

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: P366674

Luminaire Tested: **MSA-SA1A-750-U-SL4**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366674  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1A-750-U-SL4  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS  
EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3936 lumens  
Efficiency: N/A  
Efficacy: 115.8 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

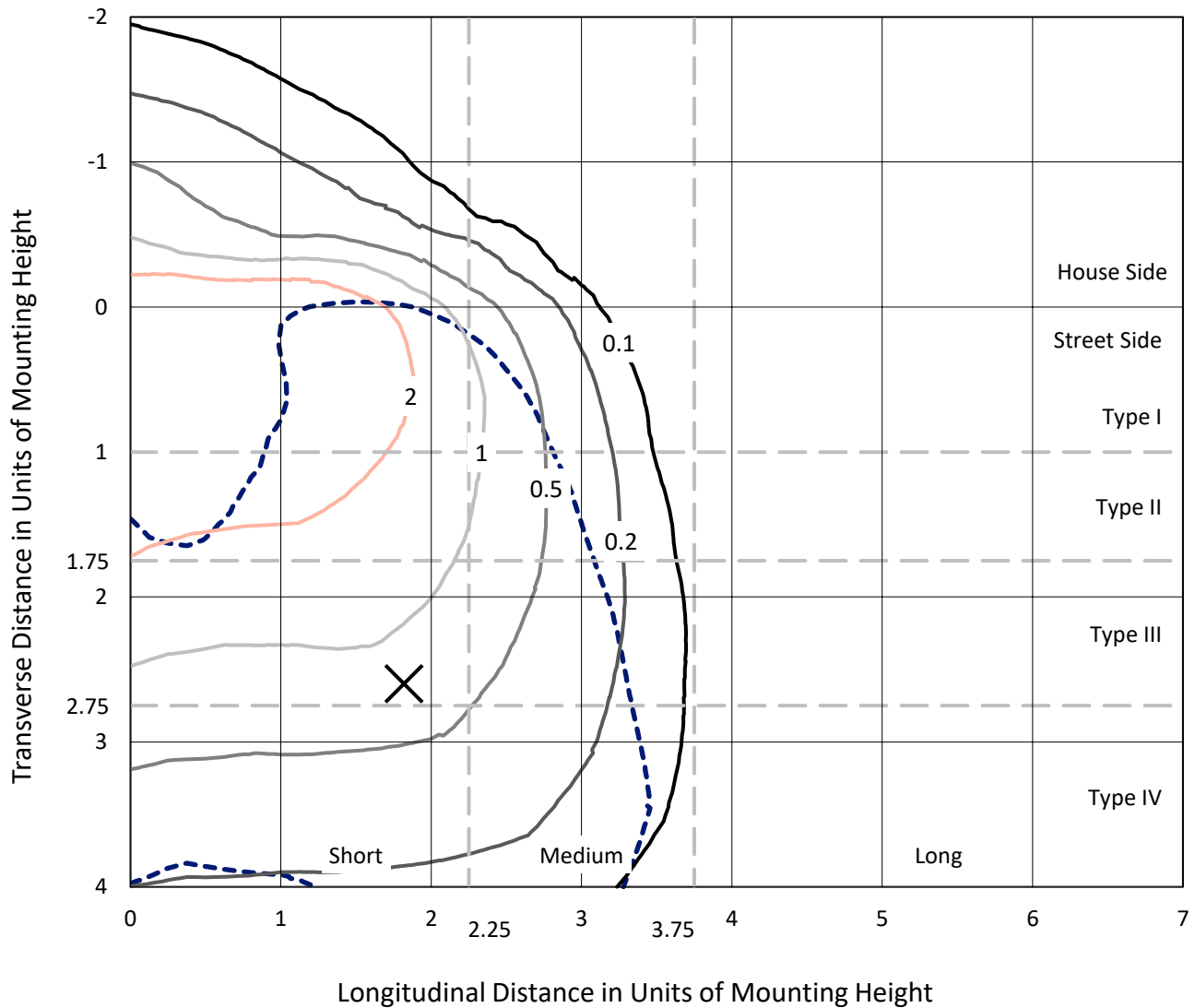


REPORT NUMBER: P366674

CATALOG NUMBER: MSA-SA1A-750-U-SL4

## Iso-Footcandle Lines of Horizontal Illumination

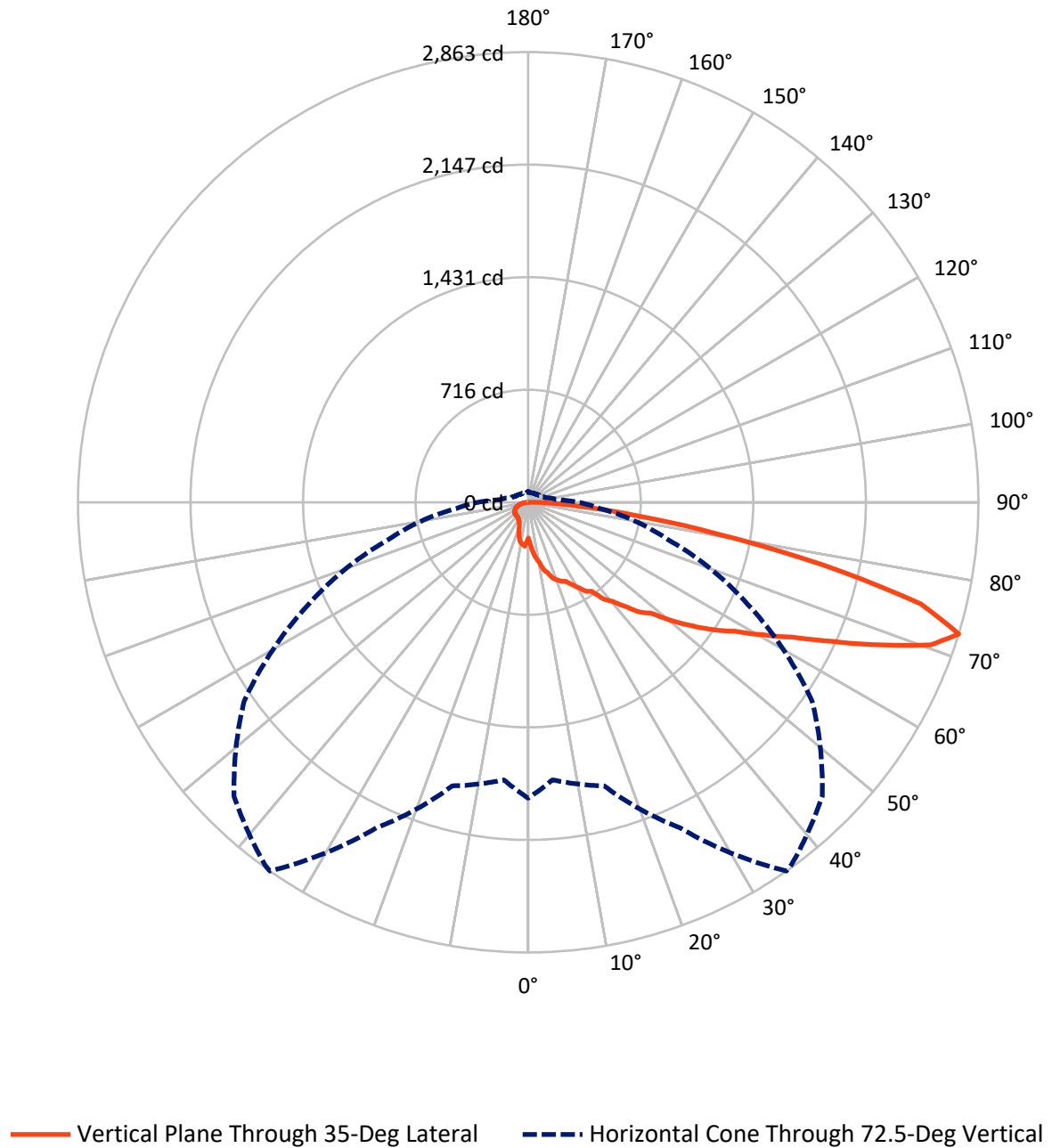
× Max cd  
 --- 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.9 fc  
 Type IV - Short - N/A

REPORT NUMBER: P366674  
CATALOG NUMBER: MSA-SA1A-750-U-SL4

## Luminous Intensity Polar Plot



REPORT NUMBER: P366674

CATALOG NUMBER: MSA-SA1A-750-U-SL4

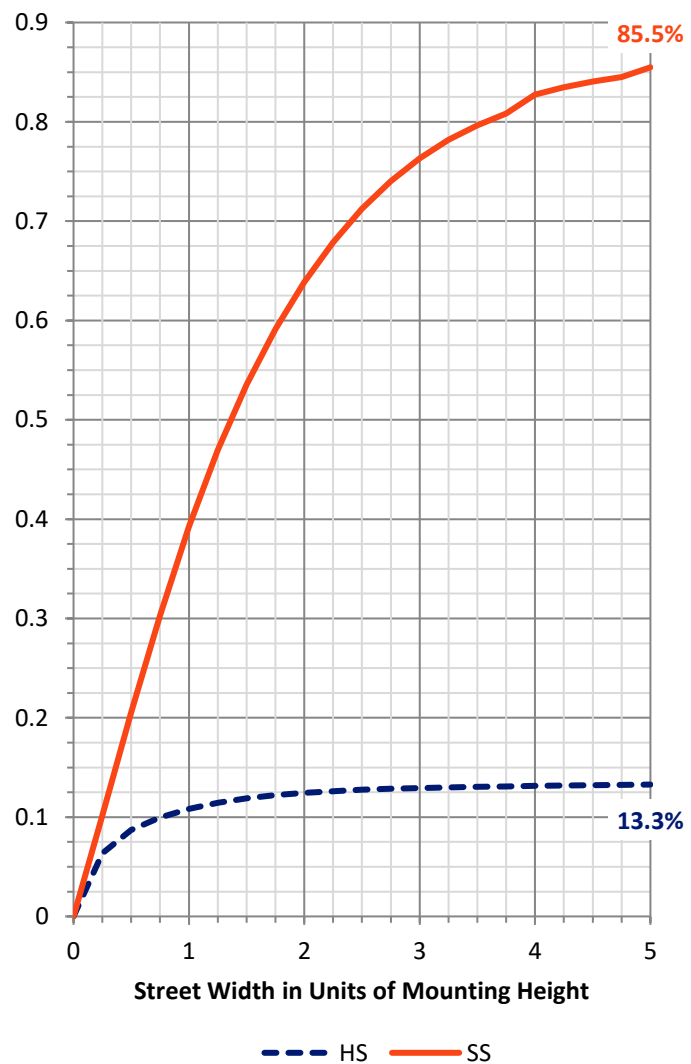
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 528.2    | 0.0    | 528.2  |
|                    | % Fixture | 13.4     | 0.0    | 13.4   |
| <b>Street Side</b> | Lumens    | 3407.8   | 0.0    | 3407.8 |
|                    | % Fixture | 86.6     | 0.0    | 86.6   |
| <b>Total</b>       | Lumens    | 3936.0   | 0.0    | 3936.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 30.2   | 0.8       |
| 10°-20°   | 106.5  | 2.7       |
| 20°-30°   | 185.0  | 4.7       |
| 30°-40°   | 309.2  | 7.9       |
| 40°-50°   | 536.7  | 13.6      |
| 50°-60°   | 811.4  | 20.6      |
| 60°-70°   | 1051.2 | 26.7      |
| 70°-80°   | 775.7  | 19.7      |
| 80°-90°   | 130.0  | 3.3       |
| 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°    | 3936.0 | 100.0     |
| 0°-180°   | 3936.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P366674

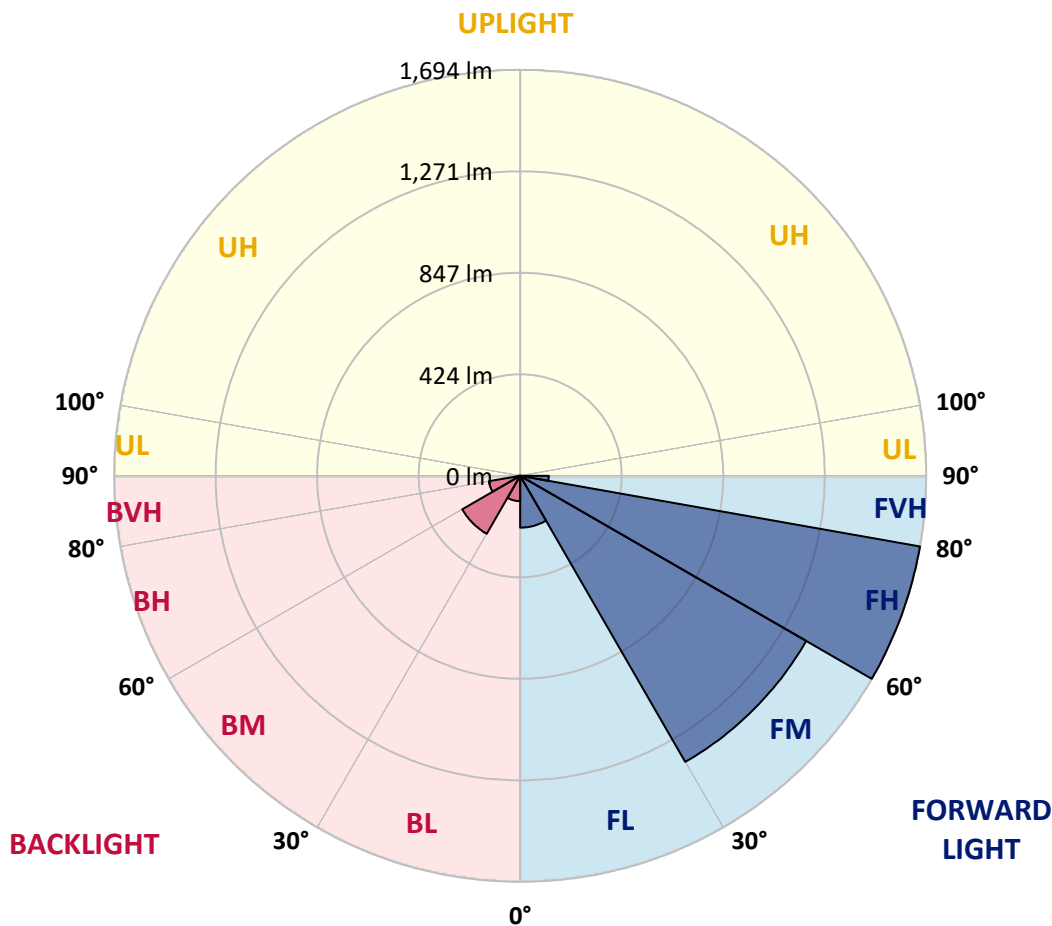
CATALOG NUMBER: MSA-SA1A-750-U-SL4

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 216.2  | 5.5       |                         |      |         |
| FM   | (30°-60°)   | 1378.3 | 35.0      |                         |      |         |
| FH   | (60°-80°)   | 1694.0 | 43.0      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 119.4  | 3.0       |                         |      | G2/225  |
| BL   | (0°-30°)    | 105.6  | 2.7       | B0/110                  |      |         |
| BM   | (30°-60°)   | 279.2  | 7.1       | B1/1000                 |      |         |
| BH   | (60°-80°)   | 132.8  | 3.4       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 10.6   | 0.3       |                         |      | 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



REPORT NUMBER: P366674

CATALOG NUMBER: MSA-SA1A-750-U-SL4

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 36°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  | 227.5  |
| 2.5°  | 283.7  | 270.1  | 258.4  | 257.9  | 268.8  | 273.0  | 271.3  | 267.6  | 263.2  | 254.0  | 274.2  |
| 5°    | 355.5  | 336.0  | 332.3  | 327.9  | 318.0  | 320.7  | 304.6  | 316.8  | 320.7  | 329.6  | 343.0  |
| 7.5°  | 397.8  | 386.4  | 377.5  | 373.8  | 356.7  | 354.6  | 342.7  | 360.2  | 367.6  | 366.4  | 386.4  |
| 10°   | 414.4  | 404.0  | 404.7  | 392.6  | 387.1  | 389.4  | 390.8  | 391.1  | 395.6  | 399.3  | 389.2  |
| 12.5° | 423.0  | 427.0  | 441.8  | 433.6  | 440.6  | 443.5  | 457.6  | 443.2  | 443.7  | 424.7  | 435.1  |
| 15°   | 466.2  | 476.3  | 467.7  | 467.4  | 465.2  | 469.9  | 482.0  | 472.2  | 479.8  | 473.7  | 460.3  |
| 17.5° | 518.3  | 521.3  | 504.8  | 498.1  | 506.8  | 505.3  | 502.3  | 503.8  | 485.0  | 519.9  | 503.5  |
| 20°   | 534.2  | 546.1  | 524.5  | 498.1  | 527.0  | 530.9  | 530.2  | 523.6  | 491.4  | 541.8  | 525.8  |
| 22.5° | 580.6  | 564.5  | 547.3  | 530.5  | 545.3  | 547.5  | 543.8  | 528.2  | 517.4  | 536.6  | 549.2  |
| 25°   | 601.6  | 597.7  | 575.9  | 573.9  | 557.6  | 549.8  | 556.2  | 551.7  | 541.1  | 575.2  | 561.3  |
| 27.5° | 649.6  | 645.1  | 594.9  | 615.5  | 591.8  | 589.8  | 556.1  | 571.2  | 581.8  | 579.2  | 600.1  |
| 30°   | 704.1  | 709.3  | 635.9  | 656.5  | 629.1  | 625.4  | 591.5  | 610.7  | 617.9  | 620.2  | 646.3  |
| 32.5° | 764.5  | 778.8  | 705.9  | 688.9  | 674.3  | 676.8  | 648.1  | 613.2  | 641.2  | 696.2  | 707.4  |
| 35°   | 830.1  | 835.9  | 759.5  | 734.0  | 695.8  | 693.1  | 693.6  | 698.0  | 726.4  | 789.1  | 797.8  |
| 37.5° | 951.2  | 924.0  | 856.9  | 792.3  | 779.5  | 754.5  | 771.4  | 784.9  | 813.3  | 909.3  | 946.0  |
| 40°   | 1025.8 | 1005.6 | 903.5  | 866.0  | 830.7  | 833.1  | 864.8  | 864.7  | 931.7  | 1030.8 | 1086.7 |
| 42.5° | 1094.8 | 1072.8 | 976.5  | 938.9  | 905.5  | 913.7  | 922.8  | 938.7  | 1067.3 | 1227.0 | 1252.6 |
| 45°   | 1150.4 | 1102.2 | 1033.0 | 1024.6 | 997.0  | 986.1  | 1024.6 | 1050.1 | 1229.4 | 1385.8 | 1400.6 |
| 47.5° | 1188.2 | 1148.6 | 1080.9 | 1073.5 | 1053.2 | 1079.9 | 1184.9 | 1201.3 | 1355.0 | 1545.2 | 1544.0 |
| 50°   | 1245.7 | 1191.4 | 1130.3 | 1126.4 | 1183.7 | 1198.0 | 1326.0 | 1324.3 | 1477.3 | 1677.6 | 1649.9 |
| 52.5° | 1311.9 | 1243.5 | 1177.1 | 1218.6 | 1306.0 | 1313.0 | 1424.1 | 1469.3 | 1610.9 | 1805.3 | 1732.9 |
| 55°   | 1388.0 | 1311.5 | 1247.4 | 1302.8 | 1432.8 | 1412.0 | 1524.4 | 1634.7 | 1778.0 | 1939.8 | 1792.8 |
| 57.5° | 1482.2 | 1389.5 | 1337.6 | 1421.9 | 1548.6 | 1567.0 | 1668.0 | 1806.9 | 1912.6 | 2023.5 | 1836.5 |
| 60°   | 1581.7 | 1472.8 | 1425.3 | 1505.6 | 1710.7 | 1731.8 | 1830.6 | 1950.1 | 2063.5 | 2102.3 | 1828.3 |
| 62.5° | 1676.6 | 1558.8 | 1515.8 | 1614.9 | 1890.4 | 1942.8 | 2015.8 | 2091.9 | 2189.0 | 2121.4 | 1728.7 |
| 65°   | 1782.2 | 1664.3 | 1637.3 | 1785.9 | 2134.2 | 2186.3 | 2281.5 | 2258.7 | 2232.0 | 2053.6 | 1563.9 |
| 67.5° | 1894.1 | 1774.3 | 1779.4 | 1984.3 | 2421.6 | 2430.5 | 2576.9 | 2425.0 | 2181.4 | 1873.8 | 1287.2 |
| 70°   | 1954.3 | 1831.6 | 1883.5 | 2195.8 | 2714.1 | 2701.3 | 2731.2 | 2469.7 | 1975.3 | 1481.2 | 887.2  |
| 72.5° | 1881.4 | 1772.0 | 1867.1 | 2284.9 | 2862.9 | 2849.2 | 2644.6 | 2204.4 | 1544.4 | 921.1  | 460.0  |
| 75°   | 1592.9 | 1487.4 | 1632.9 | 2036.8 | 2577.4 | 2590.1 | 2250.6 | 1639.3 | 884.1  | 370.4  | 191.0  |
| 77.5° | 1082.4 | 1028.0 | 1152.6 | 1518.2 | 1914.5 | 1958.6 | 1669.9 | 958.6  | 371.3  | 153.4  | 115.6  |
| 80°   | 572.0  | 546.1  | 638.2  | 874.6  | 1212.2 | 1245.2 | 981.9  | 477.4  | 190.2  | 99.3   | 82.5   |
| 82.5° | 310.8  | 299.9  | 349.3  | 449.7  | 688.8  | 717.5  | 509.2  | 317.2  | 128.2  | 62.2   | 50.4   |
| 85°   | 208.8  | 204.6  | 237.4  | 241.6  | 325.7  | 335.1  | 266.8  | 244.3  | 76.9   | 30.4   | 33.3   |
| 87.5° | 104.5  | 100.3  | 125.0  | 110.4  | 124.3  | 124.5  | 122.3  | 155.9  | 19.5   | 10.1   | 6.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

REPORT NUMBER: P366674

CATALOG NUMBER: MSA-SA1A-750-U-SL4

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 227.5  | 227.5  | 227.5 | 227.5 | 227.5 | 227.5 | 227.5 | 227.5 | 227.5 | 227.5 | 227.5 |
| 2.5°  | 274.5  | 268.6  | 248.3 | 248.1 | 251.2 | 249.1 | 250.6 | 242.4 | 238.9 | 255.0 | 254.2 |
| 5°    | 341.2  | 323.6  | 306.6 | 300.7 | 293.8 | 278.9 | 279.7 | 279.9 | 277.4 | 286.9 | 287.6 |
| 7.5°  | 380.3  | 359.2  | 343.5 | 312.3 | 287.8 | 268.6 | 271.1 | 274.0 | 271.1 | 283.9 | 288.6 |
| 10°   | 386.0  | 369.2  | 350.6 | 315.8 | 299.5 | 282.2 | 264.8 | 249.3 | 247.5 | 241.6 | 243.4 |
| 12.5° | 420.0  | 406.0  | 367.1 | 328.9 | 309.9 | 283.4 | 251.5 | 233.8 | 219.1 | 221.6 | 216.9 |
| 15°   | 447.9  | 438.0  | 391.3 | 341.4 | 296.0 | 263.1 | 229.1 | 205.0 | 191.7 | 190.2 | 185.5 |
| 17.5° | 485.7  | 471.6  | 393.4 | 332.8 | 278.0 | 238.6 | 200.2 | 172.9 | 167.2 | 164.8 | 162.4 |
| 20°   | 503.8  | 478.4  | 385.5 | 305.9 | 257.0 | 209.3 | 171.7 | 148.2 | 146.5 | 150.7 | 149.9 |
| 22.5° | 519.6  | 484.2  | 378.5 | 289.6 | 224.3 | 179.8 | 152.2 | 136.7 | 134.9 | 140.3 | 141.3 |
| 25°   | 528.8  | 500.5  | 370.8 | 273.0 | 203.9 | 157.7 | 137.6 | 128.9 | 129.2 | 136.2 | 135.4 |
| 27.5° | 570.5  | 506.2  | 351.3 | 253.3 | 180.6 | 141.5 | 130.5 | 126.0 | 124.1 | 133.9 | 134.7 |
| 30°   | 596.7  | 543.5  | 346.9 | 232.5 | 163.3 | 129.5 | 124.1 | 122.3 | 122.0 | 133.7 | 134.6 |
| 32.5° | 645.4  | 555.9  | 348.9 | 209.8 | 147.7 | 125.8 | 119.4 | 119.3 | 122.6 | 133.9 | 135.2 |
| 35°   | 713.0  | 608.3  | 339.2 | 196.9 | 139.1 | 120.1 | 115.7 | 117.1 | 122.8 | 135.1 | 136.9 |
| 37.5° | 844.7  | 657.7  | 342.2 | 184.8 | 136.2 | 118.3 | 114.7 | 115.6 | 124.8 | 138.1 | 143.1 |
| 40°   | 949.0  | 747.2  | 337.5 | 178.7 | 132.4 | 117.9 | 112.6 | 115.9 | 124.7 | 139.8 | 144.3 |
| 42.5° | 1100.2 | 818.6  | 338.0 | 172.7 | 132.2 | 116.6 | 112.2 | 116.3 | 124.3 | 138.3 | 144.5 |
| 45°   | 1229.9 | 882.6  | 345.2 | 169.2 | 130.5 | 118.8 | 111.7 | 116.8 | 122.1 | 132.9 | 139.8 |
| 47.5° | 1336.2 | 954.0  | 352.6 | 165.8 | 129.9 | 120.8 | 111.2 | 113.2 | 118.4 | 126.8 | 133.1 |
| 50°   | 1422.9 | 1004.3 | 362.0 | 165.1 | 129.9 | 119.8 | 109.9 | 109.7 | 114.1 | 120.8 | 126.7 |
| 52.5° | 1490.4 | 1039.7 | 368.4 | 166.0 | 129.9 | 115.9 | 108.2 | 106.8 | 109.5 | 114.4 | 120.3 |
| 55°   | 1539.3 | 1050.6 | 363.2 | 168.2 | 129.7 | 112.4 | 105.2 | 104.0 | 105.3 | 108.7 | 114.2 |
| 57.5° | 1559.0 | 1021.9 | 332.1 | 164.3 | 129.7 | 109.9 | 101.5 | 100.1 | 101.5 | 104.0 | 109.5 |
| 60°   | 1509.8 | 929.5  | 287.3 | 154.4 | 127.2 | 106.5 | 97.3  | 96.4  | 98.4  | 100.6 | 106.0 |
| 62.5° | 1386.3 | 806.7  | 239.4 | 142.6 | 122.0 | 103.7 | 93.2  | 93.4  | 96.6  | 99.6  | 105.0 |
| 65°   | 1194.4 | 658.2  | 199.6 | 130.7 | 115.4 | 99.1  | 89.0  | 90.2  | 94.7  | 98.8  | 104.2 |
| 67.5° | 939.9  | 487.7  | 168.0 | 119.1 | 106.2 | 91.7  | 84.3  | 84.7  | 87.9  | 91.7  | 96.9  |
| 70°   | 628.3  | 310.3  | 138.1 | 105.5 | 94.1  | 82.1  | 77.1  | 75.9  | 75.1  | 78.5  | 83.0  |
| 72.5° | 318.7  | 183.3  | 113.4 | 90.2  | 81.0  | 71.7  | 67.9  | 64.8  | 62.5  | 64.5  | 68.0  |
| 75°   | 167.0  | 128.2  | 91.6  | 74.9  | 66.9  | 61.0  | 58.1  | 54.1  | 52.4  | 53.6  | 56.1  |
| 77.5° | 118.1  | 100.3  | 74.1  | 59.3  | 54.4  | 48.4  | 48.9  | 44.7  | 43.3  | 44.0  | 46.7  |
| 80°   | 90.7   | 79.5   | 56.9  | 44.9  | 42.0  | 36.1  | 37.8  | 35.3  | 33.6  | 33.3  | 35.3  |
| 82.5° | 61.8   | 59.8   | 40.5  | 31.4  | 29.4  | 25.2  | 27.6  | 26.5  | 24.4  | 23.0  | 24.0  |
| 85°   | 41.7   | 39.6   | 24.7  | 18.1  | 17.3  | 13.1  | 16.8  | 16.1  | 14.3  | 12.3  | 12.4  |
| 87.5° | 7.2    | 13.3   | 7.1   | 4.5   | 4.2   | 1.5   | 3.9   | 3.7   | 3.4   | 1.7   | 1.3   |
| 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)