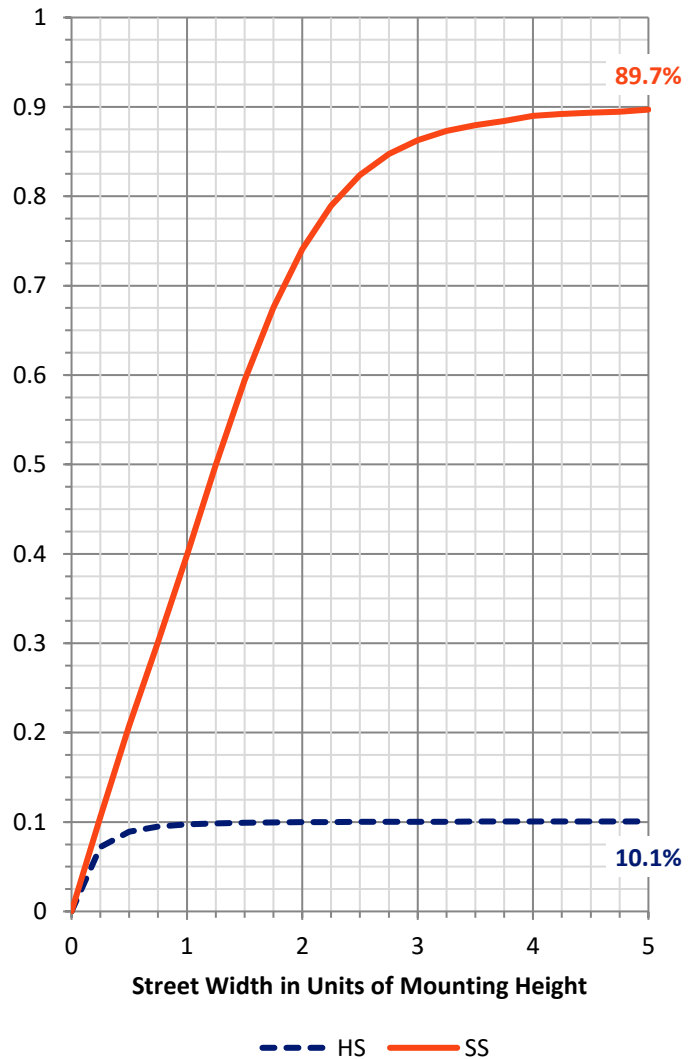
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 1107.8   | 0.0    | 1107.8  |
|                    | % Fixture | 10.2     | 0.0    | 10.2    |
| <b>Street Side</b> | Lumens    | 9798.1   | 0.0    | 9798.1  |
|                    | % Fixture | 89.8     | 0.0    | 89.8    |
| <b>Total</b>       | Lumens    | 10906.0  | 0.0    | 10906.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 54.5    | 0.5       |
| 10°-20°   | 228.0   | 2.1       |
| 20°-30°   | 403.9   | 3.7       |
| 30°-40°   | 656.5   | 6.0       |
| 40°-50°   | 1313.8  | 12.0      |
| 50°-60°   | 2695.2  | 24.7      |
| 60°-70°   | 3702.5  | 33.9      |
| 70°-80°   | 1740.2  | 16.0      |
| 80°-90°   | 111.4   | 1.0       |
| 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°    | 10906.0 | 100.0     |
| 0°-180°   | 10906.0 | 100.0     |

**Coefficient of Utilization**

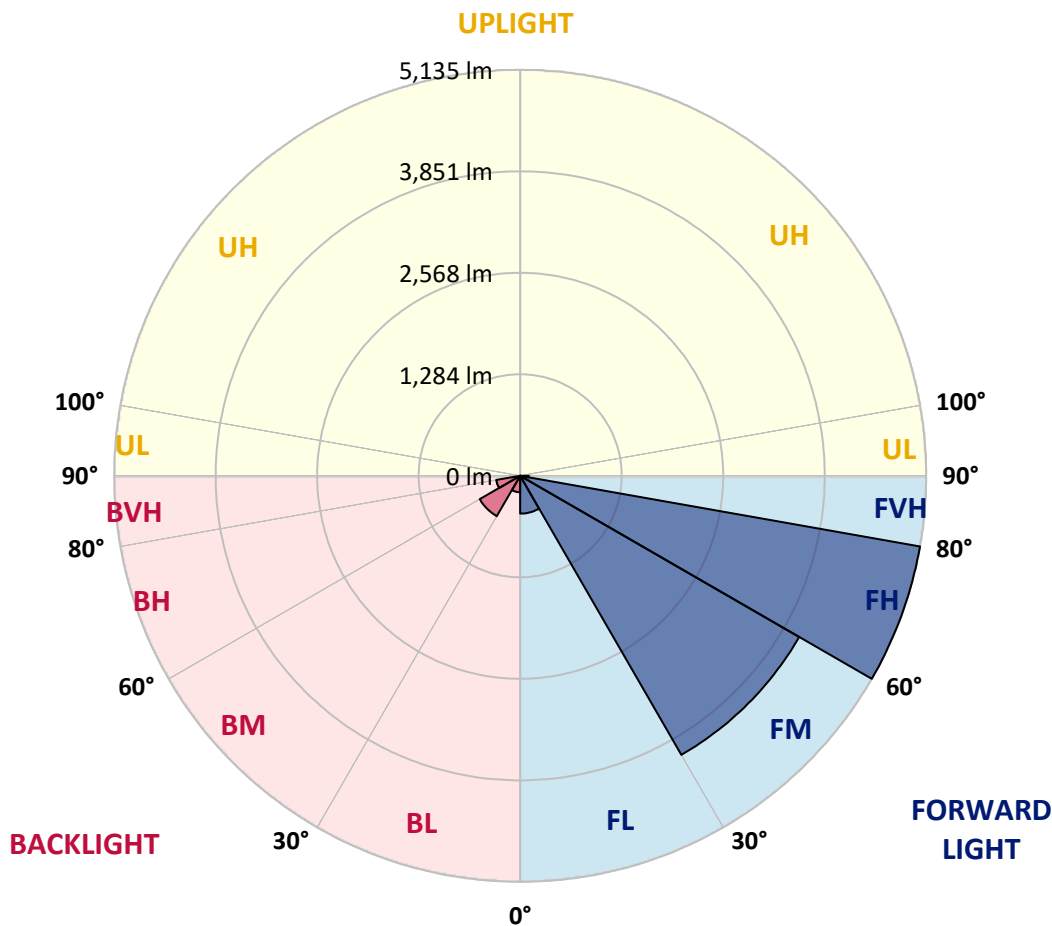


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|----------------|--------|-----------|-------------------------|------|---------|
|                |        |           | B                       | U    | G       |
| FL (0°-30°)    | 478.4  | 4.4       |                         |      |         |
| FM (30°-60°)   | 4075.4 | 37.4      |                         |      |         |
| FH (60°-80°)   | 5135.2 | 47.1      |                         |      | G3/7500 |
| FVH (80°-90°)  | 109.2  | 1.0       |                         |      | G2/225  |
| BL (0°-30°)    | 208.0  | 1.9       | B1/500                  |      |         |
| BM (30°-60°)   | 590.1  | 5.4       | B1/1000                 |      |         |
| BH (60°-80°)   | 307.4  | 2.8       | B1/500                  |      | G1/500  |
| BVH (80°-90°)  | 2.3    | 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-G3**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 44°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  | 367.4  |
| 2.5°  | 467.3  | 452.2  | 430.6  | 435.4  | 437.8  | 444.4  | 445.0  | 436.6  | 412.5  | 405.9  | 435.4  |
| 5°    | 654.9  | 618.2  | 611.6  | 597.8  | 570.1  | 555.1  | 551.5  | 566.5  | 547.3  | 541.2  | 549.1  |
| 7.5°  | 836.5  | 805.3  | 771.0  | 752.3  | 694.6  | 659.1  | 657.3  | 663.3  | 666.9  | 645.9  | 656.7  |
| 10°   | 957.4  | 923.1  | 915.9  | 872.0  | 822.1  | 813.7  | 810.1  | 787.2  | 768.6  | 752.9  | 700.6  |
| 12.5° | 1066.9 | 1066.3 | 1079.5 | 1016.3 | 1008.5 | 1016.9 | 1013.9 | 932.1  | 913.5  | 847.9  | 832.9  |
| 15°   | 1212.4 | 1248.5 | 1191.3 | 1138.4 | 1071.1 | 1099.9 | 1092.1 | 1039.8 | 1027.2 | 982.7  | 918.3  |
| 17.5° | 1363.3 | 1373.0 | 1277.3 | 1196.1 | 1178.7 | 1140.8 | 1148.6 | 1130.0 | 1066.3 | 1101.7 | 1038.0 |
| 20°   | 1366.9 | 1388.0 | 1285.8 | 1151.6 | 1205.2 | 1203.4 | 1204.0 | 1185.9 | 1101.7 | 1184.7 | 1126.4 |
| 22.5° | 1417.5 | 1365.7 | 1270.7 | 1185.3 | 1194.9 | 1204.0 | 1213.6 | 1191.3 | 1173.3 | 1193.7 | 1204.6 |
| 25°   | 1397.0 | 1376.6 | 1285.2 | 1228.6 | 1219.6 | 1226.8 | 1229.2 | 1257.5 | 1246.1 | 1295.4 | 1268.3 |
| 27.5° | 1449.9 | 1420.5 | 1256.9 | 1267.1 | 1235.2 | 1226.8 | 1212.4 | 1306.8 | 1340.5 | 1301.4 | 1373.6 |
| 30°   | 1540.7 | 1536.5 | 1305.6 | 1320.6 | 1296.0 | 1222.0 | 1260.5 | 1383.8 | 1425.9 | 1401.8 | 1489.6 |
| 32.5° | 1682.7 | 1697.1 | 1448.1 | 1350.7 | 1363.3 | 1396.4 | 1382.0 | 1383.8 | 1490.2 | 1543.7 | 1613.5 |
| 35°   | 1884.1 | 1876.3 | 1587.0 | 1465.0 | 1398.8 | 1404.2 | 1424.7 | 1522.7 | 1660.4 | 1656.8 | 1730.8 |
| 37.5° | 2279.8 | 2194.4 | 1833.0 | 1581.6 | 1601.5 | 1628.5 | 1613.5 | 1745.2 | 1758.4 | 1763.3 | 1940.1 |
| 40°   | 2863.2 | 2749.5 | 2220.9 | 1827.6 | 1636.4 | 1756.0 | 1748.8 | 1781.3 | 1869.7 | 1902.8 | 2160.8 |
| 42.5° | 3631.7 | 3479.0 | 2903.5 | 2279.8 | 1804.7 | 1722.4 | 1766.9 | 1828.2 | 2125.3 | 2219.7 | 2502.4 |
| 45°   | 4480.9 | 4171.8 | 3584.2 | 2924.5 | 2226.9 | 1971.3 | 2005.0 | 2119.3 | 2531.2 | 2687.6 | 2999.7 |
| 47.5° | 5031.2 | 4759.3 | 4258.4 | 3495.8 | 2667.1 | 2533.0 | 2536.0 | 2560.7 | 3008.1 | 3298.0 | 3716.5 |
| 50°   | 5509.3 | 5220.0 | 4755.1 | 4093.0 | 3445.9 | 3192.1 | 3134.4 | 3020.7 | 3615.5 | 4011.8 | 4476.1 |
| 52.5° | 6184.0 | 5846.0 | 5251.9 | 4793.6 | 4334.2 | 3736.4 | 3715.9 | 3754.4 | 4331.8 | 4748.5 | 5254.9 |
| 55°   | 6792.6 | 6381.9 | 5814.8 | 5526.1 | 5346.9 | 4536.2 | 4553.7 | 4618.0 | 5251.3 | 5472.0 | 5947.7 |
| 57.5° | 7061.4 | 6616.4 | 6324.7 | 6194.8 | 6099.2 | 5628.9 | 5570.0 | 5531.5 | 5976.5 | 6060.7 | 6673.5 |
| 60°   | 7237.6 | 6814.3 | 6682.0 | 6712.0 | 7001.9 | 6502.7 | 6449.2 | 6225.5 | 6576.7 | 6645.9 | 7324.2 |
| 62.5° | 7126.4 | 6740.3 | 6768.6 | 7019.3 | 7662.8 | 7334.5 | 7179.9 | 6805.8 | 7067.4 | 7123.4 | 7791.5 |
| 65°   | 6425.8 | 6023.4 | 6386.7 | 6993.5 | 8166.8 | 8159.0 | 8087.4 | 7341.7 | 7339.3 | 7410.8 | 7827.6 |
| 67.5° | 5248.9 | 4826.7 | 5414.2 | 6508.8 | 8145.7 | 8658.7 | 8625.0 | 8052.5 | 7378.4 | 7187.1 | 7063.8 |
| 70°   | 3649.2 | 3282.9 | 3949.3 | 5375.2 | 7419.9 | 8655.1 | 8601.0 | 8530.0 | 7069.2 | 6186.4 | 5476.8 |
| 72.5° | 1896.2 | 1694.7 | 2315.3 | 3703.9 | 5914.6 | 7604.5 | 7783.1 | 7666.4 | 6036.1 | 4494.7 | 3225.2 |
| 75°   | 644.1  | 577.9  | 955.0  | 1965.9 | 3931.8 | 5806.9 | 6016.2 | 5897.8 | 4099.6 | 2411.5 | 1275.5 |
| 77.5° | 249.6  | 232.1  | 342.2  | 798.0  | 1972.5 | 3538.5 | 3765.9 | 3645.0 | 2198.7 | 883.4  | 300.1  |
| 80°   | 141.9  | 137.1  | 188.8  | 359.6  | 869.6  | 1760.2 | 1920.2 | 1741.6 | 792.6  | 297.7  | 78.2   |
| 82.5° | 60.1   | 61.9   | 105.2  | 194.2  | 437.2  | 621.2  | 692.8  | 632.1  | 332.0  | 203.9  | 28.9   |
| 85°   | 13.2   | 16.2   | 49.9   | 108.2  | 183.4  | 177.4  | 185.8  | 206.3  | 203.9  | 149.7  | 12.6   |
| 87.5° | 0.0    | 0.0    | 15.6   | 29.5   | 43.9   | 28.9   | 22.9   | 40.3   | 62.5   | 60.1   | 5.4    |
| 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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CATALOG NUMBER: MSA-SA3C-830-U-T4W-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°   | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 367.4  | 367.4  | 367.4  | 367.4 | 367.4 | 367.4 | 367.4 | 367.4 | 367.4 | 367.4 | 367.4 |
| 2.5°  | 440.8  | 434.8  | 396.9  | 394.5 | 396.9 | 390.3 | 389.7 | 375.9 | 377.1 | 408.3 | 410.7 |
| 5°    | 549.1  | 519.0  | 486.5  | 476.3 | 466.7 | 445.0 | 457.1 | 457.1 | 457.1 | 476.9 | 482.9 |
| 7.5°  | 647.1  | 606.8  | 561.1  | 522.6 | 485.3 | 458.3 | 476.9 | 490.1 | 497.9 | 523.8 | 535.8 |
| 10°   | 691.6  | 651.9  | 611.0  | 556.3 | 527.4 | 517.2 | 495.5 | 484.1 | 497.9 | 492.5 | 499.1 |
| 12.5° | 786.6  | 750.5  | 680.2  | 623.6 | 602.0 | 567.1 | 503.4 | 458.9 | 429.4 | 424.6 | 423.4 |
| 15°   | 879.2  | 857.0  | 762.6  | 686.8 | 611.6 | 531.0 | 422.2 | 363.2 | 332.0 | 326.6 | 327.2 |
| 17.5° | 996.5  | 964.6  | 825.7  | 716.8 | 589.4 | 444.4 | 325.9 | 275.4 | 273.0 | 286.3 | 287.5 |
| 20°   | 1074.7 | 1022.3 | 857.6  | 692.2 | 516.0 | 336.2 | 255.0 | 243.0 | 262.2 | 286.3 | 283.9 |
| 22.5° | 1149.2 | 1092.7 | 899.7  | 670.5 | 399.9 | 255.0 | 234.5 | 235.7 | 252.0 | 277.8 | 284.5 |
| 25°   | 1198.6 | 1178.1 | 951.4  | 620.0 | 304.9 | 220.7 | 224.3 | 233.3 | 247.2 | 271.8 | 271.8 |
| 27.5° | 1347.1 | 1251.5 | 945.4  | 522.0 | 234.5 | 205.7 | 214.1 | 225.5 | 232.7 | 262.2 | 265.2 |
| 30°   | 1437.3 | 1406.0 | 976.6  | 422.2 | 205.7 | 186.4 | 202.7 | 212.9 | 217.7 | 251.4 | 252.6 |
| 32.5° | 1548.0 | 1478.8 | 1014.5 | 311.5 | 191.2 | 185.2 | 181.6 | 189.4 | 203.3 | 232.7 | 234.5 |
| 35°   | 1682.7 | 1662.2 | 960.4  | 244.8 | 186.4 | 173.2 | 166.0 | 170.2 | 179.2 | 199.1 | 203.3 |
| 37.5° | 1957.5 | 1836.0 | 927.9  | 209.9 | 186.4 | 169.0 | 161.2 | 150.3 | 151.5 | 165.4 | 173.2 |
| 40°   | 2189.0 | 2151.7 | 837.1  | 203.9 | 178.0 | 163.0 | 143.7 | 130.5 | 121.5 | 125.7 | 128.7 |
| 42.5° | 2614.2 | 2441.6 | 719.9  | 200.9 | 170.2 | 147.3 | 122.1 | 108.2 | 94.4  | 95.6  | 100.4 |
| 45°   | 3130.2 | 2757.9 | 615.2  | 197.9 | 164.8 | 131.7 | 102.8 | 86.6  | 72.2  | 72.8  | 77.6  |
| 47.5° | 3819.4 | 3219.2 | 488.3  | 188.8 | 155.2 | 117.3 | 83.0  | 66.2  | 57.7  | 59.5  | 63.7  |
| 50°   | 4602.4 | 3623.9 | 386.1  | 175.0 | 143.7 | 103.4 | 67.4  | 53.5  | 50.5  | 52.3  | 57.1  |
| 52.5° | 5301.8 | 3922.2 | 318.7  | 162.4 | 127.5 | 84.2  | 56.5  | 47.5  | 46.3  | 47.5  | 51.1  |
| 55°   | 5923.6 | 4095.4 | 266.4  | 147.9 | 109.5 | 68.0  | 51.1  | 43.9  | 43.3  | 42.7  | 45.1  |
| 57.5° | 6507.0 | 4145.3 | 208.1  | 125.1 | 89.0  | 58.9  | 47.5  | 40.9  | 39.7  | 37.9  | 39.7  |
| 60°   | 6932.1 | 4059.9 | 152.8  | 100.4 | 72.8  | 53.5  | 44.5  | 36.7  | 34.9  | 31.9  | 33.1  |
| 62.5° | 7137.2 | 3826.0 | 115.5  | 80.6  | 61.9  | 48.7  | 39.7  | 31.9  | 29.5  | 25.9  | 26.5  |
| 65°   | 6942.4 | 3440.5 | 90.8   | 68.0  | 52.9  | 40.9  | 33.7  | 27.1  | 24.1  | 20.4  | 20.4  |
| 67.5° | 6079.4 | 2854.2 | 77.0   | 58.9  | 44.5  | 34.9  | 27.7  | 24.7  | 19.8  | 16.8  | 16.2  |
| 70°   | 4462.3 | 2053.1 | 66.2   | 51.7  | 38.5  | 30.1  | 23.5  | 22.3  | 19.2  | 16.2  | 15.0  |
| 72.5° | 2518.6 | 1161.9 | 56.5   | 45.7  | 32.5  | 25.3  | 19.8  | 20.4  | 18.6  | 15.0  | 13.8  |
| 75°   | 961.0  | 391.5  | 46.9   | 37.9  | 26.5  | 19.2  | 16.8  | 16.8  | 16.8  | 12.6  | 10.8  |
| 77.5° | 238.1  | 99.8   | 37.3   | 30.7  | 21.0  | 12.6  | 13.8  | 14.4  | 14.4  | 10.8  | 7.8   |
| 80°   | 65.6   | 33.7   | 22.3   | 22.3  | 15.0  | 7.2   | 9.6   | 9.6   | 7.8   | 3.6   | 0.0   |
| 82.5° | 24.1   | 12.6   | 7.8    | 9.6   | 6.6   | 2.4   | 3.6   | 2.4   | 1.8   | 0.0   | 0.0   |
| 85°   | 10.2   | 6.6    | 4.8    | 5.4   | 3.0   | 0.0   | 0.6   | 1.2   | 0.0   | 0.0   | 0.0   |
| 87.5° | 4.2    | 3.0    | 2.4    | 2.4   | 1.2   | 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)