

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: P367116

Luminaire Tested: **MSA-SA1D-830-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367116
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-SA1D-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: 4668 lumens
Efficiency: N/A
Efficacy: 69.7 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

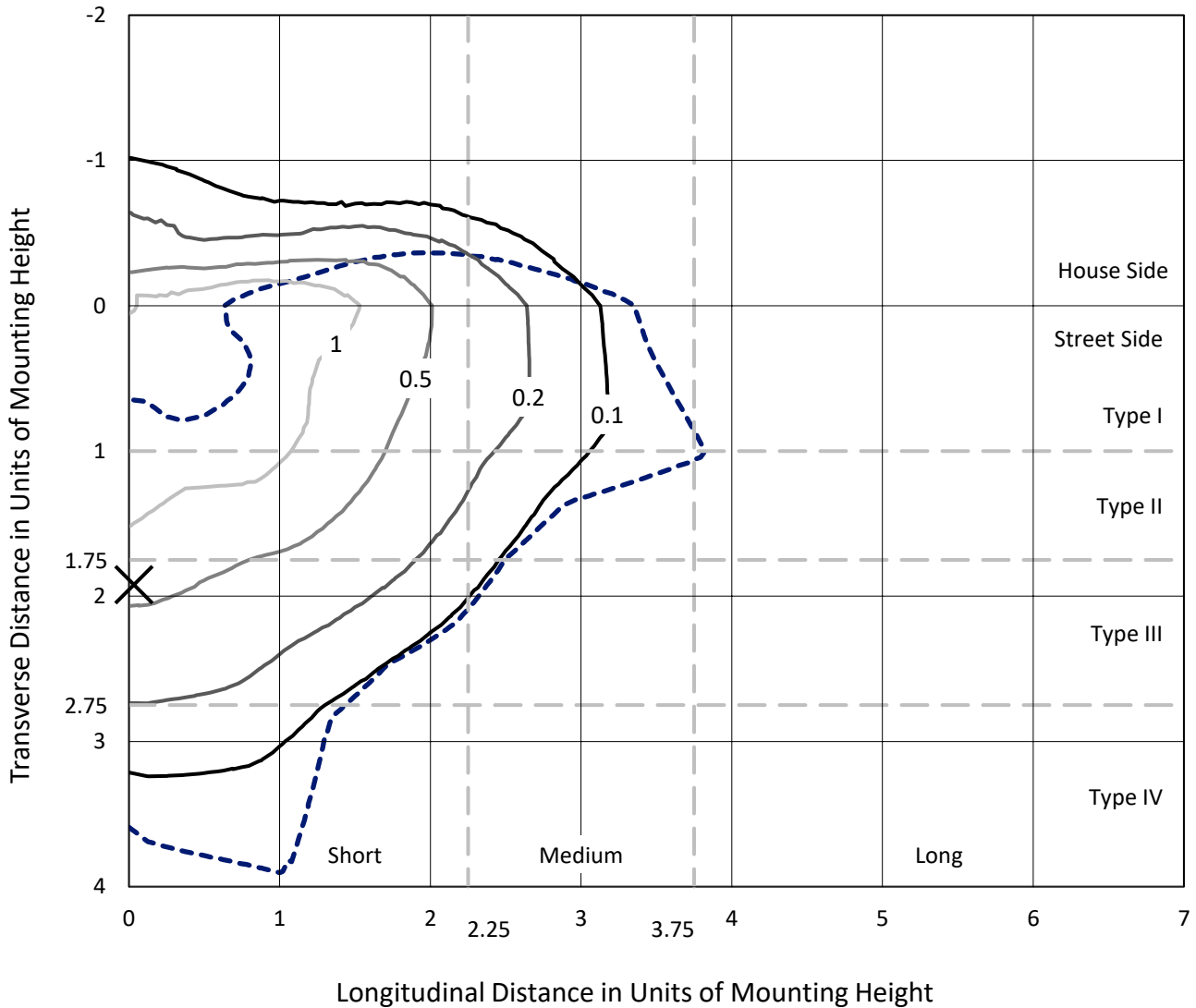
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

Iso-Footcandle Lines of Horizontal Illumination

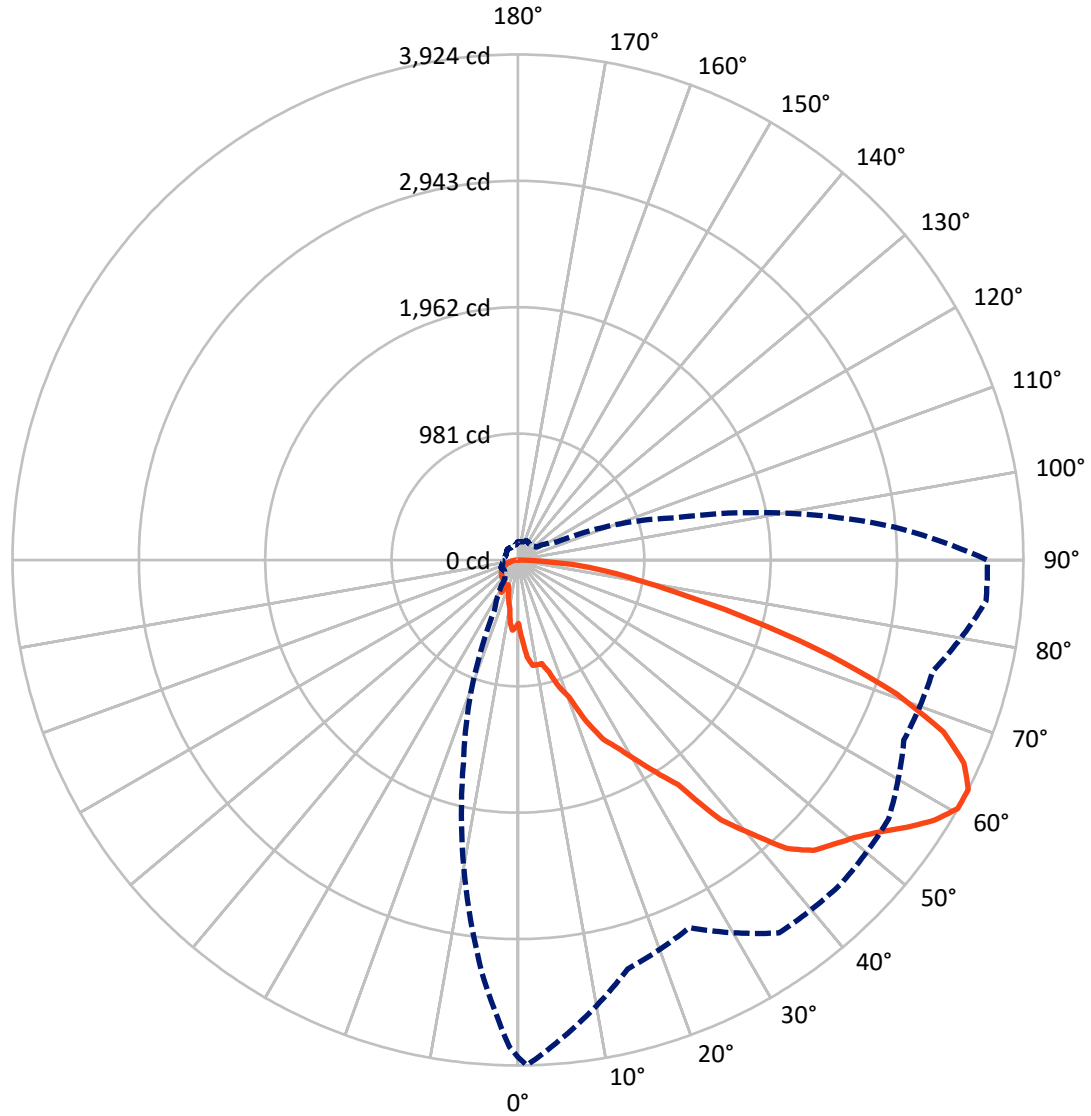
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 fc
 Type IV - Short - N/A

REPORT NUMBER: P367116
CATALOG NUMBER: MSA-SA1D-830-U-SLL

Luminous Intensity Polar Plot



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

REPORT NUMBER: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

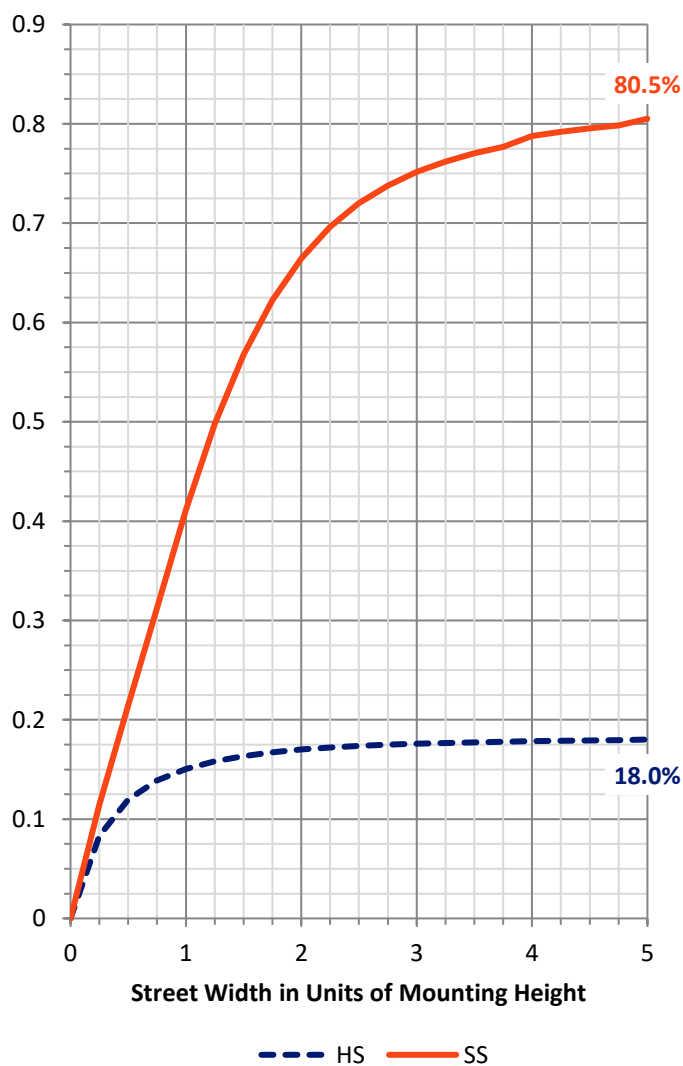
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	850.0	0.0	850.0
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	3818.0	0.0	3818.0
	% Fixture	81.8	0.0	81.8
Total	Lumens	4668.0	0.0	4668.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.4	1.2
10°-20°	164.0	3.5
20°-30°	289.5	6.2
30°-40°	450.9	9.7
40°-50°	742.5	15.9
50°-60°	1059.7	22.7
60°-70°	1123.7	24.1
70°-80°	620.7	13.3
80°-90°	160.5	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°	4668.0	100.0
0°-180°	4668.0	100.0

Coefficient of Utilization

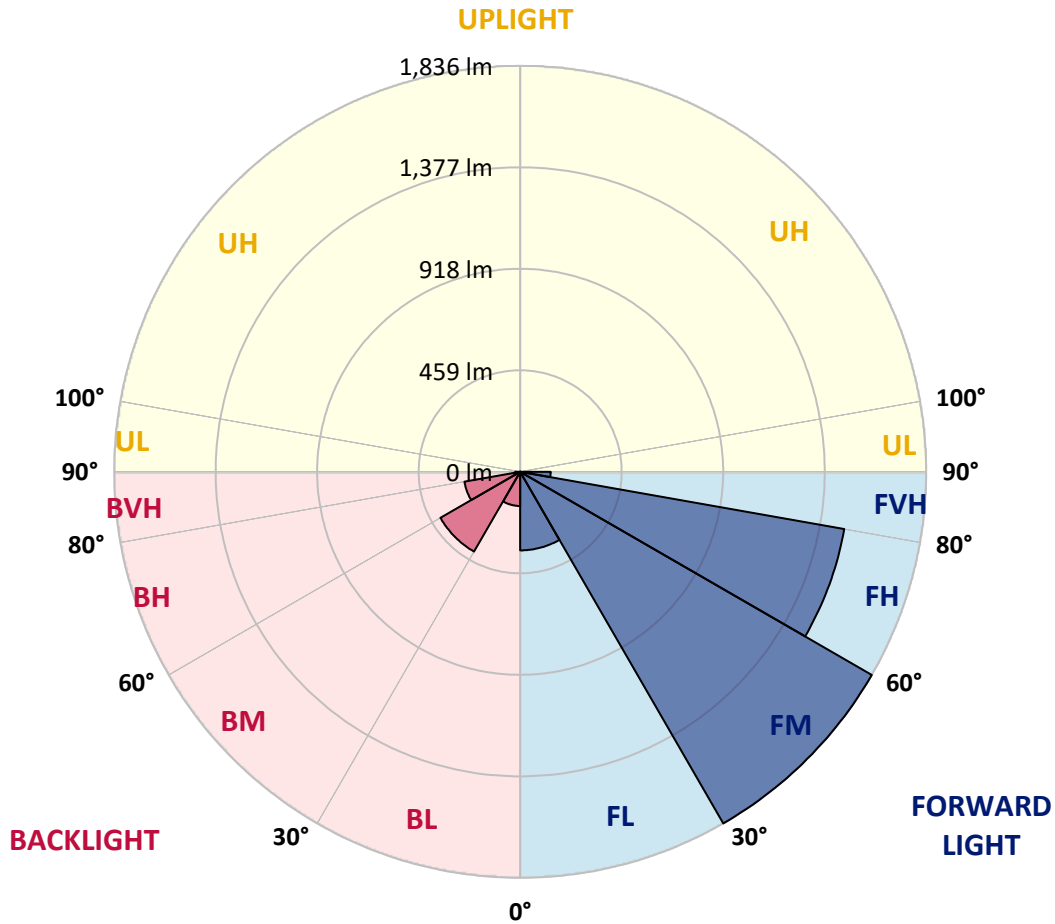


REPORT NUMBER: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	355.3	7.6			
FM (30°-60°)	1836.4	39.3			
FH (60°-80°)	1488.3	31.9			G1/1800
FVH (80°-90°)	137.9	3.0			G2/225
BL (0°-30°)	154.6	3.3	B1/500		
BM (30°-60°)	416.7	8.9	B1/1000		
BH (60°-80°)	256.1	5.5	B1/500		G1/500
BVH (80°-90°)	22.6	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: P367116

CATALOG NUMBER: MSA-SA1D-830-U-SLL

CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	605.3	610.5	599.8	587.8	538.2	586.0	571.7	598.2	589.6	532.1	637.4
5°	748.0	757.5	747.1	783.1	785.4	794.6	708.8	762.3	743.7	738.9	792.2
7.5°	816.8	826.6	853.1	917.2	967.3	922.0	871.9	860.8	846.3	808.5	840.6
10°	821.1	826.6	862.1	998.1	1022.3	1054.5	1022.1	945.7	914.2	832.0	807.6
12.5°	808.2	825.2	871.2	1036.8	1108.8	1143.9	1151.9	1066.9	989.7	895.9	883.4
15°	895.0	901.1	967.0	1064.4	1114.0	1143.7	1169.5	1117.2	1093.0	1018.7	918.8
17.5°	1019.4	1036.3	1090.3	1126.3	1159.8	1165.5	1144.2	1123.8	1085.3	1184.5	1078.3
20°	1103.6	1136.5	1202.6	1209.4	1139.0	1151.4	1148.5	1149.8	1127.9	1311.3	1252.9
22.5°	1326.5	1362.1	1371.1	1331.7	1199.0	1142.1	1153.5	1186.3	1272.8	1430.0	1496.2
25°	1528.4	1542.2	1624.9	1523.4	1311.8	1187.9	1169.3	1254.3	1395.4	1629.8	1677.0
27.5°	1633.7	1651.6	1706.6	1485.8	1325.8	1129.0	1085.5	1214.8	1358.7	1535.8	1742.6
30°	1768.5	1797.0	1872.0	1523.4	1368.2	1167.5	1071.2	1194.9	1353.9	1597.4	1881.7
32.5°	1907.3	1962.8	2018.6	1655.9	1362.3	1226.4	1162.5	1172.5	1397.0	1726.6	2025.8
35°	2091.3	2140.2	2188.2	1732.5	1481.0	1275.6	1212.1	1317.7	1507.5	1876.3	2226.7
37.5°	2484.5	2562.0	2435.4	1950.4	1610.1	1497.1	1382.7	1445.2	1624.4	2001.1	2555.0
40°	2735.0	2793.3	2670.9	2098.7	1837.6	1646.4	1627.6	1632.8	1785.5	2108.0	2775.8
42.5°	2984.0	3062.8	2868.2	2302.4	2112.6	1954.7	1857.7	1851.2	1965.8	2300.1	3027.0
45°	3169.7	3216.2	2936.0	2474.1	2407.5	2290.4	2217.7	2102.4	2202.7	2433.1	3182.4
47.5°	3258.1	3295.9	3044.9	2574.0	2598.7	2604.8	2736.0	2539.3	2409.8	2523.0	3264.0
50°	3368.4	3386.3	3109.0	2661.9	2780.4	3049.0	3080.5	2747.3	2611.4	2621.1	3312.2
52.5°	3500.2	3507.7	3202.6	2763.4	2964.1	3341.2	3292.5	3099.7	2803.2	2800.3	3403.1
55°	3666.1	3661.5	3319.9	2900.0	3095.2	3515.0	3478.0	3337.6	3012.3	2948.7	3544.4
57.5°	3813.5	3810.8	3475.6	3025.7	3205.5	3604.2	3615.1	3577.9	3154.6	3054.9	3697.5
60°	3885.8	3920.4	3652.7	3163.2	3212.6	3644.5	3648.6	3589.5	3313.6	3191.3	3738.3
62.5°	3857.7	3923.6	3739.7	3286.9	3148.0	3534.4	3551.4	3510.7	3306.3	3334.4	3647.3
65°	3729.9	3806.1	3664.2	3352.8	3108.4	3350.1	3354.4	3251.3	3202.8	3429.3	3433.9
67.5°	3490.3	3561.6	3424.1	3247.7	2837.0	2853.1	2949.1	2957.5	2886.8	3357.8	3134.2
70°	3070.8	3121.0	3035.0	2988.1	2371.2	2277.0	2381.2	2425.8	2458.0	3099.3	2774.5
72.5°	2431.1	2528.2	2541.8	2572.4	1909.1	1752.2	1829.4	1763.3	1972.8	2637.9	2266.8
75°	1798.6	1880.6	1968.7	2139.3	1504.8	1311.8	1302.3	1268.5	1464.2	2121.4	1681.3
77.5°	1271.0	1323.4	1391.1	1708.9	1135.6	1010.3	1016.2	982.0	1057.4	1603.3	1161.4
80°	911.1	938.5	970.0	1125.8	837.7	871.7	872.6	840.2	786.3	1088.9	775.2
82.5°	649.2	670.5	706.5	742.5	624.5	714.5	713.8	711.7	623.4	736.0	485.0
85°	361.5	390.1	452.6	581.7	451.0	510.8	449.2	494.7	457.6	490.0	245.6
87.5°	25.4	22.7	101.3	337.1	210.4	153.8	80.6	159.7	204.8	256.0	34.2
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: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	659.2	667.1	636.1	589.4	602.1	588.3	570.8	543.7	487.7	522.4	522.6
5°	791.7	761.6	737.3	714.5	675.9	617.7	610.0	563.4	537.1	550.9	548.9
7.5°	833.2	790.3	753.9	672.1	600.7	510.4	483.2	455.5	444.0	477.5	490.9
10°	787.6	743.0	707.2	607.8	559.3	502.9	428.1	389.8	367.2	376.0	381.2
12.5°	824.3	778.8	666.2	610.7	530.7	496.3	430.8	374.7	341.1	349.3	339.6
15°	859.7	798.3	685.7	575.1	510.4	460.5	407.5	349.5	310.1	296.1	288.6
17.5°	988.8	886.8	683.4	555.2	480.9	423.6	359.7	296.3	270.0	255.5	243.1
20°	1146.2	1004.2	695.7	534.6	449.6	377.4	307.8	248.9	230.6	221.1	217.7
22.5°	1333.5	1154.6	765.6	531.7	420.2	343.6	279.3	242.6	222.0	211.6	207.3
25°	1482.4	1310.2	817.3	551.6	418.6	315.8	262.1	269.6	260.0	263.2	238.1
27.5°	1626.9	1352.6	788.3	542.8	376.5	266.4	258.0	273.6	281.8	284.3	283.4
30°	1749.0	1531.5	794.6	492.9	318.0	217.0	197.5	205.2	227.7	263.2	270.0
32.5°	1927.7	1617.2	848.8	462.8	284.3	194.1	172.4	169.4	174.6	187.6	198.7
35°	2136.8	1814.2	864.0	454.9	261.0	183.9	168.8	162.0	164.7	174.4	176.7
37.5°	2526.6	1957.8	920.1	445.1	252.3	177.8	166.0	163.6	169.4	177.4	181.9
40°	2741.6	2216.1	922.9	436.7	241.2	175.3	167.9	166.7	170.3	181.2	183.9
42.5°	3028.2	2363.3	965.4	427.0	237.4	178.7	171.5	171.0	174.2	180.5	185.5
45°	3202.8	2461.9	967.7	421.3	236.5	193.7	176.2	174.6	174.0	177.8	182.4
47.5°	3315.4	2603.9	995.3	415.0	241.9	197.5	181.9	175.1	172.8	174.4	177.8
50°	3422.1	2717.4	1047.7	414.1	247.6	193.7	191.9	174.9	170.3	169.7	172.2
52.5°	3553.0	2904.0	1112.2	422.7	246.2	188.0	199.3	174.0	165.8	164.2	166.7
55°	3743.5	3104.1	1180.9	415.4	232.2	177.1	192.1	173.3	161.1	158.1	160.4
57.5°	3867.0	3218.7	1257.7	409.3	210.9	169.0	185.5	173.7	161.5	154.9	156.3
60°	3826.0	3157.1	1287.8	372.0	190.7	162.6	169.9	170.1	157.4	151.3	152.5
62.5°	3644.8	2933.9	1259.7	328.5	175.8	153.6	153.8	163.3	145.7	141.4	143.2
65°	3391.5	2656.4	1146.0	300.1	168.8	144.1	140.4	143.4	129.8	126.6	130.3
67.5°	3080.7	2314.4	976.8	270.2	166.3	131.2	126.9	125.7	117.1	113.5	117.1
70°	2690.9	1937.9	780.8	249.2	156.8	117.1	113.7	112.6	105.3	102.6	105.8
72.5°	2162.8	1513.2	602.6	233.1	146.3	104.2	101.3	99.9	93.8	89.9	93.8
75°	1538.3	1156.4	447.6	208.4	131.6	91.1	87.7	85.9	80.2	76.6	80.0
77.5°	1093.2	868.0	312.6	172.4	108.5	77.0	75.0	72.0	67.1	62.7	66.1
80°	808.2	620.2	201.6	133.0	82.9	61.6	60.5	58.4	53.7	48.5	51.0
82.5°	532.1	447.2	115.5	90.2	60.3	44.4	45.3	43.9	39.4	34.0	35.3
85°	238.3	264.8	61.4	49.6	39.2	26.7	29.2	28.3	24.9	19.7	20.2
87.5°	22.9	44.6	18.8	18.1	14.5	8.4	10.4	8.8	7.5	4.8	3.6
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: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	530.5	498.6	466.6	486.1	486.6	491.8	492.5	473.2	488.6	500.4	512.6
5°	538.9	518.1	519.2	500.4	490.2	503.3	500.6	495.4	504.7	517.6	533.2
7.5°	478.2	464.6	462.3	444.2	400.3	390.5	398.7	402.1	414.5	434.5	451.2
10°	373.3	400.3	369.9	362.9	351.3	328.7	315.5	314.0	340.5	356.5	370.6
12.5°	336.4	329.6	326.0	306.7	306.7	282.7	275.0	282.0	322.8	334.3	352.5
15°	286.6	281.6	264.8	255.3	250.8	241.0	249.2	256.0	294.0	294.9	314.0
17.5°	237.8	234.9	219.0	217.2	212.7	208.4	215.9	232.2	252.8	249.2	258.0
20°	212.7	202.5	188.0	193.2	188.5	185.1	181.9	205.0	219.5	224.3	229.5
22.5°	206.4	187.8	179.2	174.4	174.6	169.2	169.9	189.1	211.1	214.1	210.9
25°	235.8	202.7	174.9	161.1	155.8	154.0	159.2	176.2	202.7	209.1	211.6
27.5°	275.9	220.2	180.1	156.5	146.1	147.0	154.5	166.3	197.5	208.9	211.8
30°	264.8	207.0	180.3	153.1	140.2	145.0	147.7	159.0	193.5	210.4	225.2
32.5°	204.3	186.2	181.4	155.8	150.6	143.2	147.0	157.9	181.4	192.1	192.8
35°	173.1	159.2	156.1	149.7	142.5	139.3	143.6	153.1	168.5	175.1	174.2
37.5°	171.7	156.5	144.1	141.4	138.4	137.5	140.0	148.8	164.5	176.0	173.5
40°	174.0	155.2	142.5	137.7	138.9	134.8	137.3	148.1	165.1	176.0	173.7
42.5°	171.3	153.6	140.4	136.8	138.0	132.3	135.2	146.6	163.3	176.2	171.9
45°	165.8	150.0	139.3	133.2	138.4	130.0	133.6	142.5	157.9	171.9	166.9
47.5°	160.4	145.7	134.6	130.7	135.9	127.8	129.3	137.0	152.5	166.3	162.0
50°	154.5	140.2	130.7	129.6	133.2	127.3	124.8	131.2	145.9	159.7	156.1
52.5°	148.1	135.7	128.0	127.5	130.9	124.4	120.7	125.7	138.9	152.7	149.7
55°	142.0	130.7	124.6	125.7	129.6	121.9	117.3	120.5	131.4	145.0	140.9
57.5°	135.9	125.0	120.1	123.2	126.2	118.7	113.0	114.8	123.7	137.0	132.3
60°	130.5	120.1	115.1	118.9	121.6	113.9	107.4	108.5	116.4	128.4	124.1
62.5°	123.5	114.6	108.1	113.0	115.1	107.6	100.6	101.9	108.3	119.6	116.4
65°	113.5	107.8	101.7	105.1	107.8	100.1	93.6	95.1	99.9	110.5	108.3
67.5°	104.9	99.4	95.4	98.1	98.5	92.6	86.8	87.7	91.5	101.5	99.0
70°	95.4	90.2	87.0	89.0	88.8	83.8	79.3	79.5	82.7	91.7	88.3
72.5°	84.9	80.0	78.4	79.5	78.6	74.1	69.8	71.4	73.4	80.2	77.5
75°	73.8	69.3	68.4	69.5	68.2	63.9	60.0	61.6	63.4	69.1	65.7
77.5°	62.3	58.2	58.4	58.7	56.9	53.9	50.1	51.6	52.8	56.6	53.2
80°	49.6	46.4	47.3	47.3	45.3	43.3	39.6	40.1	40.8	42.1	39.6
82.5°	36.2	36.2	36.2	36.5	32.2	32.8	29.7	29.4	28.8	28.5	27.0
85°	21.5	22.4	22.9	23.6	17.4	20.4	17.7	17.0	15.6	14.3	13.8
87.5°	4.8	6.1	6.1	5.9	0.0	2.3	1.1	1.8	0.5	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: P367116
 CATALOG NUMBER: MSA-SA1D-830-U-SLL

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2	492.2
2.5°	498.6	485.0	510.4	533.0	529.4	542.5	511.9	557.2	605.3	605.3
5°	529.2	517.6	524.2	537.3	547.3	593.0	631.1	668.9	747.1	748.0
7.5°	446.3	471.2	477.1	473.2	516.0	574.9	637.7	745.5	811.6	816.8
10°	417.3	428.6	446.5	456.4	473.9	531.9	609.8	737.8	808.0	821.1
12.5°	378.1	420.0	447.2	502.9	516.7	528.3	652.2	762.9	811.4	808.2
15°	335.3	367.0	406.2	467.8	502.9	591.2	677.3	843.6	871.0	895.0
17.5°	267.3	290.6	342.7	413.0	499.9	581.3	739.4	943.2	994.4	1019.4
20°	220.0	220.2	272.3	365.4	460.1	539.6	762.9	1025.9	1090.9	1103.6
22.5°	207.9	197.5	224.9	300.6	416.1	564.3	810.5	1158.9	1294.6	1326.5
25°	201.4	188.7	205.9	265.3	384.6	577.2	906.3	1341.7	1515.9	1528.4
27.5°	204.1	210.0	215.4	236.5	344.8	552.9	884.1	1423.5	1610.1	1633.7
30°	222.4	232.0	219.5	226.8	311.9	517.8	923.8	1556.2	1728.8	1768.5
32.5°	185.1	181.4	180.3	196.2	279.1	486.1	1006.9	1743.1	1857.5	1907.3
35°	166.9	161.3	163.6	181.7	263.0	481.6	1053.6	1897.8	2060.7	2091.3
37.5°	166.3	159.7	162.6	176.2	268.7	489.7	1128.3	2146.1	2419.0	2484.5
40°	164.7	161.1	162.6	172.8	262.8	494.3	1171.4	2354.7	2668.7	2735.0
42.5°	164.5	162.6	164.2	175.6	256.7	496.3	1230.9	2543.2	2931.7	2984.0
45°	163.8	165.6	165.6	177.8	253.9	509.9	1266.0	2635.6	3105.2	3169.7
47.5°	160.6	166.0	174.9	177.1	242.8	503.6	1315.6	2775.8	3197.4	3258.1
50°	156.5	165.4	186.7	172.6	241.0	488.2	1373.6	2887.0	3315.6	3368.4
52.5°	151.1	164.2	183.9	163.8	237.8	485.4	1455.0	3031.6	3453.6	3500.2
55°	143.4	160.2	175.6	154.9	230.1	476.8	1579.3	3210.7	3634.1	3666.1
57.5°	136.4	154.0	163.3	150.0	211.8	478.6	1665.9	3356.9	3785.7	3813.5
60°	130.0	153.4	145.9	144.7	193.0	454.4	1693.9	3355.3	3842.1	3885.8
62.5°	123.2	144.7	133.6	137.7	176.5	429.5	1634.4	3211.4	3781.1	3857.7
65°	114.4	124.1	123.5	132.7	176.9	388.9	1497.8	2957.7	3629.1	3729.9
67.5°	104.0	109.9	113.7	124.6	182.6	357.5	1278.0	2652.6	3370.4	3490.3
70°	93.3	99.2	103.5	113.9	187.8	343.0	1017.3	2224.0	2949.1	3070.8
72.5°	82.5	88.6	92.0	101.0	180.8	311.9	753.0	1730.4	2367.2	2431.1
75°	71.1	77.0	79.7	88.1	157.0	258.0	519.9	1310.7	1733.8	1798.6
77.5°	59.6	65.9	66.8	73.6	119.8	197.3	333.2	1005.3	1227.8	1271.0
80°	47.6	53.9	53.9	57.5	84.3	135.7	199.6	758.4	894.1	911.1
82.5°	34.2	41.0	40.5	40.8	58.2	84.0	115.5	568.3	646.0	649.2
85°	20.2	24.9	24.7	22.7	34.4	45.3	62.5	352.9	360.6	361.5
87.5°	3.9	5.9	5.2	2.3	9.5	13.4	18.1	65.5	26.1	25.4
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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