

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: P368408

Luminaire Tested: **MSA-SA4B-760-U-SL2**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368408
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-16)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4B-760-U-SL2
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) 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: 19301 lumens
Efficiency: N/A
Efficacy: 112.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B3 - U0 - G3

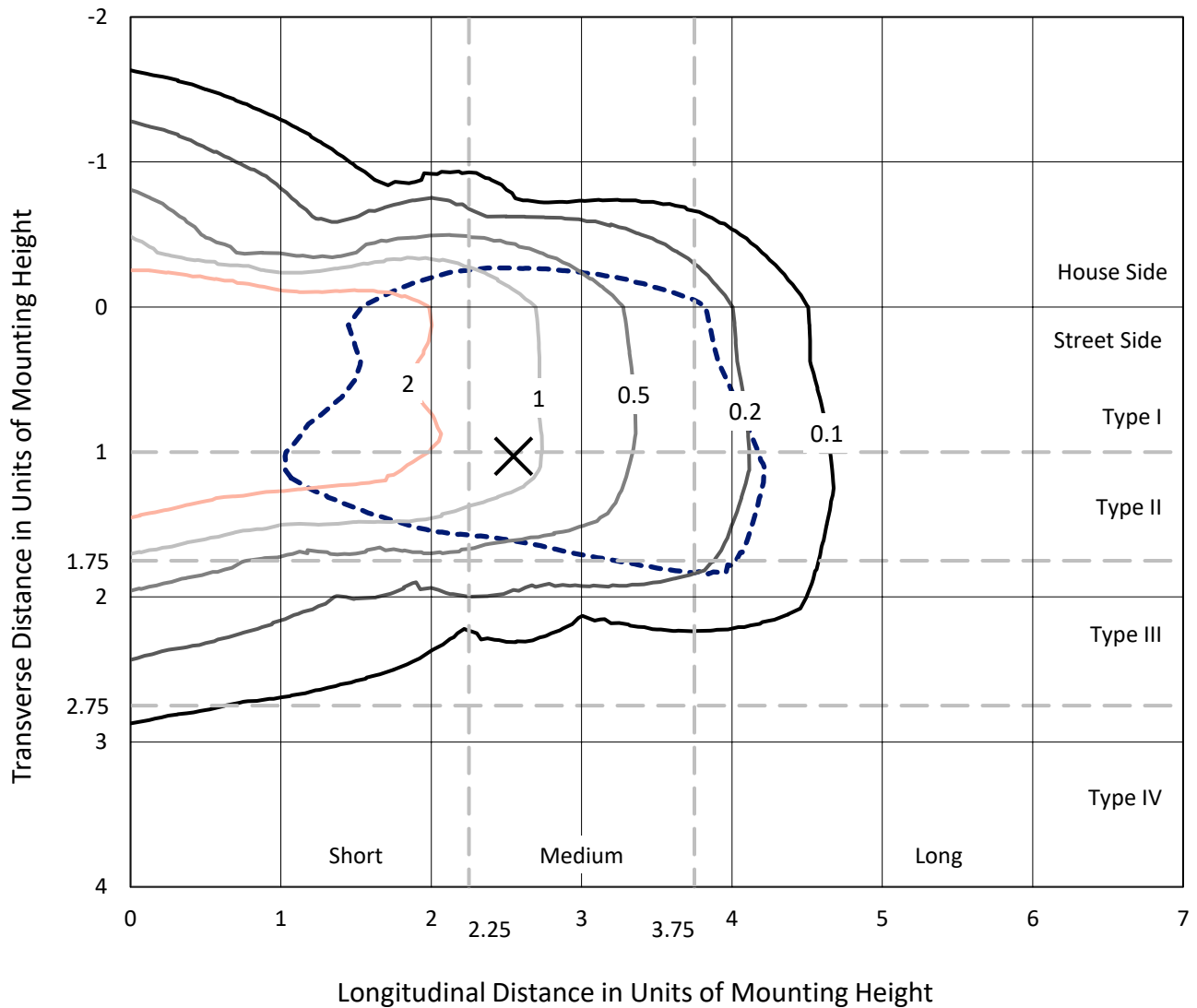
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P368408
 CATALOG NUMBER: MSA-SA4B-760-U-SL2

Iso-Footcandle Lines of Horizontal Illumination

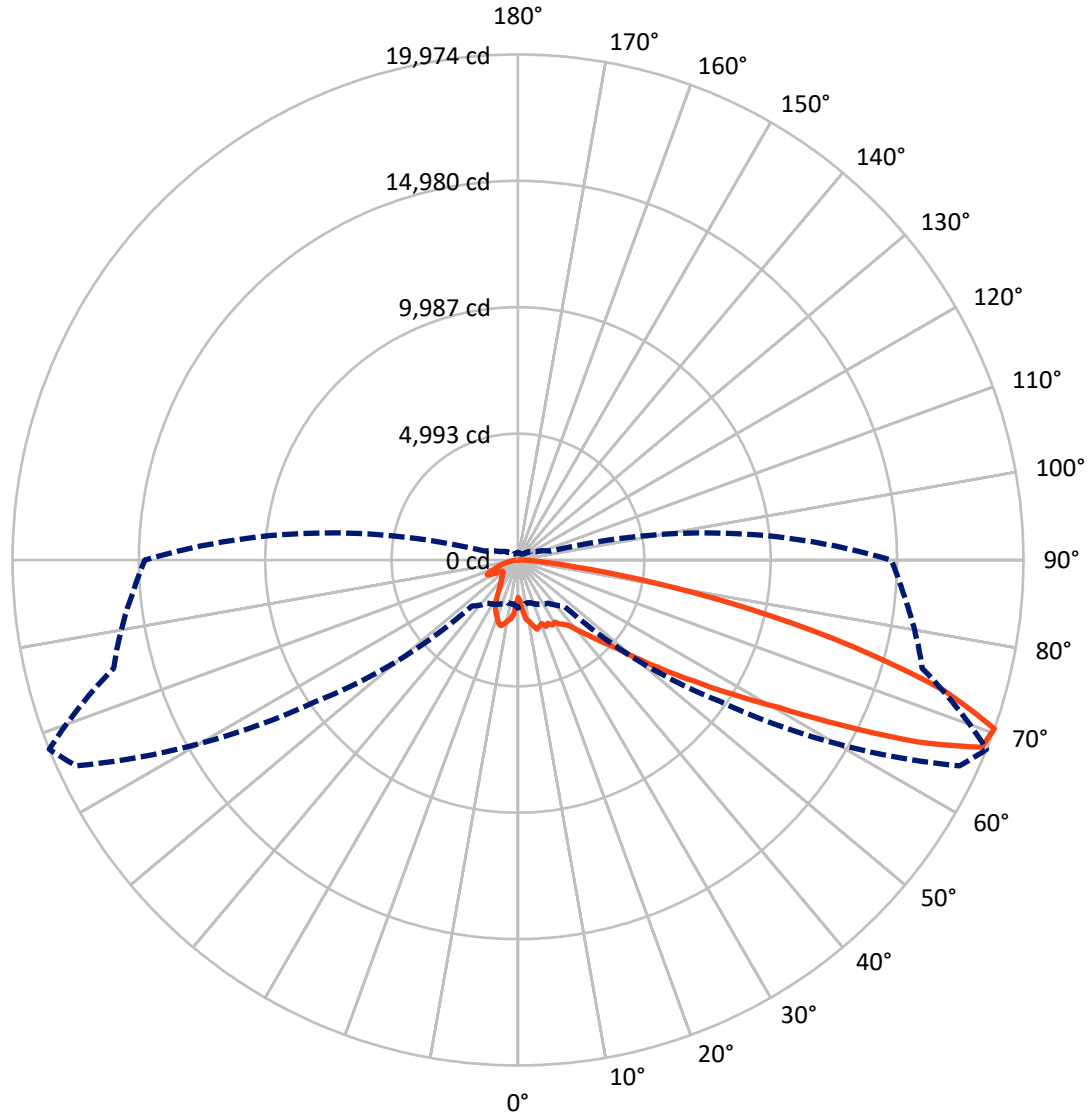
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 fc
 Type III - Medium - N/A

REPORT NUMBER: P368408
CATALOG NUMBER: MSA-SA4B-760-U-SL2

Luminous Intensity Polar Plot



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

REPORT NUMBER: P368408

CATALOG NUMBER: MSA-SA4B-760-U-SL2

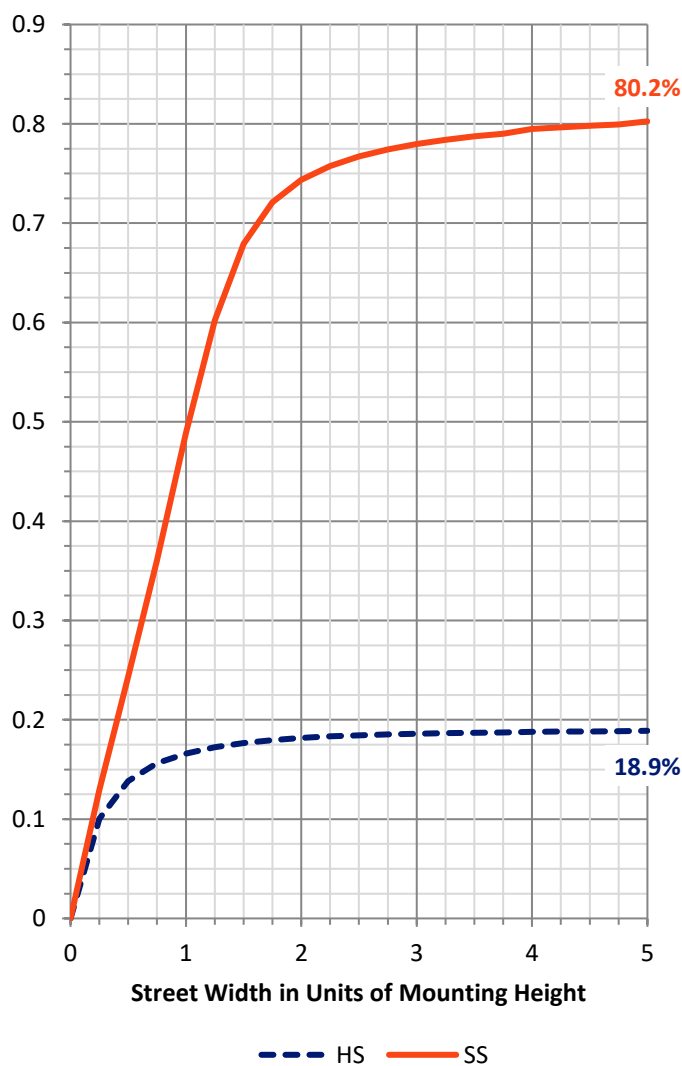
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 3685.0 | 0.0 | 3685.0 |
| | % Fixture | 19.1 | 0.0 | 19.1 |
| Street Side | Lumens | 15616.0 | 0.0 | 15616.0 |
| | % Fixture | 80.9 | 0.0 | 80.9 |
| Total | Lumens | 19301.0 | 0.0 | 19301.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 197.6 | 1.0 |
| 10°-20° | 644.2 | 3.3 |
| 20°-30° | 979.9 | 5.1 |
| 30°-40° | 1496.8 | 7.8 |
| 40°-50° | 2573.6 | 13.3 |
| 50°-60° | 4259.9 | 22.1 |
| 60°-70° | 5251.9 | 27.2 |
| 70°-80° | 3373.7 | 17.5 |
| 80°-90° | 523.3 | 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° | 19301.0 | 100.0 |
| 0°-180° | 19301.0 | 100.0 |

Coefficient of Utilization

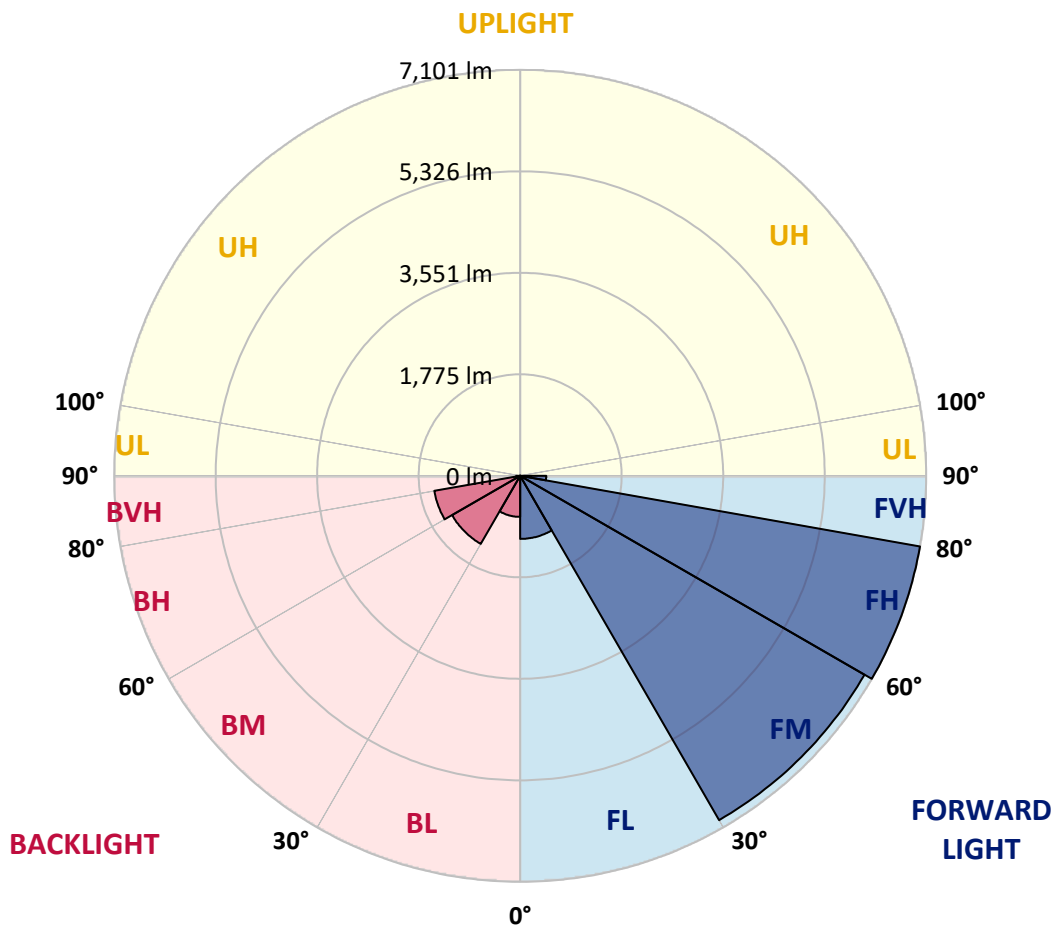


REPORT NUMBER: P368408
 CATALOG NUMBER: MSA-SA4B-760-U-SL2

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1103.7 | 5.7 | | | |
| FM (30°-60°) | 6954.9 | 36.0 | | | |
| FH (60°-80°) | 7101.3 | 36.8 | | | G3/7500 |
| FVH (80°-90°) | 456.1 | 2.4 | | | G3/500 |
| BL (0°-30°) | 718.1 | 3.7 | B2/1000 | | |
| BM (30°-60°) | 1375.5 | 7.1 | B2/2500 | | |
| BH (60°-80°) | 1524.3 | 7.9 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 67.2 | 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





REPORT NUMBER: P368408

CATALOG NUMBER: MSA-SA4B-760-U-SL2

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 |
| 2.5° | 1700.4 | 1631.7 | 1562.3 | 1596.2 | 1650.3 | 1698.0 | 1688.3 | 1693.9 | 1628.5 | 1619.6 | 1791.7 |
| 5° | 2003.3 | 1885.4 | 1883.0 | 1884.6 | 1889.4 | 1834.5 | 1968.6 | 2038.1 | 2053.4 | 2124.5 | 2293.3 |
| 7.5° | 2108.3 | 2060.7 | 2012.2 | 2036.4 | 1975.1 | 1980.7 | 2145.5 | 2326.4 | 2369.3 | 2421.0 | 2652.0 |
| 10° | 2086.5 | 2041.3 | 2055.8 | 2059.9 | 2071.2 | 2162.5 | 2268.3 | 2442.0 | 2478.3 | 2643.1 | 2702.9 |
| 12.5° | 2089.8 | 2081.7 | 2149.5 | 2152.0 | 2273.1 | 2437.1 | 2479.1 | 2639.1 | 2653.6 | 2774.8 | 3024.4 |
| 15° | 2200.4 | 2256.2 | 2218.2 | 2238.4 | 2261.8 | 2458.1 | 2518.7 | 2748.1 | 2835.4 | 2991.3 | 3178.7 |
| 17.5° | 2416.1 | 2432.3 | 2318.4 | 2288.5 | 2365.2 | 2425.0 | 2563.1 | 2662.5 | 2753.8 | 3189.2 | 3447.7 |
| 20° | 2466.2 | 2509.8 | 2374.1 | 2219.8 | 2382.2 | 2465.4 | 2561.5 | 2606.7 | 2677.8 | 3218.2 | 3585.0 |
| 22.5° | 2681.1 | 2590.6 | 2426.6 | 2292.5 | 2345.8 | 2426.6 | 2496.1 | 2666.5 | 2853.1 | 3135.0 | 3722.3 |
| 25° | 2803.0 | 2750.5 | 2604.3 | 2460.5 | 2415.3 | 2417.7 | 2551.8 | 2704.5 | 2769.1 | 3257.0 | 3749.8 |
| 27.5° | 3097.9 | 3013.9 | 2685.1 | 2657.6 | 2487.2 | 2354.7 | 2560.7 | 2798.2 | 2911.3 | 3161.7 | 3883.9 |
| 30° | 3467.0 | 3403.2 | 2971.9 | 2935.5 | 2675.4 | 2444.4 | 2673.8 | 2867.7 | 2851.5 | 3223.9 | 3976.8 |
| 32.5° | 3765.9 | 3872.6 | 3437.2 | 3150.4 | 2965.4 | 2744.1 | 2638.3 | 2855.5 | 3016.3 | 3368.5 | 4134.3 |
| 35° | 4192.4 | 4292.6 | 3799.9 | 3606.0 | 3204.5 | 2883.0 | 2886.2 | 3022.0 | 3121.3 | 3537.3 | 4310.4 |
| 37.5° | 4930.8 | 4842.7 | 4446.1 | 4139.9 | 3883.1 | 3403.2 | 3259.4 | 3211.8 | 3291.8 | 3744.1 | 4655.3 |
| 40° | 5463.1 | 5388.8 | 4921.9 | 4747.4 | 4247.4 | 3968.7 | 3574.5 | 3529.2 | 3670.6 | 3957.4 | 4937.2 |
| 42.5° | 6094.0 | 5961.5 | 5526.9 | 5383.1 | 4860.5 | 4358.0 | 3960.6 | 3986.5 | 4055.1 | 4359.7 | 5318.5 |
| 45° | 6736.2 | 6414.7 | 6168.3 | 6157.0 | 5808.0 | 5114.1 | 4580.2 | 4559.2 | 4561.6 | 4951.8 | 5746.6 |
| 47.5° | 7245.9 | 6956.7 | 6674.8 | 6540.7 | 6364.6 | 6422.0 | 5480.1 | 5233.7 | 5159.4 | 5547.9 | 6388.8 |
| 50° | 7590.8 | 7258.0 | 6938.9 | 6907.4 | 7377.6 | 7687.0 | 6325.0 | 6061.7 | 6107.7 | 6400.9 | 7245.1 |
| 52.5° | 7598.1 | 7203.1 | 6870.3 | 7090.8 | 8198.3 | 8641.0 | 7780.7 | 7044.8 | 7191.8 | 7391.3 | 8362.3 |
| 55° | 7069.8 | 6660.2 | 6443.8 | 6946.2 | 8519.0 | 9772.7 | 9826.0 | 8620.0 | 8450.3 | 8523.8 | 9697.6 |
| 57.5° | 5955.9 | 5542.3 | 5416.2 | 6018.1 | 7910.7 | 10864.0 | 12296.2 | 10502.1 | 10004.5 | 9697.6 | 11066.0 |
| 60° | 4483.2 | 4125.4 | 4047.0 | 4430.7 | 6558.5 | 10543.3 | 14296.3 | 12844.7 | 11830.9 | 11008.6 | 12438.4 |
| 62.5° | 3362.0 | 3105.2 | 2987.2 | 3042.1 | 4538.2 | 9500.4 | 15609.8 | 15804.5 | 14369.0 | 12440.0 | 13779.3 |
| 65° | 2732.0 | 2524.4 | 2419.3 | 2348.3 | 2822.4 | 7346.1 | 15372.3 | 18295.7 | 17333.6 | 13943.3 | 14823.0 |
| 67.5° | 2282.0 | 2097.8 | 2049.4 | 2118.8 | 2231.1 | 4261.9 | 13514.4 | 19689.1 | 19754.6 | 15426.4 | 15432.9 |
| 70° | 1894.3 | 1757.8 | 1740.0 | 1937.1 | 2084.9 | 2572.0 | 9761.4 | 19251.3 | 19973.5 | 16538.7 | 15289.9 |
| 72.5° | 1463.7 | 1390.2 | 1387.8 | 1697.2 | 2071.2 | 2192.3 | 5812.9 | 16630.8 | 17601.0 | 16183.3 | 13890.8 |
| 75° | 1015.4 | 964.5 | 1003.3 | 1395.1 | 2023.5 | 2223.9 | 3317.6 | 12953.8 | 13680.0 | 13771.2 | 11127.3 |
| 77.5° | 698.7 | 655.9 | 697.9 | 1008.9 | 1807.0 | 2277.2 | 2320.8 | 9366.4 | 9447.1 | 9234.7 | 6373.5 |
| 80° | 486.3 | 456.4 | 488.7 | 714.1 | 1406.4 | 2253.7 | 1975.9 | 5896.9 | 5410.6 | 4121.4 | 2040.5 |
| 82.5° | 301.3 | 292.4 | 328.0 | 508.9 | 990.4 | 2050.2 | 1872.5 | 3043.0 | 2323.2 | 1137.4 | 728.6 |
| 85° | 158.3 | 145.4 | 190.6 | 332.0 | 619.6 | 1609.1 | 1754.5 | 1388.6 | 896.6 | 403.9 | 292.4 |
| 87.5° | 46.9 | 42.0 | 73.5 | 134.1 | 262.5 | 721.4 | 1004.1 | 588.9 | 334.4 | 118.7 | 91.3 |
| 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: P368408
 CATALOG NUMBER: MSA-SA4B-760-U-SL2

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 | 1479.9 |
| 2.5° | 1803.8 | 1794.9 | 1675.4 | 1690.7 | 1716.6 | 1723.0 | 1722.2 | 1678.6 | 1632.5 | 1761.0 | 1756.9 |
| 5° | 2297.4 | 2217.4 | 2157.6 | 2144.7 | 2071.2 | 1997.7 | 2023.5 | 2014.6 | 2003.3 | 2061.5 | 2068.8 |
| 7.5° | 2652.8 | 2542.1 | 2472.7 | 2294.1 | 2124.5 | 1977.5 | 2024.3 | 2038.9 | 2009.8 | 2114.8 | 2146.3 |
| 10° | 2746.5 | 2659.3 | 2584.1 | 2354.7 | 2261.0 | 2175.4 | 2048.6 | 1904.0 | 1884.6 | 1824.0 | 1831.3 |
| 12.5° | 2988.0 | 2975.9 | 2719.8 | 2517.9 | 2395.9 | 2225.5 | 1951.6 | 1776.3 | 1626.1 | 1633.4 | 1589.7 |
| 15° | 3178.7 | 3185.1 | 2877.4 | 2594.6 | 2267.5 | 2007.4 | 1685.1 | 1467.0 | 1312.7 | 1282.0 | 1250.5 |
| 17.5° | 3434.7 | 3421.8 | 2890.3 | 2502.5 | 2088.1 | 1706.9 | 1311.9 | 1095.4 | 1069.5 | 1087.3 | 1059.8 |
| 20° | 3546.2 | 3432.3 | 2807.9 | 2273.9 | 1807.8 | 1296.5 | 991.2 | 876.5 | 926.5 | 997.6 | 999.2 |
| 22.5° | 3646.4 | 3451.7 | 2765.1 | 2089.8 | 1434.6 | 942.7 | 795.7 | 774.7 | 833.6 | 929.8 | 937.8 |
| 25° | 3642.3 | 3541.4 | 2688.3 | 1904.0 | 1112.3 | 735.9 | 691.5 | 706.8 | 777.1 | 877.3 | 882.9 |
| 27.5° | 3825.7 | 3472.7 | 2488.8 | 1660.0 | 837.7 | 630.1 | 641.4 | 669.7 | 702.8 | 798.1 | 816.7 |
| 30° | 3824.1 | 3600.3 | 2388.6 | 1363.6 | 672.9 | 577.6 | 606.7 | 630.9 | 658.4 | 745.6 | 756.1 |
| 32.5° | 3914.6 | 3517.1 | 2328.1 | 1060.6 | 603.4 | 564.6 | 571.9 | 596.2 | 635.7 | 694.7 | 702.0 |
| 35° | 4023.6 | 3611.6 | 2134.2 | 842.5 | 577.6 | 553.3 | 559.0 | 572.7 | 609.1 | 663.2 | 670.5 |
| 37.5° | 4373.4 | 3629.4 | 2057.4 | 710.0 | 576.0 | 548.5 | 547.7 | 555.0 | 596.2 | 645.4 | 667.2 |
| 40° | 4509.9 | 3791.8 | 1833.7 | 663.2 | 570.3 | 548.5 | 537.2 | 541.2 | 575.1 | 638.2 | 655.1 |
| 42.5° | 4837.1 | 3845.9 | 1668.1 | 647.0 | 570.3 | 538.8 | 521.0 | 527.5 | 567.1 | 622.8 | 649.5 |
| 45° | 5173.9 | 3922.6 | 1471.0 | 643.8 | 569.5 | 538.0 | 504.1 | 518.6 | 550.9 | 597.8 | 626.8 |
| 47.5° | 5653.7 | 4198.9 | 1273.9 | 634.1 | 563.0 | 542.0 | 500.0 | 499.2 | 527.5 | 567.9 | 595.3 |
| 50° | 6436.5 | 4630.3 | 1121.2 | 622.0 | 563.8 | 538.8 | 491.9 | 480.6 | 499.2 | 534.8 | 561.4 |
| 52.5° | 7526.2 | 5365.4 | 1061.4 | 615.5 | 557.4 | 525.9 | 478.2 | 460.4 | 470.9 | 499.2 | 525.1 |
| 55° | 8791.2 | 6358.1 | 1120.4 | 615.5 | 544.5 | 505.7 | 458.8 | 437.8 | 443.5 | 462.9 | 487.9 |
| 57.5° | 10269.5 | 7591.6 | 1405.6 | 606.7 | 528.3 | 481.4 | 435.4 | 411.2 | 412.8 | 429.7 | 452.4 |
| 60° | 11813.2 | 8969.7 | 2044.5 | 599.4 | 517.0 | 454.8 | 407.9 | 382.9 | 380.5 | 396.6 | 416.8 |
| 62.5° | 13359.3 | 10241.2 | 2716.6 | 616.3 | 513.8 | 432.2 | 378.9 | 353.8 | 353.0 | 367.5 | 384.5 |
| 65° | 14588.7 | 11110.4 | 2883.8 | 685.0 | 534.8 | 406.3 | 349.0 | 325.5 | 323.9 | 336.0 | 354.6 |
| 67.5° | 15192.2 | 11236.4 | 2190.7 | 770.6 | 579.2 | 382.1 | 319.9 | 298.1 | 296.5 | 309.4 | 325.5 |
| 70° | 14745.4 | 10375.3 | 1352.2 | 779.5 | 576.8 | 353.8 | 290.0 | 271.4 | 268.2 | 281.9 | 294.0 |
| 72.5° | 13092.7 | 9075.5 | 1027.5 | 689.9 | 499.2 | 313.4 | 260.1 | 244.0 | 239.1 | 251.2 | 262.5 |
| 75° | 10508.6 | 7205.5 | 823.1 | 556.6 | 393.4 | 264.1 | 230.2 | 214.9 | 209.2 | 220.5 | 230.2 |
| 77.5° | 6121.5 | 4053.5 | 601.8 | 434.6 | 297.3 | 215.7 | 196.3 | 182.6 | 176.1 | 188.2 | 195.5 |
| 80° | 1990.4 | 1350.6 | 378.0 | 311.8 | 217.3 | 168.8 | 159.1 | 149.4 | 143.0 | 151.1 | 153.5 |
| 82.5° | 714.9 | 502.4 | 209.2 | 191.4 | 144.6 | 121.2 | 120.4 | 114.7 | 106.6 | 109.9 | 109.9 |
| 85° | 316.7 | 229.4 | 124.4 | 102.6 | 86.4 | 64.6 | 75.9 | 71.9 | 63.8 | 62.2 | 59.8 |
| 87.5° | 88.9 | 75.9 | 45.2 | 34.7 | 28.3 | 10.5 | 24.2 | 21.8 | 17.8 | 16.2 | 11.3 |
| 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)