

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: P367908

Luminaire Tested: **MSA-SA3B-830-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367908  
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-SA3B-830-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 10007 lumens  
Efficiency: N/A  
Efficacy: 79.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

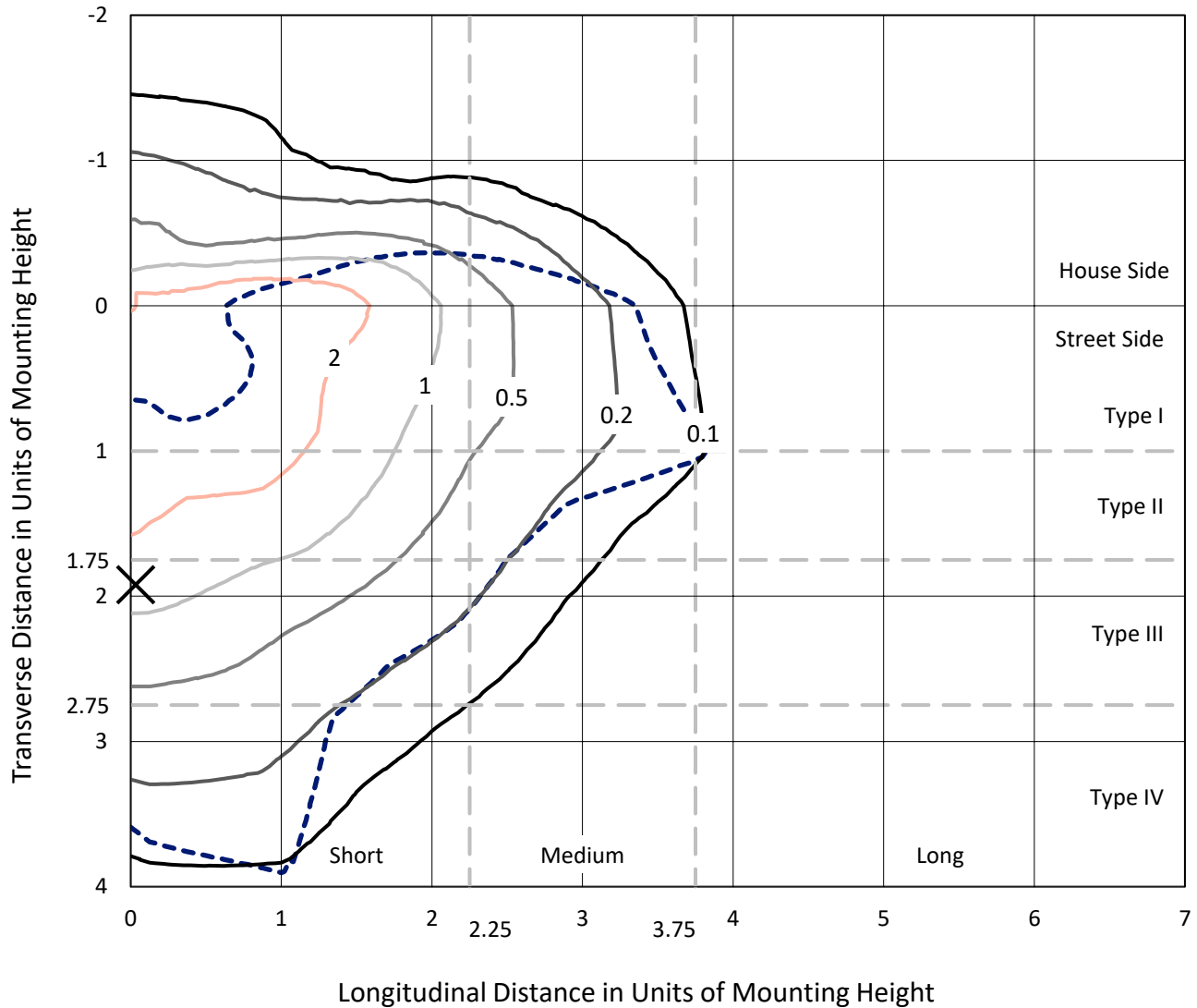
Input Watts (W): 126  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

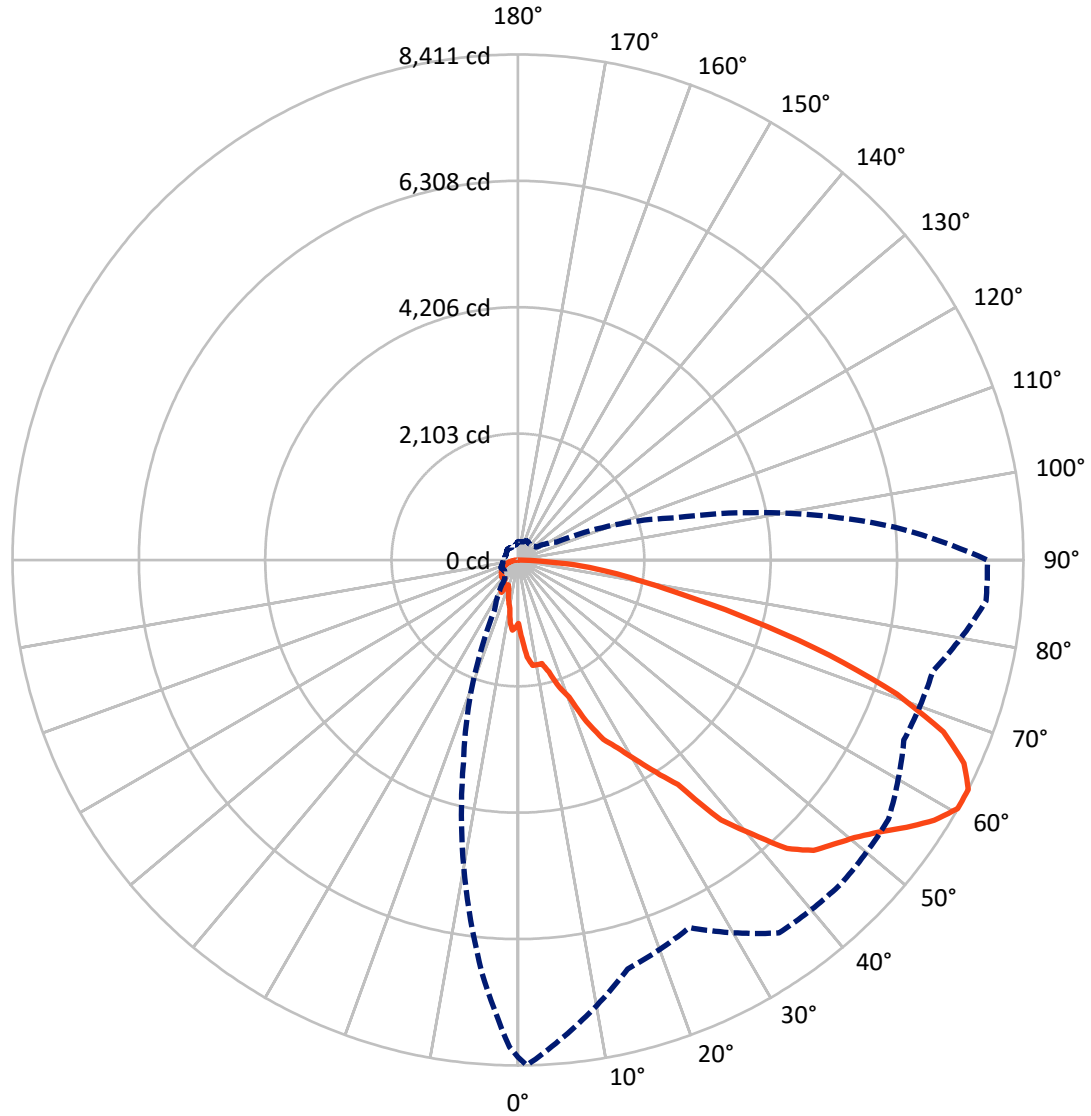
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 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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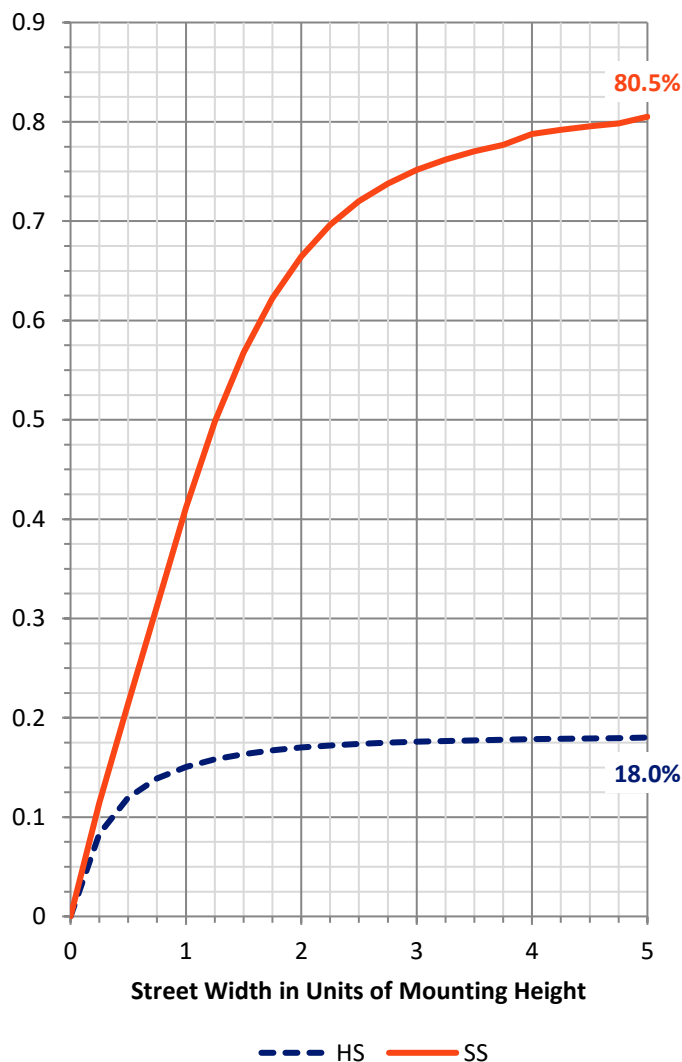
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1822.2	0.0	1822.2
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	8184.8	0.0	8184.8
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	10007.0	0.0	10007.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.0	1.2
10°-20°	351.5	3.5
20°-30°	620.6	6.2
30°-40°	966.7	9.7
40°-50°	1591.7	15.9
50°-60°	2271.8	22.7
60°-70°	2409.0	24.1
70°-80°	1330.6	13.3
80°-90°	344.2	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°	10007.0	100.0
0°-180°	10007.0	100.0

**Coefficient of Utilization**



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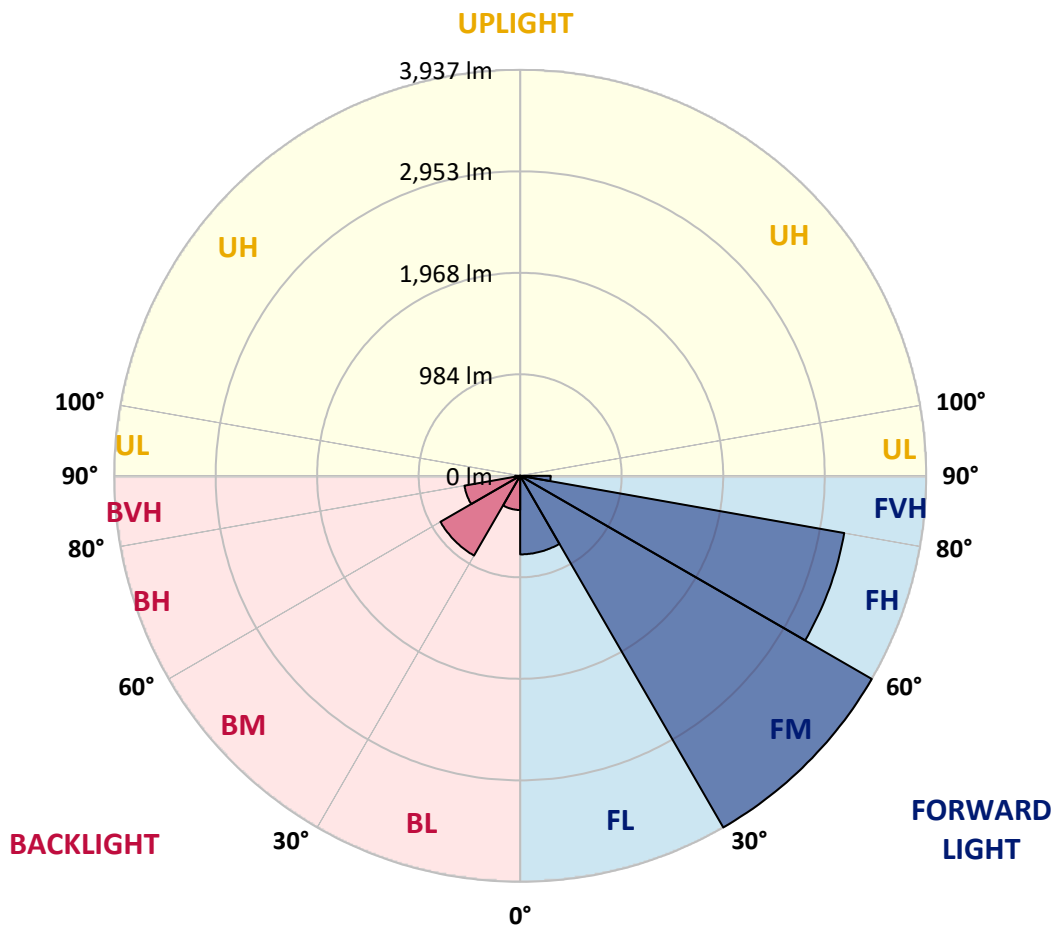
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	761.7	7.6			
FM (30°-60°)	3936.9	39.3			
FH (60°-80°)	3190.6	31.9			G2/5000
FVH (80°-90°)	295.6	3.0			G3/500
BL (0°-30°)	331.4	3.3	B1/500		
BM (30°-60°)	893.3	8.9	B1/1000		
BH (60°-80°)	549.0	5.5	B2/1000		G2/1000
BVH (80°-90°)	48.5	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°	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2
2.5°	1297.5	1308.7	1285.9	1260.2	1153.8	1256.3	1225.7	1282.5	1264.0	1140.7	1366.5
5°	1603.5	1623.9	1601.5	1678.7	1683.6	1703.5	1519.5	1634.1	1594.3	1584.1	1698.2
7.5°	1751.1	1772.0	1828.8	1966.2	2073.5	1976.4	1869.1	1845.3	1814.2	1733.1	1802.1
10°	1760.3	1772.0	1848.2	2139.6	2191.6	2260.5	2191.1	2027.4	1959.9	1783.6	1731.2
12.5°	1732.7	1769.1	1867.7	2222.6	2377.1	2452.3	2469.3	2287.2	2121.6	1920.6	1893.9
15°	1918.6	1931.8	2073.1	2281.9	2388.2	2451.8	2507.2	2395.0	2343.1	2183.8	1969.6
17.5°	2185.2	2221.7	2337.2	2414.4	2486.3	2498.5	2452.8	2409.1	2326.6	2539.2	2311.5
20°	2365.9	2436.3	2578.1	2592.7	2441.6	2468.3	2462.0	2465.0	2417.8	2811.2	2685.9
22.5°	2843.7	2920.0	2939.4	2854.9	2570.3	2448.4	2472.7	2543.1	2728.6	3065.6	3207.4
25°	3276.4	3306.0	3483.3	3265.7	2812.2	2546.5	2506.7	2688.8	2991.4	3494.0	3595.0
27.5°	3502.2	3540.6	3658.6	3185.1	2842.3	2420.3	2327.0	2604.3	2912.7	3292.4	3735.8
30°	3791.1	3852.3	4013.1	3265.7	2933.1	2502.8	2296.4	2561.6	2902.5	3424.5	4034.0
32.5°	4088.8	4207.8	4327.3	3549.8	2920.5	2629.1	2492.1	2513.5	2994.7	3701.3	4342.8
35°	4483.1	4588.0	4691.0	3713.9	3174.9	2734.5	2598.5	2824.8	3231.7	4022.3	4773.5
37.5°	5326.2	5492.2	5220.8	4181.1	3451.7	3209.4	2964.2	3098.2	3482.3	4289.9	5477.2
40°	5863.2	5988.0	5725.8	4499.2	3939.3	3529.4	3489.1	3500.3	3827.6	4519.1	5950.7
42.5°	6396.9	6565.9	6148.8	4935.7	4528.8	4190.3	3982.5	3968.4	4214.1	4930.9	6489.2
45°	6795.1	6894.7	6294.0	5303.8	5161.1	4910.0	4754.1	4506.9	4722.1	5215.9	6822.3
47.5°	6984.5	7065.6	6527.6	5518.0	5570.9	5584.0	5865.2	5443.7	5165.9	5408.7	6997.1
50°	7221.0	7259.4	6665.0	5706.4	5960.4	6536.3	6603.8	5889.5	5598.1	5619.0	7100.6
52.5°	7503.6	7519.7	6865.5	5923.9	6354.2	7162.7	7058.3	6645.1	6009.4	6003.1	7295.3
55°	7859.1	7849.4	7117.1	6216.8	6635.4	7535.2	7456.0	7155.0	6457.6	6321.2	7598.3
57.5°	8175.2	8169.4	7450.7	6486.3	6871.9	7726.5	7749.8	7670.2	6762.6	6548.9	7926.6
60°	8330.1	8404.4	7830.4	6781.0	6886.9	7813.0	7821.7	7695.0	7103.5	6841.3	8014.0
62.5°	8269.9	8411.2	8016.9	7046.2	6748.5	7577.0	7613.4	7526.0	7087.9	7148.2	7818.8
65°	7996.0	8159.2	7855.2	7187.5	6663.5	7181.7	7190.9	6969.9	6866.0	7351.6	7361.3
67.5°	7482.3	7635.2	7340.5	6962.2	6081.8	6116.2	6322.1	6340.1	6188.6	7198.2	6718.9
70°	6582.9	6690.7	6506.2	6405.7	5083.4	4881.3	5104.7	5200.4	5269.3	6644.1	5947.7
72.5°	5211.6	5419.9	5449.0	5514.6	4092.7	3756.2	3921.8	3780.0	4229.2	5654.9	4859.5
75°	3855.7	4031.5	4220.4	4586.1	3225.9	2812.2	2791.8	2719.4	3139.0	4547.7	3604.2
77.5°	2724.8	2836.9	2982.1	3663.4	2434.4	2165.8	2178.4	2105.1	2266.8	3437.1	2489.7
80°	1953.1	2011.9	2079.4	2413.5	1795.8	1868.6	1870.6	1801.1	1685.5	2334.3	1661.8
82.5°	1391.8	1437.4	1514.6	1591.8	1338.8	1531.6	1530.2	1525.8	1336.4	1577.7	1039.7
85°	775.0	836.2	970.2	1247.0	966.8	1095.0	963.0	1060.6	980.9	1050.4	526.4
87.5°	54.4	48.6	217.1	722.6	451.1	329.7	172.9	342.4	439.0	548.7	73.3
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°	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2
2.5°	1413.1	1430.1	1363.6	1263.6	1290.7	1261.1	1223.7	1165.5	1045.5	1119.8	1120.3
5°	1697.2	1632.6	1580.7	1531.6	1449.1	1324.3	1307.7	1207.7	1151.4	1181.0	1176.6
7.5°	1786.1	1694.3	1616.1	1440.8	1287.8	1094.1	1035.8	976.6	951.8	1023.7	1052.3
10°	1688.5	1592.8	1516.1	1302.9	1199.0	1078.1	917.8	835.7	787.2	806.1	817.3
12.5°	1767.1	1669.5	1428.2	1309.2	1137.8	1064.0	923.6	803.2	731.3	748.8	727.9
15°	1842.9	1711.3	1469.9	1233.0	1094.1	987.2	873.6	749.3	664.8	634.7	618.7
17.5°	2119.7	1901.2	1465.1	1190.2	1030.9	908.1	771.1	635.2	578.8	547.8	521.1
20°	2457.2	2152.7	1491.3	1146.0	963.9	809.0	659.9	533.7	494.3	474.0	466.7
22.5°	2858.8	2475.1	1641.4	1139.7	900.8	736.7	598.8	520.1	475.9	453.6	444.3
25°	3177.8	2808.8	1752.1	1182.5	897.4	676.9	561.8	577.9	557.5	564.3	510.4
27.5°	3487.6	2899.6	1689.9	1163.5	807.1	571.1	553.1	586.6	604.1	609.4	607.5
30°	3749.4	3283.2	1703.5	1056.7	681.8	465.2	423.5	440.0	488.0	564.3	578.8
32.5°	4132.5	3466.8	1819.6	992.1	609.4	416.2	369.5	363.2	374.4	402.1	425.9
35°	4580.7	3889.2	1852.1	975.1	559.4	394.3	361.8	347.2	353.0	373.9	378.8
37.5°	5416.5	4197.1	1972.5	954.2	541.0	381.2	356.0	350.6	363.2	380.2	389.9
40°	5877.3	4750.7	1978.4	936.3	517.2	375.9	359.8	357.4	365.2	388.5	394.3
42.5°	6491.6	5066.4	2069.7	915.4	508.9	383.1	367.6	366.6	373.4	387.0	397.7
45°	6866.0	5277.6	2074.5	903.2	507.0	415.2	377.8	374.4	372.9	381.2	390.9
47.5°	7107.4	5582.1	2133.8	889.6	518.6	423.5	389.9	375.4	370.5	373.9	381.2
50°	7336.1	5825.4	2245.9	887.7	530.8	415.2	411.3	374.9	365.2	363.7	369.1
52.5°	7616.8	6225.5	2384.3	906.1	527.9	403.1	427.3	372.9	355.5	352.1	357.4
55°	8025.2	6654.3	2531.5	890.6	497.7	379.7	411.8	371.5	345.3	339.0	343.8
57.5°	8289.8	6900.0	2696.1	877.5	452.1	362.3	397.7	372.5	346.2	332.2	335.1
60°	8201.9	6767.9	2760.7	797.4	408.9	348.7	364.2	364.7	337.5	324.4	326.8
62.5°	7813.4	6289.6	2700.5	704.1	376.8	329.2	329.7	350.1	312.2	303.0	306.9
65°	7270.5	5694.7	2456.7	643.4	361.8	308.8	301.1	307.4	278.3	271.5	279.2
67.5°	6604.3	4961.5	2093.9	579.3	356.4	281.2	271.9	269.5	251.1	243.3	251.1
70°	5768.5	4154.4	1673.9	534.2	336.0	251.1	243.8	241.3	225.8	220.0	226.8
72.5°	4636.6	3243.9	1291.7	499.7	313.7	223.4	217.1	214.2	201.0	192.8	201.0
75°	3297.8	2479.0	959.6	446.8	282.1	195.2	187.9	184.0	171.9	164.1	171.4
77.5°	2343.5	1860.9	670.1	369.5	232.6	165.1	160.7	154.4	143.7	134.5	141.8
80°	1732.7	1329.6	432.2	285.1	177.7	132.1	129.7	125.3	115.1	103.9	109.3
82.5°	1140.7	958.6	247.7	193.3	129.2	95.2	97.1	94.2	84.5	72.8	75.8
85°	510.9	567.7	131.6	106.3	84.0	57.3	62.6	60.7	53.4	42.2	43.2
87.5°	49.0	95.7	40.3	38.8	31.1	18.0	22.3	18.9	16.0	10.2	7.8
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):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2
2.5°	1137.3	1068.8	1000.4	1042.1	1043.1	1054.3	1055.7	1014.4	1047.5	1072.7	1098.9
5°	1155.3	1110.6	1113.0	1072.7	1050.9	1079.0	1073.2	1062.0	1081.9	1109.6	1143.1
7.5°	1025.1	996.0	991.1	952.3	858.1	837.2	854.7	862.0	888.7	931.4	967.3
10°	800.3	858.1	793.0	777.9	753.2	704.6	676.5	673.1	729.9	764.3	794.5
12.5°	721.1	706.6	698.8	657.5	657.5	606.0	589.5	604.6	692.0	716.8	755.6
15°	614.3	603.6	567.7	547.3	537.6	516.7	534.2	548.7	630.3	632.3	673.1
17.5°	509.9	503.6	469.6	465.7	456.0	446.8	462.8	497.7	541.9	534.2	553.1
20°	456.0	434.1	403.1	414.2	404.0	396.7	389.9	439.5	470.6	480.8	491.9
22.5°	442.4	402.6	384.1	373.9	374.4	362.7	364.2	405.5	452.6	458.9	452.1
25°	505.5	434.6	374.9	345.3	334.1	330.2	341.4	377.8	434.6	448.2	453.6
27.5°	591.5	472.0	386.1	335.6	313.2	315.2	331.2	356.4	423.5	447.7	454.0
30°	567.7	443.8	386.5	328.3	300.6	310.8	316.6	340.9	414.7	451.1	482.7
32.5°	438.0	399.2	389.0	334.1	322.9	306.9	315.2	338.5	389.0	411.8	413.3
35°	371.0	341.4	334.6	321.0	305.4	298.6	307.9	328.3	361.3	375.4	373.4
37.5°	368.1	335.6	308.8	303.0	296.7	294.8	300.1	319.0	352.6	377.3	372.0
40°	372.9	332.6	305.4	295.3	297.7	288.9	294.3	317.6	354.0	377.3	372.5
42.5°	367.1	329.2	301.1	293.3	295.7	283.6	289.9	314.2	350.1	377.8	368.6
45°	355.5	321.5	298.6	285.5	296.7	278.7	286.5	305.4	338.5	368.6	357.9
47.5°	343.8	312.2	288.5	280.2	291.4	273.9	277.3	293.8	326.8	356.4	347.2
50°	331.2	300.6	280.2	277.8	285.5	272.9	267.6	281.2	312.7	342.4	334.6
52.5°	317.6	290.9	274.4	273.4	280.7	266.6	258.8	269.5	297.7	327.3	321.0
55°	304.5	280.2	267.1	269.5	277.8	261.3	251.5	258.3	281.7	310.8	302.0
57.5°	291.4	268.1	257.4	264.2	270.5	254.5	242.3	246.2	265.1	293.8	283.6
60°	279.7	257.4	246.7	254.9	260.8	244.3	230.2	232.6	249.6	275.3	266.1
62.5°	264.7	245.7	231.6	242.3	246.7	230.7	215.6	218.5	232.1	256.4	249.6
65°	243.3	231.1	218.0	225.3	231.1	214.6	200.6	204.0	214.2	237.0	232.1
67.5°	224.8	213.2	204.4	210.3	211.2	198.6	186.0	187.9	196.2	217.6	212.2
70°	204.4	193.3	186.5	190.8	190.4	179.7	170.0	170.4	177.2	196.7	189.4
72.5°	182.1	171.4	168.0	170.4	168.5	158.8	149.6	153.0	157.3	171.9	166.1
75°	158.3	148.6	146.7	149.1	146.2	136.9	128.7	132.1	136.0	148.1	140.8
77.5°	133.5	124.8	125.3	125.8	121.9	115.6	107.3	110.7	113.1	121.4	114.1
80°	106.3	99.5	101.5	101.5	97.1	92.8	85.0	86.0	87.4	90.3	85.0
82.5°	77.7	77.7	77.7	78.2	69.0	70.4	63.6	63.1	61.7	61.2	57.8
85°	46.1	48.1	49.0	50.5	37.4	43.7	37.9	36.4	33.5	30.6	29.6
87.5°	10.2	13.1	13.1	12.6	0.0	4.9	2.4	3.9	1.0	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-SA3B-830-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2	1055.2
2.5°	1068.8	1039.7	1094.1	1142.6	1134.9	1163.0	1097.5	1194.6	1297.5	1297.5
5°	1134.4	1109.6	1123.7	1151.9	1173.2	1271.3	1352.9	1434.0	1601.5	1603.5
7.5°	956.6	1010.1	1022.7	1014.4	1106.2	1232.5	1367.0	1598.1	1739.9	1751.1
10°	894.5	918.8	957.1	978.5	1015.9	1140.2	1307.3	1581.6	1732.2	1760.3
12.5°	810.5	900.3	958.6	1078.1	1107.7	1132.4	1398.1	1635.5	1739.5	1732.7
15°	718.7	786.7	870.7	1002.8	1078.1	1267.4	1452.0	1808.4	1867.2	1918.6
17.5°	573.0	623.0	734.7	885.3	1071.7	1246.1	1585.0	2022.1	2131.8	2185.2
20°	471.5	472.0	583.7	783.3	986.3	1156.7	1635.5	2199.3	2338.7	2365.9
22.5°	445.8	423.5	482.2	644.4	892.1	1209.7	1737.5	2484.4	2775.3	2843.7
25°	431.7	404.5	441.4	568.6	824.6	1237.3	1942.9	2876.3	3249.7	3276.4
27.5°	437.5	450.2	461.8	507.0	739.1	1185.4	1895.3	3051.6	3451.7	3502.2
30°	476.9	497.3	470.6	486.1	668.7	1110.1	1980.3	3336.1	3706.2	3791.1
32.5°	396.7	389.0	386.5	420.5	598.3	1042.1	2158.5	3736.8	3982.0	4088.8
35°	357.9	345.8	350.6	389.5	563.8	1032.4	2258.6	4068.4	4417.6	4483.1
37.5°	356.4	342.4	348.7	377.8	575.9	1049.9	2418.8	4600.7	5185.8	5326.2
40°	353.0	345.3	348.7	370.5	563.3	1059.6	2511.1	5047.9	5721.0	5863.2
42.5°	352.6	348.7	352.1	376.3	550.2	1064.0	2638.8	5451.9	6284.8	6396.9
45°	351.1	355.0	355.0	381.2	544.4	1093.1	2714.1	5650.1	6656.7	6795.1
47.5°	344.3	356.0	374.9	379.7	520.6	1079.5	2820.4	5950.7	6854.4	6984.5
50°	335.6	354.5	400.1	370.0	516.7	1046.5	2944.7	6189.1	7107.9	7221.0
52.5°	323.9	352.1	394.3	351.1	509.9	1040.7	3119.1	6498.9	7403.6	7503.6
55°	307.4	343.3	376.3	332.2	493.4	1022.2	3385.7	6883.0	7790.6	7859.1
57.5°	292.3	330.2	350.1	321.5	454.0	1026.1	3571.2	7196.2	8115.5	8175.2
60°	278.7	328.8	312.7	310.3	413.7	974.1	3631.4	7192.8	8236.4	8330.1
62.5°	264.2	310.3	286.5	295.3	378.3	920.7	3503.7	6884.5	8105.8	8269.9
65°	245.2	266.1	264.7	284.6	379.3	833.8	3210.8	6340.6	7779.9	7996.0
67.5°	222.9	235.5	243.8	267.1	391.4	766.3	2739.8	5686.5	7225.4	7482.3
70°	200.1	212.7	221.9	244.3	402.6	735.2	2180.9	4767.7	6322.1	6582.9
72.5°	176.8	189.9	197.2	216.6	387.5	668.7	1614.2	3709.6	5074.6	5211.6
75°	152.5	165.1	170.9	188.9	336.5	553.1	1114.5	2809.7	3716.9	3855.7
77.5°	127.7	141.3	143.3	157.8	256.9	423.0	714.3	2155.1	2632.0	2724.8
80°	102.0	115.6	115.6	123.3	180.6	290.9	427.8	1625.8	1916.7	1953.1
82.5°	73.3	87.9	86.9	87.4	124.8	180.2	247.7	1218.4	1385.0	1391.8
85°	43.2	53.4	52.9	48.6	73.8	97.1	134.0	756.6	773.1	775.0
87.5°	8.3	12.6	11.2	4.9	20.4	28.7	38.8	140.3	55.8	54.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)