

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: P366852

Luminaire Tested: **MSA-SA1B-830-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366852  
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-SA1B-830-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

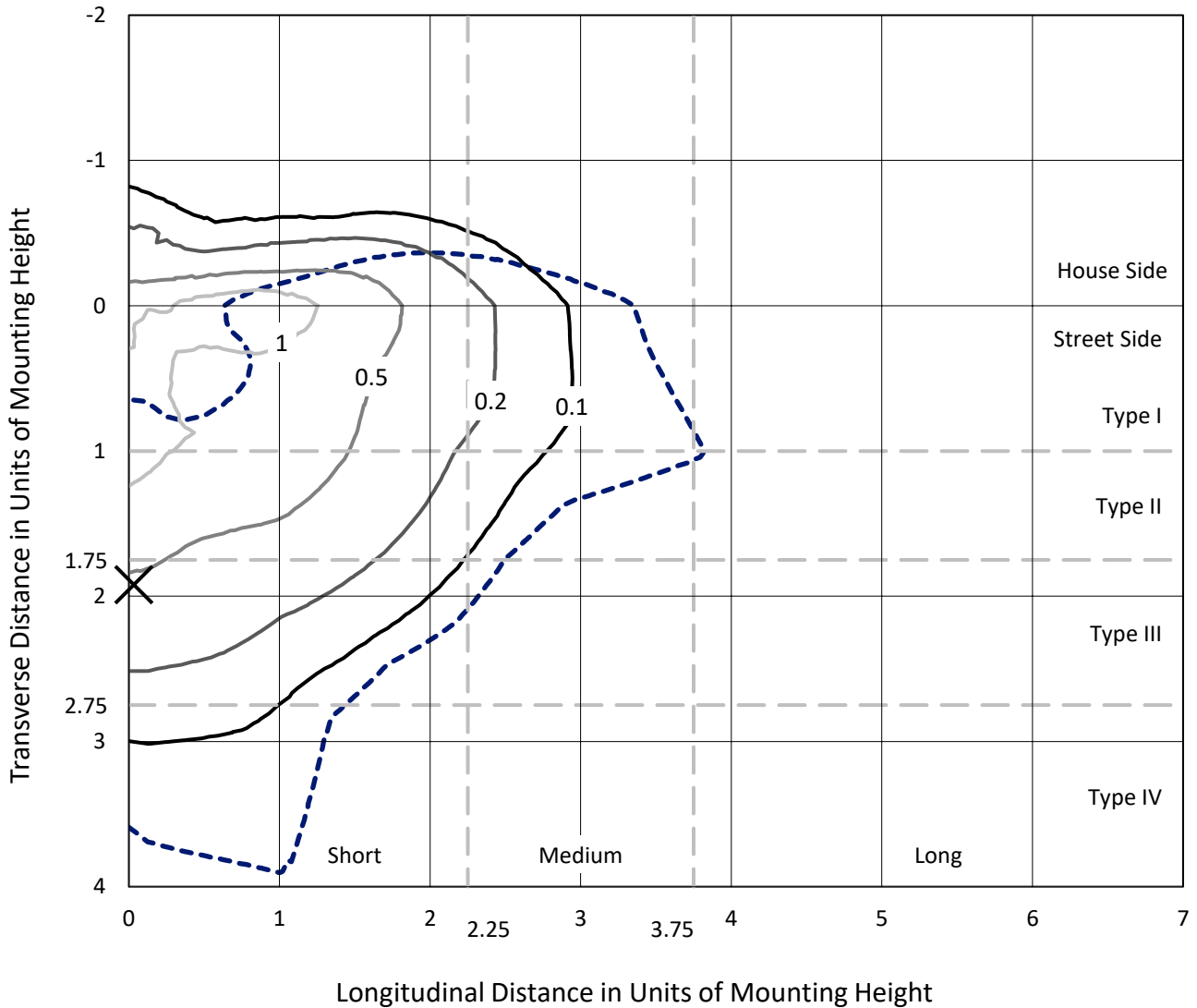
Lumens per Lamp: N/A  
Luminaire Lumens: 3447 lumens  
Efficiency: N/A  
Efficacy: 78.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
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: P366852  
 CATALOG NUMBER: MSA-SA1B-830-U-SLL

### Iso-Footcandle Lines of Horizontal Illumination

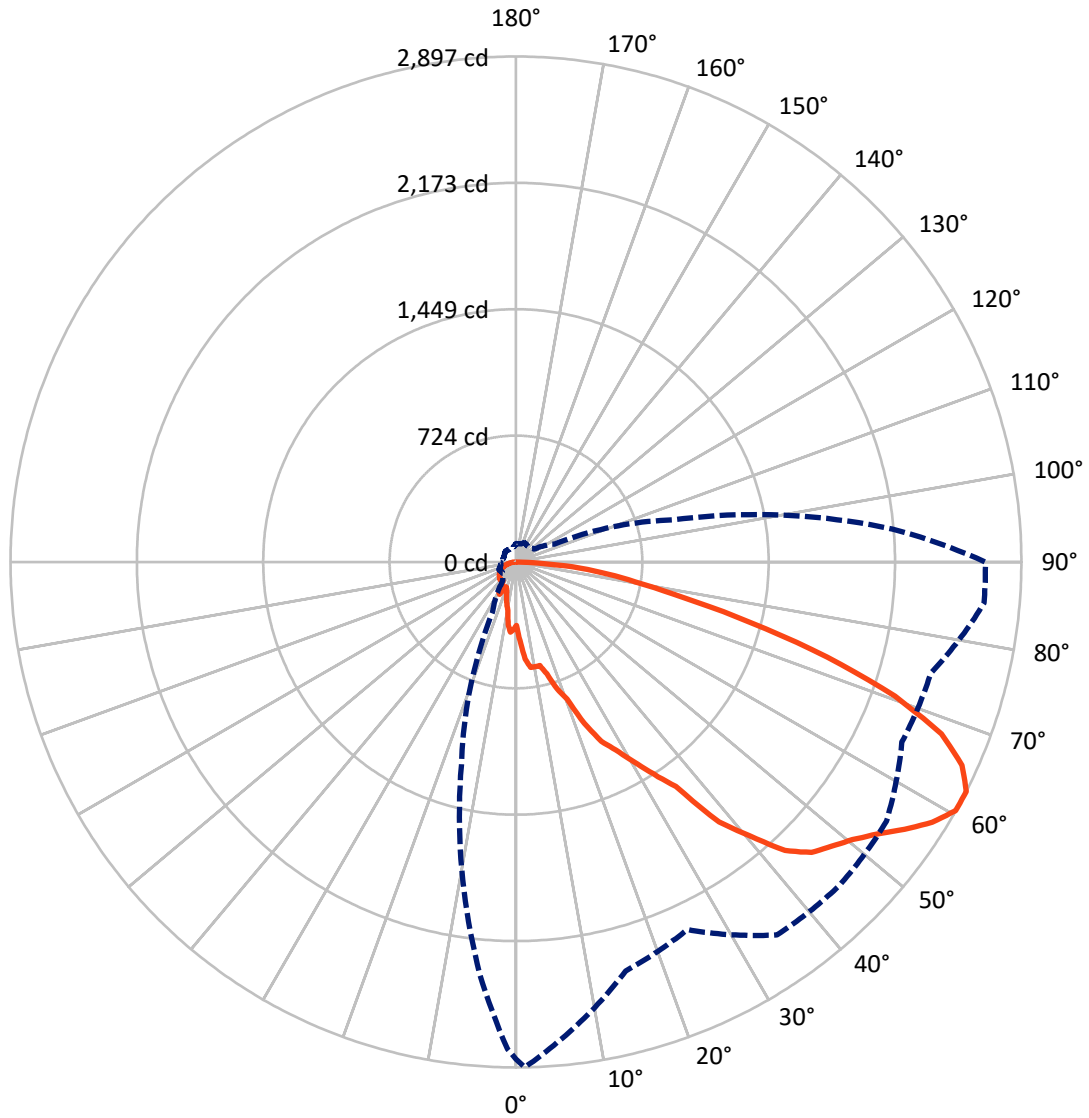
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.5 fc  
 Type IV - Short - N/A

REPORT NUMBER: P366852  
CATALOG NUMBER: MSA-SA1B-830-U-SLL

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P366852  
 CATALOG NUMBER: MSA-SA1B-830-U-SLL

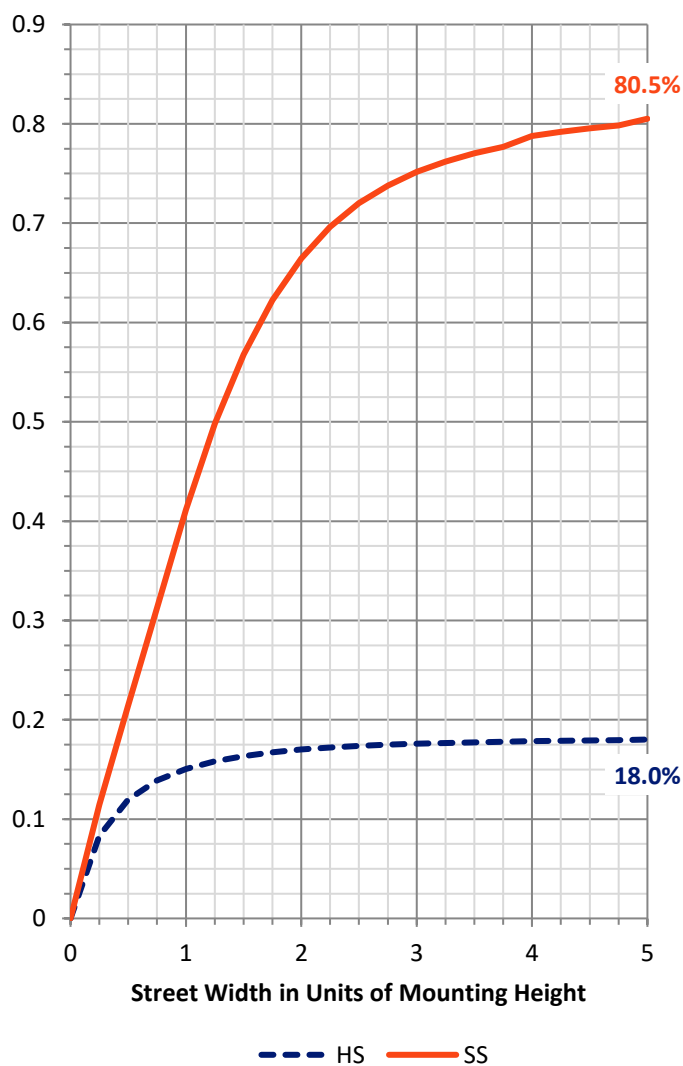
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	627.7	0.0	627.7
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	2819.3	0.0	2819.3
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	3447.0	0.0	3447.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.7	1.2
10°-20°	121.1	3.5
20°-30°	213.8	6.2
30°-40°	333.0	9.7
40°-50°	548.3	15.9
50°-60°	782.5	22.7
60°-70°	829.8	24.1
70°-80°	458.3	13.3
80°-90°	118.5	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°	3447.0	100.0
0°-180°	3447.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P366852

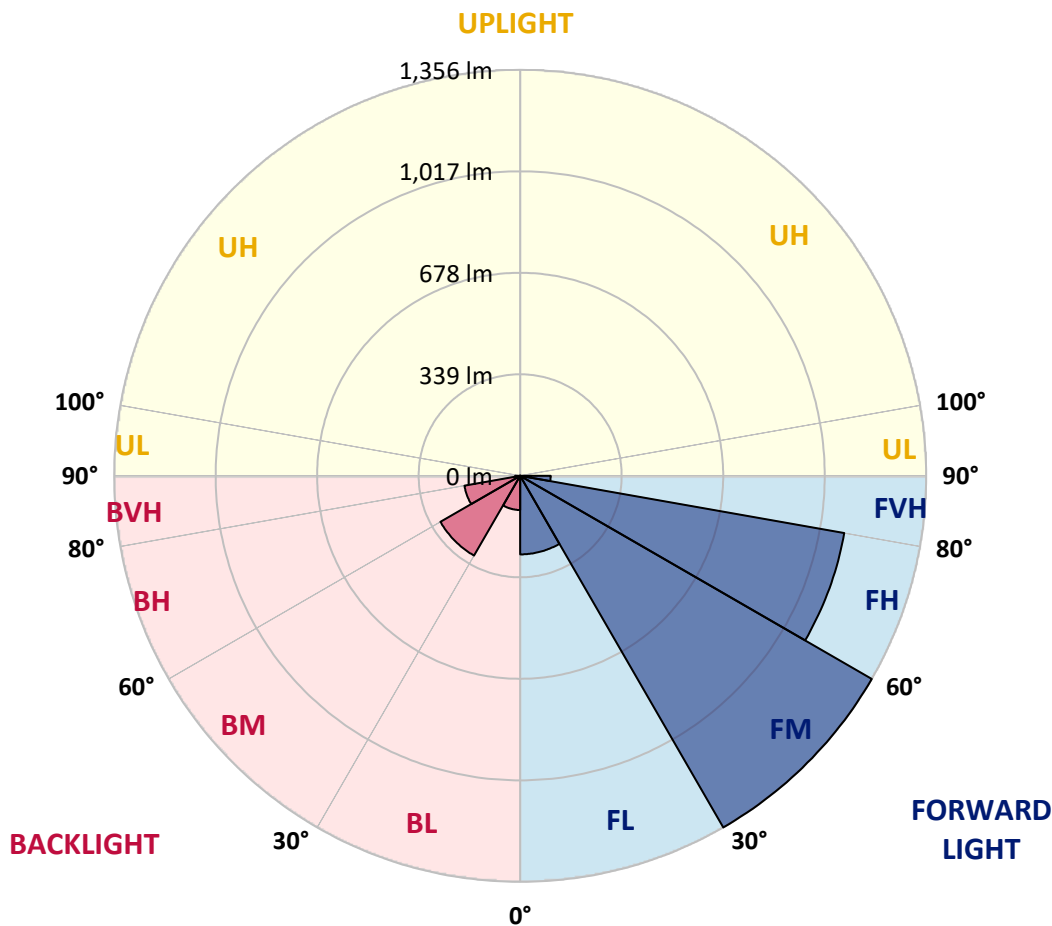
CATALOG NUMBER: MSA-SA1B-830-U-SLL

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	262.4	7.6			
FM (30°-60°)	1356.1	39.3			
FH (60°-80°)	1099.0	31.9			G1/1800
FVH (80°-90°)	101.8	3.0			G2/225
BL (0°-30°)	114.2	3.3	B1/500		
BM (30°-60°)	307.7	8.9	B1/1000		
BH (60°-80°)	189.1	5.5	B1/500		G1/500
BVH (80°-90°)	16.7	0.5			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: P366852

CATALOG NUMBER: MSA-SA1B-830-U-SLL

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5
2.5°	447.0	450.8	442.9	434.1	397.4	432.7	422.2	441.8	435.4	392.9	470.7
5°	552.3	559.4	551.7	578.3	579.9	586.8	523.4	562.9	549.2	545.6	585.0
7.5°	603.2	610.4	629.9	677.3	714.3	680.8	643.8	635.6	624.9	597.0	620.7
10°	606.4	610.4	636.6	737.0	754.9	778.7	754.7	698.4	675.1	614.4	596.3
12.5°	596.8	609.4	643.3	765.6	818.8	844.7	850.6	787.9	730.8	661.6	652.4
15°	660.9	665.4	714.1	786.0	822.6	844.6	863.6	825.0	807.1	752.2	678.5
17.5°	752.7	765.3	805.1	831.7	856.4	860.6	844.9	829.8	801.4	874.7	796.2
20°	815.0	839.2	888.0	893.1	841.0	850.2	848.1	849.1	832.8	968.3	925.2
22.5°	979.5	1005.8	1012.5	983.4	885.4	843.4	851.8	876.0	939.9	1056.0	1104.8
25°	1128.6	1138.8	1199.8	1124.9	968.7	877.2	863.5	926.2	1030.4	1203.5	1238.3
27.5°	1206.4	1219.6	1260.2	1097.1	979.0	833.7	801.6	897.1	1003.3	1134.1	1286.8
30°	1305.9	1327.0	1382.3	1124.9	1010.3	862.1	791.0	882.4	999.8	1179.6	1389.5
32.5°	1408.4	1449.4	1490.6	1222.8	1006.0	905.6	858.4	865.8	1031.6	1274.9	1495.9
35°	1544.3	1580.4	1615.9	1279.3	1093.6	941.9	895.1	973.0	1113.2	1385.5	1644.3
37.5°	1834.6	1891.8	1798.3	1440.2	1189.0	1105.5	1021.0	1067.2	1199.5	1477.7	1886.7
40°	2019.6	2062.6	1972.3	1549.8	1356.9	1215.7	1201.9	1205.7	1318.4	1556.6	2049.8
42.5°	2203.5	2261.7	2118.0	1700.2	1560.0	1443.4	1371.8	1366.9	1451.6	1698.5	2235.3
45°	2340.6	2374.9	2168.0	1826.9	1777.8	1691.3	1637.6	1552.5	1626.6	1796.7	2350.0
47.5°	2405.9	2433.8	2248.5	1900.7	1918.9	1923.5	2020.3	1875.1	1779.4	1863.1	2410.2
50°	2487.3	2500.6	2295.8	1965.6	2053.1	2251.5	2274.7	2028.7	1928.3	1935.5	2445.9
52.5°	2584.7	2590.2	2364.9	2040.6	2188.8	2467.3	2431.3	2289.0	2070.0	2067.8	2512.9
55°	2707.1	2703.8	2451.5	2141.4	2285.6	2595.6	2568.3	2464.6	2224.4	2177.4	2617.3
57.5°	2816.0	2814.0	2566.5	2234.3	2367.1	2661.5	2669.5	2642.1	2329.4	2255.8	2730.4
60°	2869.4	2895.0	2697.3	2335.8	2372.3	2691.2	2694.3	2650.6	2446.9	2356.5	2760.5
62.5°	2848.6	2897.3	2761.5	2427.1	2324.6	2609.9	2622.5	2592.4	2441.5	2462.2	2693.3
65°	2754.3	2810.5	2705.8	2475.8	2295.3	2473.8	2477.0	2400.9	2365.1	2532.3	2535.7
67.5°	2577.3	2630.0	2528.5	2398.2	2094.9	2106.8	2177.7	2183.9	2131.7	2479.5	2314.4
70°	2267.5	2304.7	2241.1	2206.5	1751.0	1681.4	1758.4	1791.3	1815.1	2288.6	2048.8
72.5°	1795.2	1866.9	1877.0	1899.5	1409.8	1293.9	1350.9	1302.0	1456.8	1947.9	1673.9
75°	1328.1	1388.7	1453.8	1579.7	1111.2	968.7	961.6	936.7	1081.2	1566.5	1241.5
77.5°	938.6	977.2	1027.2	1261.9	838.5	746.0	750.4	725.1	780.8	1184.0	857.6
80°	672.8	693.0	716.3	831.3	618.6	643.7	644.3	620.4	580.6	804.1	572.4
82.5°	479.4	495.1	521.7	548.3	461.2	527.6	527.1	525.6	460.3	543.5	358.1
85°	267.0	288.0	334.2	429.6	333.0	377.2	331.7	365.3	337.9	361.8	181.3
87.5°	18.7	16.7	74.8	248.9	155.4	113.6	59.5	117.9	151.2	189.0	25.3
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: P366852

CATALOG NUMBER: MSA-SA1B-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5
2.5°	486.8	492.6	469.7	435.2	444.6	434.4	421.5	401.5	360.1	385.7	385.9
5°	584.6	562.4	544.5	527.6	499.1	456.2	450.5	416.0	396.6	406.8	405.3
7.5°	615.2	583.6	556.7	496.3	443.6	376.9	356.8	336.4	327.9	352.6	362.5
10°	581.6	548.7	522.2	448.8	413.0	371.3	316.1	287.9	271.1	277.7	281.5
12.5°	608.7	575.1	491.9	451.0	391.9	366.5	318.2	276.7	251.9	257.9	250.7
15°	634.8	589.5	506.3	424.7	376.9	340.1	300.9	258.1	229.0	218.6	213.1
17.5°	730.1	654.9	504.7	410.0	355.1	312.8	265.6	218.8	199.4	188.7	179.5
20°	846.4	741.5	513.7	394.8	332.0	278.7	227.3	183.8	170.3	163.3	160.7
22.5°	984.7	852.6	565.4	392.6	310.3	253.8	206.2	179.1	163.9	156.2	153.1
25°	1094.6	967.5	603.5	407.3	309.1	233.2	193.5	199.1	192.0	194.4	175.8
27.5°	1201.3	998.8	582.1	400.8	278.0	196.7	190.5	202.1	208.1	209.9	209.3
30°	1291.5	1130.9	586.8	364.0	234.9	160.2	145.9	151.5	168.1	194.4	199.4
32.5°	1423.5	1194.2	626.8	341.7	209.9	143.4	127.3	125.1	129.0	138.5	146.7
35°	1577.9	1339.7	638.0	335.9	192.7	135.8	124.6	119.6	121.6	128.8	130.5
37.5°	1865.8	1445.7	679.5	328.7	186.3	131.3	122.6	120.8	125.1	131.0	134.3
40°	2024.5	1636.4	681.5	322.5	178.1	129.5	123.9	123.1	125.8	133.8	135.8
42.5°	2236.1	1745.2	712.9	315.3	175.3	132.0	126.6	126.3	128.6	133.3	137.0
45°	2365.1	1817.9	714.6	311.1	174.6	143.0	130.1	129.0	128.5	131.3	134.7
47.5°	2448.2	1922.8	735.0	306.4	178.6	145.9	134.3	129.3	127.6	128.8	131.3
50°	2527.0	2006.6	773.6	305.8	182.8	143.0	141.7	129.1	125.8	125.3	127.1
52.5°	2623.7	2144.4	821.3	312.1	181.8	138.8	147.2	128.5	122.4	121.3	123.1
55°	2764.3	2292.1	872.0	306.8	171.5	130.8	141.8	128.0	118.9	116.8	118.4
57.5°	2855.5	2376.8	928.7	302.3	155.7	124.8	137.0	128.3	119.3	114.4	115.4
60°	2825.2	2331.3	950.9	274.7	140.8	120.1	125.5	125.6	116.3	111.7	112.6
62.5°	2691.4	2166.5	930.2	242.5	129.8	113.4	113.6	120.6	107.6	104.4	105.7
65°	2504.4	1961.6	846.2	221.6	124.6	106.4	103.7	105.9	95.8	93.5	96.2
67.5°	2274.9	1709.0	721.3	199.6	122.8	96.9	93.7	92.8	86.5	83.8	86.5
70°	1987.0	1431.0	576.6	184.0	115.8	86.5	84.0	83.1	77.8	75.8	78.1
72.5°	1597.1	1117.4	444.9	172.1	108.1	76.9	74.8	73.8	69.3	66.4	69.3
75°	1135.9	853.9	330.5	153.9	97.2	67.2	64.7	63.4	59.2	56.5	59.0
77.5°	807.3	641.0	230.8	127.3	80.1	56.9	55.4	53.2	49.5	46.3	48.8
80°	596.8	458.0	148.9	98.2	61.2	45.5	44.7	43.2	39.6	35.8	37.6
82.5°	392.9	330.2	85.3	66.6	44.5	32.8	33.5	32.5	29.1	25.1	26.1
85°	176.0	195.5	45.3	36.6	28.9	19.7	21.6	20.9	18.4	14.6	14.9
87.5°	16.9	33.0	13.9	13.4	10.7	6.2	7.7	6.5	5.5	3.5	2.7
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: P366852  
 CATALOG NUMBER: MSA-SA1B-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5
2.5°	391.8	368.2	344.6	359.0	359.3	363.1	363.6	349.4	360.8	369.5	378.5
5°	397.9	382.6	383.4	369.5	362.0	371.7	369.7	365.8	372.7	382.2	393.8
7.5°	353.1	343.1	341.4	328.0	295.6	288.4	294.4	296.9	306.1	320.8	333.2
10°	275.7	295.6	273.2	268.0	259.4	242.7	233.0	231.8	251.4	263.3	273.7
12.5°	248.4	243.4	240.7	226.5	226.5	208.8	203.1	208.3	238.4	246.9	260.3
15°	211.6	207.9	195.5	188.5	185.2	178.0	184.0	189.0	217.1	217.8	231.8
17.5°	175.6	173.5	161.8	160.4	157.1	153.9	159.4	171.5	186.7	184.0	190.5
20°	157.1	149.5	138.8	142.7	139.2	136.7	134.3	151.4	162.1	165.6	169.4
22.5°	152.4	138.7	132.3	128.8	129.0	125.0	125.5	139.7	155.9	158.1	155.7
25°	174.1	149.7	129.1	118.9	115.1	113.7	117.6	130.1	149.7	154.4	156.2
27.5°	203.7	162.6	133.0	115.6	107.9	108.6	114.1	122.8	145.9	154.2	156.4
30°	195.5	152.9	133.1	113.1	103.5	107.1	109.1	117.4	142.9	155.4	166.3
32.5°	150.9	137.5	134.0	115.1	111.2	105.7	108.6	116.6	134.0	141.8	142.3
35°	127.8	117.6	115.3	110.6	105.2	102.9	106.1	113.1	124.5	129.3	128.6
37.5°	126.8	115.6	106.4	104.4	102.2	101.5	103.4	109.9	121.4	130.0	128.1
40°	128.5	114.6	105.2	101.7	102.5	99.5	101.4	109.4	121.9	130.0	128.3
42.5°	126.5	113.4	103.7	101.0	101.9	97.7	99.9	108.2	120.6	130.1	127.0
45°	122.4	110.7	102.9	98.4	102.2	96.0	98.7	105.2	116.6	127.0	123.3
47.5°	118.4	107.6	99.4	96.5	100.4	94.3	95.5	101.2	112.6	122.8	119.6
50°	114.1	103.5	96.5	95.7	98.4	94.0	92.2	96.9	107.7	117.9	115.3
52.5°	109.4	100.2	94.5	94.2	96.7	91.8	89.2	92.8	102.5	112.7	110.6
55°	104.9	96.5	92.0	92.8	95.7	90.0	86.6	89.0	97.0	107.1	104.0
57.5°	100.4	92.3	88.7	91.0	93.2	87.7	83.5	84.8	91.3	101.2	97.7
60°	96.3	88.7	85.0	87.8	89.8	84.1	79.3	80.1	86.0	94.8	91.7
62.5°	91.2	84.6	79.8	83.5	85.0	79.5	74.3	75.3	80.0	88.3	86.0
65°	83.8	79.6	75.1	77.6	79.6	73.9	69.1	70.3	73.8	81.6	80.0
67.5°	77.4	73.4	70.4	72.4	72.8	68.4	64.1	64.7	67.6	74.9	73.1
70°	70.4	66.6	64.2	65.7	65.6	61.9	58.5	58.7	61.1	67.7	65.2
72.5°	62.7	59.0	57.9	58.7	58.0	54.7	51.5	52.7	54.2	59.2	57.2
75°	54.5	51.2	50.5	51.4	50.3	47.2	44.3	45.5	46.8	51.0	48.5
77.5°	46.0	43.0	43.2	43.3	42.0	39.8	37.0	38.1	39.0	41.8	39.3
80°	36.6	34.3	35.0	35.0	33.5	31.9	29.3	29.6	30.1	31.1	29.3
82.5°	26.8	26.8	26.8	26.9	23.8	24.3	21.9	21.7	21.2	21.1	19.9
85°	15.9	16.6	16.9	17.4	12.9	15.1	13.0	12.5	11.5	10.5	10.2
87.5°	3.5	4.5	4.5	4.3	0.0	1.7	0.8	1.3	0.3	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: P366852  
 CATALOG NUMBER: MSA-SA1B-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5	363.5
2.5°	368.2	358.1	376.9	393.6	390.9	400.6	378.0	411.5	447.0	447.0
5°	390.7	382.2	387.1	396.8	404.1	437.9	466.0	494.0	551.7	552.3
7.5°	329.5	347.9	352.3	349.4	381.0	424.5	470.9	550.5	599.3	603.2
10°	308.1	316.5	329.7	337.1	349.9	392.8	450.3	544.8	596.7	606.4
12.5°	279.2	310.1	330.2	371.3	381.5	390.1	481.6	563.4	599.2	596.8
15°	247.6	271.0	299.9	345.4	371.3	436.6	500.1	622.9	643.2	660.9
17.5°	197.4	214.6	253.1	304.9	369.2	429.2	546.0	696.5	734.3	752.7
20°	162.4	162.6	201.1	269.8	339.7	398.4	563.4	757.6	805.6	815.0
22.5°	153.6	145.9	166.1	222.0	307.3	416.7	598.5	855.8	956.0	979.5
25°	148.7	139.3	152.1	195.9	284.0	426.2	669.3	990.8	1119.4	1128.6
27.5°	150.7	155.1	159.1	174.6	254.6	408.3	652.9	1051.1	1189.0	1206.4
30°	164.3	171.3	162.1	167.4	230.3	382.4	682.1	1149.2	1276.6	1305.9
32.5°	136.7	134.0	133.1	144.9	206.1	359.0	743.5	1287.2	1371.6	1408.4
35°	123.3	119.1	120.8	134.2	194.2	355.6	778.0	1401.4	1521.7	1544.3
37.5°	122.8	117.9	120.1	130.1	198.4	361.6	833.2	1584.7	1786.3	1834.6
40°	121.6	118.9	120.1	127.6	194.0	365.0	865.0	1738.8	1970.6	2019.6
42.5°	121.4	120.1	121.3	129.6	189.5	366.5	909.0	1878.0	2164.8	2203.5
45°	120.9	122.3	122.3	131.3	187.5	376.5	934.9	1946.2	2293.0	2340.6
47.5°	118.6	122.6	129.1	130.8	179.3	371.8	971.5	2049.8	2361.0	2405.9
50°	115.6	122.1	137.8	127.5	178.0	360.5	1014.3	2131.9	2448.4	2487.3
52.5°	111.6	121.3	135.8	120.9	175.6	358.5	1074.4	2238.6	2550.2	2584.7
55°	105.9	118.3	129.6	114.4	169.9	352.1	1166.2	2370.9	2683.5	2707.1
57.5°	100.7	113.7	120.6	110.7	156.4	353.4	1230.1	2478.8	2795.5	2816.0
60°	96.0	113.2	107.7	106.9	142.5	335.5	1250.9	2477.6	2837.1	2869.4
62.5°	91.0	106.9	98.7	101.7	130.3	317.1	1206.9	2371.4	2792.1	2848.6
65°	84.5	91.7	91.2	98.0	130.6	287.2	1106.0	2184.1	2679.9	2754.3
67.5°	76.8	81.1	84.0	92.0	134.8	264.0	943.8	1958.8	2488.8	2577.3
70°	68.9	73.3	76.4	84.1	138.7	253.3	751.2	1642.3	2177.7	2267.5
72.5°	60.9	65.4	67.9	74.6	133.5	230.3	556.0	1277.8	1748.0	1795.2
75°	52.5	56.9	58.9	65.1	115.9	190.5	383.9	967.8	1280.3	1328.1
77.5°	44.0	48.7	49.3	54.4	88.5	145.7	246.1	742.4	906.6	938.6
80°	35.1	39.8	39.8	42.5	62.2	100.2	147.4	560.0	660.2	672.8
82.5°	25.3	30.3	29.9	30.1	43.0	62.1	85.3	419.7	477.1	479.4
85°	14.9	18.4	18.2	16.7	25.4	33.5	46.2	260.6	266.3	267.0
87.5°	2.8	4.3	3.8	1.7	7.0	9.9	13.4	48.3	19.2	18.7
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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