

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: P367534

Luminaire Tested: **MSA-SA2D-727-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367534  
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-SA2D-727-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

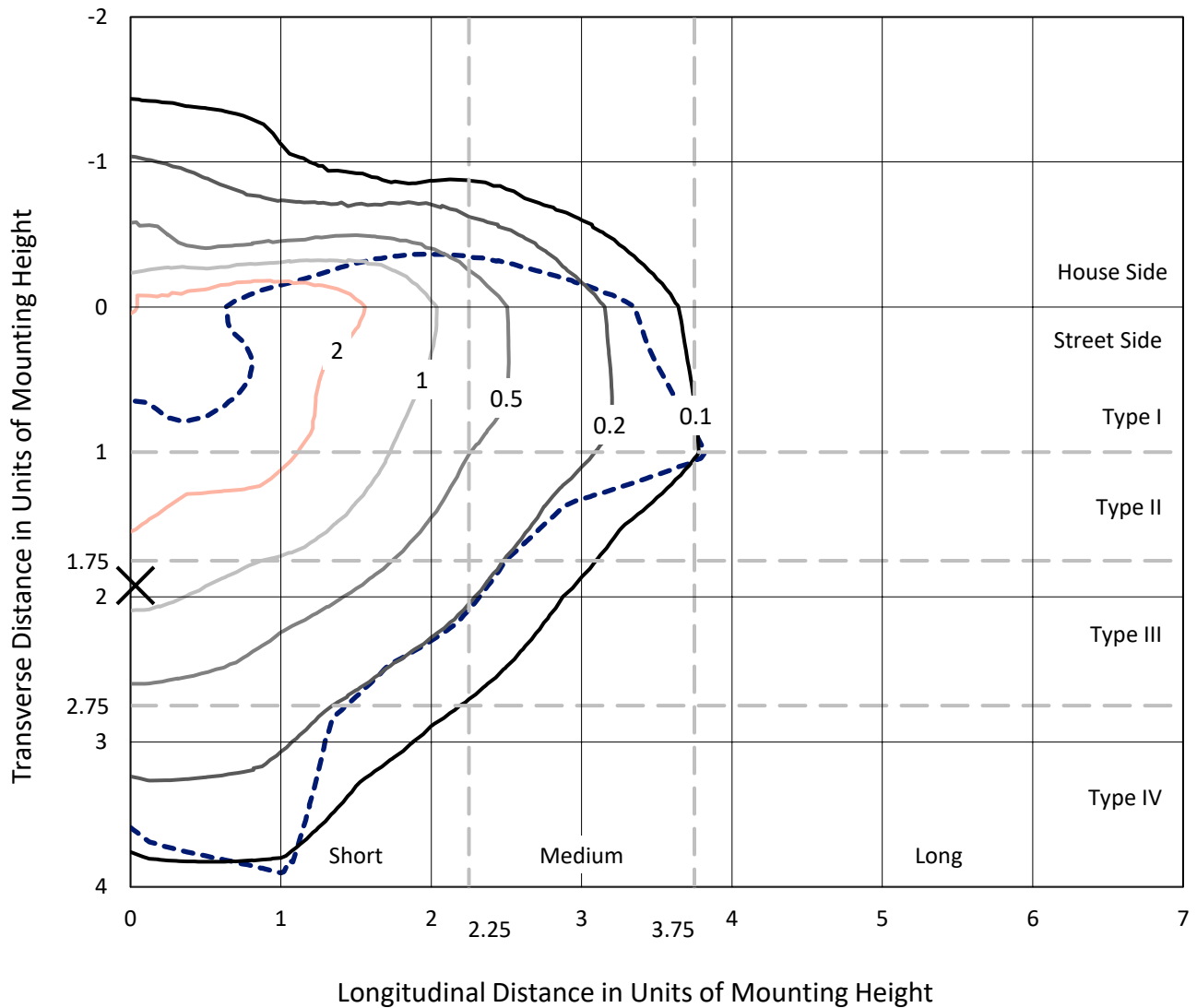
Lumens per Lamp: N/A  
Luminaire Lumens: 9663 lumens  
Efficiency: N/A  
Efficacy: 74.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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

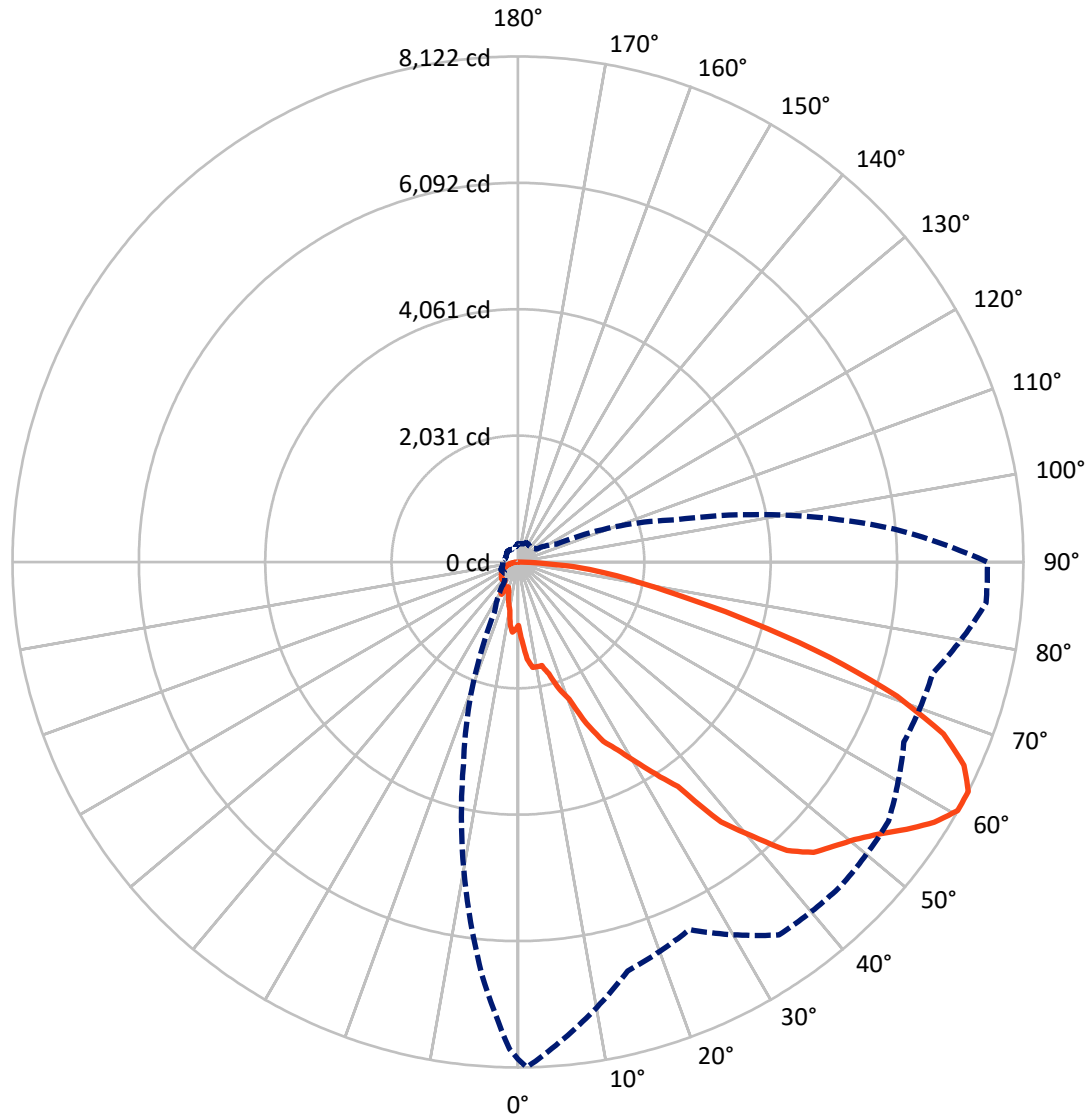
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 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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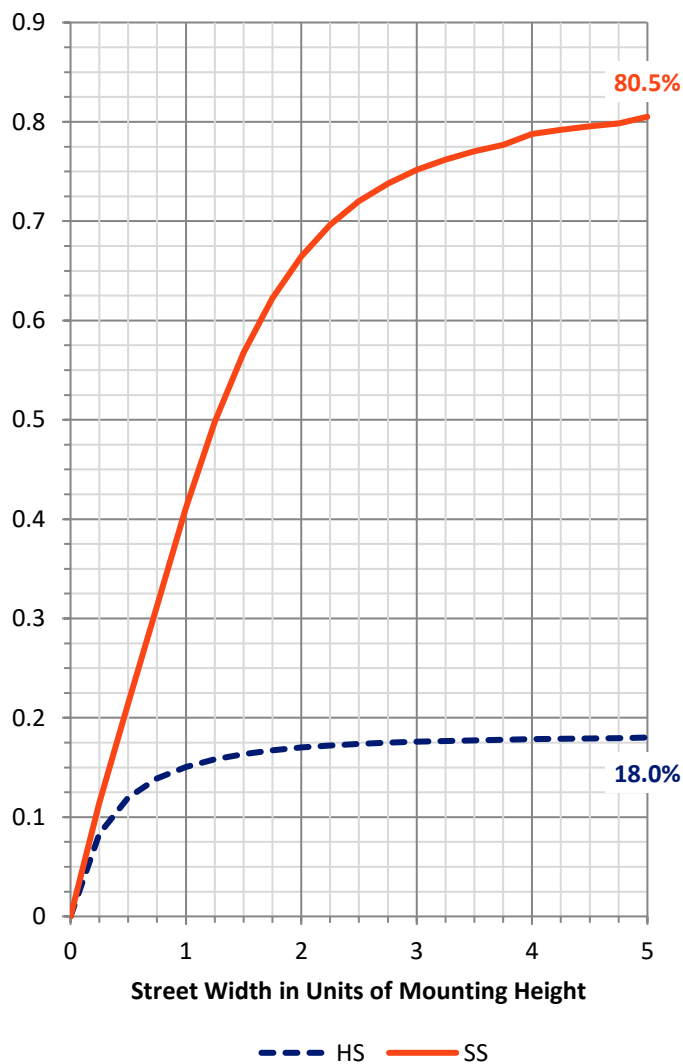
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1759.6	0.0	1759.6
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	7903.4	0.0	7903.4
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	9663.0	0.0	9663.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.8	1.2
10°-20°	339.4	3.5
20°-30°	599.3	6.2
30°-40°	933.4	9.7
40°-50°	1537.0	15.9
50°-60°	2193.7	22.7
60°-70°	2326.2	24.1
70°-80°	1284.9	13.3
80°-90°	332.3	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°	9663.0	100.0
0°-180°	9663.0	100.0

**Coefficient of Utilization**



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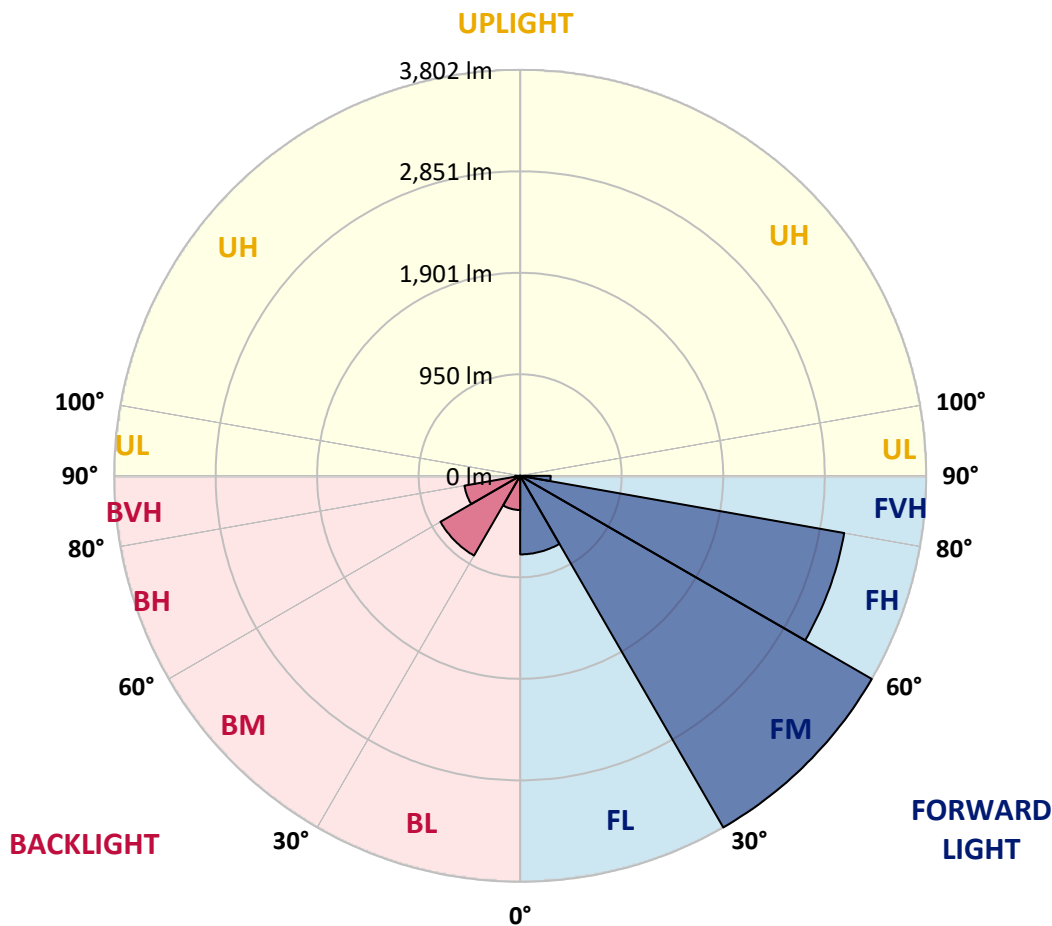
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	735.5	7.6			
FM (30°-60°)	3801.5	39.3			
FH (60°-80°)	3081.0	31.9			G2/5000
FVH (80°-90°)	285.5	3.0			G3/500
BL (0°-30°)	320.0	3.3	B1/500		
BM (30°-60°)	862.6	8.9	B1/1000		
BH (60°-80°)	530.1	5.5	B2/1000		G2/1000
BVH (80°-90°)	46.9	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°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1252.9	1263.7	1241.7	1216.8	1114.1	1213.1	1183.5	1238.4	1220.6	1101.5	1319.5
5°	1548.4	1568.1	1546.5	1621.0	1625.7	1645.0	1467.2	1577.9	1539.4	1529.6	1639.8
7.5°	1690.9	1711.1	1765.9	1898.6	2002.3	1908.5	1804.9	1781.9	1751.9	1673.6	1740.1
10°	1699.8	1711.1	1784.7	2066.0	2116.2	2182.8	2115.7	1957.7	1892.5	1722.3	1671.7
12.5°	1673.1	1708.3	1803.4	2146.2	2295.3	2368.0	2384.4	2208.6	2048.7	1854.6	1828.8
15°	1852.7	1865.3	2001.8	2203.4	2306.1	2367.6	2421.0	2312.7	2262.5	2108.7	1901.9
17.5°	2110.1	2145.3	2256.9	2331.4	2400.8	2412.6	2368.5	2326.3	2246.6	2452.0	2232.0
20°	2284.6	2352.5	2489.5	2503.5	2357.7	2383.5	2377.4	2380.2	2334.7	2714.6	2593.6
22.5°	2746.0	2819.6	2838.3	2756.8	2482.0	2364.3	2387.7	2455.7	2634.8	2960.3	3097.2
25°	3163.8	3192.4	3363.5	3153.5	2715.5	2459.0	2420.5	2596.4	2888.5	3373.8	3471.4
27.5°	3381.8	3418.9	3532.8	3075.6	2744.6	2337.1	2247.0	2514.8	2812.6	3179.2	3607.4
30°	3660.8	3719.9	3875.1	3153.5	2832.3	2416.8	2217.5	2473.5	2802.7	3306.8	3895.3
32.5°	3948.3	4063.2	4178.5	3427.8	2820.1	2538.7	2406.5	2427.1	2891.8	3574.1	4193.5
35°	4329.0	4430.3	4529.7	3586.3	3065.8	2640.5	2509.2	2727.7	3120.6	3884.0	4609.4
37.5°	5143.1	5303.4	5041.3	4037.4	3333.1	3099.1	2862.3	2991.7	3362.6	4142.4	5288.9
40°	5661.7	5782.2	5529.0	4344.5	3803.8	3408.1	3369.2	3379.9	3696.0	4363.7	5746.1
42.5°	6177.0	6340.2	5937.4	4766.1	4373.1	4046.3	3845.6	3832.0	4069.2	4761.4	6266.1
45°	6561.5	6657.7	6077.6	5121.5	4983.6	4741.2	4590.7	4352.0	4559.7	5036.6	6587.8
47.5°	6744.4	6822.7	6303.2	5328.3	5379.4	5392.1	5663.6	5256.5	4988.3	5222.8	6756.6
50°	6972.8	7009.8	6435.9	5510.2	5755.5	6311.6	6376.8	5687.0	5405.7	5425.8	6856.5
52.5°	7245.7	7261.2	6629.5	5720.3	6135.8	6916.5	6815.7	6416.6	5802.8	5796.7	7044.5
55°	7588.9	7579.6	6872.4	6003.1	6407.3	7276.2	7199.7	6909.0	6235.6	6103.9	7337.1
57.5°	7894.2	7888.6	7194.6	6263.3	6635.6	7460.9	7483.4	7406.5	6530.1	6323.8	7654.1
60°	8043.8	8115.5	7561.3	6547.9	6650.2	7544.4	7552.8	7430.4	6859.3	6606.1	7738.5
62.5°	7985.6	8122.1	7741.3	6804.0	6516.5	7316.5	7351.7	7267.3	6844.3	6902.4	7550.0
65°	7721.2	7878.7	7585.2	6940.4	6434.5	6934.8	6943.7	6730.3	6630.0	7098.9	7108.3
67.5°	7225.1	7372.8	7088.1	6722.8	5872.7	5906.0	6104.8	6122.2	5975.9	6950.7	6487.9
70°	6356.6	6460.7	6282.5	6185.5	4908.6	4713.5	4929.2	5021.6	5088.2	6415.7	5743.3
72.5°	5032.4	5233.6	5261.7	5325.0	3952.0	3627.1	3787.0	3650.0	4083.8	5460.5	4692.4
75°	3723.2	3892.9	4075.3	4428.4	3115.0	2715.5	2695.8	2625.9	3031.1	4391.4	3480.3
77.5°	2631.1	2739.4	2879.6	3537.5	2350.7	2091.4	2103.6	2032.7	2188.9	3319.0	2404.1
80°	1886.0	1942.7	2007.9	2330.5	1734.0	1804.4	1806.3	1739.2	1627.6	2254.1	1604.6
82.5°	1343.9	1388.0	1462.5	1537.1	1292.8	1479.0	1477.6	1473.3	1290.5	1523.5	1003.9
85°	748.4	807.5	936.9	1204.2	933.6	1057.4	929.9	1024.1	947.2	1014.3	508.3
87.5°	52.5	46.9	209.6	697.7	435.6	318.4	166.9	330.6	423.9	529.9	70.8
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°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1364.5	1381.0	1316.7	1220.1	1246.4	1217.8	1181.7	1125.4	1009.6	1081.3	1081.8
5°	1638.9	1576.5	1526.3	1479.0	1399.2	1278.7	1262.8	1166.2	1111.8	1140.4	1136.2
7.5°	1724.7	1636.0	1560.6	1391.3	1243.6	1056.5	1000.2	943.0	919.1	988.5	1016.1
10°	1630.4	1538.0	1464.0	1258.1	1157.8	1041.0	886.3	807.0	760.1	778.4	789.2
12.5°	1706.4	1612.1	1379.1	1264.2	1098.7	1027.4	891.9	775.6	706.2	723.1	702.9
15°	1779.5	1652.5	1419.4	1190.6	1056.5	953.3	843.6	723.5	641.9	612.9	597.4
17.5°	2046.8	1835.8	1414.7	1149.3	995.5	876.9	744.6	613.3	558.9	528.9	503.1
20°	2372.7	2078.7	1440.0	1106.6	930.8	781.2	637.3	515.3	477.4	457.7	450.6
22.5°	2760.5	2390.1	1584.9	1100.5	869.8	711.3	578.2	502.2	459.5	438.0	429.1
25°	3068.6	2712.2	1691.8	1141.8	866.6	653.7	542.5	558.0	538.3	544.9	492.8
27.5°	3367.8	2799.9	1631.8	1123.5	779.3	551.4	534.1	566.5	583.3	588.5	586.6
30°	3620.5	3170.3	1645.0	1020.4	658.4	449.2	408.9	424.8	471.3	544.9	558.9
32.5°	3990.5	3347.6	1757.0	958.0	588.5	401.9	356.8	350.7	361.5	388.3	411.2
35°	4423.3	3755.5	1788.4	941.6	540.2	380.8	349.3	335.3	340.9	361.1	365.8
37.5°	5230.3	4052.8	1904.7	921.4	522.4	368.1	343.7	338.6	350.7	367.2	376.5
40°	5675.3	4587.4	1910.4	904.1	499.4	362.9	347.5	345.1	352.6	375.1	380.8
42.5°	6268.5	4892.2	1998.5	883.9	491.4	370.0	355.0	354.0	360.6	373.7	384.0
45°	6630.0	5096.2	2003.2	872.2	489.5	400.9	364.8	361.5	360.1	368.1	377.5
47.5°	6863.0	5390.2	2060.4	859.1	500.8	408.9	376.5	362.5	357.8	361.1	368.1
50°	7083.9	5625.1	2168.7	857.2	512.5	400.9	397.2	362.0	352.6	351.2	356.4
52.5°	7354.9	6011.5	2302.4	875.0	509.7	389.2	412.6	360.1	343.2	340.0	345.1
55°	7749.3	6425.6	2444.5	860.0	480.6	366.7	397.6	358.7	333.4	327.3	332.0
57.5°	8004.9	6662.8	2603.4	847.3	436.6	349.8	384.0	359.7	334.3	320.7	323.6
60°	7920.0	6535.3	2665.8	770.0	394.8	336.7	351.7	352.2	325.9	313.2	315.6
62.5°	7544.9	6073.4	2607.6	679.9	363.9	317.9	318.4	338.1	301.5	292.6	296.4
65°	7020.6	5499.0	2372.2	621.3	349.3	298.2	290.7	296.8	268.7	262.1	269.6
67.5°	6377.3	4790.9	2022.0	559.4	344.2	271.5	262.6	260.2	242.4	234.9	242.4
70°	5570.2	4011.6	1616.4	515.8	324.5	242.4	235.4	233.1	218.0	212.4	219.0
72.5°	4477.2	3132.4	1247.3	482.5	302.9	215.7	209.6	206.8	194.1	186.2	194.1
75°	3184.4	2393.8	926.6	431.4	272.4	188.5	181.5	177.7	166.0	158.5	165.5
77.5°	2263.0	1796.9	647.1	356.8	224.6	159.4	155.2	149.1	138.8	129.9	136.9
80°	1673.1	1283.9	417.3	275.3	171.6	127.5	125.2	121.0	111.1	100.3	105.5
82.5°	1101.5	925.6	239.1	186.6	124.7	91.9	93.8	91.0	81.6	70.3	73.2
85°	493.3	548.2	127.1	102.7	81.1	55.3	60.5	58.6	51.6	40.8	41.7
87.5°	47.4	92.4	38.9	37.5	30.0	17.3	21.6	18.3	15.5	9.8	7.5
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°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1098.2	1032.1	966.0	1006.3	1007.2	1018.0	1019.4	979.6	1011.5	1035.8	1061.2
5°	1115.6	1072.4	1074.8	1035.8	1014.7	1041.9	1036.3	1025.5	1044.7	1071.5	1103.8
7.5°	989.9	961.7	957.1	919.5	828.6	808.4	825.3	832.3	858.1	899.4	934.1
10°	772.8	828.6	765.7	751.2	727.3	680.4	653.2	649.9	704.8	738.1	767.1
12.5°	696.3	682.3	674.8	634.9	634.9	585.2	569.3	583.8	668.2	692.1	729.6
15°	593.2	582.9	548.2	528.5	519.1	498.9	515.8	529.9	608.7	610.5	649.9
17.5°	492.4	486.3	453.4	449.7	440.3	431.4	446.9	480.6	523.3	515.8	534.1
20°	440.3	419.2	389.2	400.0	390.1	383.1	376.5	424.4	454.4	464.2	475.0
22.5°	427.2	388.7	370.9	361.1	361.5	350.3	351.7	391.5	437.0	443.1	436.6
25°	488.1	419.7	362.0	333.4	322.6	318.9	329.6	364.8	419.7	432.8	438.0
27.5°	571.1	455.8	372.8	324.0	302.5	304.3	319.8	344.2	408.9	432.3	438.4
30°	548.2	428.6	373.3	317.0	290.3	300.1	305.7	329.2	400.5	435.6	466.1
32.5°	423.0	385.4	375.6	322.6	311.8	296.4	304.3	326.8	375.6	397.6	399.0
35°	358.3	329.6	323.1	310.0	294.9	288.4	297.3	317.0	348.9	362.5	360.6
37.5°	355.4	324.0	298.2	292.6	286.5	284.6	289.8	308.1	340.4	364.3	359.2
40°	360.1	321.2	294.9	285.1	287.4	279.0	284.2	306.7	341.8	364.3	359.7
42.5°	354.5	317.9	290.7	283.2	285.6	273.8	279.9	303.4	338.1	364.8	355.9
45°	343.2	310.4	288.4	275.7	286.5	269.2	276.7	294.9	326.8	355.9	345.6
47.5°	332.0	301.5	278.5	270.6	281.3	264.5	267.8	283.7	315.6	344.2	335.3
50°	319.8	290.3	270.6	268.2	275.7	263.5	258.4	271.5	302.0	330.6	323.1
52.5°	306.7	280.9	264.9	264.0	271.0	257.4	249.9	260.2	287.4	316.0	310.0
55°	294.0	270.6	257.9	260.2	268.2	252.3	242.9	249.5	272.0	300.1	291.7
57.5°	281.3	258.8	248.5	255.1	261.2	245.7	234.0	237.7	256.0	283.7	273.8
60°	270.1	248.5	238.2	246.2	251.8	235.9	222.3	224.6	241.0	265.9	257.0
62.5°	255.6	237.3	223.7	234.0	238.2	222.7	208.2	211.0	224.1	247.6	241.0
65°	234.9	223.2	210.5	217.6	223.2	207.3	193.7	196.9	206.8	228.8	224.1
67.5°	217.1	205.9	197.4	203.0	204.0	191.8	179.6	181.5	189.4	210.1	204.9
70°	197.4	186.6	180.1	184.3	183.8	173.5	164.1	164.6	171.2	189.9	182.9
72.5°	175.8	165.5	162.2	164.6	162.7	153.3	144.4	147.7	151.9	166.0	160.4
75°	152.9	143.5	141.6	144.0	141.1	132.2	124.3	127.5	131.3	143.0	136.0
77.5°	129.0	120.5	121.0	121.4	117.7	111.6	103.6	106.9	109.3	117.2	110.2
80°	102.7	96.1	98.0	98.0	93.8	89.6	82.1	83.0	84.4	87.2	82.1
82.5°	75.0	75.0	75.0	75.5	66.6	68.0	61.4	61.0	59.6	59.1	55.8
85°	44.5	46.4	47.4	48.8	36.1	42.2	36.6	35.2	32.4	29.5	28.6
87.5°	9.8	12.7	12.7	12.2	0.0	4.7	2.3	3.8	0.9	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: P367534  
 CATALOG NUMBER: MSA-SA2D-727-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0	1019.0
2.5°	1032.1	1003.9	1056.5	1103.4	1095.9	1123.1	1059.7	1153.5	1252.9	1252.9
5°	1095.4	1071.5	1085.1	1112.3	1132.9	1227.6	1306.4	1384.7	1546.5	1548.4
7.5°	923.8	975.3	987.5	979.6	1068.2	1190.1	1320.0	1543.2	1680.1	1690.9
10°	863.7	887.2	924.2	944.9	981.0	1101.0	1262.3	1527.3	1672.6	1699.8
12.5°	782.6	869.4	925.6	1041.0	1069.6	1093.5	1350.0	1579.3	1679.7	1673.1
15°	694.0	759.6	840.8	968.3	1041.0	1223.9	1402.1	1746.2	1803.0	1852.7
17.5°	553.3	601.6	709.5	854.8	1034.9	1203.2	1530.5	1952.6	2058.5	2110.1
20°	455.3	455.8	563.6	756.4	952.4	1117.0	1579.3	2123.7	2258.3	2284.6
22.5°	430.5	408.9	465.6	622.3	861.4	1168.1	1677.8	2399.0	2679.9	2746.0
25°	416.9	390.6	426.2	549.1	796.2	1194.8	1876.1	2777.4	3138.0	3163.8
27.5°	422.5	434.7	445.9	489.5	713.7	1144.6	1830.2	2946.7	3333.1	3381.8
30°	460.5	480.2	454.4	469.4	645.7	1071.9	1912.2	3221.5	3578.8	3660.8
32.5°	383.1	375.6	373.3	406.1	577.7	1006.3	2084.3	3608.3	3845.1	3948.3
35°	345.6	333.9	338.6	376.1	544.4	996.9	2180.9	3928.6	4265.7	4329.0
37.5°	344.2	330.6	336.7	364.8	556.1	1013.8	2335.7	4442.5	5007.5	5143.1
40°	340.9	333.4	336.7	357.8	543.9	1023.2	2424.8	4874.4	5524.3	5661.7
42.5°	340.4	336.7	340.0	363.4	531.3	1027.4	2548.1	5264.5	6068.7	6177.0
45°	339.0	342.8	342.8	368.1	525.7	1055.5	2620.8	5455.8	6427.9	6561.5
47.5°	332.5	343.7	362.0	366.7	502.7	1042.4	2723.5	5746.1	6618.7	6744.4
50°	324.0	342.3	386.4	357.3	498.9	1010.5	2843.5	5976.3	6863.5	6972.8
52.5°	312.8	340.0	380.8	339.0	492.4	1004.9	3011.8	6275.5	7149.1	7245.7
55°	296.8	331.5	363.4	320.7	476.4	987.1	3269.3	6646.4	7522.8	7588.9
57.5°	282.3	318.9	338.1	310.4	438.4	990.8	3448.4	6948.9	7836.5	7894.2
60°	269.2	317.5	302.0	299.6	399.5	940.6	3506.6	6945.6	7953.3	8043.8
62.5°	255.1	299.6	276.7	285.1	365.3	889.1	3383.2	6647.8	7827.1	7985.6
65°	236.8	257.0	255.6	274.8	366.2	805.1	3100.5	6122.6	7512.5	7721.2
67.5°	215.2	227.4	235.4	257.9	377.9	739.9	2645.6	5491.0	6977.0	7225.1
70°	193.2	205.4	214.3	235.9	388.7	709.9	2105.9	4603.8	6104.8	6356.6
72.5°	170.7	183.3	190.4	209.1	374.2	645.7	1558.7	3582.0	4900.2	5032.4
75°	147.2	159.4	165.1	182.4	325.0	534.1	1076.2	2713.1	3589.1	3723.2
77.5°	123.3	136.5	138.3	152.4	248.1	408.4	689.8	2081.0	2541.5	2631.1
80°	98.5	111.6	111.6	119.1	174.4	280.9	413.1	1569.9	1850.8	1886.0
82.5°	70.8	84.9	83.9	84.4	120.5	174.0	239.1	1176.5	1337.3	1343.9
85°	41.7	51.6	51.1	46.9	71.3	93.8	129.4	730.6	746.5	748.4
87.5°	8.0	12.2	10.8	4.7	19.7	27.7	37.5	135.5	53.9	52.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)