

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: P596058

Luminaire Tested: **MSA-SA2A-AMB-U-SL2-HSS**

Issue Date: 4/29/2022

**Test Information**

Test Method: LM-79-08  
Report Number: P596058  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2109-400-18)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 4/29/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2A-AMB-U-SL2-HSS  
Description: POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH  
AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: (32) 1549K CCT, -21.5 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1370 lumens  
Efficiency: N/A  
Efficacy: 33.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B0 - U0 - G1

Input Watts (W): 41.2  
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



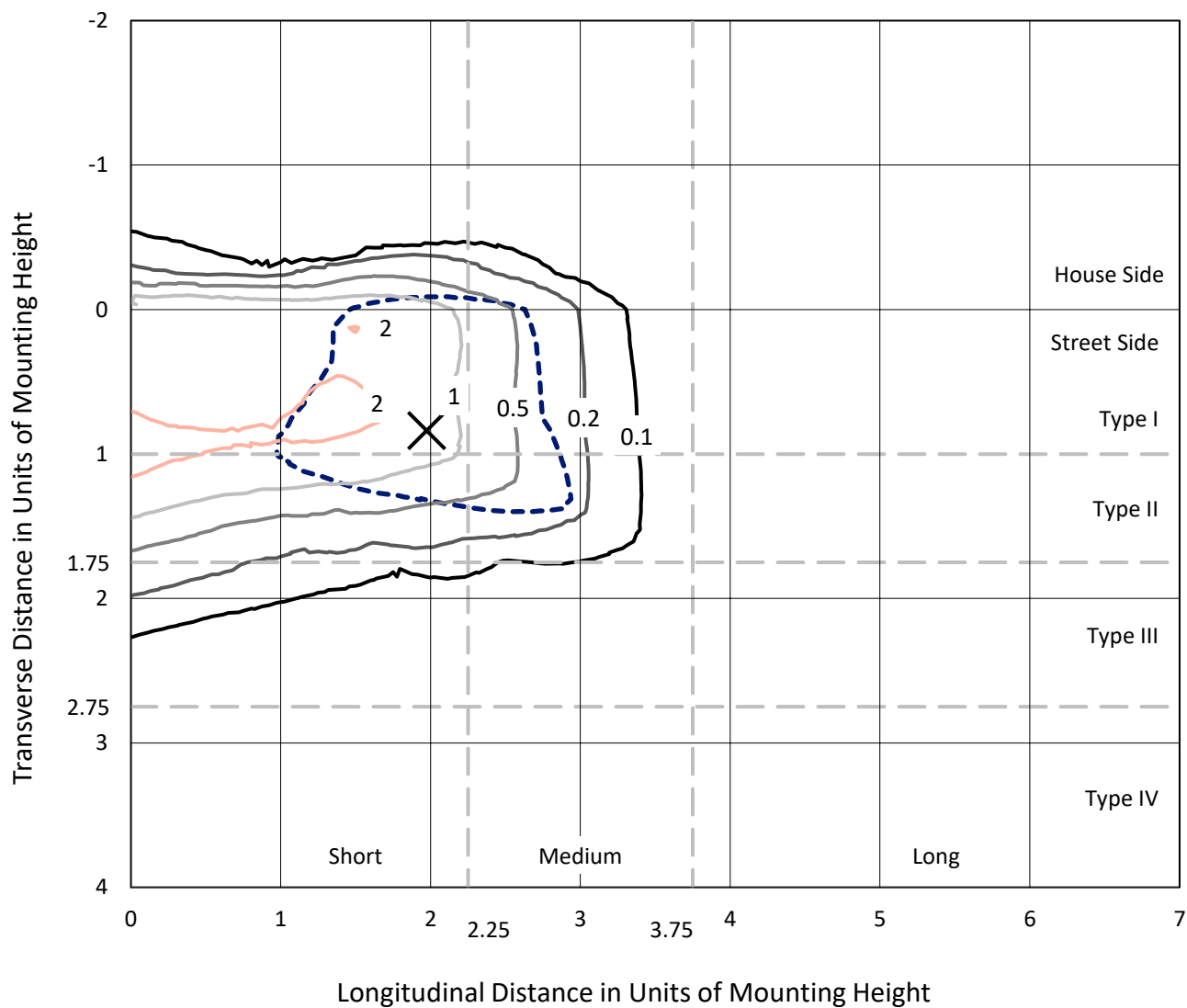
REPORT NUMBER: P596058

CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

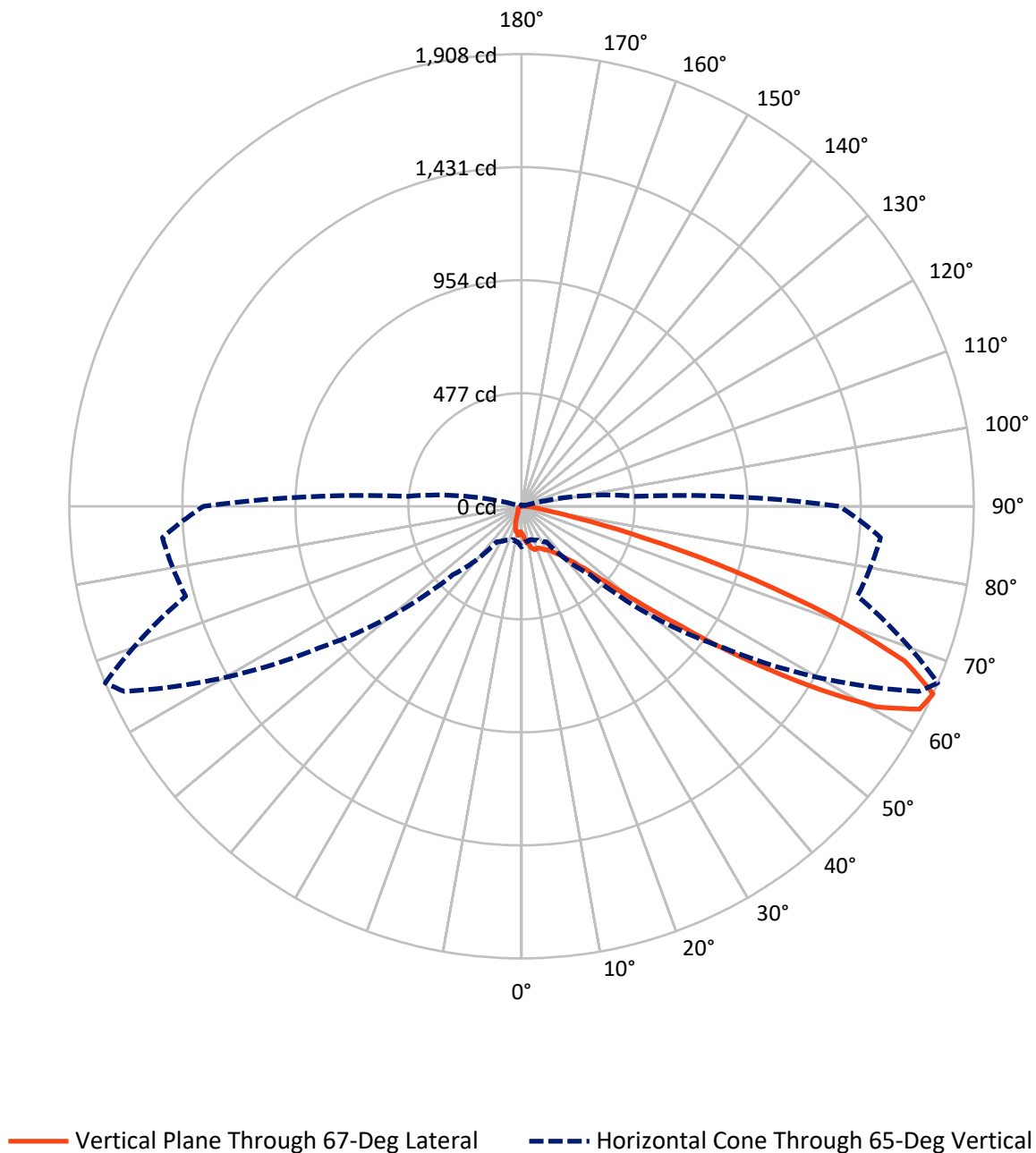


Based on 10 foot mounting height. Maximum calculated value = 2.4 fc  
Type II - Short - Full Cutoff

REPORT NUMBER: P596058

CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

## Luminous Intensity Polar Plot



REPORT NUMBER: P596058

CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

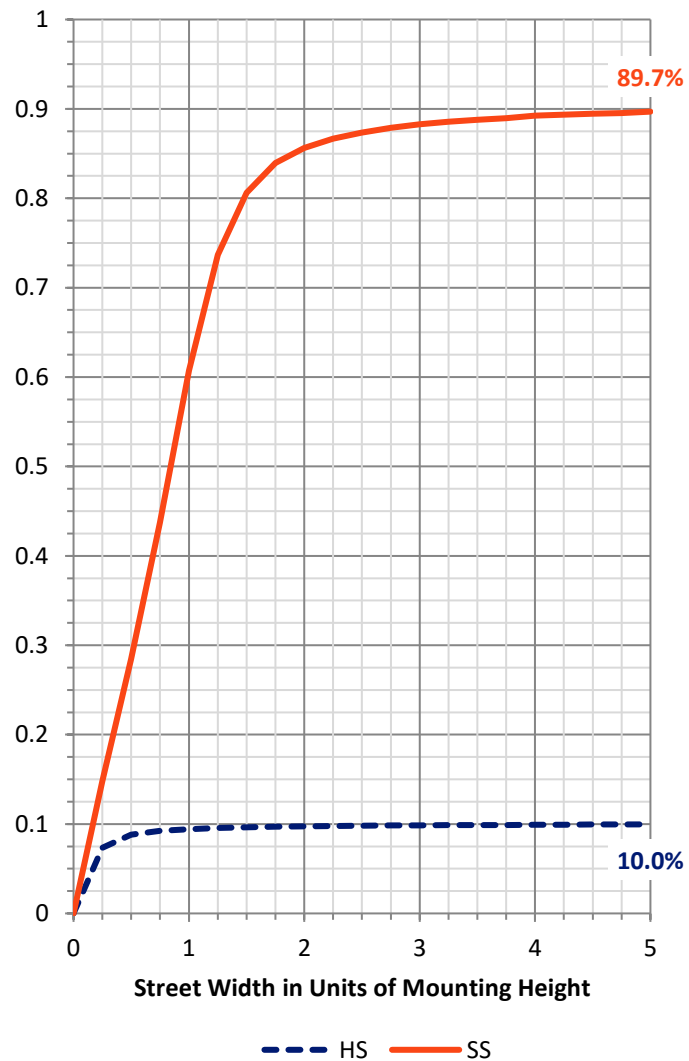
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 138.2    | 0.0    | 138.2  |
|                    | % Fixture | 10.1     | 0.0    | 10.1   |
| <b>Street Side</b> | Lumens    | 1231.8   | 0.0    | 1231.8 |
|                    | % Fixture | 89.9     | 0.0    | 89.9   |
| <b>Total</b>       | Lumens    | 1370.0   | 0.0    | 1370.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 11.3   | 0.8       |
| 10°-20°   | 33.3   | 2.4       |
| 20°-30°   | 57.9   | 4.2       |
| 30°-40°   | 103.5  | 7.6       |
| 40°-50°   | 217.8  | 15.9      |
| 50°-60°   | 395.4  | 28.9      |
| 60°-70°   | 405.5  | 29.6      |
| 70°-80°   | 130.2  | 9.5       |
| 80°-90°   | 15.1   | 1.1       |
| 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°    | 1370.0 | 100.0     |
| 0°-180°   | 1370.0 | 100.0     |

**Coefficient of Utilization**



REPORT NUMBER: P596058

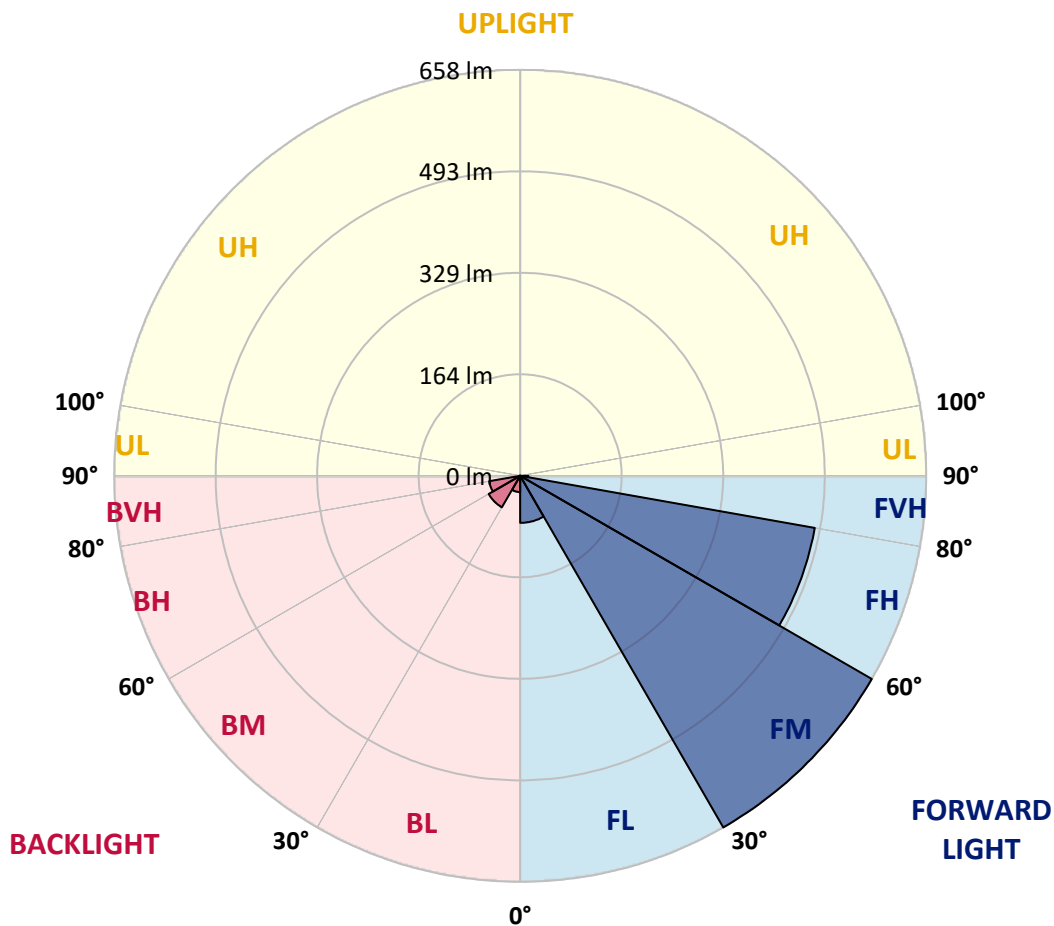
CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

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

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|------|-------------|--------|-----------|-------------------------|------|--------|
|      |             |        |           | B                       | U    | G      |
| FL   | (0°-30°)    | 76.2   | 5.6       |                         |      |        |
| FM   | (30°-60°)   | 657.8  | 48.0      |                         |      |        |
| FH   | (60°-80°)   | 484.6  | 35.4      |                         |      | G0/660 |
| FVH  | (80°-90°)   | 13.2   | 1.0       |                         |      | G1/100 |
| BL   | (0°-30°)    | 26.3   | 1.9       | B0/110                  |      |        |
| BM   | (30°-60°)   | 58.9   | 4.3       | B0/220                  |      |        |
| BH   | (60°-80°)   | 51.0   | 3.7       | B0/110                  |      | G0/110 |
| BVH  | (80°-90°)   | 1.9    | 0.1       |                         |      | G0/10  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |        |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |        |

**BUG Rating: B0-U0-G1**

Type II Short



REPORT NUMBER: P596058

CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 5°    | 15°   | 25°   | 35°   | 45°   | 55°    | 65°    | 67°    | 75°    | 85°    |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| 0°    | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5  | 114.5  | 114.5  | 114.5  | 114.5  |
| 2.5°  | 147.5 | 126.9 | 119.8 | 114.5 | 113.9 | 125.7 | 125.1  | 120.4  | 122.7  | 123.9  | 130.4  |
| 5°    | 158.7 | 138.1 | 141.0 | 126.3 | 114.5 | 112.7 | 118.6  | 139.2  | 140.4  | 157.5  | 159.3  |
| 7.5°  | 158.7 | 145.1 | 146.9 | 131.6 | 115.6 | 115.6 | 131.6  | 158.1  | 156.4  | 175.8  | 178.8  |
| 10°   | 141.0 | 135.7 | 134.5 | 124.5 | 125.1 | 138.1 | 139.2  | 155.8  | 159.3  | 182.9  | 182.9  |
| 12.5° | 127.4 | 127.4 | 135.7 | 132.2 | 140.4 | 152.2 | 158.7  | 175.8  | 178.2  | 195.9  | 196.5  |
| 15°   | 132.8 | 133.3 | 134.5 | 138.1 | 144.6 | 159.3 | 168.2  | 185.9  | 187.6  | 213.0  | 208.9  |
| 17.5° | 146.3 | 148.1 | 145.7 | 148.7 | 152.8 | 162.3 | 172.3  | 187.6  | 192.3  | 228.9  | 234.8  |
| 20°   | 159.9 | 161.1 | 156.4 | 146.9 | 158.7 | 162.8 | 175.2  | 184.1  | 188.2  | 233.6  | 252.5  |
| 22.5° | 181.1 | 176.4 | 162.8 | 155.2 | 156.9 | 161.1 | 172.3  | 184.7  | 191.8  | 231.9  | 273.2  |
| 25°   | 197.1 | 194.1 | 181.7 | 172.3 | 165.2 | 168.2 | 175.8  | 194.7  | 198.2  | 243.7  | 278.5  |
| 27.5° | 220.7 | 216.5 | 191.8 | 192.9 | 178.2 | 167.6 | 181.1  | 204.7  | 207.7  | 239.5  | 288.5  |
| 30°   | 250.2 | 253.7 | 220.7 | 218.9 | 201.2 | 177.0 | 194.7  | 210.0  | 213.0  | 243.7  | 300.3  |
| 32.5° | 303.9 | 300.3 | 267.9 | 243.1 | 226.6 | 208.3 | 197.7  | 215.9  | 223.0  | 261.4  | 321.0  |
| 35°   | 349.3 | 346.9 | 310.9 | 295.6 | 254.3 | 222.4 | 224.2  | 233.1  | 241.3  | 279.7  | 331.6  |
| 37.5° | 437.2 | 419.5 | 374.1 | 346.9 | 313.3 | 267.3 | 257.8  | 258.4  | 257.2  | 297.4  | 363.4  |
| 40°   | 519.8 | 501.5 | 449.6 | 418.9 | 361.7 | 321.6 | 284.4  | 283.8  | 287.9  | 321.6  | 386.5  |
| 42.5° | 623.6 | 598.3 | 541.6 | 523.3 | 449.0 | 363.4 | 321.0  | 321.0  | 321.0  | 357.5  | 427.2  |
| 45°   | 690.3 | 648.4 | 612.4 | 615.4 | 568.8 | 470.8 | 399.4  | 389.4  | 378.2  | 407.1  | 495.0  |
| 47.5° | 734.0 | 689.1 | 653.7 | 666.1 | 678.5 | 643.1 | 506.8  | 496.2  | 475.5  | 499.7  | 572.3  |
| 50°   | 713.3 | 675.6 | 643.7 | 659.6 | 762.9 | 807.7 | 674.4  | 649.6  | 626.6  | 617.2  | 677.3  |
| 52.5° | 657.3 | 604.8 | 560.5 | 607.1 | 778.2 | 914.5 | 925.7  | 841.4  | 833.7  | 778.2  | 833.7  |
| 55°   | 545.8 | 499.1 | 464.9 | 500.3 | 709.8 | 959.9 | 1170.0 | 1188.3 | 1122.2 | 998.9  | 1062.6 |
| 57.5° | 434.2 | 396.5 | 365.2 | 377.6 | 542.8 | 935.8 | 1329.3 | 1532.8 | 1422.5 | 1194.8 | 1303.9 |
| 60°   | 322.7 | 289.7 | 273.2 | 285.6 | 385.3 | 763.5 | 1368.2 | 1783.0 | 1717.5 | 1357.6 | 1461.5 |
| 62.5° | 235.4 | 208.9 | 194.7 | 195.3 | 262.0 | 555.8 | 1292.1 | 1870.3 | 1885.1 | 1465.6 | 1564.1 |
| 65°   | 172.3 | 152.8 | 145.7 | 158.1 | 183.5 | 407.7 | 1040.8 | 1848.5 | 1907.5 | 1466.8 | 1520.5 |
| 67.5° | 129.8 | 116.8 | 109.2 | 132.8 | 161.1 | 220.1 | 775.9  | 1780.7 | 1742.9 | 1323.4 | 1259.7 |
| 70°   | 101.5 | 91.5  | 86.7  | 109.2 | 154.0 | 171.7 | 475.0  | 1459.1 | 1381.2 | 1012.5 | 903.9  |
| 72.5° | 63.1  | 55.5  | 63.7  | 89.1  | 145.7 | 159.9 | 249.0  | 996.5  | 943.4  | 674.4  | 522.7  |
| 75°   | 33.6  | 30.7  | 37.2  | 61.4  | 127.4 | 155.8 | 157.5  | 585.9  | 531.0  | 359.9  | 238.4  |
| 77.5° | 20.1  | 19.5  | 21.2  | 34.8  | 91.5  | 142.8 | 134.5  | 274.9  | 234.8  | 131.0  | 86.7   |
| 80°   | 10.6  | 9.4   | 13.0  | 20.7  | 47.2  | 133.9 | 116.2  | 134.5  | 100.9  | 36.6   | 28.9   |
| 82.5° | 4.1   | 4.1   | 7.1   | 14.2  | 25.4  | 85.0  | 100.9  | 87.3   | 63.7   | 14.8   | 18.9   |
| 85°   | 1.2   | 1.8   | 4.1   | 8.3   | 12.4  | 34.2  | 76.1   | 56.1   | 41.3   | 8.3    | 11.8   |
| 87.5° | 1.2   | 1.2   | 2.4   | 3.0   | 3.5   | 4.1   | 13.0   | 9.4    | 8.9    | 4.1    | 5.3    |
| 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: P596058

CATALOG NUMBER: MSA-SA2A-AMB-U-SL2-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 114.5  | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 | 114.5 |
| 2.5°  | 135.7  | 116.2 | 121.0 | 103.8 | 100.9 | 102.7 | 99.1  | 97.9  | 103.8 | 106.8 | 112.7 |
| 5°    | 168.2  | 147.5 | 138.1 | 117.4 | 97.4  | 82.0  | 83.2  | 92.0  | 96.2  | 98.5  | 104.4 |
| 7.5°  | 184.7  | 165.2 | 151.0 | 116.2 | 85.0  | 69.6  | 69.0  | 70.8  | 72.0  | 72.6  | 74.9  |
| 10°   | 181.7  | 167.0 | 141.6 | 103.8 | 82.6  | 67.3  | 54.9  | 49.6  | 47.2  | 46.0  | 45.4  |
| 12.5° | 190.6  | 169.9 | 141.0 | 99.1  | 70.8  | 52.5  | 38.9  | 31.3  | 26.6  | 25.4  | 26.0  |
| 15°   | 196.5  | 182.3 | 141.0 | 90.3  | 56.1  | 38.4  | 27.1  | 23.6  | 23.0  | 23.6  | 23.6  |
| 17.5° | 215.9  | 200.6 | 132.2 | 76.7  | 43.1  | 27.1  | 23.6  | 23.0  | 23.0  | 23.6  | 23.0  |
| 20°   | 232.5  | 207.1 | 126.9 | 60.2  | 31.9  | 24.2  | 22.4  | 21.2  | 21.2  | 21.8  | 21.2  |
| 22.5° | 251.9  | 210.0 | 112.1 | 46.6  | 24.8  | 21.8  | 20.1  | 18.9  | 18.9  | 19.5  | 20.1  |
| 25°   | 257.8  | 213.0 | 96.2  | 36.6  | 21.8  | 19.5  | 18.3  | 17.1  | 16.5  | 17.1  | 17.1  |
| 27.5° | 265.5  | 207.7 | 78.5  | 28.9  | 20.7  | 17.7  | 16.5  | 15.3  | 14.2  | 14.8  | 14.8  |
| 30°   | 263.7  | 215.9 | 64.9  | 23.6  | 19.5  | 16.5  | 14.8  | 13.6  | 12.4  | 13.0  | 13.0  |
| 32.5° | 279.7  | 204.7 | 54.3  | 22.4  | 18.3  | 15.3  | 13.6  | 12.4  | 11.8  | 12.4  | 12.4  |
| 35°   | 283.8  | 204.7 | 47.8  | 21.2  | 17.7  | 14.2  | 12.4  | 11.2  | 10.6  | 11.2  | 11.2  |
| 37.5° | 302.7  | 201.8 | 40.7  | 20.7  | 16.5  | 13.6  | 11.8  | 10.6  | 10.0  | 10.6  | 10.6  |
| 40°   | 325.1  | 201.2 | 34.2  | 19.5  | 15.3  | 13.0  | 10.6  | 10.0  | 9.4   | 9.4   | 10.0  |
| 42.5° | 359.3  | 214.8 | 30.1  | 18.9  | 14.2  | 11.8  | 10.0  | 9.4   | 8.9   | 8.9   | 8.9   |
| 45°   | 407.7  | 223.6 | 27.1  | 18.3  | 13.6  | 11.2  | 9.4   | 8.9   | 8.3   | 8.3   | 8.3   |
| 47.5° | 460.2  | 230.1 | 26.0  | 17.1  | 13.0  | 10.6  | 8.9   | 8.3   | 7.7   | 7.7   | 7.7   |
| 50°   | 536.9  | 249.6 | 24.8  | 15.9  | 12.4  | 10.6  | 8.9   | 7.7   | 7.1   | 6.5   | 6.5   |
| 52.5° | 673.8  | 286.7 | 23.0  | 14.8  | 11.8  | 10.0  | 8.3   | 7.1   | 6.5   | 6.5   | 6.5   |
| 55°   | 882.1  | 381.7 | 21.8  | 13.6  | 11.2  | 9.4   | 7.7   | 6.5   | 5.9   | 5.9   | 5.9   |
| 57.5° | 1102.1 | 467.3 | 20.1  | 13.0  | 10.0  | 8.3   | 7.1   | 6.5   | 5.9   | 5.3   | 5.3   |
| 60°   | 1279.7 | 528.6 | 18.3  | 11.2  | 9.4   | 7.7   | 6.5   | 5.9   | 5.3   | 5.3   | 4.7   |
| 62.5° | 1383.6 | 534.0 | 16.5  | 10.6  | 8.9   | 7.1   | 5.9   | 5.9   | 5.3   | 4.7   | 4.1   |
| 65°   | 1341.7 | 481.4 | 14.8  | 9.4   | 7.7   | 6.5   | 5.9   | 5.3   | 5.3   | 4.7   | 4.1   |
| 67.5° | 1152.3 | 410.1 | 13.0  | 8.9   | 7.1   | 6.5   | 5.3   | 5.3   | 4.7   | 4.7   | 3.5   |
| 70°   | 830.7  | 305.6 | 11.8  | 8.3   | 7.1   | 5.9   | 5.3   | 5.3   | 4.7   | 4.7   | 3.5   |
| 72.5° | 476.1  | 174.1 | 10.6  | 7.7   | 6.5   | 5.3   | 5.9   | 5.9   | 5.3   | 4.7   | 3.5   |
| 75°   | 226.6  | 63.1  | 9.4   | 7.1   | 5.9   | 5.3   | 5.9   | 5.9   | 5.3   | 4.7   | 3.5   |
| 77.5° | 69.6   | 24.2  | 8.3   | 6.5   | 5.3   | 4.7   | 5.9   | 5.3   | 4.7   | 3.5   | 3.0   |
| 80°   | 24.8   | 10.6  | 6.5   | 5.3   | 4.7   | 3.0   | 4.7   | 4.7   | 4.1   | 3.5   | 2.4   |
| 82.5° | 17.7   | 6.5   | 5.3   | 4.7   | 3.5   | 1.8   | 4.1   | 4.1   | 4.1   | 3.5   | 2.4   |
| 85°   | 10.6   | 4.1   | 4.1   | 4.1   | 3.5   | 1.8   | 3.5   | 3.5   | 3.5   | 3.5   | 2.4   |
| 87.5° | 3.0    | 3.5   | 4.1   | 3.5   | 3.0   | 1.8   | 3.5   | 3.5   | 3.5   | 3.5   | 2.4   |
| 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)