

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: P368194

Luminaire Tested: **MSA-SA4A-727-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368194  
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-SA4A-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: 11107 lumens  
Efficiency: N/A  
Efficacy: 86.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

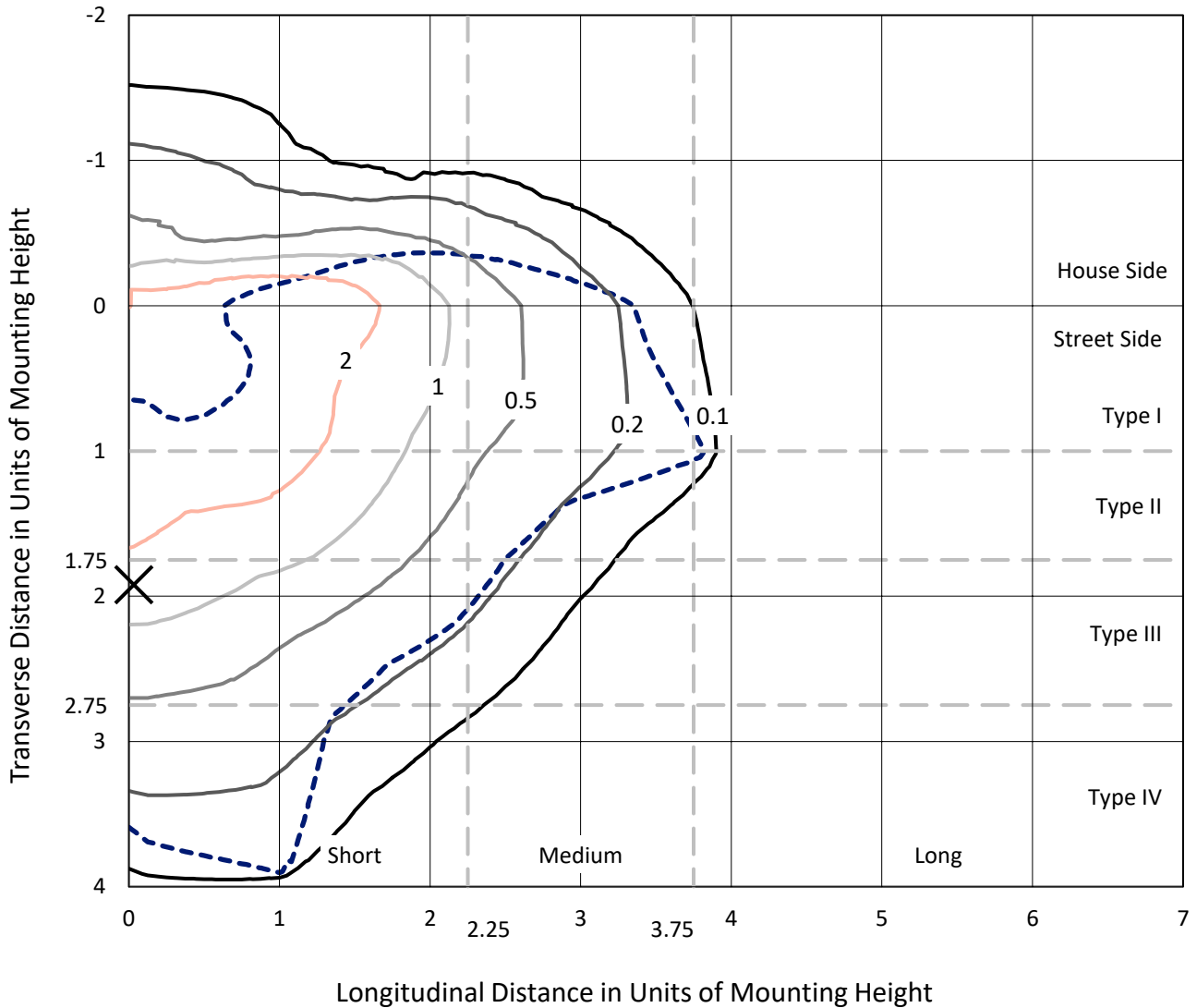
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

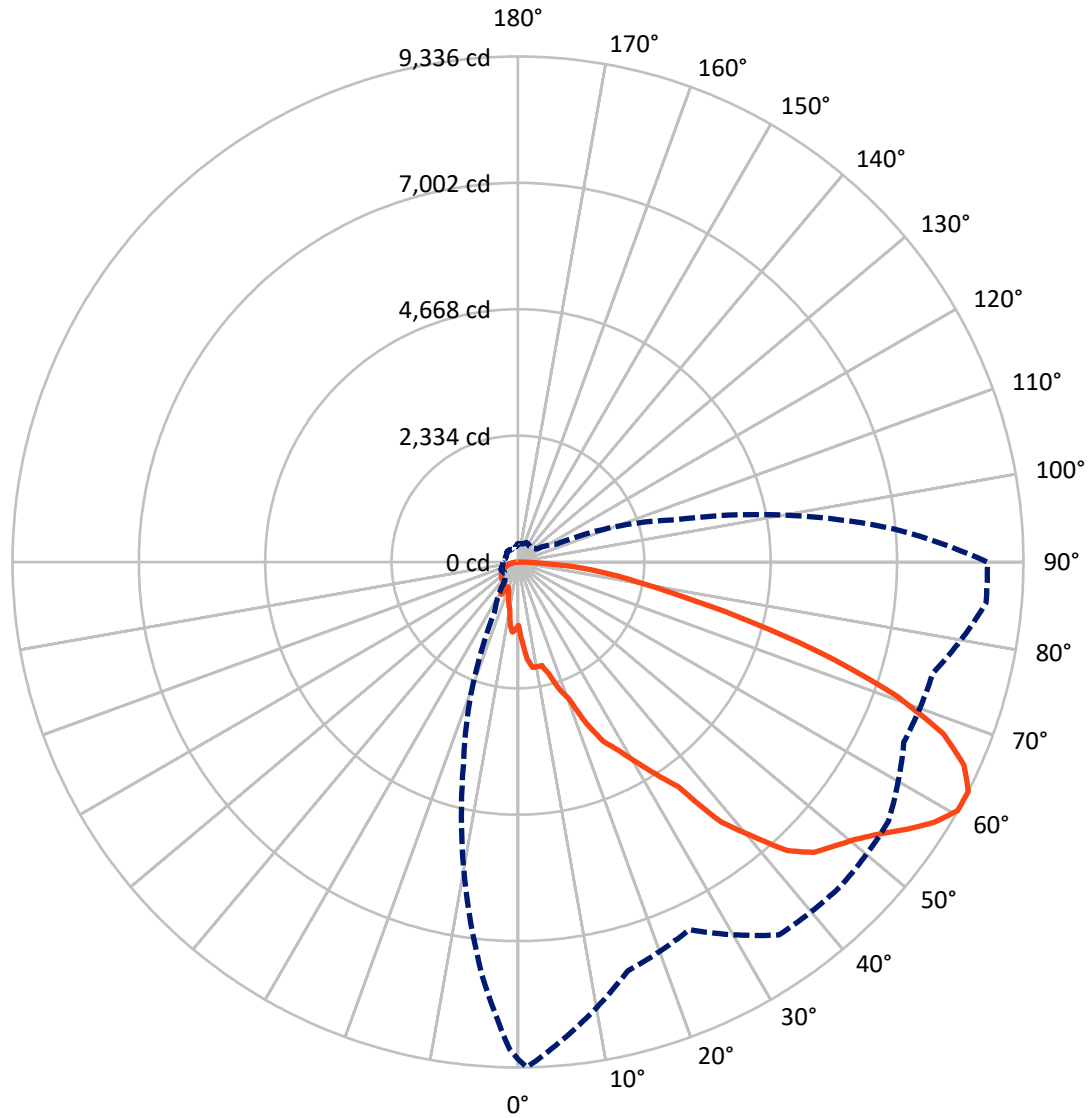
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



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

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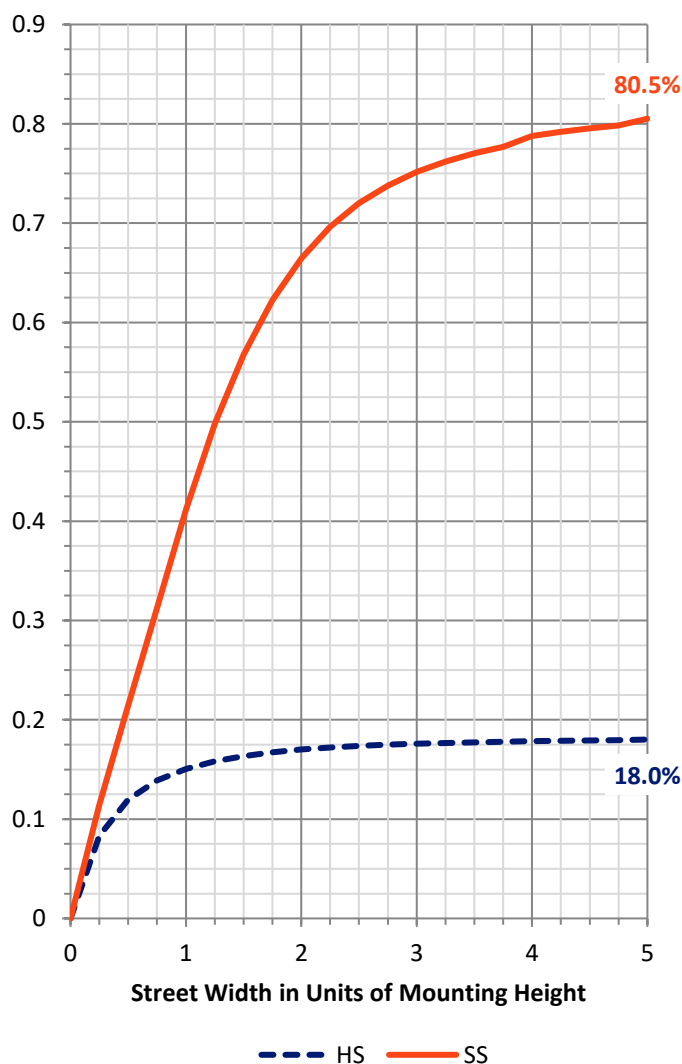
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2022.5	0.0	2022.5
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	9084.5	0.0	9084.5
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	11107.0	0.0	11107.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.3	1.2
10°-20°	390.2	3.5
20°-30°	688.8	6.2
30°-40°	1072.9	9.7
40°-50°	1766.7	15.9
50°-60°	2521.5	22.7
60°-70°	2673.8	24.1
70°-80°	1476.9	13.3
80°-90°	382.0	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°	11107.0	100.0
0°-180°	11107.0	100.0

**Coefficient of Utilization**



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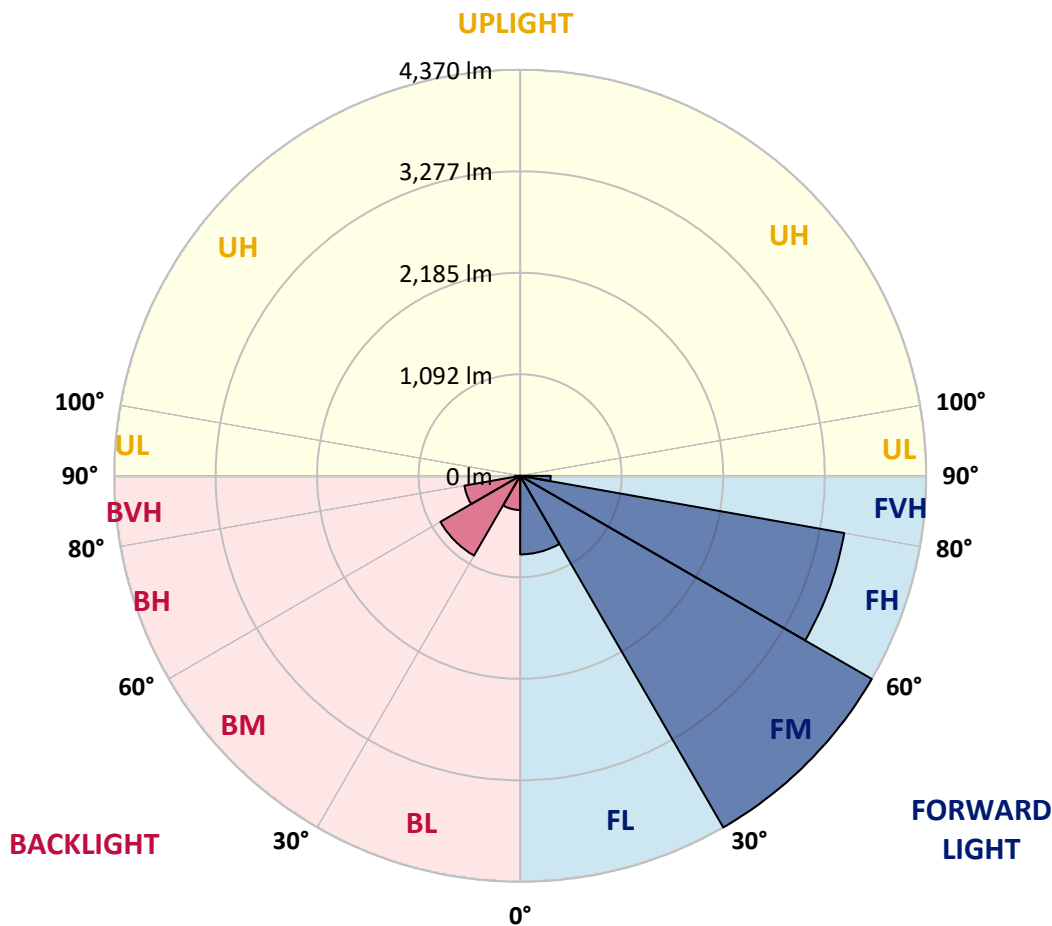
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	845.4	7.6			
FM (30°-60°)	4369.6	39.3			
FH (60°-80°)	3541.4	31.9			G2/5000
FVH (80°-90°)	328.1	3.0			G3/500
BL (0°-30°)	367.8	3.3	B1/500		
BM (30°-60°)	991.5	8.9	B1/1000		
BH (60°-80°)	609.3	5.5	B2/1000		G2/1000
BVH (80°-90°)	53.9	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





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**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2
2.5°	1440.2	1452.6	1427.2	1398.7	1280.6	1394.4	1360.4	1423.5	1403.0	1266.1	1516.7
5°	1779.7	1802.4	1777.6	1863.3	1868.7	1890.8	1686.5	1813.7	1769.5	1758.2	1884.8
7.5°	1943.6	1966.8	2029.8	2182.4	2301.5	2193.7	2074.6	2048.2	2013.7	1923.6	2000.2
10°	1953.8	1966.8	2051.4	2374.8	2432.5	2509.0	2431.9	2250.3	2175.4	1979.7	1921.5
12.5°	1923.1	1963.5	2072.9	2467.0	2638.3	2721.9	2740.8	2538.6	2354.8	2131.7	2102.1
15°	2129.5	2144.1	2300.9	2532.7	2650.7	2721.4	2782.8	2658.3	2600.6	2423.8	2186.1
17.5°	2425.4	2465.9	2594.2	2679.9	2759.6	2773.1	2722.4	2673.9	2582.3	2818.4	2565.6
20°	2626.0	2704.1	2861.5	2877.7	2710.0	2739.7	2732.7	2735.9	2683.6	3120.2	2981.1
22.5°	3156.3	3240.9	3262.5	3168.7	2852.9	2717.6	2744.5	2822.7	3028.6	3402.6	3560.0
25°	3636.6	3669.4	3866.2	3624.7	3121.3	2826.5	2782.3	2984.4	3320.2	3878.0	3990.1
27.5°	3887.2	3929.8	4060.7	3535.2	3154.7	2686.3	2582.8	2890.6	3232.9	3654.3	4146.4
30°	4207.9	4275.8	4454.2	3624.7	3255.5	2777.9	2548.9	2843.2	3221.5	3800.9	4477.4
32.5°	4538.3	4670.3	4802.9	3940.0	3241.5	2918.1	2766.1	2789.8	3323.9	4108.2	4820.2
35°	4975.9	5092.4	5206.6	4122.2	3523.9	3035.0	2884.1	3135.3	3587.0	4464.4	5298.3
37.5°	5911.6	6096.0	5794.7	4640.7	3831.1	3562.2	3290.0	3438.7	3865.1	4761.4	6079.3
40°	6507.7	6646.3	6355.2	4993.7	4372.3	3917.4	3872.6	3885.0	4248.3	5015.8	6604.8
42.5°	7100.1	7287.7	6824.7	5478.3	5026.6	4650.9	4420.2	4404.6	4677.3	5472.9	7202.5
45°	7542.1	7652.6	6985.8	5886.8	5728.4	5449.7	5276.7	5002.4	5241.1	5789.3	7572.2
47.5°	7752.3	7842.3	7245.1	6124.5	6183.3	6197.8	6509.9	6042.1	5733.8	6003.3	7766.3
50°	8014.8	8057.3	7397.6	6333.7	6615.5	7254.8	7329.7	6536.9	6213.5	6236.6	7881.1
52.5°	8328.5	8346.2	7620.2	6575.1	7052.7	7950.1	7834.2	7375.5	6670.0	6663.0	8097.2
55°	8723.0	8712.2	7899.4	6900.1	7364.7	8363.5	8275.6	7941.5	7167.5	7016.0	8433.6
57.5°	9073.9	9067.4	8269.7	7199.3	7627.2	8575.8	8601.7	8513.3	7506.0	7268.8	8797.9
60°	9245.8	9328.3	8691.2	7526.4	7643.9	8671.8	8681.5	8540.8	7884.3	7593.3	8894.9
62.5°	9179.0	9335.8	8898.2	7820.7	7490.3	8409.8	8450.3	8353.2	7867.1	7933.9	8678.3
65°	8875.0	9056.1	8718.7	7977.6	7396.0	7971.1	7981.3	7736.1	7620.8	8159.7	8170.5
67.5°	8304.7	8474.5	8147.3	7727.5	6750.3	6788.6	7017.1	7037.0	6868.9	7989.4	7457.4
70°	7306.5	7426.2	7221.4	7109.8	5642.1	5417.9	5665.8	5772.0	5848.6	7374.4	6601.5
72.5°	5784.4	6015.7	6048.0	6120.8	4542.6	4169.1	4352.9	4195.5	4694.1	6276.5	5393.7
75°	4279.6	4474.7	4684.3	5090.2	3580.5	3121.3	3098.6	3018.3	3484.0	5047.6	4000.4
77.5°	3024.3	3148.8	3309.9	4066.1	2701.9	2403.9	2417.9	2336.5	2516.0	3815.0	2763.4
80°	2167.8	2233.0	2307.9	2678.8	1993.2	2074.0	2076.2	1999.1	1870.8	2590.9	1844.4
82.5°	1544.7	1595.4	1681.1	1766.8	1486.0	1700.0	1698.4	1693.5	1483.3	1751.2	1154.0
85°	860.2	928.1	1076.9	1384.1	1073.1	1215.4	1068.8	1177.2	1088.8	1165.8	584.3
87.5°	60.4	53.9	240.9	802.0	500.7	366.0	191.9	380.0	487.2	609.1	81.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2
2.5°	1568.5	1587.3	1513.5	1402.4	1432.6	1399.8	1358.3	1293.6	1160.4	1242.9	1243.4
5°	1883.8	1812.1	1754.4	1700.0	1608.3	1469.8	1451.5	1340.5	1277.9	1310.8	1306.0
7.5°	1982.4	1880.5	1793.8	1599.2	1429.4	1214.3	1149.7	1083.9	1056.4	1136.2	1168.0
10°	1874.1	1767.9	1682.7	1446.1	1330.8	1196.6	1018.7	927.6	873.7	894.7	907.1
12.5°	1961.4	1853.0	1585.2	1453.1	1262.9	1180.9	1025.2	891.5	811.7	831.1	807.9
15°	2045.5	1899.4	1631.5	1368.5	1214.3	1095.8	969.6	831.7	737.9	704.5	686.7
17.5°	2352.7	2110.1	1626.1	1321.1	1144.3	1007.9	855.9	705.0	642.5	608.0	578.3
20°	2727.3	2389.3	1655.2	1272.0	1069.9	898.0	732.5	592.3	548.7	526.1	518.0
22.5°	3173.0	2747.2	1821.8	1265.0	999.8	817.6	664.6	577.3	528.2	503.4	493.2
25°	3527.1	3117.5	1944.7	1312.4	996.1	751.3	623.6	641.4	618.8	626.3	566.5
27.5°	3871.0	3218.3	1875.7	1291.4	895.8	633.9	613.9	651.1	670.5	676.4	674.3
30°	4161.5	3644.1	1890.8	1172.8	756.7	516.4	470.0	488.3	541.7	626.3	642.5
32.5°	4586.8	3847.8	2019.6	1101.2	676.4	461.9	410.2	403.2	415.6	446.3	472.7
35°	5084.3	4316.8	2055.7	1082.3	620.9	437.7	401.5	385.4	391.8	415.0	420.4
37.5°	6011.9	4658.5	2189.4	1059.1	600.4	423.1	395.1	389.1	403.2	422.0	432.8
40°	6523.4	5272.9	2195.8	1039.2	574.0	417.2	399.4	396.7	405.3	431.2	437.7
42.5°	7205.2	5623.3	2297.2	1016.0	564.9	425.3	408.0	406.9	414.5	429.6	441.4
45°	7620.8	5857.7	2302.6	1002.5	562.7	460.8	419.3	415.6	413.9	423.1	433.9
47.5°	7888.6	6195.7	2368.3	987.4	575.6	470.0	432.8	416.6	411.2	415.0	423.1
50°	8142.5	6465.7	2492.8	985.3	589.1	460.8	456.5	416.1	405.3	403.7	409.6
52.5°	8454.0	6909.8	2646.4	1005.8	585.9	447.4	474.3	413.9	394.5	390.8	396.7
55°	8907.3	7385.8	2809.7	988.5	552.5	421.5	457.1	412.3	383.2	376.2	381.6
57.5°	9201.1	7658.5	2992.5	974.0	501.8	402.1	441.4	413.4	384.3	368.7	371.9
60°	9103.5	7511.9	3064.1	885.0	453.8	387.0	404.2	404.8	374.6	360.0	362.7
62.5°	8672.3	6981.0	2997.3	781.5	418.3	365.4	366.0	388.6	346.6	336.3	340.6
65°	8069.7	6320.7	2726.7	714.2	401.5	342.8	334.2	341.2	308.8	301.3	309.9
67.5°	7330.2	5506.8	2324.1	643.0	395.6	312.1	301.8	299.1	278.7	270.0	278.7
70°	6402.6	4611.0	1857.9	592.9	373.0	278.7	270.6	267.9	250.6	244.2	251.7
72.5°	5146.3	3600.4	1433.7	554.6	348.2	247.9	240.9	237.7	223.1	214.0	223.1
75°	3660.3	2751.5	1065.0	495.9	313.2	216.7	208.6	204.3	190.8	182.2	190.3
77.5°	2601.2	2065.4	743.8	410.2	258.2	183.3	178.4	171.4	159.5	149.3	157.4
80°	1923.1	1475.8	479.7	316.4	197.3	146.6	143.9	139.1	127.7	115.3	121.3
82.5°	1266.1	1064.0	274.9	214.5	143.4	105.6	107.8	104.6	93.8	80.8	84.1
85°	567.0	630.1	146.1	118.0	93.2	63.6	69.5	67.4	59.3	46.9	48.0
87.5°	54.4	106.2	44.7	43.1	34.5	19.9	24.8	21.0	17.8	11.3	8.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2
2.5°	1262.3	1186.3	1110.3	1156.7	1157.7	1170.1	1171.8	1125.9	1162.6	1190.6	1219.7
5°	1282.3	1232.7	1235.4	1190.6	1166.4	1197.6	1191.2	1178.8	1200.9	1231.6	1268.8
7.5°	1137.8	1105.5	1100.1	1057.0	952.4	929.2	948.6	956.7	986.3	1033.8	1073.7
10°	888.3	952.4	880.2	863.5	836.0	782.1	750.8	747.0	810.1	848.4	881.8
12.5°	800.4	784.2	775.6	729.8	729.8	672.7	654.3	671.0	768.1	795.5	838.7
15°	681.8	670.0	630.1	607.4	596.7	573.5	592.9	609.1	699.6	701.8	747.0
17.5°	565.9	558.9	521.2	516.9	506.1	495.9	513.7	552.5	601.5	592.9	613.9
20°	506.1	481.9	447.4	459.8	448.4	440.4	432.8	487.8	522.3	533.6	546.0
22.5°	491.0	446.8	426.3	415.0	415.6	402.6	404.2	450.1	502.3	509.3	501.8
25°	561.1	482.4	416.1	383.2	370.8	366.5	378.9	419.3	482.4	497.5	503.4
27.5°	656.5	523.9	428.5	372.4	347.6	349.8	367.6	395.6	470.0	496.9	504.0
30°	630.1	492.6	429.0	364.4	333.6	345.0	351.4	378.4	460.3	500.7	535.8
32.5°	486.2	443.0	431.7	370.8	358.4	340.6	349.8	375.7	431.7	457.1	458.7
35°	411.8	378.9	371.4	356.3	339.0	331.5	341.7	364.4	401.0	416.6	414.5
37.5°	408.6	372.4	342.8	336.3	329.3	327.2	333.1	354.1	391.3	418.8	412.9
40°	413.9	369.2	339.0	327.7	330.4	320.7	326.6	352.5	392.9	418.8	413.4
42.5°	407.5	365.4	334.2	325.5	328.2	314.8	321.8	348.7	388.6	419.3	409.1
45°	394.5	356.8	331.5	316.9	329.3	309.4	318.0	339.0	375.7	409.1	397.2
47.5°	381.6	346.6	320.2	311.0	323.4	304.0	307.8	326.1	362.7	395.6	385.4
50°	367.6	333.6	311.0	308.3	316.9	302.9	297.0	312.1	347.1	380.0	371.4
52.5°	352.5	322.9	304.5	303.5	311.5	295.9	287.3	299.1	330.4	363.3	356.3
55°	337.9	311.0	296.4	299.1	308.3	290.0	279.2	286.7	312.6	345.0	335.3
57.5°	323.4	297.5	285.7	293.2	300.2	282.4	269.0	273.3	294.3	326.1	314.8
60°	310.5	285.7	273.8	283.0	289.4	271.1	255.5	258.2	277.0	305.6	295.4
62.5°	293.7	272.7	257.1	269.0	273.8	256.0	239.3	242.5	257.6	284.6	277.0
65°	270.0	256.6	242.0	250.1	256.6	238.2	222.6	226.4	237.7	263.0	257.6
67.5°	249.6	236.6	226.9	233.4	234.5	220.4	206.4	208.6	217.8	241.5	235.5
70°	226.9	214.5	207.0	211.8	211.3	199.4	188.6	189.2	196.7	218.3	210.2
72.5°	202.1	190.3	186.5	189.2	187.0	176.2	166.0	169.8	174.6	190.8	184.3
75°	175.7	164.9	162.8	165.5	162.2	152.0	142.8	146.6	150.9	164.4	156.3
77.5°	148.2	138.5	139.1	139.6	135.3	128.3	119.1	122.9	125.6	134.7	126.7
80°	118.0	110.5	112.6	112.6	107.8	102.9	94.3	95.4	97.0	100.3	94.3
82.5°	86.2	86.2	86.2	86.8	76.5	78.2	70.6	70.1	68.5	67.9	64.1
85°	51.2	53.4	54.4	56.1	41.5	48.5	42.0	40.4	37.2	34.0	32.9
87.5°	11.3	14.6	14.6	14.0	0.0	5.4	2.7	4.3	1.1	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



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 CATALOG NUMBER: MSA-SA4A-727-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2	1171.2
2.5°	1186.3	1154.0	1214.3	1268.2	1259.6	1290.9	1218.1	1325.9	1440.2	1440.2
5°	1259.1	1231.6	1247.2	1278.5	1302.2	1411.1	1501.6	1591.6	1777.6	1779.7
7.5°	1061.8	1121.1	1135.1	1125.9	1227.8	1368.0	1517.3	1773.8	1931.2	1943.6
10°	992.8	1019.8	1062.3	1086.1	1127.6	1265.5	1451.0	1755.5	1922.6	1953.8
12.5°	899.6	999.3	1064.0	1196.6	1229.4	1256.9	1551.7	1815.3	1930.7	1923.1
15°	797.7	873.2	966.4	1113.0	1196.6	1406.8	1611.6	2007.2	2072.4	2129.5
17.5°	636.0	691.5	815.5	982.6	1189.5	1383.0	1759.3	2244.3	2366.2	2425.4
20°	523.4	523.9	647.9	869.4	1094.7	1283.9	1815.3	2441.1	2595.8	2626.0
22.5°	494.8	470.0	535.2	715.2	990.1	1342.6	1928.5	2757.5	3080.3	3156.3
25°	479.2	449.0	489.9	631.2	915.2	1373.3	2156.5	3192.4	3606.9	3636.6
27.5°	485.6	499.6	512.6	562.7	820.3	1315.7	2103.7	3387.0	3831.1	3887.2
30°	529.3	551.9	522.3	539.5	742.2	1232.1	2198.0	3702.9	4113.6	4207.9
32.5°	440.4	431.7	429.0	466.8	664.0	1156.7	2395.8	4147.5	4419.7	4538.3
35°	397.2	383.8	389.1	432.3	625.8	1145.9	2506.8	4515.6	4903.2	4975.9
37.5°	395.6	380.0	387.0	419.3	639.2	1165.3	2684.7	5106.4	5755.9	5911.6
40°	391.8	383.2	387.0	411.2	625.2	1176.1	2787.1	5602.8	6349.8	6507.7
42.5°	391.3	387.0	390.8	417.7	610.7	1180.9	2928.9	6051.2	6975.6	7100.1
45°	389.7	394.0	394.0	423.1	604.2	1213.3	3012.4	6271.1	7388.5	7542.1
47.5°	382.1	395.1	416.1	421.5	577.8	1198.2	3130.4	6604.8	7607.8	7752.3
50°	372.4	393.5	444.1	410.7	573.5	1161.5	3268.4	6869.4	7889.2	8014.8
52.5°	359.5	390.8	437.7	389.7	565.9	1155.1	3461.9	7213.3	8217.4	8328.5
55°	341.2	381.1	417.7	368.7	547.6	1134.6	3757.8	7639.6	8647.0	8723.0
57.5°	324.5	366.5	388.6	356.8	504.0	1138.9	3963.7	7987.3	9007.6	9073.9
60°	309.4	364.9	347.1	344.4	459.2	1081.2	4030.6	7983.5	9141.8	9245.8
62.5°	293.2	344.4	318.0	327.7	419.9	1021.9	3888.8	7641.2	8996.8	9179.0
65°	272.2	295.4	293.7	315.8	421.0	925.4	3563.8	7037.6	8635.1	8875.0
67.5°	247.4	261.4	270.6	296.4	434.4	850.5	3041.0	6311.6	8019.6	8304.7
70°	222.1	236.1	246.3	271.1	446.8	816.0	2420.6	5291.8	7017.1	7306.5
72.5°	196.2	210.7	218.8	240.4	430.1	742.2	1791.6	4117.3	5632.4	5784.4
75°	169.2	183.3	189.7	209.7	373.5	613.9	1237.0	3118.6	4125.4	4279.6
77.5°	141.8	156.8	159.0	175.2	285.1	469.5	792.9	2392.0	2921.3	3024.3
80°	113.2	128.3	128.3	136.9	200.5	322.9	474.8	1804.5	2127.4	2167.8
82.5°	81.4	97.6	96.5	97.0	138.5	200.0	274.9	1352.3	1537.2	1544.7
85°	48.0	59.3	58.7	53.9	81.9	107.8	148.8	839.7	858.1	860.2
87.5°	9.2	14.0	12.4	5.4	22.6	31.8	43.1	155.8	62.0	60.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)