

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: P368435

Luminaire Tested: **MSA-SA4B-830-U-SLL-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368435  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-25)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4B-830-U-SLL-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11262 lumens  
Efficiency: N/A  
Efficacy: 65.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2

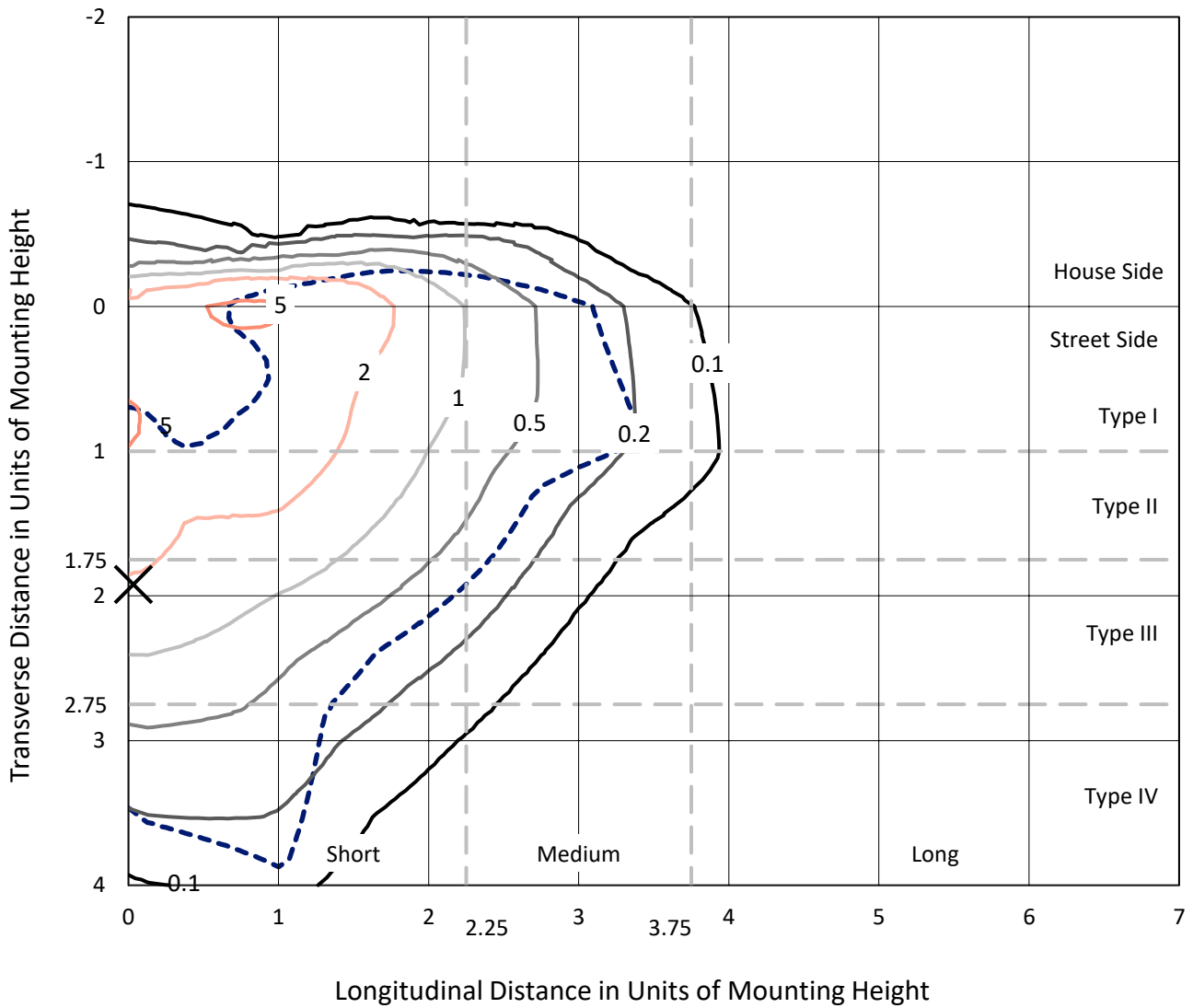
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

### Iso-Footcandle Lines of Horizontal Illumination

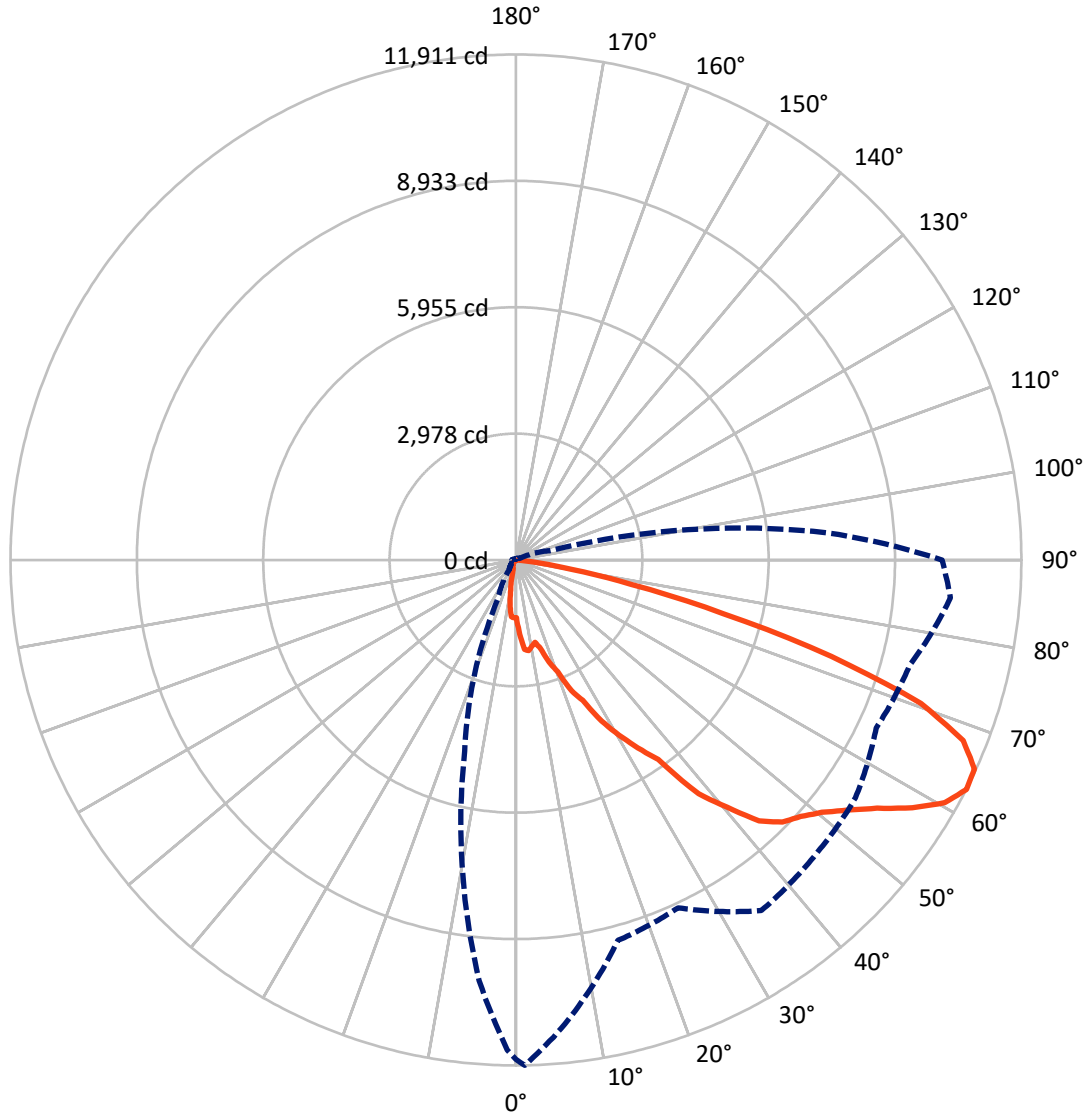
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.8 fc  
 Type IV - Short - N/A

REPORT NUMBER: P368435  
CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

### Luminous Intensity Polar Plot



— Vertical Plane Through 1-Deg Lateral      - - - Horizontal Cone Through 62.5-Deg Vertical

REPORT NUMBER: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

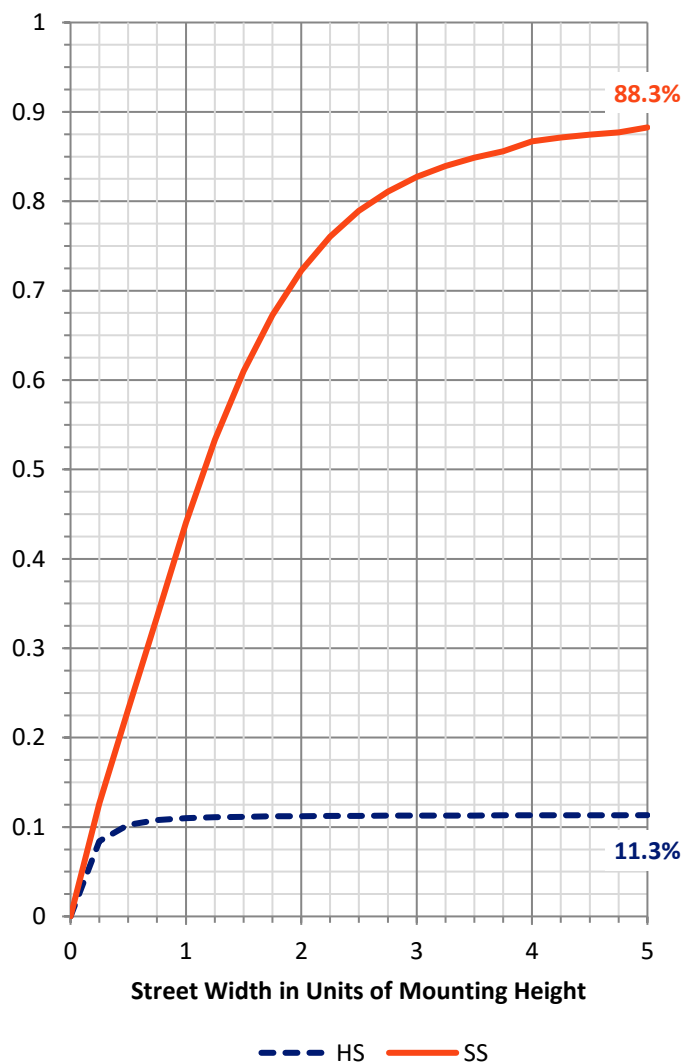
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1287.9	0.0	1287.9
	% Fixture	11.4	0.0	11.4
<b>Street Side</b>	Lumens	9974.1	0.0	9974.1
	% Fixture	88.6	0.0	88.6
<b>Total</b>	Lumens	11262.0	0.0	11262.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.6	1.3
10°-20°	395.9	3.5
20°-30°	640.0	5.7
30°-40°	1072.1	9.5
40°-50°	1753.0	15.6
50°-60°	2594.9	23.0
60°-70°	2979.1	26.5
70°-80°	1473.2	13.1
80°-90°	202.2	1.8
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°	11262.0	100.0
0°-180°	11262.0	100.0

**Coefficient of Utilization**

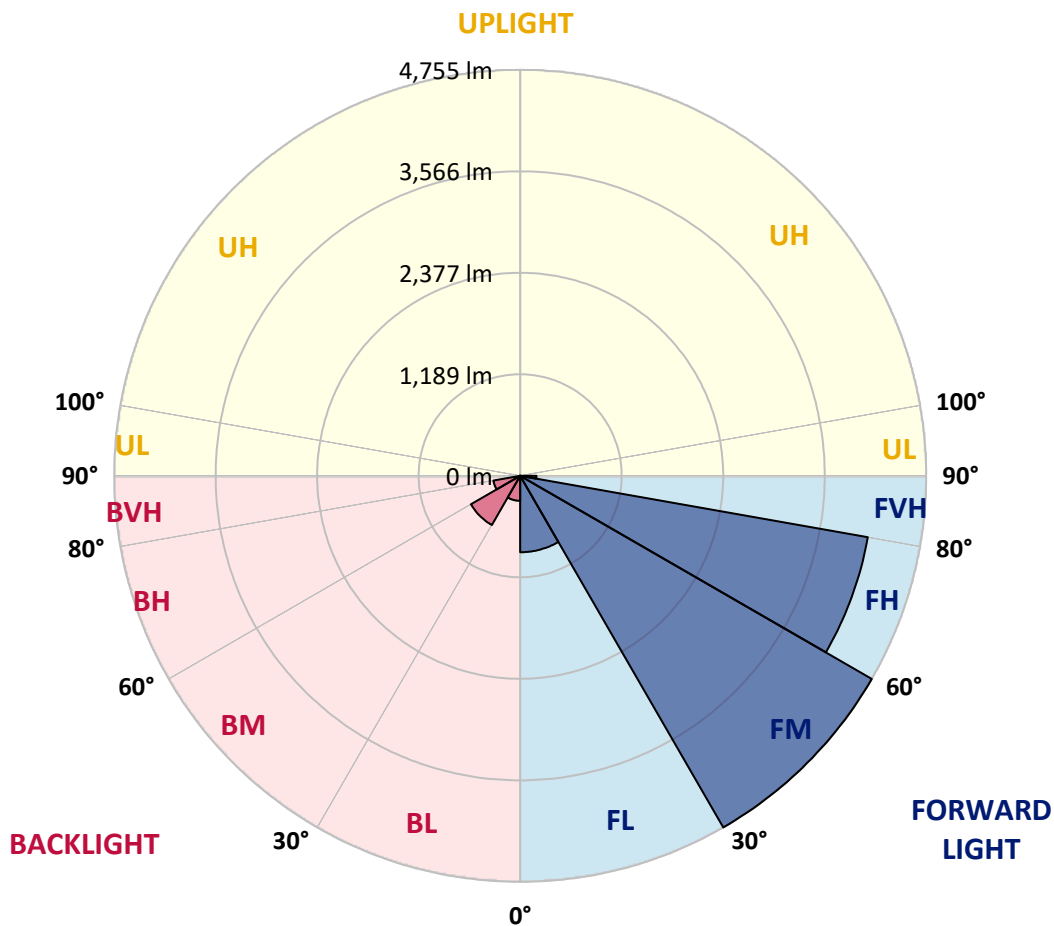


REPORT NUMBER: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	894.5	7.9			
FM (30°-60°)	4754.7	42.2			
FH (60°-80°)	4133.9	36.7			G2/5000
FVH (80°-90°)	191.0	1.7			G2/225
BL (0°-30°)	293.0	2.6	B1/500		
BM (30°-60°)	665.2	5.9	B1/1000		
BH (60°-80°)	318.4	2.8	B1/500		G1/500
BVH (80°-90°)	11.2	0.1			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: P368435

CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7
2.5°	1749.4	1757.8	1718.6	1713.5	1622.4	1736.0	1739.2	1752.7	1669.2	1507.5	1733.4
5°	2093.4	2116.5	2086.4	2220.5	2259.0	2341.8	2189.7	2325.8	2268.0	2284.0	2316.8
7.5°	2134.5	2158.3	2221.8	2446.4	2653.7	2601.7	2585.0	2636.4	2631.9	2513.1	2572.2
10°	2049.2	2069.0	2174.9	2583.7	2674.2	2907.8	2964.9	2846.9	2798.7	2538.8	2425.2
12.5°	1956.1	1989.5	2124.2	2614.5	2886.0	3122.2	3310.2	3142.1	2982.3	2705.7	2601.7
15°	2134.5	2153.1	2364.9	2678.7	2916.2	3079.2	3233.2	3177.4	3153.0	2954.0	2601.7
17.5°	2484.3	2527.9	2681.3	2836.0	3023.3	3121.5	3085.0	3067.6	3005.4	3317.9	2953.4
20°	2733.3	2814.8	3015.6	3082.4	2933.5	3025.3	3002.8	2987.4	2938.6	3520.1	3357.7
22.5°	3272.4	3347.4	3351.3	3375.0	3028.5	2882.2	2844.9	2849.4	3070.8	3580.4	3860.9
25°	3639.4	3665.1	3867.9	3698.5	3287.8	2925.8	2784.0	2847.5	3166.5	4014.2	4333.8
27.5°	4240.1	4301.1	4427.5	3853.8	3443.1	2898.2	2672.3	2903.3	3418.0	4158.0	4859.4
30°	4729.8	4788.2	4991.6	4066.2	3577.8	3034.9	2720.4	3015.6	3574.6	4453.8	5331.8
32.5°	5127.0	5277.9	5508.9	4394.2	3572.7	3192.1	2966.2	2978.4	3767.2	4837.0	5799.0
35°	5634.7	5775.2	5937.6	4620.1	3806.3	3242.8	3038.8	3344.2	4053.4	5237.4	6427.9
37.5°	6778.9	6991.4	6670.5	5189.3	4078.4	3701.1	3325.0	3569.5	4353.1	5646.2	7292.4
40°	7477.2	7656.2	7346.3	5480.0	4549.5	3932.1	3835.8	3961.0	4646.4	5857.4	7943.8
42.5°	8165.2	8401.3	7883.4	5917.7	4996.8	4584.1	4321.0	4421.8	5070.6	6366.9	8676.6
45°	8663.2	8809.5	7999.6	6146.8	5611.6	5327.3	5152.1	5001.9	5662.3	6694.2	9149.6
47.5°	8913.5	9030.3	8228.7	6219.3	5977.4	6113.4	6497.2	6183.4	6186.0	6931.0	9404.4
50°	9260.0	9341.5	8357.0	6306.0	6374.6	7338.6	7532.4	6864.3	6784.1	7168.5	9446.1
52.5°	9747.1	9786.9	8606.1	6534.4	6969.6	8298.0	8368.0	8097.8	7382.8	7610.0	9538.5
55°	10394.6	10324.7	9050.8	7014.5	7590.1	9000.7	9094.4	8858.9	8135.6	8050.9	9824.8
57.5°	11092.9	11012.7	9709.9	7690.9	8263.3	9537.9	9593.7	9612.3	8635.6	8441.1	10311.2
60°	11593.5	11608.2	10539.7	8466.8	8681.8	10051.9	9940.3	9770.9	9140.0	9012.9	10548.0
62.5°	11768.7	11910.5	11185.9	9279.9	9042.5	10084.0	9910.8	9767.6	9365.9	9602.7	10276.6
65°	11625.5	11873.3	11336.1	9994.2	9260.6	9681.6	9501.3	9409.5	9358.8	9843.4	9675.9
67.5°	11056.9	11366.9	10906.1	10000.6	8467.4	8243.5	8456.5	8747.2	8579.1	9643.8	8834.5
70°	9783.0	10122.5	9908.2	9414.0	7053.6	6485.7	6720.5	7160.2	7041.4	8577.2	7596.6
72.5°	7339.9	7776.3	7818.6	8127.3	5599.4	4881.3	4915.3	4903.1	5107.8	6916.3	5928.0
75°	4715.0	5054.5	5513.4	6558.2	4253.6	3563.7	3237.7	3158.1	3540.0	5404.3	4244.0
77.5°	2737.1	2777.6	2989.3	4948.0	3046.5	2567.7	2345.6	2459.2	2592.7	3771.6	2812.9
80°	1309.2	1329.7	1417.0	2545.9	2116.5	2222.4	2051.1	2178.8	1780.3	2167.9	1596.1
82.5°	415.2	419.7	434.5	1250.8	1314.3	1472.2	943.4	1264.9	1100.6	1310.5	1062.8
85°	69.3	118.1	145.7	361.3	741.9	496.7	204.7	451.2	614.2	826.6	482.6
87.5°	0.0	0.0	0.0	6.4	60.3	28.2	4.5	25.7	94.3	184.2	21.8
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: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7
2.5°	1798.9	1843.1	1676.3	1526.8	1564.6	1534.5	1488.9	1411.2	1231.5	1363.7	1354.8
5°	2314.8	2232.7	2006.8	1901.5	1773.2	1577.5	1553.7	1403.5	1337.4	1348.3	1338.7
7.5°	2494.5	2347.6	2148.0	1831.0	1530.0	1247.6	1161.0	1062.8	1042.9	1085.2	1112.8
10°	2353.3	2197.4	2022.8	1628.8	1397.1	1193.0	979.3	842.0	767.5	758.6	766.3
12.5°	2418.2	2250.0	1890.6	1589.0	1347.1	1162.2	923.5	716.2	554.5	566.7	534.6
15°	2463.1	2269.9	1859.2	1505.6	1243.7	996.7	709.1	501.9	369.7	331.2	308.0
17.5°	2726.9	2450.9	1819.4	1409.3	1099.3	775.9	445.4	290.7	247.7	234.2	223.3
20°	3065.7	2673.6	1818.8	1307.9	886.3	485.2	277.9	210.5	200.2	207.9	199.6
22.5°	3459.7	2970.1	1915.7	1181.5	636.0	306.1	216.3	186.8	176.5	182.9	183.5
25°	3856.4	3414.8	1994.6	1061.5	442.8	234.9	192.5	172.0	160.4	166.2	163.0
27.5°	4572.6	3783.2	1976.6	908.1	326.0	206.6	179.1	161.1	143.8	152.7	152.1
30°	5041.1	4433.3	2046.6	693.1	258.6	181.0	166.9	147.0	128.4	138.6	138.0
32.5°	5601.3	4712.5	2122.3	532.0	215.0	171.4	150.2	130.9	120.0	126.4	125.1
35°	6230.9	5264.4	1983.0	442.8	186.8	154.7	132.8	118.1	108.5	111.7	111.7
37.5°	7343.1	5725.8	1899.6	360.7	173.9	139.9	124.5	106.5	100.8	100.8	104.0
40°	7974.6	6430.5	1650.6	285.6	177.8	129.0	116.2	97.5	89.8	89.2	92.4
42.5°	8796.0	6836.7	1494.7	231.0	161.1	125.8	106.5	88.6	79.6	78.9	82.1
45°	9283.1	7063.9	1275.2	181.6	144.4	146.3	98.8	81.5	68.0	65.5	71.2
47.5°	9590.5	7364.9	1150.7	144.4	125.8	145.7	96.3	70.6	57.1	53.9	59.0
50°	9746.5	7513.8	1126.3	123.9	109.1	130.3	110.4	59.0	48.8	44.3	48.8
52.5°	9908.8	7755.7	1135.3	114.2	96.3	104.6	104.6	50.7	43.0	37.9	41.1
55°	10236.8	8113.2	1115.4	108.5	88.6	79.6	67.4	44.9	39.1	33.4	36.6
57.5°	10639.8	8369.9	1115.4	103.3	82.1	68.0	53.9	41.7	35.9	28.9	31.4
60°	10563.4	8099.7	1060.2	98.2	77.0	63.5	48.8	38.5	33.4	26.3	28.2
62.5°	10039.1	7364.9	858.7	90.5	72.5	60.3	44.3	36.6	31.4	23.1	25.0
65°	9423.0	6584.5	596.8	82.1	67.4	54.5	39.8	34.7	28.9	20.5	21.8
67.5°	8681.1	5654.6	331.2	73.8	62.3	47.5	36.6	34.0	27.6	18.6	19.9
70°	7393.8	4269.0	177.8	67.4	58.4	43.6	34.7	34.0	27.6	18.0	18.6
72.5°	5550.6	2688.3	104.0	61.6	53.3	40.4	32.7	34.7	27.0	17.3	17.3
75°	3776.8	1632.0	74.4	52.6	47.5	34.0	31.4	33.4	27.6	17.3	16.0
77.5°	2567.7	1146.8	61.0	47.5	43.0	30.2	32.1	33.4	27.6	14.1	10.9
80°	1603.1	591.7	46.2	37.9	37.2	26.3	32.1	28.9	18.0	3.2	0.0
82.5°	1121.2	220.1	27.0	28.9	28.9	18.6	25.0	20.5	10.3	0.0	0.0
85°	470.4	37.9	14.8	20.5	18.0	10.9	19.9	15.4	6.4	0.0	0.0
87.5°	8.3	0.0	5.8	12.2	12.8	6.4	10.3	6.4	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





REPORT NUMBER: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7
2.5°	1397.1	1336.2	1207.8	1269.4	1263.0	1291.2	1293.8	1228.3	1369.5	1456.8	1469.6
5°	1340.0	1298.9	1291.9	1256.6	1247.6	1299.6	1271.3	1269.4	1337.4	1436.9	1437.6
7.5°	1113.5	1082.0	1096.8	1055.7	949.8	956.2	965.9	1006.3	1064.7	1130.1	1153.9
10°	764.3	845.8	786.2	781.0	770.1	736.1	709.1	730.3	806.1	866.4	888.8
12.5°	545.5	558.3	594.9	581.4	600.0	571.2	560.3	626.4	700.2	761.8	806.1
15°	319.0	340.8	362.6	408.8	427.4	421.6	455.0	510.2	569.9	598.1	652.7
17.5°	224.6	226.5	231.0	281.1	313.8	326.7	346.6	388.3	412.7	425.5	448.0
20°	196.4	190.6	182.9	211.1	241.9	258.0	252.2	284.9	304.8	317.7	333.7
22.5°	177.8	168.1	163.6	173.3	197.0	211.1	213.7	233.0	263.1	272.1	277.2
25°	160.4	154.0	150.8	155.9	168.8	182.3	184.8	209.9	236.8	240.7	250.9
27.5°	148.9	136.7	138.0	141.8	147.6	164.3	169.4	183.5	222.7	227.2	230.4
30°	136.7	123.9	127.7	131.6	129.0	149.5	157.2	173.3	211.1	218.2	222.1
32.5°	124.5	114.9	114.2	118.1	122.6	133.5	150.2	168.8	203.4	213.1	222.7
35°	111.0	103.3	104.6	105.2	111.0	125.1	137.3	147.0	170.7	175.8	179.1
37.5°	101.4	95.0	93.7	100.1	105.9	116.8	121.3	125.8	157.2	168.8	169.4
40°	89.8	86.0	86.0	90.5	103.3	102.0	107.8	121.9	152.1	164.3	165.6
42.5°	81.5	76.4	77.7	82.1	91.1	84.7	96.3	116.8	150.2	162.4	161.7
45°	68.7	67.4	70.0	73.8	77.7	71.9	89.8	111.7	143.8	159.8	155.3
47.5°	57.1	57.1	60.3	64.2	62.3	64.2	81.5	104.6	139.9	154.7	151.5
50°	46.8	47.5	50.7	57.1	51.3	56.5	73.2	97.5	133.5	149.5	147.0
52.5°	39.8	40.4	42.4	46.8	44.3	51.3	67.4	90.5	127.1	140.5	139.3
55°	34.7	35.9	35.9	38.5	39.8	48.1	61.0	83.4	117.4	132.2	129.6
57.5°	30.8	32.1	31.4	33.4	34.7	42.4	54.5	75.7	107.8	120.0	116.2
60°	27.6	28.9	28.2	30.8	30.2	36.6	47.5	67.4	97.5	107.2	104.0
62.5°	24.4	25.7	25.7	27.0	27.6	30.8	41.1	59.7	87.3	95.0	92.4
65°	21.8	23.1	23.7	23.1	24.4	26.3	34.7	53.9	75.7	83.4	79.6
67.5°	19.9	21.2	22.5	19.9	21.2	21.8	29.5	48.1	66.7	73.2	70.0
70°	19.3	19.9	19.9	17.3	16.7	17.3	25.7	41.1	58.4	64.8	60.3
72.5°	18.0	18.6	18.0	14.1	12.2	13.5	21.8	34.7	49.4	54.5	50.7
75°	16.7	17.3	16.7	11.6	7.7	9.6	18.0	30.2	42.4	44.9	43.0
77.5°	14.1	15.4	15.4	8.3	2.6	5.8	13.5	24.4	35.3	35.3	35.9
80°	1.3	3.9	6.4	4.5	0.0	0.6	4.5	12.8	22.5	21.8	23.7
82.5°	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	7.7	5.8	6.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	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



REPORT NUMBER: P368435  
 CATALOG NUMBER: MSA-SA4B-830-U-SLL-HSS

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7	1356.7
2.5°	1439.5	1419.6	1444.6	1521.0	1490.2	1496.0	1475.4	1601.8	1745.0	1749.4
5°	1438.8	1420.9	1458.1	1454.9	1542.8	1638.4	1730.8	1880.4	2092.1	2093.4
7.5°	1143.0	1249.5	1277.1	1268.8	1381.7	1513.3	1655.8	1942.0	2115.9	2134.5
10°	1030.7	1076.9	1133.4	1153.9	1200.7	1325.9	1487.0	1811.1	2006.2	2049.2
12.5°	893.3	1040.9	1116.0	1261.7	1288.7	1306.6	1560.8	1842.5	1961.2	1956.1
15°	740.0	868.3	987.0	1164.8	1238.0	1426.6	1626.9	1995.9	2066.5	2134.5
17.5°	523.7	620.6	802.8	989.6	1212.9	1418.3	1809.1	2269.9	2403.4	2484.3
20°	350.4	397.3	562.2	809.3	1092.3	1296.4	1883.6	2517.6	2663.3	2733.3
22.5°	284.3	306.8	392.1	593.0	933.1	1290.6	1913.7	2787.8	3179.3	3272.4
25°	250.3	265.7	311.3	439.0	774.6	1264.9	2080.6	3092.0	3564.4	3639.4
27.5°	218.8	241.9	276.0	362.0	664.2	1246.9	2165.3	3602.9	4166.3	4240.1
30°	209.2	237.5	270.2	329.9	587.2	1177.6	2300.1	4063.6	4598.2	4729.8
32.5°	225.9	235.5	251.6	302.3	527.5	1104.5	2536.9	4614.3	4955.7	5127.0
35°	179.1	196.4	224.6	277.2	502.5	1100.6	2671.0	4968.5	5528.8	5634.7
37.5°	175.2	191.2	227.8	270.2	532.7	1130.1	2870.0	5694.4	6562.0	6778.9
40°	170.1	190.6	225.3	267.0	532.7	1159.0	2997.0	6275.2	7257.1	7477.2
42.5°	168.1	194.5	224.6	280.5	516.0	1175.1	3188.9	6854.7	7991.2	8165.2
45°	166.9	198.3	226.5	296.5	512.1	1227.7	3297.4	7136.4	8463.6	8663.2
47.5°	163.6	198.3	252.9	286.9	490.9	1222.6	3437.9	7554.2	8745.3	8913.5
50°	161.1	199.6	286.2	268.9	494.2	1191.1	3628.5	7946.3	9140.0	9260.0
52.5°	155.3	204.1	281.1	243.9	484.5	1187.9	3912.8	8504.0	9659.2	9747.1
55°	142.5	198.3	254.1	213.1	450.5	1151.3	4289.5	9229.2	10379.2	10394.6
57.5°	130.9	184.2	212.4	195.7	377.4	1155.8	4614.3	9896.6	11021.0	11092.9
60°	119.4	191.2	164.9	182.3	312.5	1073.7	4771.5	10152.1	11488.2	11593.5
62.5°	108.5	176.5	140.5	167.5	278.5	997.3	4662.4	9946.7	11547.9	11768.7
65°	96.3	122.6	118.7	150.2	281.7	890.1	4297.9	9345.4	11321.4	11625.5
67.5°	82.8	96.3	104.6	129.6	301.6	798.4	3672.8	8380.2	10712.3	11056.9
70°	72.5	86.6	91.1	113.6	313.8	738.0	2898.2	7040.8	9464.7	9783.0
72.5°	60.3	80.2	81.5	99.5	302.3	678.3	2065.2	5054.5	7187.1	7339.9
75°	52.0	66.7	73.8	83.4	254.1	506.4	1137.8	3128.6	4544.3	4715.0
77.5°	46.8	50.7	55.8	57.8	107.8	263.8	391.5	1929.1	2544.6	2737.1
80°	35.9	39.8	38.5	39.8	59.0	91.1	148.9	904.2	1202.0	1309.2
82.5°	11.6	19.3	21.2	18.0	38.5	44.9	43.0	312.5	390.8	415.2
85°	2.6	7.1	3.2	0.0	12.8	23.1	3.2	47.5	93.7	69.3
87.5°	0.0	0.0	0.0	0.0	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

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