

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: P368568

Luminaire Tested: **MSA-SA4C-830-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368568  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-24)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4C-830-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16379 lumens  
Efficiency: N/A  
Efficacy: 72.8 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

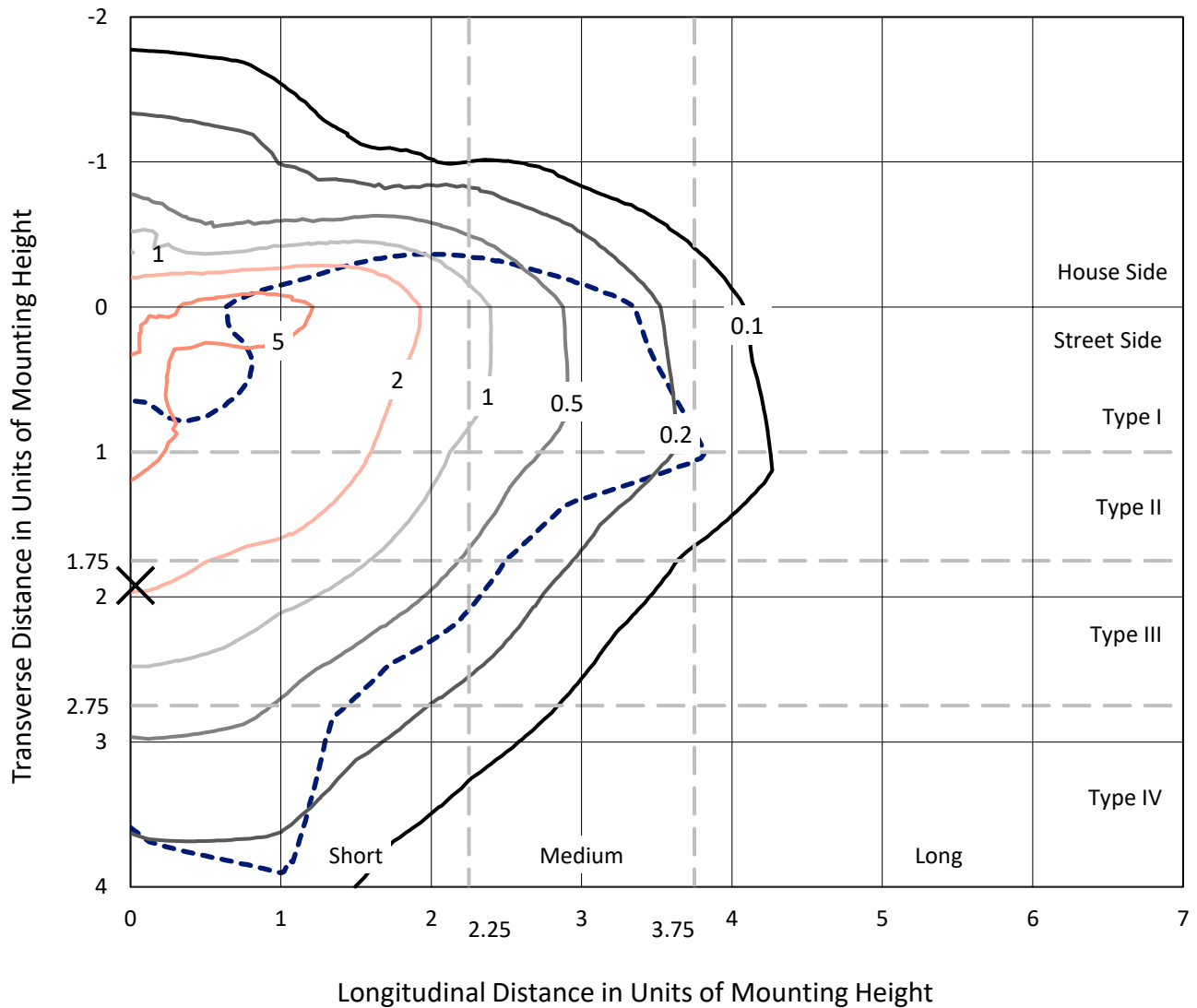
Input Watts (W): 225  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P368568  
 CATALOG NUMBER: MSA-SA4C-830-U-SLL

### Iso-Footcandle Lines of Horizontal Illumination

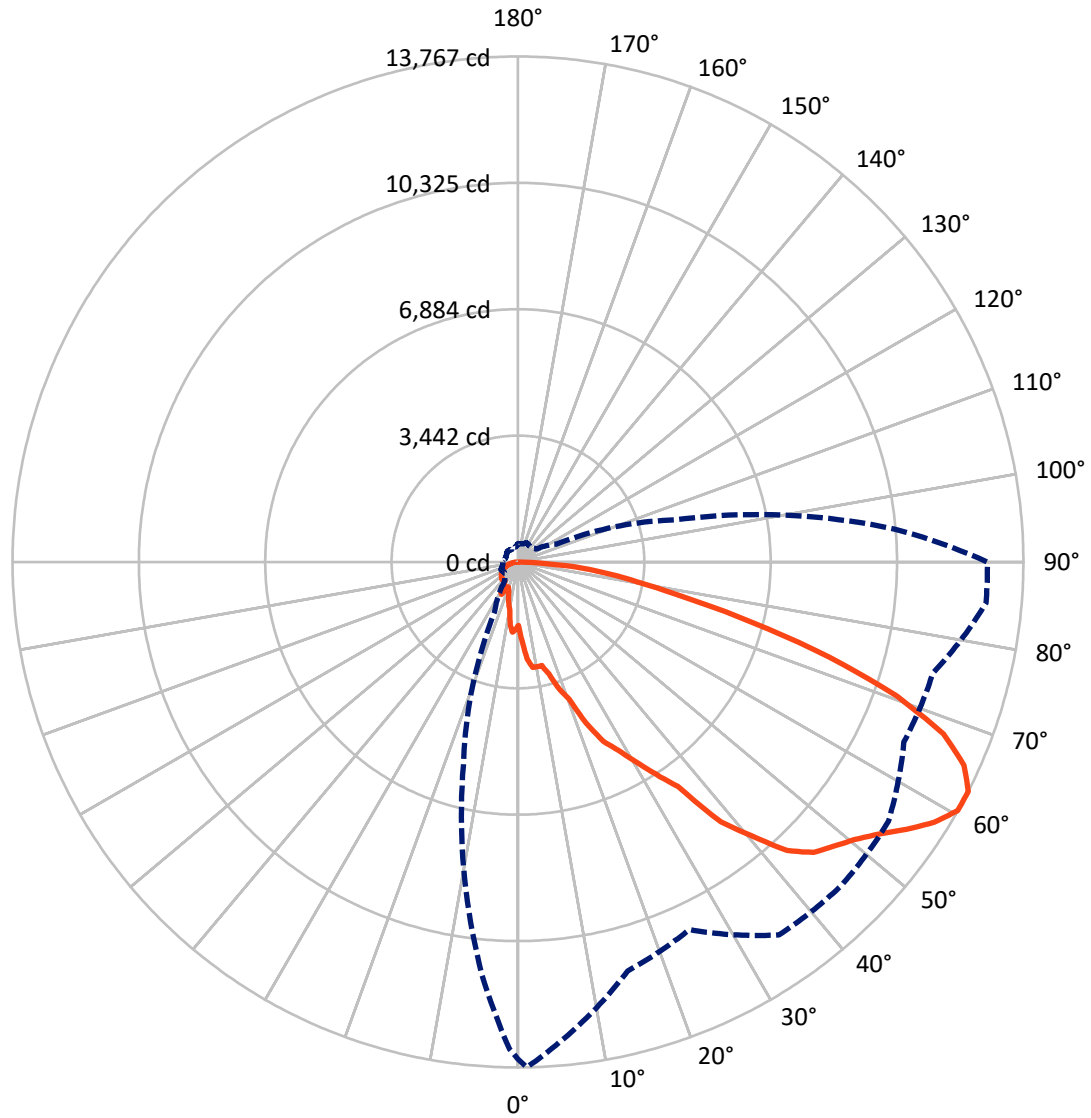
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7 fc  
 Type IV - Short - N/A

REPORT NUMBER: P368568  
CATALOG NUMBER: MSA-SA4C-830-U-SLL

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P368568

CATALOG NUMBER: MSA-SA4C-830-U-SLL

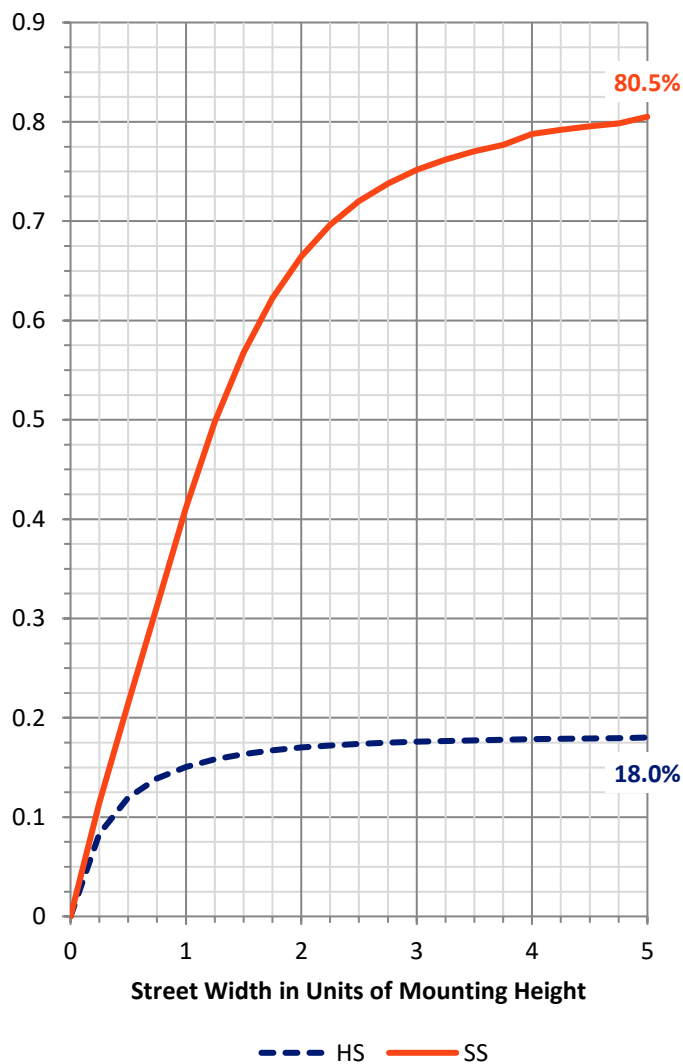
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2982.5	0.0	2982.5
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	13396.5	0.0	13396.5
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	16379.0	0.0	16379.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.0	1.2
10°-20°	575.3	3.5
20°-30°	1015.8	6.2
30°-40°	1582.2	9.7
40°-50°	2605.2	15.9
50°-60°	3718.3	22.7
60°-70°	3942.9	24.1
70°-80°	2177.9	13.3
80°-90°	563.3	3.4
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°	16379.0	100.0
0°-180°	16379.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P368568

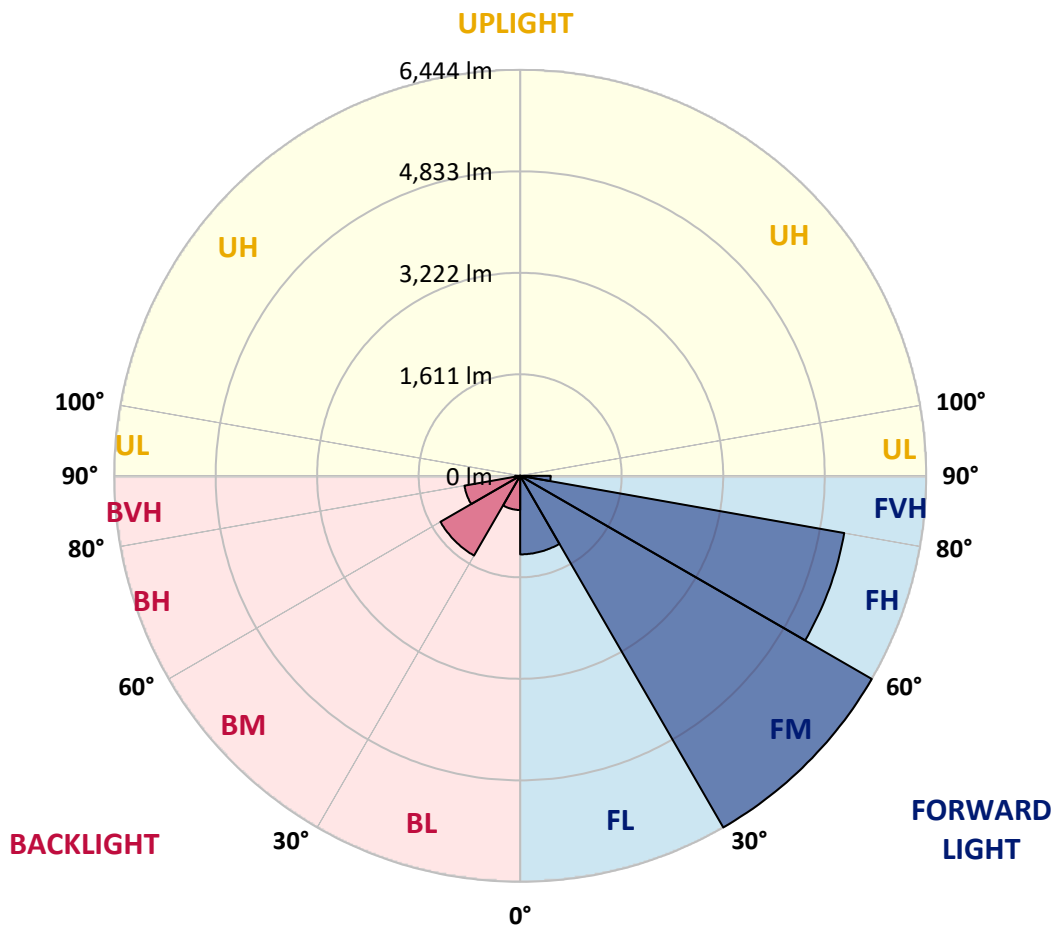
CATALOG NUMBER: MSA-SA4C-830-U-SLL

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1246.7	7.6			
FM (30°-60°)	6443.7	39.3			
FH (60°-80°)	5222.3	31.9			G3/7500
FVH (80°-90°)	483.9	3.0			G3/500
BL (0°-30°)	542.4	3.3	B2/1000		
BM (30°-60°)	1462.1	8.9	B2/2500		
BH (60°-80°)	898.6	5.5	B2/1000		G2/1000
BVH (80°-90°)	79.4	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





REPORT NUMBER: P368568

CATALOG NUMBER: MSA-SA4C-830-U-SLL

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1
2.5°	2123.8	2142.0	2104.7	2062.6	1888.5	2056.2	2006.1	2099.1	2068.9	1867.0	2236.6
5°	2624.5	2657.9	2621.3	2747.7	2755.6	2788.2	2487.0	2674.6	2609.4	2592.7	2779.5
7.5°	2866.1	2900.3	2993.3	3218.2	3393.9	3234.9	3059.3	3020.3	2969.5	2836.7	2949.6
10°	2881.2	2900.3	3025.1	3502.0	3587.0	3699.9	3586.2	3318.4	3207.9	2919.4	2833.5
12.5°	2835.9	2895.5	3056.9	3637.9	3890.7	4013.9	4041.7	3743.6	3472.6	3143.5	3099.8
15°	3140.3	3161.8	3393.1	3734.9	3908.9	4013.1	4103.7	3920.1	3835.0	3574.3	3223.8
17.5°	3576.7	3636.3	3825.5	3951.9	4069.5	4089.4	4014.6	3943.1	3808.0	4156.1	3783.4
20°	3872.4	3987.6	4219.7	4243.6	3996.4	4040.1	4029.7	4034.5	3957.4	4601.2	4396.2
22.5°	4654.5	4779.3	4811.1	4672.8	4207.0	4007.5	4047.2	4162.5	4466.1	5017.7	5249.8
25°	5362.7	5411.2	5701.3	5345.2	4602.8	4168.0	4102.9	4400.9	4896.1	5718.7	5884.1
27.5°	5732.3	5795.1	5988.2	5213.2	4652.1	3961.4	3808.8	4262.6	4767.3	5388.9	6114.6
30°	6205.2	6305.3	6568.4	5345.2	4800.7	4096.5	3758.7	4192.7	4750.7	5605.1	6602.6
32.5°	6692.4	6887.1	7082.7	5810.2	4780.1	4303.2	4079.0	4114.0	4901.7	6058.1	7108.1
35°	7337.8	7509.5	7678.0	6078.8	5196.5	4475.6	4253.1	4623.5	5289.5	6583.5	7813.1
37.5°	8717.6	8989.4	8545.1	6843.4	5649.6	5253.0	4851.6	5071.0	5699.7	7021.5	8964.8
40°	9596.7	9801.0	9371.8	7364.0	6447.6	5776.8	5710.8	5729.1	6264.8	7396.6	9739.8
42.5°	10470.2	10746.8	10064.0	8078.6	7412.5	6858.5	6518.3	6495.3	6897.5	8070.6	10621.2
45°	11121.9	11284.9	10301.7	8681.1	8447.4	8036.4	7781.3	7376.7	7728.9	8537.2	11166.5
47.5°	11431.9	11564.7	10684.0	9031.6	9118.2	9139.7	9599.9	8910.0	8455.3	8852.7	11452.6
50°	11819.0	11881.8	10908.9	9340.0	9755.7	10698.3	10808.8	9639.6	9162.7	9196.9	11621.9
52.5°	12281.6	12307.8	11237.2	9696.0	10400.3	11723.6	11552.7	10876.3	9835.9	9825.6	11940.6
55°	12863.4	12847.5	11648.9	10175.3	10860.5	12333.3	12203.7	11710.9	10569.5	10346.2	12436.6
57.5°	13380.8	13371.3	12195.0	10616.4	11247.5	12646.4	12684.6	12554.2	11068.7	10719.0	12973.9
60°	13634.4	13756.0	12816.5	11098.9	11272.2	12787.9	12802.2	12594.8	11626.7	11197.5	13117.0
62.5°	13535.8	13767.1	13121.7	11532.9	11045.6	12401.6	12461.2	12318.2	11601.2	11699.8	12797.4
65°	13087.5	13354.6	12857.0	11764.2	10906.6	11754.6	11769.7	11408.1	11238.0	12032.8	12048.7
67.5°	12246.6	12497.0	12014.5	11395.4	9954.4	10010.8	10347.8	10377.2	10129.2	11781.7	10997.2
70°	10774.6	10951.1	10649.0	10484.5	8320.2	7989.6	8355.2	8511.8	8624.6	10874.8	9735.0
72.5°	8530.0	8871.0	8918.7	9026.0	6698.8	6148.0	6419.0	6186.9	6922.1	9255.7	7953.8
75°	6310.9	6598.6	6907.8	7506.3	5280.0	4602.8	4569.4	4451.0	5137.7	7443.5	5899.2
77.5°	4459.7	4643.4	4881.0	5996.1	3984.4	3544.9	3565.6	3445.6	3710.2	5625.8	4075.1
80°	3196.8	3292.9	3403.4	3950.3	2939.3	3058.5	3061.7	2948.0	2758.8	3820.7	2719.9
82.5°	2278.0	2352.7	2479.1	2605.4	2191.3	2506.9	2504.5	2497.3	2187.4	2582.4	1701.7
85°	1268.5	1368.7	1588.1	2041.1	1582.5	1792.3	1576.1	1735.9	1605.5	1719.2	861.6
87.5°	89.0	79.5	355.3	1182.7	738.4	539.7	283.0	560.3	718.5	898.1	120.0
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: P368568

CATALOG NUMBER: MSA-SA4C-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1
2.5°	2312.9	2340.8	2231.9	2068.1	2112.6	2064.2	2003.0	1907.6	1711.3	1832.9	1833.7
5°	2777.9	2672.2	2587.1	2506.9	2371.8	2167.5	2140.5	1976.7	1884.5	1933.0	1925.9
7.5°	2923.4	2773.1	2645.2	2358.2	2107.9	1790.7	1695.4	1598.4	1557.9	1675.5	1722.4
10°	2763.6	2607.0	2481.4	2132.5	1962.4	1764.5	1502.2	1367.9	1288.4	1319.4	1337.7
12.5°	2892.4	2732.6	2337.6	2142.8	1862.3	1741.5	1511.8	1314.6	1197.0	1225.6	1191.4
15°	3016.4	2801.0	2405.9	2018.1	1790.7	1615.9	1429.9	1226.4	1088.1	1038.8	1012.6
17.5°	3469.4	3111.7	2398.0	1948.1	1687.4	1486.3	1262.2	1039.6	947.4	896.6	852.8
20°	4021.8	3523.4	2440.9	1875.8	1577.7	1324.2	1080.2	873.5	809.1	775.7	763.8
22.5°	4679.1	4051.2	2686.5	1865.4	1474.4	1205.7	980.0	851.3	778.9	742.4	727.3
25°	5201.3	4597.3	2867.7	1935.4	1468.8	1108.0	919.6	945.8	912.5	923.6	835.4
27.5°	5708.4	4745.9	2766.0	1904.4	1321.0	934.7	905.3	960.1	988.8	997.5	994.3
30°	6136.8	5373.8	2788.2	1729.5	1115.9	761.4	693.1	720.1	798.8	923.6	947.4
32.5°	6763.9	5674.2	2978.2	1623.8	997.5	681.2	604.9	594.5	612.8	658.1	697.1
35°	7497.6	6365.7	3031.5	1596.0	915.6	645.4	592.1	568.3	577.8	612.0	620.0
37.5°	8865.4	6869.6	3228.6	1561.8	885.4	623.9	582.6	573.9	594.5	622.3	638.2
40°	9619.7	7775.7	3238.1	1532.4	846.5	615.2	589.0	585.0	597.7	635.9	645.4
42.5°	10625.2	8292.4	3387.5	1498.2	833.0	627.1	601.7	600.1	611.2	633.5	651.0
45°	11238.0	8638.1	3395.5	1478.4	829.8	679.6	618.4	612.8	610.4	623.9	639.8
47.5°	11633.0	9136.5	3492.4	1456.1	848.9	693.1	638.2	614.4	606.4	612.0	623.9
50°	12007.4	9534.7	3676.1	1452.9	868.7	679.6	673.2	613.6	597.7	595.3	604.1
52.5°	12466.8	10189.6	3902.6	1483.1	864.0	659.7	699.4	610.4	581.8	576.2	585.0
55°	13135.2	10891.5	4143.4	1457.7	814.7	621.6	674.0	608.0	565.1	554.8	562.7
57.5°	13568.4	11293.6	4412.9	1436.2	740.0	592.9	651.0	609.6	566.7	543.7	548.4
60°	13424.6	11077.4	4518.6	1305.1	669.2	570.7	596.1	596.9	552.4	530.9	534.9
62.5°	12788.7	10294.5	4420.0	1152.5	616.8	538.9	539.7	573.1	511.1	496.0	502.3
65°	11900.1	9320.9	4021.0	1053.1	592.1	505.5	492.8	503.1	455.4	444.3	457.0
67.5°	10809.6	8120.7	3427.3	948.2	583.4	460.2	445.1	441.1	410.9	398.2	410.9
70°	9441.7	6799.7	2739.8	874.3	550.0	410.9	399.0	395.0	369.6	360.1	371.2
72.5°	7589.0	5309.4	2114.2	817.9	513.5	365.6	355.3	350.5	329.1	315.5	329.1
75°	5397.6	4057.6	1570.6	731.2	461.8	319.5	307.6	301.2	281.4	268.6	280.6
77.5°	3835.8	3045.8	1096.9	604.9	380.7	270.2	263.1	252.8	235.3	220.2	232.1
80°	2835.9	2176.2	707.4	466.6	290.9	216.2	212.2	205.1	188.4	170.1	178.8
82.5°	1867.0	1569.0	405.4	316.3	211.4	155.8	159.0	154.2	138.3	119.2	124.0
85°	836.2	929.1	215.4	174.1	137.5	93.8	102.5	99.4	87.4	69.1	70.7
87.5°	80.3	156.6	66.0	63.6	50.9	29.4	36.6	31.0	26.2	16.7	12.7
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: P368568  
 CATALOG NUMBER: MSA-SA4C-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1
2.5°	1861.5	1749.4	1637.3	1705.7	1707.3	1725.6	1727.9	1660.4	1714.4	1755.8	1798.7
5°	1890.9	1817.8	1821.7	1755.8	1720.0	1766.1	1756.6	1738.3	1770.9	1816.2	1871.0
7.5°	1677.9	1630.2	1622.2	1558.6	1404.5	1370.3	1398.9	1410.8	1454.5	1524.5	1583.3
10°	1309.9	1404.5	1297.9	1273.3	1232.8	1153.3	1107.2	1101.6	1194.6	1251.1	1300.3
12.5°	1180.3	1156.5	1143.7	1076.2	1076.2	991.9	964.9	989.6	1132.6	1173.2	1236.7
15°	1005.5	988.0	929.1	895.8	879.9	845.7	874.3	898.1	1031.7	1034.9	1101.6
17.5°	834.6	824.2	768.6	762.2	746.3	731.2	757.5	814.7	887.0	874.3	905.3
20°	746.3	710.6	659.7	678.0	661.3	649.4	638.2	719.3	770.2	786.9	805.2
22.5°	724.1	658.9	628.7	612.0	612.8	593.7	596.1	663.7	740.8	751.1	740.0
25°	827.4	711.4	613.6	565.1	546.8	540.5	558.8	618.4	711.4	733.6	742.4
27.5°	968.1	772.6	631.9	549.2	512.7	515.8	542.1	583.4	693.1	732.8	743.2
30°	929.1	726.5	632.7	537.3	492.0	508.7	518.2	558.0	678.8	738.4	790.1
32.5°	716.9	653.3	636.7	546.8	528.6	502.3	515.8	554.0	636.7	674.0	676.4
35°	607.2	558.8	547.6	525.4	499.9	488.8	503.9	537.3	591.3	614.4	611.2
37.5°	602.5	549.2	505.5	496.0	485.6	482.5	491.2	522.2	577.0	617.6	608.8
40°	610.4	544.5	499.9	483.3	487.2	472.9	481.7	519.8	579.4	617.6	609.6
42.5°	600.9	538.9	492.8	480.1	484.0	464.2	474.5	514.3	573.1	618.4	603.3
45°	581.8	526.2	488.8	467.4	485.6	456.2	468.9	499.9	554.0	603.3	585.8
47.5°	562.7	511.1	472.1	458.6	476.9	448.3	453.8	480.9	534.9	583.4	568.3
50°	542.1	492.0	458.6	454.6	467.4	446.7	437.9	460.2	511.9	560.3	547.6
52.5°	519.8	476.1	449.1	447.5	459.4	436.4	423.6	441.1	487.2	535.7	525.4
55°	498.4	458.6	437.2	441.1	454.6	427.6	411.7	422.8	461.0	508.7	494.4
57.5°	476.9	438.7	421.3	432.4	442.7	416.5	396.6	403.0	434.0	480.9	464.2
60°	457.8	421.3	403.8	417.3	426.8	399.8	376.7	380.7	408.5	450.7	435.6
62.5°	433.2	402.2	379.1	396.6	403.8	377.5	352.9	357.7	379.9	419.7	408.5
65°	398.2	378.3	356.9	368.8	378.3	351.3	328.3	333.8	350.5	387.9	379.9
67.5°	368.0	348.9	334.6	344.2	345.7	325.1	304.4	307.6	321.1	356.1	347.3
70°	334.6	316.3	305.2	312.4	311.6	294.1	278.2	279.0	290.1	321.9	310.0
72.5°	298.1	280.6	275.0	279.0	275.8	259.9	244.8	250.4	257.5	281.4	271.8
75°	259.1	243.2	240.0	244.0	239.2	224.1	210.6	216.2	222.6	242.4	230.5
77.5°	218.6	204.3	205.1	205.9	199.5	189.2	175.7	181.2	185.2	198.7	186.8
80°	174.1	162.9	166.1	166.1	159.0	151.8	139.1	140.7	143.1	147.8	139.1
82.5°	127.2	127.2	127.2	128.0	112.9	115.2	104.1	103.3	100.9	100.1	94.6
85°	75.5	78.7	80.3	82.7	61.2	71.5	62.0	59.6	54.8	50.1	48.5
87.5°	16.7	21.5	21.5	20.7	0.0	7.9	4.0	6.4	1.6	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: P368568  
 CATALOG NUMBER: MSA-SA4C-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1	1727.1
2.5°	1749.4	1701.7	1790.7	1870.2	1857.5	1903.6	1796.3	1955.3	2123.8	2123.8
5°	1856.7	1816.2	1839.2	1885.3	1920.3	2080.8	2214.4	2347.1	2621.3	2624.5
7.5°	1565.8	1653.2	1673.9	1660.4	1810.6	2017.3	2237.4	2615.8	2847.8	2866.1
10°	1464.1	1503.8	1566.6	1601.6	1662.8	1866.2	2139.7	2588.7	2835.1	2881.2
12.5°	1326.6	1473.6	1569.0	1764.5	1813.0	1853.5	2288.3	2677.0	2847.1	2835.9
15°	1176.3	1287.6	1425.1	1641.3	1764.5	2074.5	2376.5	2959.9	3056.1	3140.3
17.5°	937.9	1019.8	1202.6	1449.0	1754.2	2039.5	2594.3	3309.6	3489.3	3576.7
20°	771.8	772.6	955.4	1282.0	1614.3	1893.3	2677.0	3599.8	3827.9	3872.4
22.5°	729.6	693.1	789.3	1054.7	1460.1	1979.9	2843.9	4066.3	4542.4	4654.5
25°	706.6	662.1	722.5	930.7	1349.6	2025.2	3180.1	4707.7	5319.0	5362.7
27.5°	716.1	736.8	755.9	829.8	1209.7	1940.2	3102.2	4994.7	5649.6	5732.3
30°	780.5	813.9	770.2	795.6	1094.5	1817.0	3241.3	5460.4	6066.1	6205.2
32.5°	649.4	636.7	632.7	688.3	979.2	1705.7	3533.0	6116.2	6517.5	6692.4
35°	585.8	565.9	573.9	637.4	922.8	1689.8	3696.7	6659.0	7230.5	7337.8
37.5°	583.4	560.3	570.7	618.4	942.7	1718.4	3959.0	7530.1	8487.9	8717.6
40°	577.8	565.1	570.7	606.4	922.0	1734.3	4110.0	8262.2	9363.8	9596.7
42.5°	577.0	570.7	576.2	616.0	900.5	1741.5	4319.1	8923.5	10286.6	10470.2
45°	574.7	581.0	581.0	623.9	891.0	1789.1	4442.3	9247.8	10895.4	11121.9
47.5°	563.5	582.6	613.6	621.6	852.0	1766.9	4616.3	9739.8	11218.9	11431.9
50°	549.2	580.2	654.9	605.7	845.7	1712.8	4819.8	10130.0	11633.8	11819.0
52.5°	530.1	576.2	645.4	574.7	834.6	1703.3	5105.1	10637.1	12117.9	12281.6
55°	503.1	561.9	616.0	543.7	807.5	1673.1	5541.5	11265.8	12751.3	12863.4
57.5°	478.5	540.5	573.1	526.2	743.2	1679.5	5845.1	11778.5	13283.1	13380.8
60°	456.2	538.1	511.9	507.9	677.2	1594.4	5943.7	11772.9	13481.0	13634.4
62.5°	432.4	507.9	468.9	483.3	619.2	1507.0	5734.6	11268.2	13267.2	13535.8
65°	401.4	435.6	433.2	465.8	620.8	1364.7	5255.4	10378.0	12733.8	13087.5
67.5°	364.8	385.5	399.0	437.2	640.6	1254.2	4484.4	9307.4	11826.2	12246.6
70°	327.5	348.1	363.2	399.8	658.9	1203.4	3569.5	7803.6	10347.8	10774.6
72.5°	289.3	310.8	322.7	354.5	634.3	1094.5	2642.0	6071.6	8305.9	8530.0
75°	249.6	270.2	279.8	309.2	550.8	905.3	1824.1	4598.8	6083.6	6310.9
77.5°	209.0	231.3	234.5	258.3	420.5	692.3	1169.2	3527.4	4307.9	4459.7
80°	166.9	189.2	189.2	201.9	295.7	476.1	700.2	2661.1	3137.2	3196.8
82.5°	120.0	143.9	142.3	143.1	204.3	294.9	405.4	1994.2	2266.8	2278.0
85°	70.7	87.4	86.6	79.5	120.8	159.0	219.4	1238.3	1265.4	1268.5
87.5°	13.5	20.7	18.3	7.9	33.4	46.9	63.6	229.7	91.4	89.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)