

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: P368678

Luminaire Tested: **MSA-SA4D-760-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368678  
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-760-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**

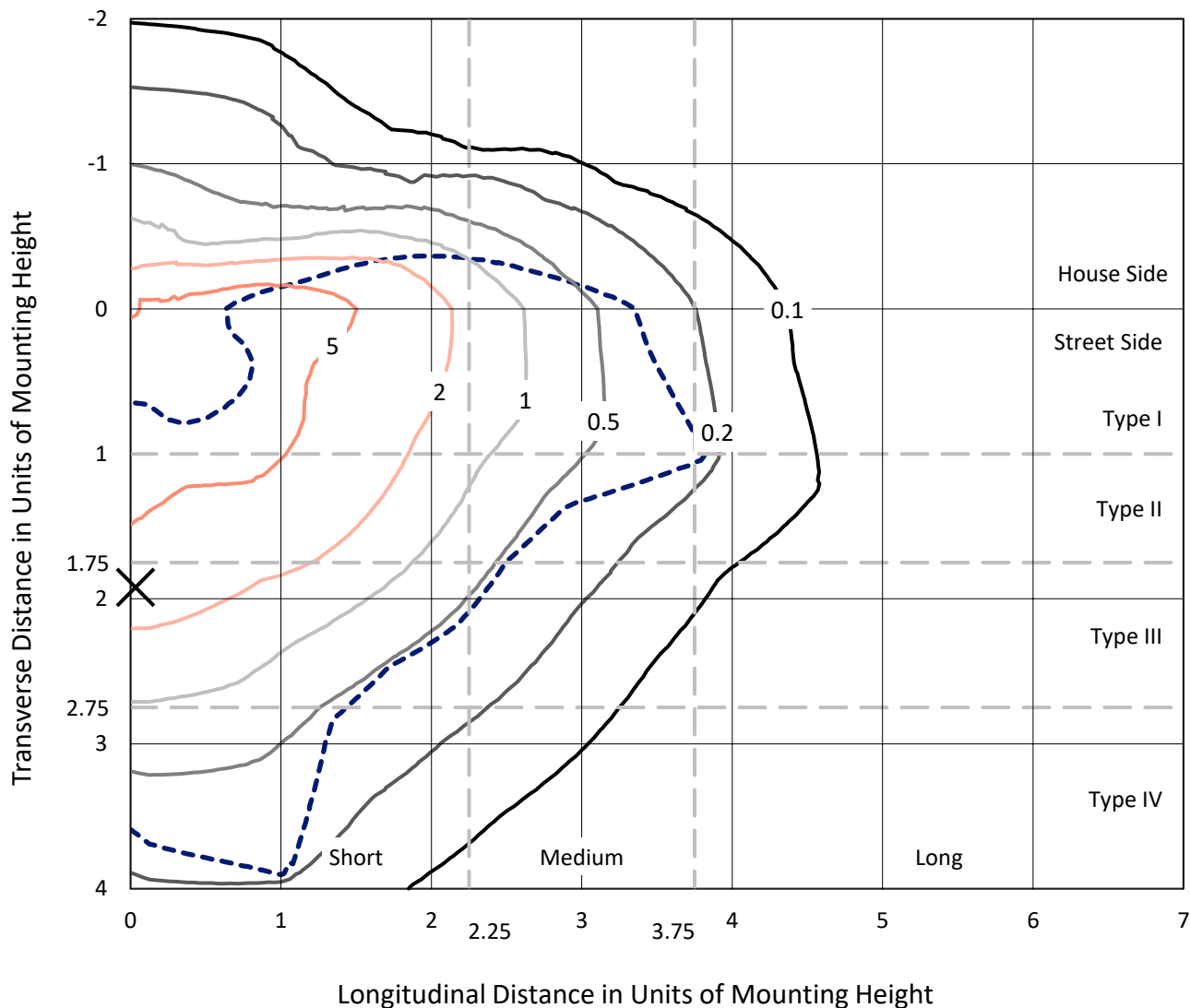
Lumens per Lamp: N/A  
Luminaire Lumens: 22536 lumens  
Efficiency: N/A  
Efficacy: 87.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G4  
  
Input Watts (W): 259  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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: P368678  
 CATALOG NUMBER: MSA-SA4D-760-U-SLL

### Iso-Footcandle Lines of Horizontal Illumination

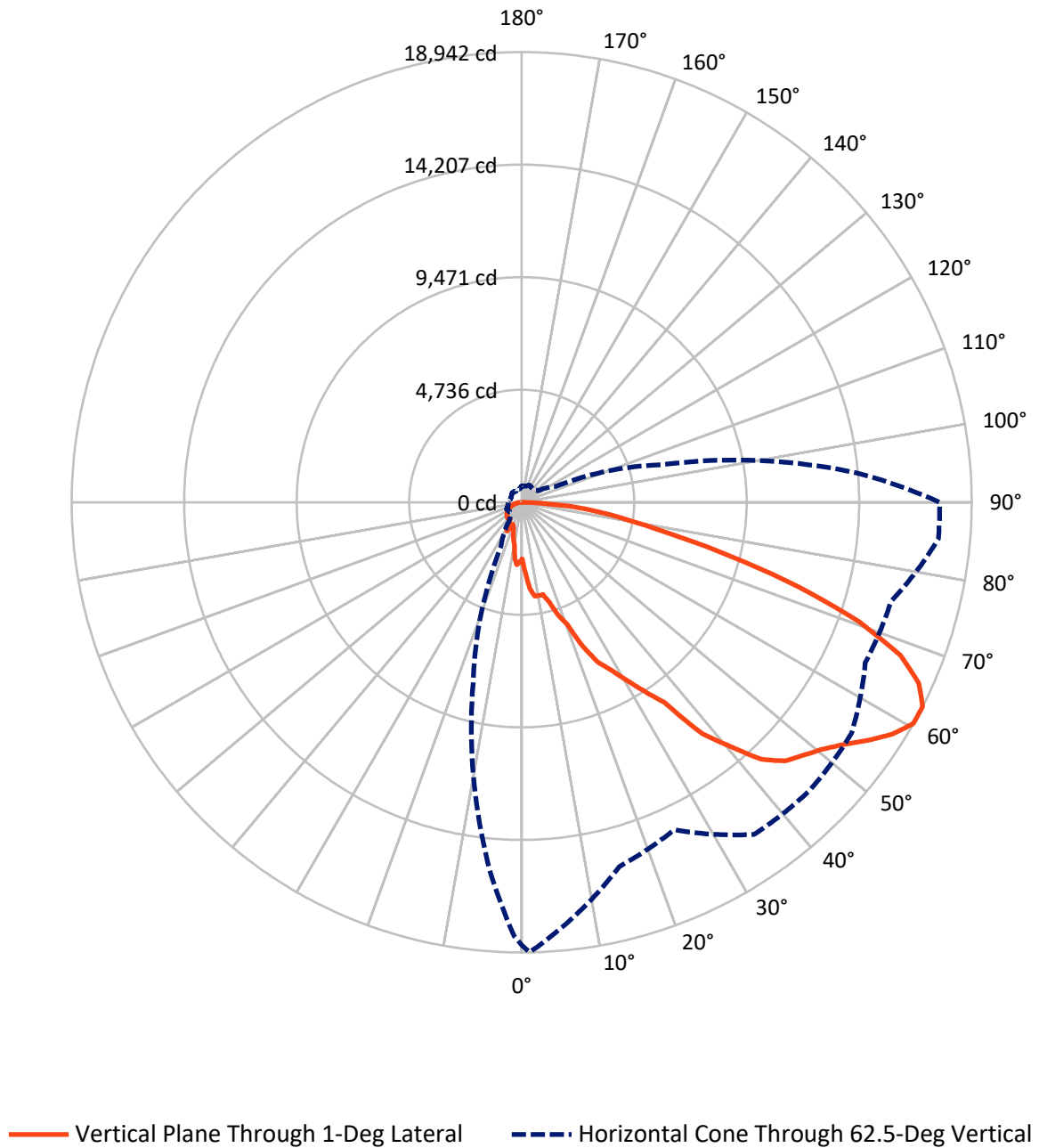
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.6 fc  
 Type IV - Short - N/A

REPORT NUMBER: P368678  
CATALOG NUMBER: MSA-SA4D-760-U-SLL

### Luminous Intensity Polar Plot



REPORT NUMBER: P368678  
 CATALOG NUMBER: MSA-SA4D-760-U-SLL

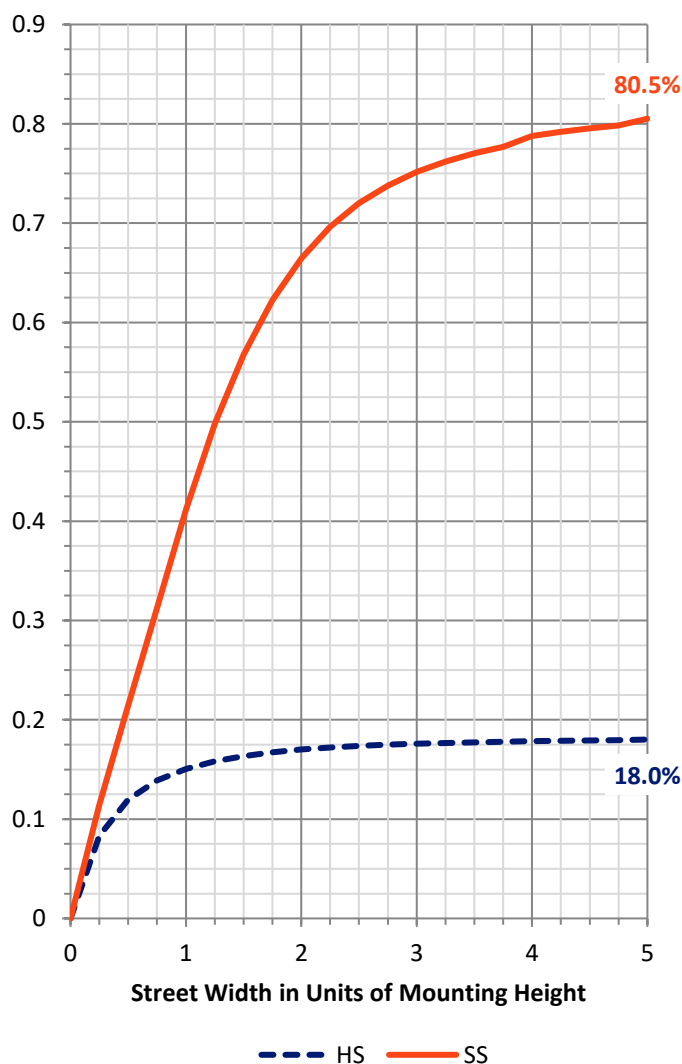
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4103.7	0.0	4103.7
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	18432.3	0.0	18432.3
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	22536.0	0.0	22536.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	272.4	1.2
10°-20°	791.6	3.5
20°-30°	1397.6	6.2
30°-40°	2176.9	9.7
40°-50°	3584.6	15.9
50°-60°	5116.1	22.7
60°-70°	5425.1	24.1
70°-80°	2996.6	13.3
80°-90°	775.1	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°	22536.0	100.0
0°-180°	22536.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P368678

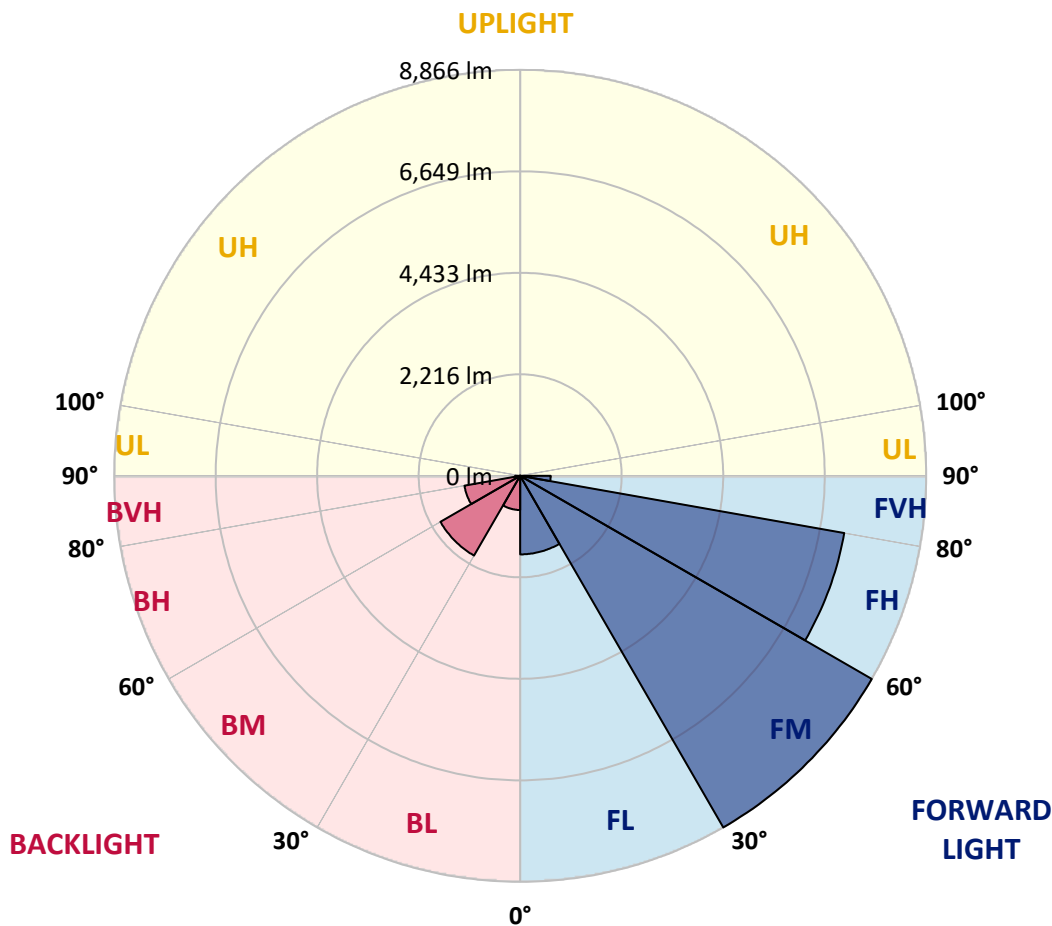
CATALOG NUMBER: MSA-SA4D-760-U-SLL

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1715.3	7.6			
FM (30°-60°)	8865.9	39.3			
FH (60°-80°)	7185.4	31.9			G3/7500
FVH (80°-90°)	665.8	3.0			G4/750
BL (0°-30°)	746.3	3.3	B2/1000		
BM (30°-60°)	2011.7	8.9	B2/2500		
BH (60°-80°)	1236.3	5.5	B3/2500		G3/2500
BVH (80°-90°)	109.3	0.5			G2/225
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: P368678

CATALOG NUMBER: MSA-SA4D-760-U-SLL

**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4
2.5°	2922.1	2947.3	2895.9	2837.9	2598.4	2829.2	2760.3	2888.2	2846.6	2568.9	3077.4
5°	3611.1	3657.0	3606.7	3780.6	3791.5	3836.4	3421.9	3680.0	3590.3	3567.3	3824.3
7.5°	3943.5	3990.6	4118.5	4428.0	4669.7	4451.0	4209.3	4155.7	4085.7	3903.1	4058.4
10°	3964.3	3990.6	4162.3	4818.4	4935.4	5090.7	4934.3	4565.8	4413.8	4016.8	3898.7
12.5°	3902.0	3984.0	4206.0	5005.4	5353.2	5522.7	5561.0	5150.9	4777.9	4325.2	4265.1
15°	4320.8	4350.4	4668.6	5138.8	5378.3	5521.6	5646.3	5393.6	5276.6	4917.9	4435.7
17.5°	4921.2	5003.2	5263.5	5437.4	5599.2	5626.6	5523.8	5425.4	5239.5	5718.4	5205.5
20°	5328.0	5486.6	5805.9	5838.7	5498.6	5558.8	5544.6	5551.1	5445.0	6330.9	6048.7
22.5°	6404.1	6575.8	6619.6	6429.3	5788.4	5513.9	5568.6	5727.2	6145.0	6903.9	7223.2
25°	7378.5	7445.2	7844.4	7354.5	6333.1	5734.9	5645.2	6055.3	6736.6	7868.5	8095.9
27.5°	7887.1	7973.5	8239.2	7172.9	6400.9	5450.5	5240.5	5865.0	6559.4	7414.6	8413.1
30°	8537.8	8675.5	9037.5	7354.5	6605.4	5636.4	5171.6	5768.8	6536.5	7712.1	9084.6
32.5°	9208.1	9476.1	9745.1	7994.2	6576.9	5920.8	5612.4	5660.5	6744.2	8335.4	9780.1
35°	10096.1	10332.4	10564.2	8363.9	7150.0	6158.1	5851.9	6361.5	7277.9	9058.3	10750.1
37.5°	11994.6	12368.6	11757.3	9415.9	7773.3	7227.6	6675.4	6977.2	7842.2	9660.9	12334.7
40°	13204.2	13485.2	12894.7	10132.2	8871.3	7948.3	7857.5	7882.7	8619.8	10177.1	13401.0
42.5°	14406.0	14786.6	13847.2	11115.4	10198.9	9436.7	8968.6	8936.9	9490.3	11104.4	14613.8
45°	15302.8	15527.0	14174.2	11944.3	11622.8	11057.4	10706.4	10149.7	10634.2	11746.4	15364.0
47.5°	15729.3	15911.9	14700.2	12426.6	12545.8	12575.3	13208.5	12259.3	11633.7	12180.5	15757.7
50°	16261.9	16348.3	15009.7	12850.9	13422.9	14719.9	14871.9	13263.2	12607.1	12654.1	15990.7
52.5°	16898.3	16934.4	15461.4	13340.9	14309.8	16130.6	15895.5	14964.9	13533.3	13519.1	16429.2
55°	17698.9	17677.0	16027.8	14000.3	14943.0	16969.4	16791.2	16113.1	14542.7	14235.4	17111.6
57.5°	18410.8	18397.7	16779.1	14607.3	15475.6	17400.3	17452.8	17273.5	15229.5	14748.3	17850.9
60°	18759.7	18927.0	17634.3	15271.1	15509.5	17595.0	17614.7	17329.2	15997.2	15406.7	18047.7
62.5°	18624.1	18942.3	18054.3	15868.2	15197.8	17063.5	17145.5	16948.7	15962.2	16097.8	17608.1
65°	18007.3	18374.7	17690.1	16186.4	15006.4	16173.3	16194.1	15696.5	15462.4	16556.1	16577.9
67.5°	16850.2	17194.7	16530.9	15679.0	13696.3	13773.9	14237.6	14278.1	13936.9	16210.5	15131.1
70°	14824.9	15067.7	14652.1	14425.7	11447.8	10992.9	11496.0	11711.4	11866.7	14962.7	13394.4
72.5°	11736.5	12205.7	12271.3	12419.0	9216.9	8459.0	8831.9	8512.6	9524.2	12735.0	10943.7
75°	8683.2	9079.1	9504.5	10328.0	7264.8	6333.1	6287.1	6124.2	7069.0	10241.6	8116.7
77.5°	6136.2	6388.8	6715.8	8250.1	5482.2	4877.5	4905.9	4740.8	5104.9	7740.5	5606.9
80°	4398.5	4530.8	4682.8	5435.2	4044.1	4208.2	4212.6	4056.2	3795.9	5256.9	3742.3
82.5°	3134.3	3237.1	3410.9	3584.8	3015.1	3449.2	3445.9	3436.1	3009.6	3553.1	2341.4
85°	1745.4	1883.2	2185.0	2808.4	2177.4	2466.1	2168.6	2388.4	2209.1	2365.5	1185.5
87.5°	122.5	109.4	488.8	1627.3	1016.0	742.6	389.3	771.0	988.6	1235.8	165.1
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: P368678

CATALOG NUMBER: MSA-SA4D-760-U-SLL

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4
2.5°	3182.4	3220.7	3070.8	2845.6	2906.8	2840.1	2755.9	2624.6	2354.5	2521.8	2522.9
5°	3822.1	3676.7	3559.7	3449.2	3263.3	2982.3	2945.1	2719.8	2592.9	2659.6	2649.8
7.5°	4022.3	3815.6	3639.5	3244.7	2900.2	2463.9	2332.7	2199.2	2143.5	2305.3	2369.8
10°	3802.5	3587.0	3414.2	2934.1	2700.1	2427.8	2066.9	1882.1	1772.7	1815.4	1840.5
12.5°	3979.6	3759.8	3216.3	2948.4	2562.3	2396.1	2080.0	1808.8	1647.0	1686.3	1639.3
15°	4150.2	3853.9	3310.3	2776.7	2463.9	2223.3	1967.4	1687.4	1497.1	1429.3	1393.2
17.5°	4773.6	4281.5	3299.4	2680.4	2321.7	2045.0	1736.6	1430.4	1303.6	1233.6	1173.4
20°	5533.6	4847.9	3358.5	2580.9	2170.8	1821.9	1486.2	1201.9	1113.3	1067.4	1051.0
22.5°	6438.0	5574.1	3696.4	2566.7	2028.6	1659.0	1348.4	1171.2	1071.7	1021.4	1000.6
25°	7156.5	6325.4	3945.7	2662.9	2021.0	1524.5	1265.3	1301.4	1255.5	1270.8	1149.4
27.5°	7854.3	6529.9	3805.7	2620.3	1817.6	1286.1	1245.6	1321.1	1360.4	1372.5	1368.1
30°	8443.7	7393.8	3836.4	2379.7	1535.4	1047.7	953.6	990.8	1099.1	1270.8	1303.6
32.5°	9306.6	7807.2	4097.7	2234.2	1372.5	937.2	832.2	818.0	843.2	905.5	959.1
35°	10316.0	8758.7	4171.0	2196.0	1259.8	888.0	814.7	781.9	795.0	842.1	853.0
37.5°	12198.0	9452.0	4442.2	2148.9	1218.3	858.5	801.6	789.6	818.0	856.3	878.2
40°	13235.9	10698.7	4455.3	2108.5	1164.7	846.4	810.4	804.9	822.4	874.9	888.0
42.5°	14619.3	11409.6	4660.9	2061.4	1146.1	862.9	827.9	825.7	841.0	871.6	895.7
45°	15462.4	11885.3	4671.9	2034.1	1141.7	935.0	850.8	843.2	839.9	858.5	880.4
47.5°	16006.0	12571.0	4805.3	2003.5	1168.0	953.6	878.2	845.4	834.4	842.1	858.5
50°	16521.1	13118.9	5057.9	1999.1	1195.3	935.0	926.3	844.3	822.4	819.1	831.1
52.5°	17153.2	14020.0	5369.6	2040.7	1188.7	907.7	962.4	839.9	800.5	792.9	804.9
55°	18072.9	14985.6	5701.0	2005.7	1120.9	855.2	927.4	836.6	777.6	763.3	774.3
57.5°	18668.9	15539.0	6071.7	1976.1	1018.1	815.8	895.7	838.8	779.7	748.0	754.6
60°	18470.9	15241.5	6217.1	1795.7	920.8	785.2	820.2	821.3	760.1	730.5	736.0
62.5°	17596.1	14164.3	6081.5	1585.7	848.6	741.5	742.6	788.5	703.2	682.4	691.2
65°	16373.4	12824.7	5532.5	1449.0	814.7	695.5	678.0	692.3	626.6	611.3	628.8
67.5°	14873.0	11173.3	4715.6	1304.7	802.7	633.2	612.4	606.9	565.4	547.9	565.4
70°	12990.9	9355.8	3769.6	1203.0	756.8	565.4	549.0	543.5	508.5	495.4	510.7
72.5°	10441.7	7305.3	2909.0	1125.3	706.5	503.1	488.8	482.3	452.8	434.2	452.8
75°	7426.7	5582.8	2161.0	1006.1	635.4	439.6	423.2	414.5	387.1	369.6	386.0
77.5°	5277.7	4190.7	1509.2	832.2	523.8	371.8	362.0	347.8	323.7	302.9	319.3
80°	3902.0	2994.3	973.3	641.9	400.3	297.5	292.0	282.1	259.2	234.0	246.1
82.5°	2568.9	2158.8	557.7	435.3	290.9	214.3	218.7	212.2	190.3	164.0	170.6
85°	1150.5	1278.4	296.4	239.5	189.2	129.0	141.1	136.7	120.3	95.1	97.3
87.5°	110.5	215.4	90.8	87.5	70.0	40.5	50.3	42.7	36.1	23.0	17.5
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: P368678  
 CATALOG NUMBER: MSA-SA4D-760-U-SLL

**CANDELA DISTRIBUTION (continued):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4
2.5°	2561.2	2407.0	2252.8	2346.9	2349.1	2374.2	2377.5	2284.5	2358.9	2415.8	2474.8
5°	2601.7	2501.1	2506.5	2415.8	2366.6	2430.0	2416.9	2391.7	2436.5	2498.9	2574.3
7.5°	2308.6	2243.0	2232.0	2144.6	1932.4	1885.4	1924.7	1941.1	2001.3	2097.5	2178.5
10°	1802.3	1932.4	1785.9	1752.0	1696.2	1586.8	1523.4	1515.7	1643.7	1721.3	1789.1
12.5°	1624.0	1591.2	1573.7	1480.7	1480.7	1364.8	1327.6	1361.5	1558.4	1614.2	1701.6
15°	1383.4	1359.3	1278.4	1232.5	1210.6	1163.6	1203.0	1235.8	1419.5	1423.9	1515.7
17.5°	1148.3	1134.1	1057.5	1048.8	1026.9	1006.1	1042.2	1120.9	1220.5	1203.0	1245.6
20°	1026.9	977.7	907.7	932.8	909.9	893.5	878.2	989.7	1059.7	1082.7	1107.8
22.5°	996.3	906.6	865.0	842.1	843.2	816.9	820.2	913.2	1019.2	1033.5	1018.1
25°	1138.4	978.8	844.3	777.6	752.4	743.6	768.8	850.8	978.8	1009.4	1021.4
27.5°	1332.0	1063.0	869.4	755.7	705.4	709.7	745.8	802.7	953.6	1008.3	1022.5
30°	1278.4	999.6	870.5	739.3	676.9	699.9	713.0	767.7	933.9	1016.0	1087.0
32.5°	986.4	898.9	876.0	752.4	727.2	691.2	709.7	762.2	876.0	927.4	930.7
35°	835.5	768.8	753.5	722.9	687.9	672.6	693.3	739.3	813.6	845.4	841.0
37.5°	829.0	755.7	695.5	682.4	668.2	663.8	675.8	718.5	794.0	849.7	837.7
40°	839.9	749.1	687.9	664.9	670.4	650.7	662.7	715.2	797.2	849.7	838.8
42.5°	826.8	741.5	678.0	660.5	666.0	638.7	652.9	707.6	788.5	850.8	830.0
45°	800.5	724.0	672.6	643.0	668.2	627.7	645.2	687.9	762.2	830.0	806.0
47.5°	774.3	703.2	649.6	631.0	656.2	616.8	624.4	661.6	736.0	802.7	781.9
50°	745.8	676.9	631.0	625.5	643.0	614.6	602.6	633.2	704.3	771.0	753.5
52.5°	715.2	655.1	617.9	615.7	632.1	600.4	582.9	606.9	670.4	737.1	722.9
55°	685.7	631.0	601.5	606.9	625.5	588.4	566.5	581.8	634.3	699.9	680.2
57.5°	656.2	603.7	579.6	594.9	609.1	573.0	545.7	554.5	597.1	661.6	638.7
60°	629.9	579.6	555.6	574.1	587.3	550.1	518.4	523.8	562.1	620.1	599.3
62.5°	596.0	553.4	521.6	545.7	555.6	519.5	485.6	492.1	522.7	577.4	562.1
65°	547.9	520.6	491.0	507.4	520.6	483.4	451.7	459.3	482.3	533.7	522.7
67.5°	506.3	480.1	460.4	473.5	475.7	447.3	418.8	423.2	441.8	489.9	477.9
70°	460.4	435.3	419.9	429.8	428.7	404.6	382.8	383.9	399.2	442.9	426.5
72.5°	410.1	386.0	378.4	383.9	379.5	357.6	336.8	344.5	354.3	387.1	374.0
75°	356.5	334.6	330.3	335.7	329.2	308.4	289.8	297.5	306.2	333.5	317.1
77.5°	300.7	281.1	282.1	283.2	274.5	260.3	241.7	249.3	254.8	273.4	257.0
80°	239.5	224.2	228.6	228.6	218.7	208.9	191.4	193.6	196.8	203.4	191.4
82.5°	175.0	175.0	175.0	176.1	155.3	158.6	143.3	142.2	138.9	137.8	130.1
85°	103.9	108.3	110.5	113.7	84.2	98.4	85.3	82.0	75.5	68.9	66.7
87.5°	23.0	29.5	29.5	28.4	0.0	10.9	5.5	8.7	2.2	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: P368678  
 CATALOG NUMBER: MSA-SA4D-760-U-SLL

**CANDELA DISTRIBUTION (continued):**

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4	2376.4
2.5°	2407.0	2341.4	2463.9	2573.2	2555.7	2619.2	2471.5	2690.3	2922.1	2922.1
5°	2554.7	2498.9	2530.6	2594.0	2642.1	2863.1	3046.8	3229.4	3606.7	3611.1
7.5°	2154.4	2274.7	2303.1	2284.5	2491.2	2775.6	3078.5	3599.0	3918.4	3943.5
10°	2014.4	2069.1	2155.5	2203.6	2287.8	2567.8	2944.0	3561.9	3900.9	3964.3
12.5°	1825.2	2027.5	2158.8	2427.8	2494.5	2550.3	3148.5	3683.3	3917.3	3902.0
15°	1618.5	1771.6	1960.8	2258.3	2427.8	2854.3	3269.9	4072.6	4204.9	4320.8
17.5°	1290.5	1403.1	1654.6	1993.6	2413.6	2806.2	3569.5	4553.8	4800.9	4921.2
20°	1061.9	1063.0	1314.5	1764.0	2221.1	2605.0	3683.3	4952.9	5266.8	5328.0
22.5°	1003.9	953.6	1085.9	1451.2	2008.9	2724.2	3912.9	5594.9	6249.9	6404.1
25°	972.2	911.0	994.1	1280.6	1856.9	2786.5	4375.5	6477.4	7318.4	7378.5
27.5°	985.3	1013.8	1040.0	1141.7	1664.5	2669.5	4268.3	6872.2	7773.3	7887.1
30°	1073.9	1119.8	1059.7	1094.7	1505.9	2500.0	4459.7	7513.1	8346.4	8537.8
32.5°	893.5	876.0	870.5	947.1	1347.3	2346.9	4861.1	8415.3	8967.5	9208.1
35°	806.0	778.6	789.6	877.1	1269.7	2325.0	5086.3	9162.2	9948.5	10096.1
37.5°	802.7	771.0	785.2	850.8	1297.0	2364.4	5447.2	10360.8	11678.6	11994.6
40°	795.0	777.6	785.2	834.4	1268.6	2386.2	5655.0	11368.0	12883.7	13204.2
42.5°	794.0	785.2	792.9	847.5	1239.1	2396.1	5942.6	12277.9	14153.4	14406.0
45°	790.7	799.4	799.4	858.5	1225.9	2461.7	6112.1	12724.1	14991.1	15302.8
47.5°	775.4	801.6	844.3	855.2	1172.3	2431.1	6351.6	13401.0	15436.2	15729.3
50°	755.7	798.3	901.1	833.3	1163.6	2356.7	6631.6	13938.0	16007.1	16261.9
52.5°	729.4	792.9	888.0	790.7	1148.3	2343.6	7024.2	14635.7	16673.1	16898.3
55°	692.3	773.2	847.5	748.0	1111.1	2302.0	7624.6	15500.7	17544.7	17698.9
57.5°	658.3	743.6	788.5	724.0	1022.5	2310.8	8042.4	16206.1	18276.3	18410.8
60°	627.7	740.4	704.3	698.8	931.7	2193.8	8178.0	16198.4	18548.6	18759.7
62.5°	594.9	698.8	645.2	664.9	851.9	2073.5	7890.3	15504.0	18254.4	18624.1
65°	552.3	599.3	596.0	640.9	854.1	1877.7	7230.9	14279.2	17520.6	18007.3
67.5°	502.0	530.4	549.0	601.5	881.4	1725.7	6170.1	12806.1	16271.7	16850.2
70°	450.6	479.0	499.8	550.1	906.6	1655.7	4911.4	10737.0	14237.6	14824.9
72.5°	398.1	427.6	444.0	487.7	872.7	1505.9	3635.1	8354.0	11428.1	11736.5
75°	343.4	371.8	384.9	425.4	757.9	1245.6	2509.8	6327.6	8370.4	8683.2
77.5°	287.6	318.2	322.6	355.4	578.5	952.5	1608.7	4853.4	5927.3	6136.2
80°	229.7	260.3	260.3	277.8	406.8	655.1	963.5	3661.4	4316.4	4398.5
82.5°	165.1	197.9	195.8	196.8	281.1	405.7	557.7	2743.8	3119.0	3134.3
85°	97.3	120.3	119.2	109.4	166.2	218.7	301.8	1703.8	1741.0	1745.4
87.5°	18.6	28.4	25.2	10.9	45.9	64.5	87.5	316.1	125.8	122.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)