

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: P368436

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

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368436
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-SA4B-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: 13226 lumens
Efficiency: N/A
Efficacy: 77.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G3

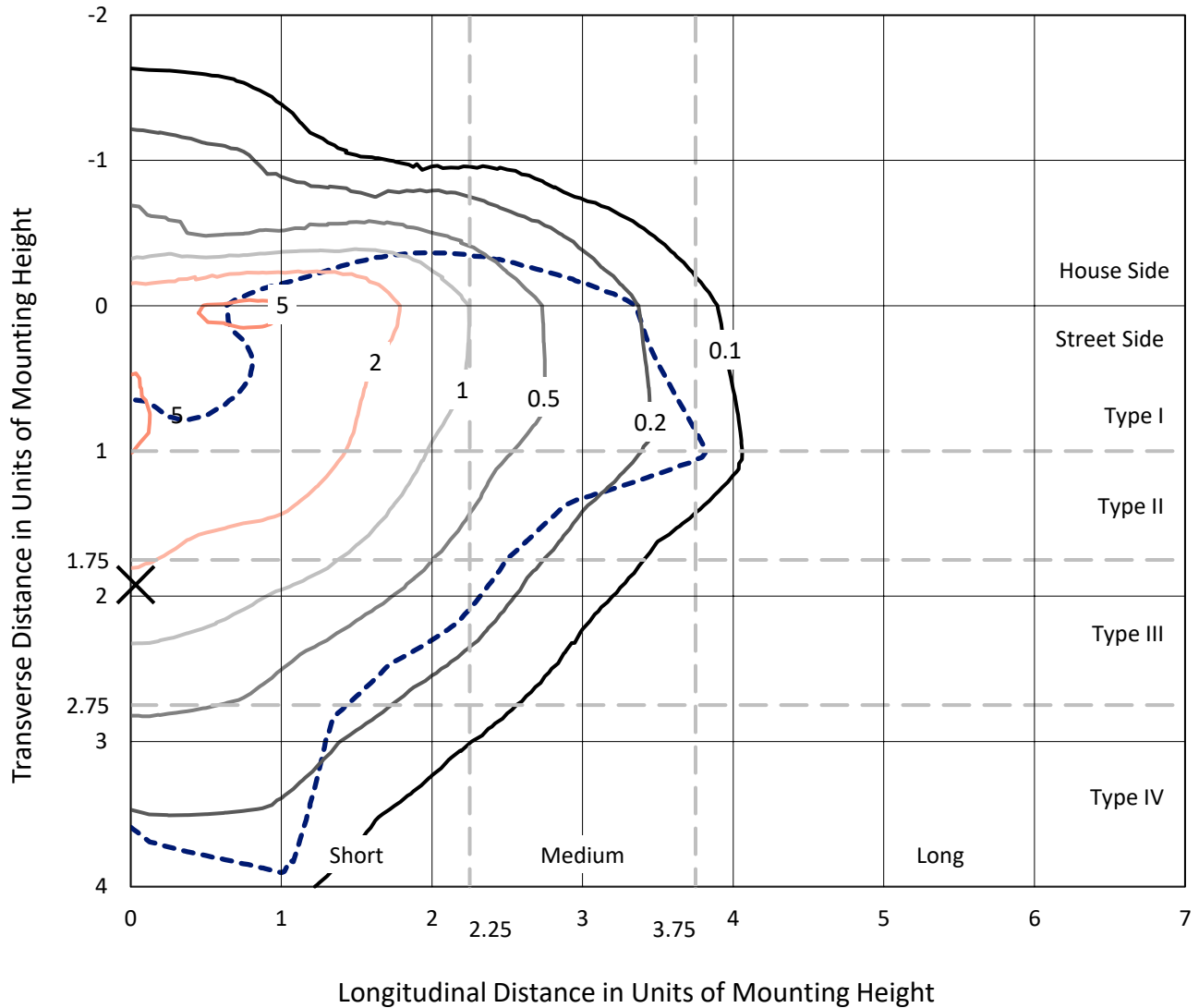
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P368436
 CATALOG NUMBER: MSA-SA4B-830-U-SLL

Iso-Footcandle Lines of Horizontal Illumination

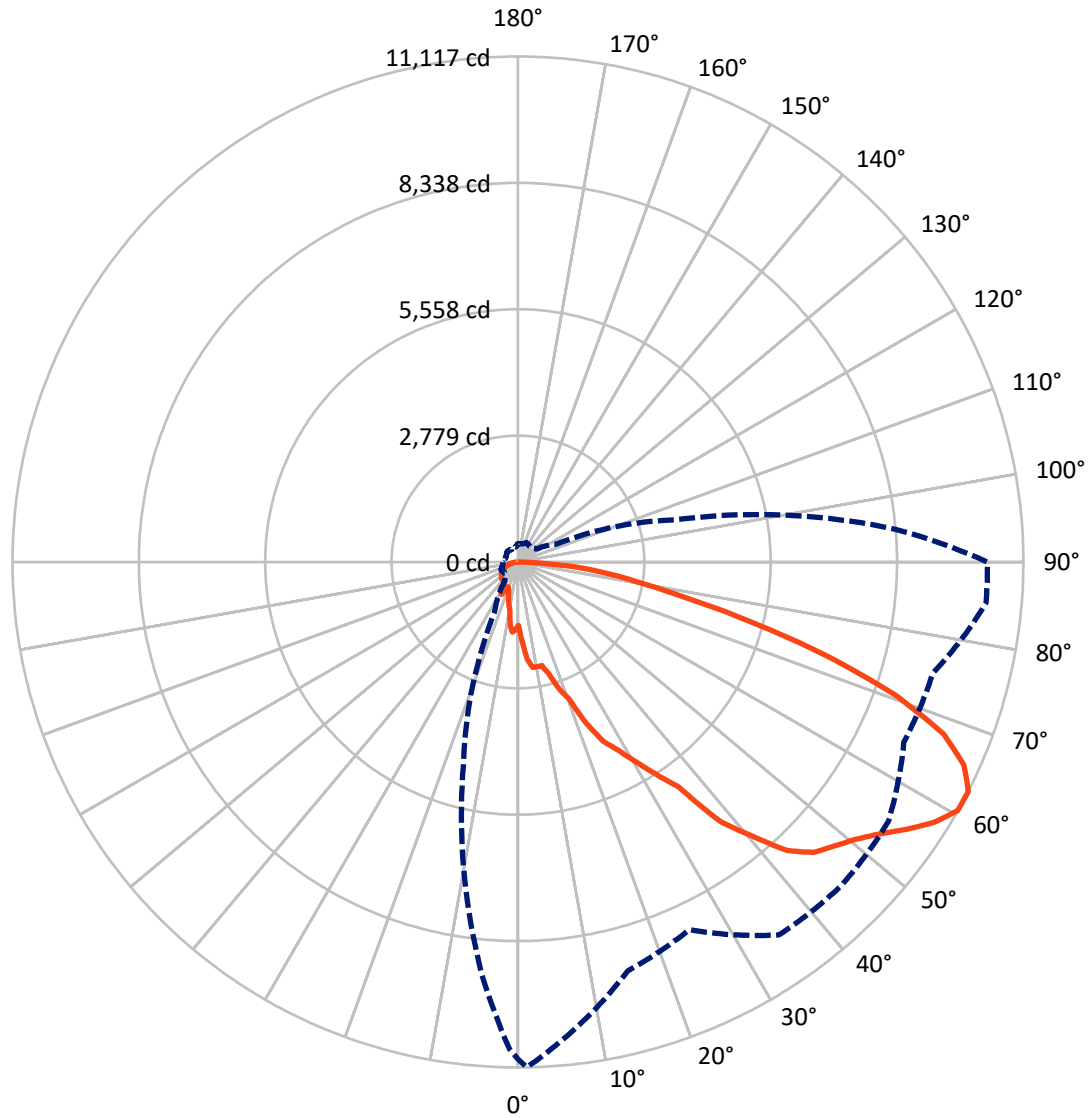
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.6 fc
 Type IV - Short - N/A

REPORT NUMBER: P368436
CATALOG NUMBER: MSA-SA4B-830-U-SLL

Luminous Intensity Polar Plot



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

REPORT NUMBER: P368436
 CATALOG NUMBER: MSA-SA4B-830-U-SLL

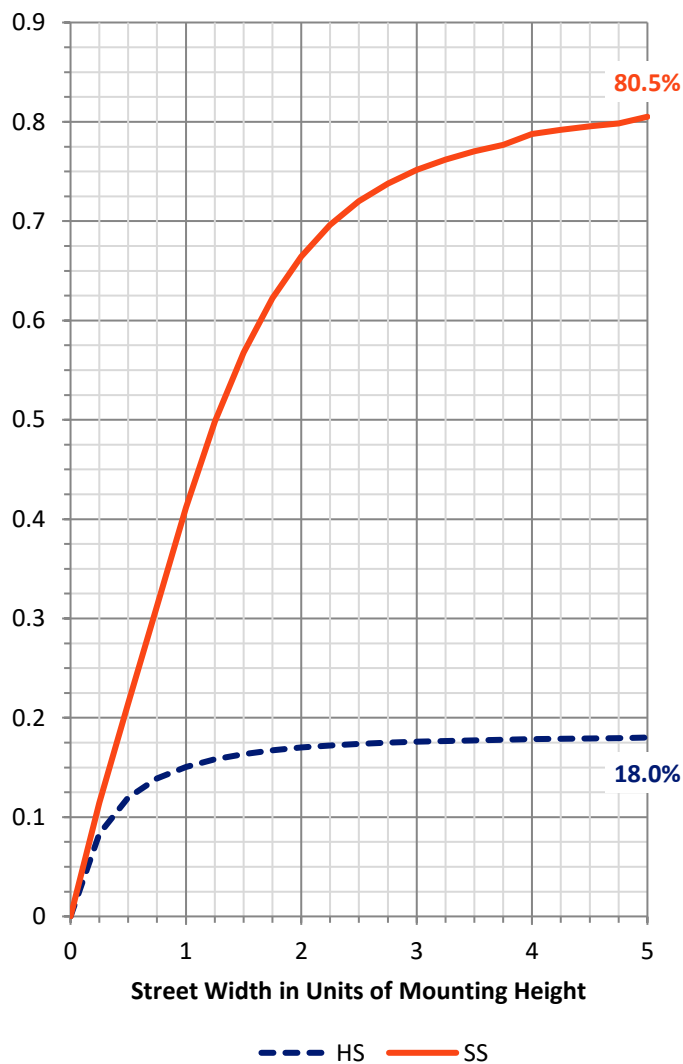
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2408.4	0.0	2408.4
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	10817.6	0.0	10817.6
	% Fixture	81.8	0.0	81.8
Total	Lumens	13226.0	0.0	13226.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.9	1.2
10°-20°	464.6	3.5
20°-30°	820.2	6.2
30°-40°	1277.6	9.7
40°-50°	2103.7	15.9
50°-60°	3002.5	22.7
60°-70°	3183.9	24.1
70°-80°	1758.7	13.3
80°-90°	454.9	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°	13226.0	100.0
0°-180°	13226.0	100.0

Coefficient of Utilization

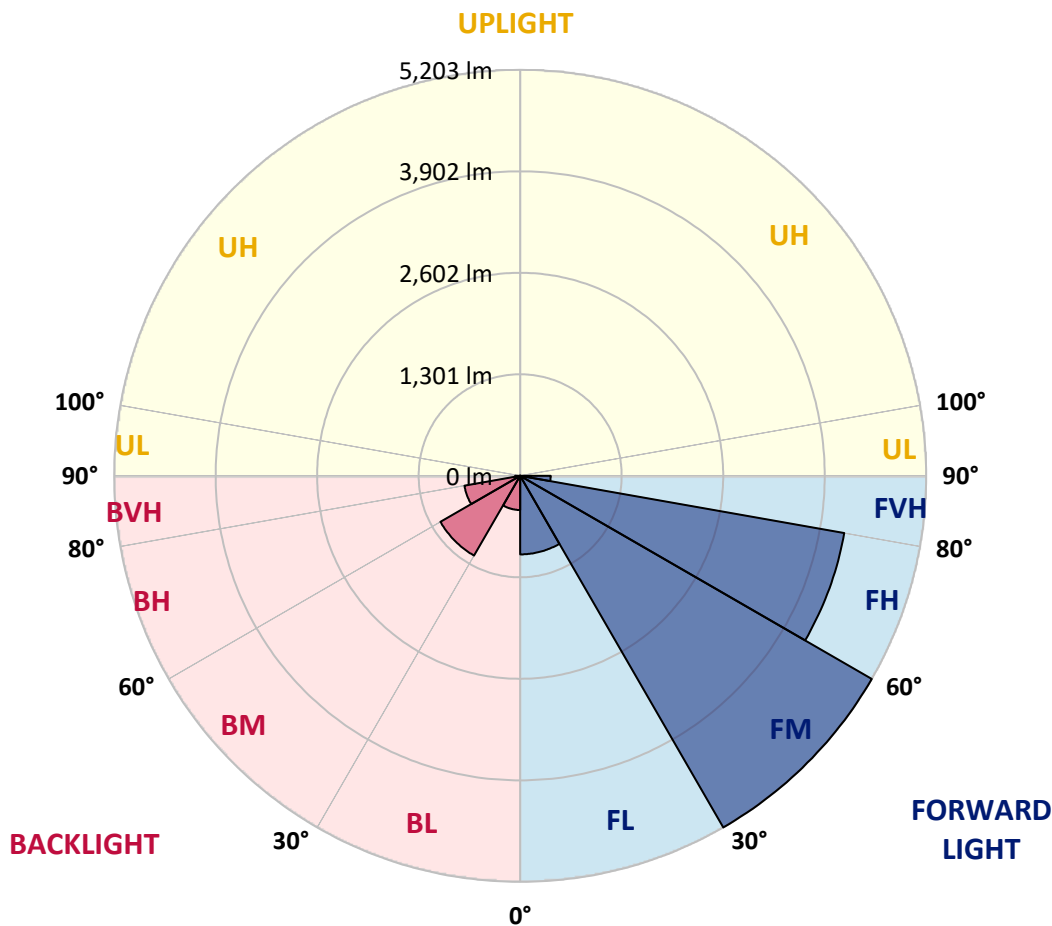


REPORT NUMBER: P368436
 CATALOG NUMBER: MSA-SA4B-830-U-SLL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1006.7	7.6			
FM (30°-60°)	5203.2	39.3			
FH (60°-80°)	4217.0	31.9			G2/5000
FVH (80°-90°)	390.7	3.0			G3/500
BL (0°-30°)	438.0	3.3	B1/500		
BM (30°-60°)	1180.6	8.9	B2/2500		
BH (60°-80°)	725.6	5.5	B2/1000		G2/1000
BVH (80°-90°)	64.1	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: P368436

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

CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7
2.5°	1714.9	1729.7	1699.5	1665.5	1525.0	1660.4	1619.9	1695.0	1670.6	1507.6	1806.1
5°	2119.3	2146.2	2116.7	2218.8	2225.2	2251.5	2008.2	2159.7	2107.1	2093.6	2244.4
7.5°	2314.4	2342.0	2417.1	2598.7	2740.6	2612.2	2470.4	2438.9	2397.8	2290.6	2381.8
10°	2326.6	2342.0	2442.8	2827.8	2896.5	2987.7	2895.9	2679.6	2590.4	2357.4	2288.1
12.5°	2290.0	2338.1	2468.4	2937.6	3141.7	3241.2	3263.6	3023.0	2804.1	2538.4	2503.1
15°	2535.8	2553.1	2739.9	3015.9	3156.5	3240.5	3313.7	3165.4	3096.8	2886.3	2603.2
17.5°	2888.2	2936.3	3089.1	3191.1	3286.1	3302.1	3241.8	3184.1	3074.9	3356.1	3055.0
20°	3126.9	3220.0	3407.4	3426.7	3227.1	3262.4	3254.0	3257.9	3195.6	3715.5	3549.9
22.5°	3758.5	3859.2	3884.9	3773.2	3397.1	3236.0	3268.1	3361.2	3606.4	4051.8	4239.2
25°	4330.3	4369.5	4603.8	4316.2	3716.8	3365.7	3313.1	3553.7	3953.6	4617.9	4751.4
27.5°	4628.8	4679.5	4835.4	4209.7	3756.6	3198.8	3075.6	3442.1	3849.6	4351.5	4937.5
30°	5010.7	5091.5	5304.0	4316.2	3876.6	3307.9	3035.2	3385.6	3836.1	4526.1	5331.6
32.5°	5404.1	5561.3	5719.2	4691.7	3859.9	3474.8	3293.8	3322.0	3958.1	4891.9	5739.8
35°	5925.3	6063.9	6200.0	4908.6	4196.2	3614.1	3434.4	3733.4	4271.3	5316.2	6309.1
37.5°	7039.4	7259.0	6900.2	5526.0	4562.0	4241.8	3917.7	4094.8	4602.5	5669.8	7239.1
40°	7749.3	7914.2	7567.7	5946.4	5206.4	4664.7	4611.5	4626.2	5058.8	5972.7	7864.8
42.5°	8454.7	8678.0	8126.7	6523.4	5985.6	5538.2	5263.5	5244.9	5569.7	6517.0	8576.6
45°	8980.9	9112.5	8318.6	7009.9	6821.2	6489.4	6283.4	5956.7	6241.0	6893.8	9016.9
47.5°	9231.3	9338.4	8627.3	7293.0	7362.9	7380.3	7751.9	7194.8	6827.6	7148.6	9247.9
50°	9543.8	9594.5	8808.9	7542.0	7877.7	8638.9	8728.1	7784.0	7398.9	7426.5	9384.6
52.5°	9917.4	9938.5	9074.0	7829.5	8398.2	9466.8	9328.8	8782.6	7942.5	7934.1	9642.0
55°	10387.2	10374.3	9406.5	8216.5	8769.8	9959.1	9854.5	9456.5	8534.9	8354.5	10042.5
57.5°	10805.0	10797.3	9847.4	8572.8	9082.4	10212.0	10242.8	10137.5	8937.9	8655.5	10476.4
60°	11009.7	11107.9	10349.3	8962.3	9102.2	10326.2	10337.7	10170.2	9388.5	9041.9	10591.9
62.5°	10930.1	11116.9	10595.8	9312.8	8919.3	10014.3	10062.4	9946.9	9368.0	9447.5	10333.9
65°	10568.2	10783.8	10382.0	9499.5	8807.0	9491.8	9504.0	9212.0	9074.7	9716.5	9729.3
67.5°	9889.1	10091.3	9701.7	9201.7	8038.1	8083.7	8355.8	8379.6	8179.3	9513.7	8880.2
70°	8700.5	8843.0	8599.1	8466.2	6718.5	6451.5	6746.8	6873.2	6964.4	8781.3	7861.0
72.5°	6888.0	7163.3	7201.8	7288.5	5409.2	4964.5	5183.3	4995.9	5589.6	7474.0	6422.7
75°	5096.0	5328.4	5578.0	6061.3	4263.6	3716.8	3689.8	3594.2	4148.7	6010.6	4763.6
77.5°	3601.2	3749.5	3941.4	4841.9	3217.4	2862.5	2879.2	2782.3	2996.0	4542.8	3290.6
80°	2581.4	2659.0	2748.3	3189.8	2373.4	2469.7	2472.3	2380.5	2227.7	3085.2	2196.3
82.5°	1839.4	1899.8	2001.8	2103.9	1769.5	2024.3	2022.4	2016.6	1766.3	2085.3	1374.1
85°	1024.3	1105.2	1282.4	1648.2	1277.9	1447.3	1272.7	1401.7	1296.5	1388.3	695.7
87.5°	71.9	64.2	286.9	955.0	596.2	435.8	228.5	452.5	580.2	725.3	96.9
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: P368436

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

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7
2.5°	1867.7	1890.2	1802.2	1670.0	1705.9	1666.8	1617.4	1540.4	1381.8	1480.0	1480.7
5°	2243.2	2157.8	2089.1	2024.3	1915.2	1750.2	1728.4	1596.2	1521.7	1560.9	1555.1
7.5°	2360.6	2239.3	2136.0	1904.3	1702.1	1446.0	1369.0	1290.7	1258.0	1353.0	1390.8
10°	2231.6	2105.2	2003.8	1722.0	1584.6	1424.8	1213.0	1104.6	1040.4	1065.4	1080.2
12.5°	2335.6	2206.6	1887.6	1730.3	1503.8	1406.2	1220.7	1061.6	966.6	989.7	962.1
15°	2435.7	2261.8	1942.8	1629.6	1446.0	1304.8	1154.6	990.3	878.6	838.9	817.7
17.5°	2801.5	2512.7	1936.4	1573.1	1362.6	1200.2	1019.2	839.5	765.0	724.0	688.7
20°	3247.6	2845.2	1971.0	1514.7	1274.0	1069.3	872.2	705.4	653.4	626.4	616.8
22.5°	3778.4	3271.3	2169.3	1506.3	1190.6	973.6	791.4	687.4	629.0	599.5	587.3
25°	4200.1	3712.3	2315.7	1562.8	1186.1	894.7	742.6	763.8	736.8	745.8	674.5
27.5°	4609.5	3832.3	2233.5	1537.8	1066.7	754.8	731.0	775.3	798.4	805.5	802.9
30°	4955.5	4339.3	2251.5	1396.6	901.1	614.9	559.7	581.5	645.0	745.8	765.0
32.5°	5461.9	4581.9	2404.9	1311.2	805.5	550.0	488.4	480.1	494.8	531.4	562.9
35°	6054.3	5140.3	2447.9	1288.8	739.4	521.2	478.2	458.9	466.6	494.2	500.6
37.5°	7158.8	5547.2	2607.1	1261.2	715.0	503.8	470.5	463.4	480.1	502.5	515.4
40°	7767.9	6278.9	2614.8	1237.4	683.5	496.8	475.6	472.4	482.6	513.5	521.2
42.5°	8579.8	6696.1	2735.4	1209.8	672.6	506.4	485.9	484.6	493.6	511.5	525.6
45°	9074.7	6975.3	2741.8	1193.8	670.1	548.8	499.3	494.8	492.9	503.8	516.7
47.5°	9393.6	7377.7	2820.1	1175.8	685.5	559.7	515.4	496.1	489.7	494.2	503.8
50°	9695.9	7699.2	2968.4	1173.2	701.5	548.8	543.6	495.5	482.6	480.7	487.8
52.5°	10066.9	8228.1	3151.3	1197.6	697.7	532.7	564.8	492.9	469.8	465.3	472.4
55°	10606.7	8794.8	3345.8	1177.1	657.9	501.9	544.3	491.0	456.3	448.0	454.4
57.5°	10956.5	9119.6	3563.4	1159.8	597.5	478.8	525.6	492.3	457.6	439.0	442.9
60°	10840.3	8945.0	3648.7	1053.9	540.4	460.8	481.4	482.0	446.1	428.7	431.9
62.5°	10326.8	8312.8	3569.1	930.6	498.1	435.2	435.8	462.8	412.7	400.5	405.6
65°	9609.3	7526.6	3247.0	850.4	478.2	408.2	397.9	406.3	367.8	358.8	369.0
67.5°	8728.7	6557.4	2767.5	765.7	471.1	371.6	359.4	356.2	331.8	321.6	331.8
70°	7624.1	5490.7	2212.3	706.0	444.1	331.8	322.2	319.0	298.4	290.7	299.7
72.5°	6128.1	4287.3	1707.2	660.4	414.6	295.2	286.9	283.0	265.7	254.8	265.7
75°	4358.6	3276.5	1268.2	590.5	372.9	258.0	248.4	243.2	227.2	216.9	226.6
77.5°	3097.4	2459.4	885.7	488.4	307.4	218.2	212.4	204.1	190.0	177.8	187.4
80°	2290.0	1757.3	571.2	376.7	234.9	174.6	171.4	165.6	152.1	137.3	144.4
82.5°	1507.6	1266.9	327.3	255.4	170.7	125.8	128.4	124.5	111.7	96.3	100.1
85°	675.2	750.3	173.9	140.6	111.0	75.7	82.8	80.2	70.6	55.8	57.1
87.5°	64.8	126.4	53.3	51.3	41.1	23.7	29.5	25.0	21.2	13.5	10.3
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: P368436

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

CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7
2.5°	1503.1	1412.6	1322.1	1377.3	1378.6	1393.4	1395.3	1340.8	1384.4	1417.8	1452.4
5°	1526.9	1467.8	1471.0	1417.8	1388.9	1426.1	1418.4	1403.7	1430.0	1466.6	1510.8
7.5°	1354.9	1316.4	1309.9	1258.6	1134.1	1106.5	1129.6	1139.2	1174.5	1231.0	1278.5
10°	1057.7	1134.1	1048.1	1028.2	995.5	931.3	894.1	889.6	964.7	1010.2	1050.0
12.5°	953.1	933.8	923.6	869.0	869.0	801.0	779.2	799.1	914.6	947.3	998.7
15°	811.9	797.8	750.3	723.3	710.5	682.9	706.0	725.3	833.1	835.6	889.6
17.5°	673.9	665.6	620.6	615.5	602.7	590.5	611.7	657.9	716.3	706.0	731.0
20°	602.7	573.8	532.7	547.5	534.0	524.4	515.4	580.8	621.9	635.4	650.2
22.5°	584.7	532.1	507.7	494.2	494.8	479.4	481.4	535.9	598.2	606.5	597.5
25°	668.1	574.4	495.5	456.3	441.6	436.4	451.2	499.3	574.4	592.4	599.5
27.5°	781.7	623.8	510.2	443.5	414.0	416.5	437.7	471.1	559.7	591.8	600.1
30°	750.3	586.6	510.9	433.9	397.3	410.8	418.5	450.6	548.1	596.2	638.0
32.5°	578.9	527.6	514.1	441.6	426.8	405.6	416.5	447.3	514.1	544.3	546.2
35°	490.3	451.2	442.2	424.2	403.7	394.7	406.9	433.9	477.5	496.1	493.6
37.5°	486.5	443.5	408.2	400.5	392.2	389.6	396.6	421.7	466.0	498.7	491.6
40°	492.9	439.6	403.7	390.2	393.4	381.9	388.9	419.7	467.9	498.7	492.3
42.5°	485.2	435.2	397.9	387.7	390.9	374.8	383.2	415.3	462.8	499.3	487.1
45°	469.8	424.9	394.7	377.4	392.2	368.4	378.7	403.7	447.3	487.1	473.0
47.5°	454.4	412.7	381.2	370.3	385.1	362.0	366.5	388.3	431.9	471.1	458.9
50°	437.7	397.3	370.3	367.1	377.4	360.7	353.6	371.6	413.3	452.5	442.2
52.5°	419.7	384.4	362.6	361.3	371.0	352.4	342.1	356.2	393.4	432.6	424.2
55°	402.4	370.3	353.0	356.2	367.1	345.3	332.5	341.4	372.3	410.8	399.2
57.5°	385.1	354.3	340.2	349.1	357.5	336.3	320.3	325.4	350.4	388.3	374.8
60°	369.7	340.2	326.0	337.0	344.7	322.8	304.2	307.4	329.9	363.9	351.7
62.5°	349.8	324.8	306.1	320.3	326.0	304.9	285.0	288.8	306.8	338.9	329.9
65°	321.6	305.5	288.2	297.8	305.5	283.7	265.1	269.6	283.0	313.2	306.8
67.5°	297.2	281.8	270.2	277.9	279.2	262.5	245.8	248.4	259.3	287.5	280.5
70°	270.2	255.4	246.5	252.2	251.6	237.5	224.6	225.3	234.3	259.9	250.3
72.5°	240.7	226.6	222.1	225.3	222.7	209.9	197.7	202.2	207.9	227.2	219.5
75°	209.2	196.4	193.8	197.0	193.2	181.0	170.1	174.6	179.7	195.8	186.1
77.5°	176.5	164.9	165.6	166.2	161.1	152.8	141.8	146.3	149.5	160.5	150.8
80°	140.6	131.6	134.1	134.1	128.4	122.6	112.3	113.6	115.5	119.4	112.3
82.5°	102.7	102.7	102.7	103.3	91.1	93.1	84.1	83.4	81.5	80.9	76.4
85°	61.0	63.5	64.8	66.7	49.4	57.8	50.1	48.1	44.3	40.4	39.2
87.5°	13.5	17.3	17.3	16.7	0.0	6.4	3.2	5.1	1.3	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: P368436
 CATALOG NUMBER: MSA-SA4B-830-U-SLL

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7	1394.7
2.5°	1412.6	1374.1	1446.0	1510.2	1499.9	1537.2	1450.5	1578.9	1714.9	1714.9
5°	1499.3	1466.6	1485.2	1522.4	1550.6	1680.3	1788.1	1895.3	2116.7	2119.3
7.5°	1264.4	1335.0	1351.7	1340.8	1462.1	1628.9	1806.7	2112.2	2299.6	2314.4
10°	1182.2	1214.3	1265.0	1293.3	1342.7	1507.0	1727.8	2090.4	2289.4	2326.6
12.5°	1071.2	1189.9	1266.9	1424.8	1464.0	1496.7	1847.8	2161.6	2299.0	2290.0
15°	949.9	1039.7	1150.8	1325.4	1424.8	1675.1	1919.0	2390.1	2467.8	2535.8
17.5°	757.3	823.5	971.1	1170.0	1416.5	1646.9	2094.9	2672.5	2817.6	2888.2
20°	623.2	623.8	771.5	1035.3	1303.5	1528.8	2161.6	2906.8	3091.0	3126.9
22.5°	589.2	559.7	637.3	851.7	1179.0	1598.8	2296.4	3283.5	3668.0	3758.5
25°	570.6	534.6	583.4	751.6	1089.8	1635.3	2567.9	3801.5	4295.0	4330.3
27.5°	578.3	595.0	610.4	670.1	976.8	1566.7	2505.0	4033.2	4562.0	4628.8
30°	630.3	657.2	621.9	642.5	883.8	1467.2	2617.3	4409.3	4898.3	5010.7
32.5°	524.4	514.1	510.9	555.8	790.7	1377.3	2852.9	4938.8	5262.9	5404.1
35°	473.0	457.0	463.4	514.7	745.1	1364.5	2985.1	5377.1	5838.6	5925.3
37.5°	471.1	452.5	460.8	499.3	761.2	1387.6	3196.9	6080.6	6854.0	7039.4
40°	466.6	456.3	460.8	489.7	744.5	1400.4	3318.8	6671.7	7561.2	7749.3
42.5°	466.0	460.8	465.3	497.4	727.2	1406.2	3487.6	7205.7	8306.4	8454.7
45°	464.0	469.2	469.2	503.8	719.5	1444.7	3587.1	7467.5	8798.0	8980.9
47.5°	455.0	470.5	495.5	501.9	688.0	1426.8	3727.7	7864.8	9059.2	9231.3
50°	443.5	468.5	528.9	489.1	682.9	1383.1	3892.0	8180.0	9394.3	9543.8
52.5°	428.1	465.3	521.2	464.0	673.9	1375.4	4122.4	8589.4	9785.1	9917.4
55°	406.3	453.8	497.4	439.0	652.1	1351.0	4474.7	9097.1	10296.7	10387.2
57.5°	386.4	436.4	462.8	424.9	600.1	1356.2	4719.9	9511.1	10726.0	10805.0
60°	368.4	434.5	413.3	410.1	546.8	1287.5	4799.5	9506.6	10885.9	11009.7
62.5°	349.1	410.1	378.7	390.2	500.0	1216.9	4630.7	9099.0	10713.2	10930.1
65°	324.1	351.7	349.8	376.1	501.3	1102.0	4243.7	8380.2	10282.6	10568.2
67.5°	294.6	311.3	322.2	353.0	517.3	1012.8	3621.1	7515.7	9549.6	9889.1
70°	264.4	281.1	293.3	322.8	532.1	971.7	2882.4	6301.4	8355.8	8700.5
72.5°	233.6	251.0	260.6	286.3	512.2	883.8	2133.4	4902.8	6707.0	6888.0
75°	201.5	218.2	225.9	249.7	444.8	731.0	1473.0	3713.6	4912.5	5096.0
77.5°	168.8	186.8	189.3	208.6	339.5	559.0	944.1	2848.4	3478.6	3601.2
80°	134.8	152.8	152.8	163.0	238.8	384.4	565.4	2148.8	2533.3	2581.4
82.5°	96.9	116.2	114.9	115.5	164.9	238.1	327.3	1610.3	1830.5	1839.4
85°	57.1	70.6	70.0	64.2	97.6	128.4	177.1	1000.0	1021.8	1024.3
87.5°	10.9	16.7	14.8	6.4	27.0	37.9	51.3	185.5	73.8	71.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)