

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: P368590

Luminaire Tested: **MSA-SA4D-727-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368590  
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-SA4D-727-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: 18847 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: B3 - U0 - G4

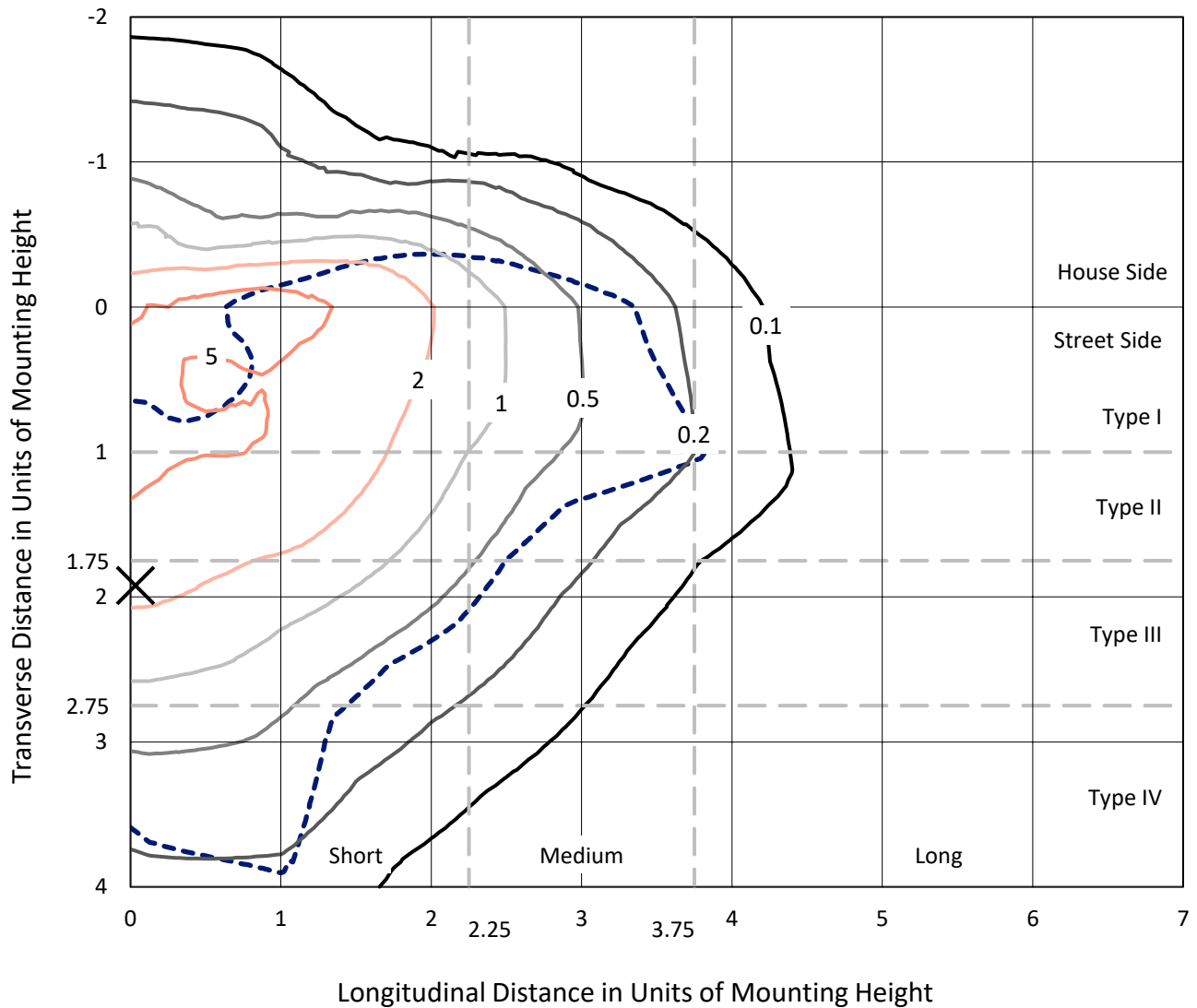
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

### Iso-Footcandle Lines of Horizontal Illumination

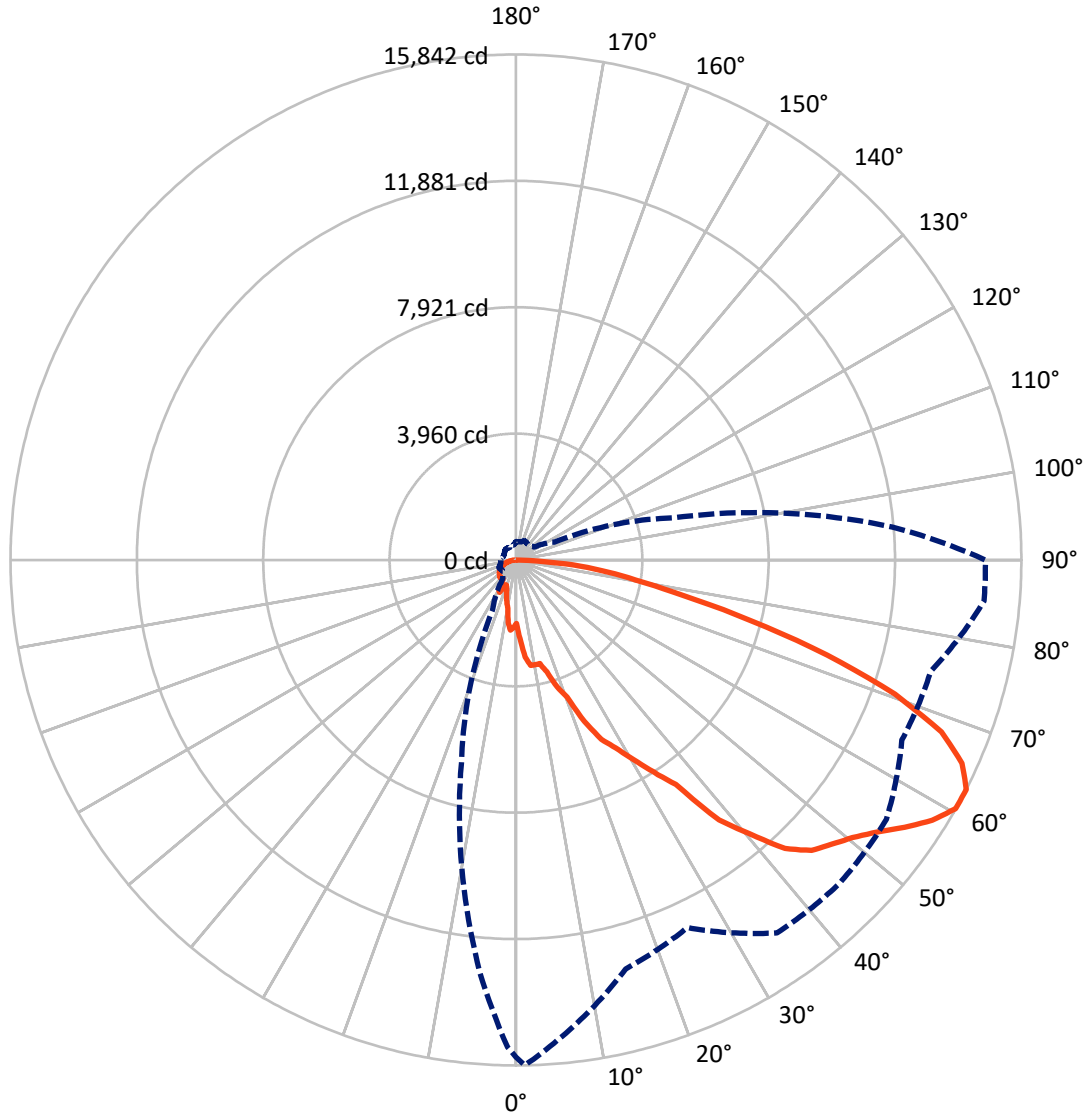
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8 fc  
 Type IV - Short - N/A

REPORT NUMBER: P368590  
CATALOG NUMBER: MSA-SA4D-727-U-SLL

### Luminous Intensity Polar Plot



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

REPORT NUMBER: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

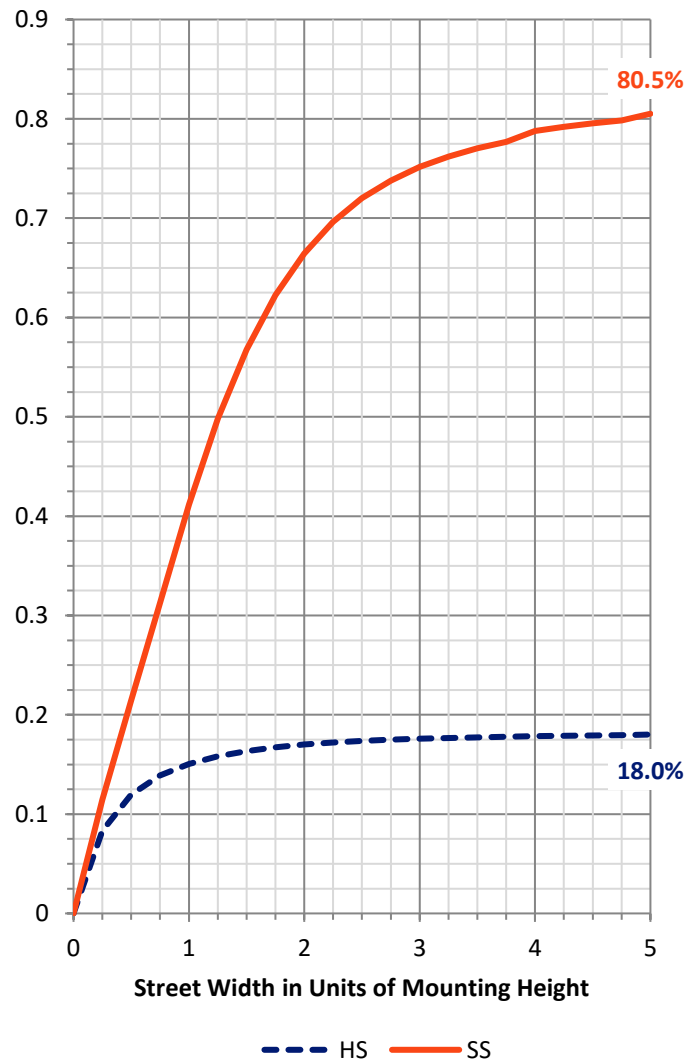
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3431.9	0.0	3431.9
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	15415.1	0.0	15415.1
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	18847.0	0.0	18847.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.8	1.2
10°-20°	662.0	3.5
20°-30°	1168.8	6.2
30°-40°	1820.6	9.7
40°-50°	2997.8	15.9
50°-60°	4278.6	22.7
60°-70°	4537.1	24.1
70°-80°	2506.1	13.3
80°-90°	648.2	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°	18847.0	100.0
0°-180°	18847.0	100.0

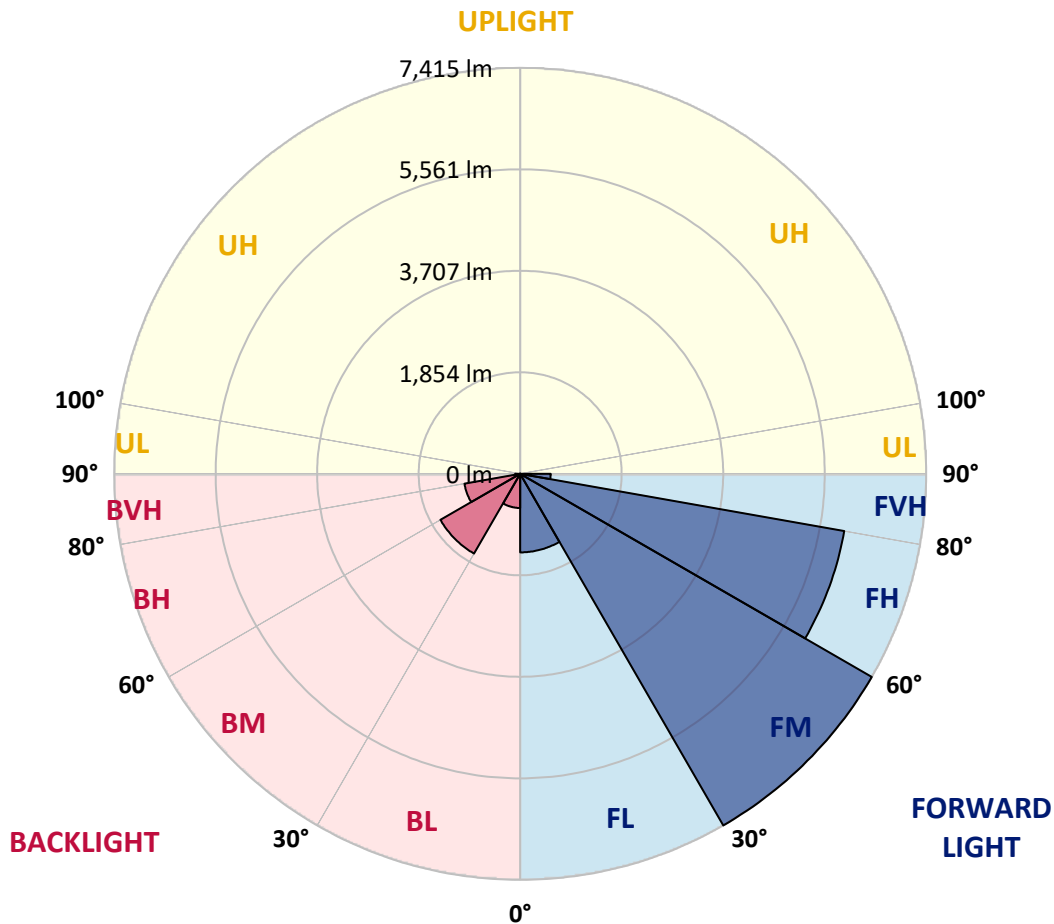


REPORT NUMBER: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1434.5	7.6			
FM (30°-60°)	7414.6	39.3			
FH (60°-80°)	6009.2	31.9			G3/7500
FVH (80°-90°)	556.8	3.0			G4/750
BL (0°-30°)	624.2	3.3	B2/1000		
BM (30°-60°)	1682.4	8.9	B2/2500		
BH (60°-80°)	1033.9	5.5	B3/2500		G3/2500
BVH (80°-90°)	91.4	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**  
 Type IV Short





REPORT NUMBER: P368590

CATALOG NUMBER: MSA-SA4D-727-U-SLL

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4
2.5°	2443.8	2464.8	2421.8	2373.4	2173.1	2366.0	2308.4	2415.4	2380.7	2148.4	2573.6
5°	3020.0	3058.4	3016.3	3161.7	3170.9	3208.4	2861.7	3077.6	3002.6	2983.4	3198.3
7.5°	3298.0	3337.3	3444.3	3703.2	3905.3	3722.4	3520.2	3475.4	3416.9	3264.2	3394.0
10°	3315.4	3337.3	3480.9	4029.7	4127.5	4257.4	4126.6	3818.4	3691.3	3359.3	3260.5
12.5°	3263.2	3331.8	3517.5	4186.1	4476.9	4618.7	4650.7	4307.7	3995.8	3617.2	3566.9
15°	3613.5	3638.2	3904.4	4297.6	4497.9	4617.7	4722.0	4510.7	4412.9	4112.9	3709.6
17.5°	4115.6	4184.2	4401.9	4547.3	4682.7	4705.5	4619.6	4537.3	4381.8	4782.4	4353.4
20°	4455.9	4588.5	4855.5	4883.0	4598.5	4648.8	4637.0	4642.4	4553.7	5294.5	5058.6
22.5°	5355.8	5499.4	5536.0	5376.9	4840.9	4611.3	4657.1	4789.7	5139.1	5773.8	6040.8
25°	6170.7	6226.5	6560.3	6150.6	5296.4	4796.1	4721.1	5064.1	5633.9	6580.5	6770.7
27.5°	6596.0	6668.3	6890.5	5998.8	5353.1	4558.3	4382.7	4904.9	5485.7	6200.9	7035.9
30°	7140.2	7255.4	7558.1	6150.6	5524.1	4713.8	4325.1	4824.4	5466.5	6449.7	7597.5
32.5°	7700.8	7924.9	8149.9	6685.6	5500.3	4951.6	4693.7	4733.9	5640.3	6971.0	8179.2
35°	8443.5	8641.0	8834.9	6994.8	5979.6	5150.0	4894.0	5320.2	6086.6	7575.5	8990.4
37.5°	10031.2	10344.0	9832.7	7874.6	6500.9	6044.5	5582.6	5835.1	6558.5	8079.5	10315.6
40°	11042.7	11277.8	10783.9	8473.6	7419.1	6647.2	6571.3	6592.3	7208.8	8511.1	11207.3
42.5°	12047.9	12366.1	11580.5	9295.9	8529.4	7892.0	7500.5	7474.0	7936.8	9286.7	12221.6
45°	12797.8	12985.3	11854.0	9989.1	9720.2	9247.4	8953.8	8488.3	8893.4	9823.6	12849.0
47.5°	13154.5	13307.2	12293.9	10392.5	10492.1	10516.8	11046.4	10252.5	9729.4	10186.7	13178.3
50°	13599.9	13672.2	12552.7	10747.3	11225.6	12310.3	12437.5	11092.1	10543.4	10582.7	13373.1
52.5°	14132.2	14162.4	12930.4	11157.0	11967.4	13490.2	13293.5	12515.2	11318.0	11306.1	13739.8
55°	14801.7	14783.4	13404.2	11708.5	12496.9	14191.6	14042.6	13475.5	12162.2	11905.2	14310.5
57.5°	15397.1	15386.1	14032.5	12216.1	12942.3	14552.0	14595.9	14445.9	12736.5	12334.1	14928.8
60°	15688.8	15828.8	14747.7	12771.3	12970.7	14714.8	14731.3	14492.5	13378.6	12884.7	15093.4
62.5°	15575.4	15841.6	15098.9	13270.7	12710.0	14270.3	14338.9	14174.3	13349.3	13462.7	14725.8
65°	15059.6	15366.9	14794.4	13536.8	12550.0	13525.8	13543.2	13127.1	12931.3	13845.9	13864.2
67.5°	14092.0	14380.0	13824.9	13112.4	11454.3	11519.2	11907.0	11940.8	11655.5	13556.9	12654.2
70°	12398.1	12601.2	12253.6	12064.3	9573.9	9193.4	9614.1	9794.3	9924.2	12513.4	11201.9
72.5°	9815.3	10207.7	10262.6	10386.0	7708.1	7074.3	7386.2	7119.1	7965.1	10650.4	9152.3
75°	7261.8	7592.9	7948.7	8637.4	6075.6	5296.4	5258.0	5121.7	5911.9	8565.1	6788.1
77.5°	5131.7	5343.0	5616.5	6899.6	4584.8	4079.1	4102.8	3964.7	4269.3	6473.4	4689.1
80°	3678.5	3789.1	3916.3	4545.5	3382.1	3519.3	3523.0	3392.2	3174.5	4396.4	3129.7
82.5°	2621.2	2707.2	2852.6	2998.0	2521.5	2884.6	2881.9	2873.6	2516.9	2971.5	1958.1
85°	1459.7	1574.9	1827.3	2348.7	1820.9	2062.4	1813.6	1997.5	1847.5	1978.3	991.4
87.5°	102.4	91.5	408.8	1360.9	849.7	621.0	325.6	644.8	826.8	1033.5	138.1
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: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4
2.5°	2661.4	2693.5	2568.2	2379.8	2431.0	2375.2	2304.8	2195.0	1969.1	2109.0	2110.0
5°	3196.5	3074.8	2977.0	2884.6	2729.1	2494.1	2463.0	2274.6	2168.5	2224.3	2216.0
7.5°	3363.9	3191.0	3043.7	2713.6	2425.5	2060.6	1950.8	1839.2	1792.6	1927.9	1981.9
10°	3180.0	2999.8	2855.3	2453.8	2258.1	2030.4	1728.6	1574.0	1482.5	1518.2	1539.2
12.5°	3328.2	3144.3	2689.8	2465.7	2142.9	2003.9	1739.5	1512.7	1377.4	1410.3	1371.0
15°	3470.9	3223.0	2768.5	2322.1	2060.6	1859.4	1645.3	1411.2	1252.1	1195.4	1165.2
17.5°	3992.2	3580.6	2759.3	2241.7	1941.7	1710.3	1452.4	1196.3	1090.2	1031.7	981.4
20°	4627.8	4054.4	2808.7	2158.4	1815.5	1523.7	1242.9	1005.1	931.0	892.6	878.9
22.5°	5384.2	4661.6	3091.3	2146.5	1696.6	1387.4	1127.7	979.5	896.3	854.2	836.8
25°	5985.1	5290.0	3299.8	2227.0	1690.2	1274.9	1058.2	1088.4	1049.9	1062.7	961.2
27.5°	6568.6	5461.0	3182.8	2191.4	1520.0	1075.6	1041.7	1104.8	1137.7	1147.8	1144.1
30°	7061.5	6183.5	3208.4	1990.1	1284.1	876.2	797.5	828.6	919.2	1062.7	1090.2
32.5°	7783.1	6529.2	3427.0	1868.5	1147.8	783.8	696.0	684.1	705.1	757.3	802.1
35°	8627.3	7324.9	3488.2	1836.5	1053.6	742.6	681.4	653.9	664.9	704.2	713.4
37.5°	10201.3	7904.8	3715.1	1797.2	1018.8	718.0	670.4	660.3	684.1	716.1	734.4
40°	11069.2	8947.4	3726.0	1763.3	974.0	707.9	677.7	673.1	687.8	731.7	742.6
42.5°	12226.2	9541.9	3898.0	1724.0	958.5	721.6	692.3	690.5	703.3	728.9	749.0
45°	12931.3	9939.7	3907.1	1701.1	954.8	782.0	711.5	705.1	702.4	718.0	736.2
47.5°	13385.9	10513.2	4018.7	1675.5	976.8	797.5	734.4	707.0	697.8	704.2	718.0
50°	13816.7	10971.4	4230.0	1671.9	999.6	782.0	774.7	706.1	687.8	685.0	695.1
52.5°	14345.3	11725.0	4490.6	1706.6	994.2	759.1	804.8	702.4	669.5	663.1	673.1
55°	15114.5	12532.6	4767.7	1677.4	937.5	715.2	775.6	699.7	650.3	638.4	647.5
57.5°	15612.9	12995.4	5077.8	1652.7	851.5	682.3	749.0	701.5	652.1	625.6	631.1
60°	15447.4	12746.6	5199.4	1501.8	770.1	656.7	685.9	686.9	635.6	610.9	615.5
62.5°	14715.7	11845.7	5086.0	1326.2	709.7	620.1	621.0	659.4	588.1	570.7	578.0
65°	13693.2	10725.4	4626.9	1211.8	681.4	581.7	567.0	578.9	524.1	511.3	525.9
67.5°	12438.4	9344.3	3943.7	1091.1	671.3	529.5	512.2	507.6	472.8	458.2	472.8
70°	10864.4	7824.3	3152.6	1006.0	632.9	472.8	459.1	454.5	425.3	414.3	427.1
72.5°	8732.5	6109.4	2432.8	941.1	590.8	420.7	408.8	403.3	378.6	363.1	378.6
75°	6211.0	4669.0	1807.2	841.4	531.4	367.7	353.9	346.6	323.8	309.1	322.8
77.5°	4413.8	3504.7	1262.1	696.0	438.1	311.0	302.7	290.8	270.7	253.3	267.1
80°	3263.2	2504.1	814.0	536.9	334.7	248.8	244.2	236.0	216.8	195.7	205.8
82.5°	2148.4	1805.4	466.4	364.0	243.3	179.3	182.9	177.4	159.1	137.2	142.7
85°	962.1	1069.2	247.9	200.3	158.2	107.9	118.0	114.3	100.6	79.6	81.4
87.5°	92.4	180.2	75.9	73.2	58.5	33.8	42.1	35.7	30.2	19.2	14.6
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: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4
2.5°	2142.0	2013.0	1884.0	1962.7	1964.5	1985.6	1988.3	1910.6	1972.8	2020.3	2069.7
5°	2175.8	2091.7	2096.2	2020.3	1979.2	2032.2	2021.2	2000.2	2037.7	2089.8	2152.9
7.5°	1930.7	1875.8	1866.7	1793.5	1616.1	1576.7	1609.7	1623.4	1673.7	1754.2	1821.9
10°	1507.2	1616.1	1493.5	1465.2	1418.5	1327.1	1274.0	1267.6	1374.6	1439.6	1496.3
12.5°	1358.2	1330.7	1316.1	1238.4	1238.4	1141.4	1110.3	1138.7	1303.3	1349.9	1423.1
15°	1157.0	1136.8	1069.2	1030.7	1012.4	973.1	1006.0	1033.5	1187.1	1190.8	1267.6
17.5°	960.3	948.4	884.4	877.1	858.8	841.4	871.6	937.5	1020.7	1006.0	1041.7
20°	858.8	817.6	759.1	780.1	760.9	747.2	734.4	827.7	886.2	905.4	926.5
22.5°	833.2	758.2	723.4	704.2	705.1	683.2	685.9	763.7	852.4	864.3	851.5
25°	952.1	818.6	706.1	650.3	629.2	621.9	643.0	711.5	818.6	844.2	854.2
27.5°	1114.0	889.0	727.1	632.0	589.9	593.6	623.7	671.3	797.5	843.2	855.1
30°	1069.2	835.9	728.0	618.3	566.1	585.3	596.3	642.0	781.1	849.7	909.1
32.5°	825.0	751.8	732.6	629.2	608.2	578.0	593.6	637.5	732.6	775.6	778.3
35°	698.7	643.0	630.2	604.5	575.3	562.5	579.8	618.3	680.5	707.0	703.3
37.5°	693.3	632.0	581.7	570.7	558.8	555.2	565.2	600.9	664.0	710.6	700.6
40°	702.4	626.5	575.3	556.1	560.6	544.2	554.2	598.1	666.7	710.6	701.5
42.5°	691.4	620.1	567.0	552.4	557.0	534.1	546.0	591.7	659.4	711.5	694.2
45°	669.5	605.5	562.5	537.8	558.8	525.0	539.6	575.3	637.5	694.2	674.1
47.5°	647.5	588.1	543.3	527.7	548.8	515.8	522.2	553.3	615.5	671.3	653.9
50°	623.7	566.1	527.7	523.1	537.8	514.0	503.9	529.5	589.0	644.8	630.2
52.5°	598.1	547.8	516.7	514.9	528.6	502.1	487.5	507.6	560.6	616.4	604.5
55°	573.4	527.7	503.0	507.6	523.1	492.0	473.8	486.6	530.5	585.3	568.9
57.5°	548.8	504.9	484.7	497.5	509.4	479.2	456.4	463.7	499.4	553.3	534.1
60°	526.8	484.7	464.6	480.2	491.1	460.0	433.5	438.1	470.1	518.6	501.2
62.5°	498.4	462.8	436.3	456.4	464.6	434.4	406.1	411.6	437.2	482.9	470.1
65°	458.2	435.3	410.6	424.4	435.3	404.2	377.7	384.1	403.3	446.3	437.2
67.5°	423.5	401.5	385.0	396.0	397.8	374.1	350.3	353.9	369.5	409.7	399.7
70°	385.0	364.0	351.2	359.4	358.5	338.4	320.1	321.0	333.8	370.4	356.7
72.5°	343.0	322.8	316.4	321.0	317.4	299.1	281.7	288.1	296.3	323.8	312.8
75°	298.2	279.9	276.2	280.8	275.3	257.9	242.4	248.8	256.1	278.9	265.2
77.5°	251.5	235.0	236.0	236.9	229.6	217.7	202.1	208.5	213.1	228.6	214.9
80°	200.3	187.5	191.1	191.1	182.9	174.7	160.1	161.9	164.6	170.1	160.1
82.5°	146.3	146.3	146.3	147.2	129.9	132.6	119.8	118.9	116.2	115.2	108.8
85°	86.9	90.5	92.4	95.1	70.4	82.3	71.3	68.6	63.1	57.6	55.8
87.5°	19.2	24.7	24.7	23.8	0.0	9.1	4.6	7.3	1.8	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: P368590  
 CATALOG NUMBER: MSA-SA4D-727-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4	1987.4
2.5°	2013.0	1958.1	2060.6	2152.0	2137.4	2190.4	2067.0	2249.9	2443.8	2443.8
5°	2136.5	2089.8	2116.4	2169.4	2209.6	2394.4	2548.0	2700.8	3016.3	3020.0
7.5°	1801.7	1902.3	1926.1	1910.6	2083.4	2321.2	2574.6	3009.9	3277.0	3298.0
10°	1684.7	1730.4	1802.7	1842.9	1913.3	2147.4	2462.1	2978.8	3262.3	3315.4
12.5°	1526.4	1695.6	1805.4	2030.4	2086.2	2132.8	2633.1	3080.3	3276.1	3263.2
15°	1353.6	1481.6	1639.9	1888.6	2030.4	2387.1	2734.6	3405.9	3516.6	3613.5
17.5°	1079.2	1173.4	1383.8	1667.3	2018.5	2346.8	2985.2	3808.3	4015.0	4115.6
20°	888.1	889.0	1099.3	1475.2	1857.5	2178.5	3080.3	4142.2	4404.7	4455.9
22.5°	839.6	797.5	908.2	1213.7	1680.1	2278.2	3272.4	4679.0	5226.9	5355.8
25°	813.1	761.9	831.4	1071.0	1553.0	2330.4	3659.3	5417.1	6120.4	6170.7
27.5°	824.0	847.8	869.8	954.8	1392.0	2232.5	3569.6	5747.3	6500.9	6596.0
30°	898.1	936.5	886.2	915.5	1259.4	2090.7	3729.7	6283.2	6980.1	7140.2
32.5°	747.2	732.6	728.0	792.0	1126.8	1962.7	4065.3	7037.7	7499.6	7700.8
35°	674.1	651.2	660.3	733.5	1061.8	1944.4	4253.7	7662.4	8320.0	8443.5
37.5°	671.3	644.8	656.7	711.5	1084.7	1977.3	4555.6	8664.8	9766.9	10031.2
40°	664.9	650.3	656.7	697.8	1060.9	1995.6	4729.3	9507.1	10774.7	11042.7
42.5°	664.0	656.7	663.1	708.8	1036.2	2003.9	4969.9	10268.1	11836.6	12047.9
45°	661.2	668.6	668.6	718.0	1025.3	2058.7	5111.6	10641.2	12537.2	12797.8
47.5°	648.4	670.4	706.1	715.2	980.4	2033.1	5311.9	11207.3	12909.4	13154.5
50°	632.0	667.6	753.6	696.9	973.1	1970.9	5546.1	11656.4	13386.8	13599.9
52.5°	610.0	663.1	742.6	661.2	960.3	1960.0	5874.4	12239.9	13943.8	14132.2
55°	578.9	646.6	708.8	625.6	929.2	1925.2	6376.5	12963.4	14672.7	14801.7
57.5°	550.6	621.9	659.4	605.5	855.1	1932.5	6725.9	13553.3	15284.6	15397.1
60°	525.0	619.2	589.0	584.4	779.2	1834.7	6839.3	13546.9	15512.3	15688.8
62.5°	497.5	584.4	539.6	556.1	712.5	1734.1	6598.7	12966.1	15266.3	15575.4
65°	461.9	501.2	498.4	535.9	714.3	1570.3	6047.2	11941.8	14652.6	15059.6
67.5°	419.8	443.6	459.1	503.0	737.2	1443.2	5160.1	10709.8	13608.1	14092.0
70°	376.8	400.6	418.0	460.0	758.2	1384.7	4107.4	8979.4	11907.0	12398.1
72.5°	332.9	357.6	371.3	407.9	729.8	1259.4	3040.1	6986.5	9557.4	9815.3
75°	287.2	311.0	321.9	355.8	633.8	1041.7	2099.0	5291.8	7000.2	7261.8
77.5°	240.5	266.1	269.8	297.2	483.8	796.6	1345.4	4058.9	4957.1	5131.7
80°	192.1	217.7	217.7	232.3	340.2	547.8	805.8	3062.0	3609.9	3678.5
82.5°	138.1	165.5	163.7	164.6	235.0	339.3	466.4	2294.7	2608.4	2621.2
85°	81.4	100.6	99.7	91.5	139.0	182.9	252.4	1424.9	1456.0	1459.7
87.5°	15.5	23.8	21.0	9.1	38.4	54.0	73.2	264.3	105.2	102.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)