

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: P368172

Luminaire Tested: **MSA-SA3D-830-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368172
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-SA3D-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: 13550 lumens
Efficiency: N/A
Efficacy: 70.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G3

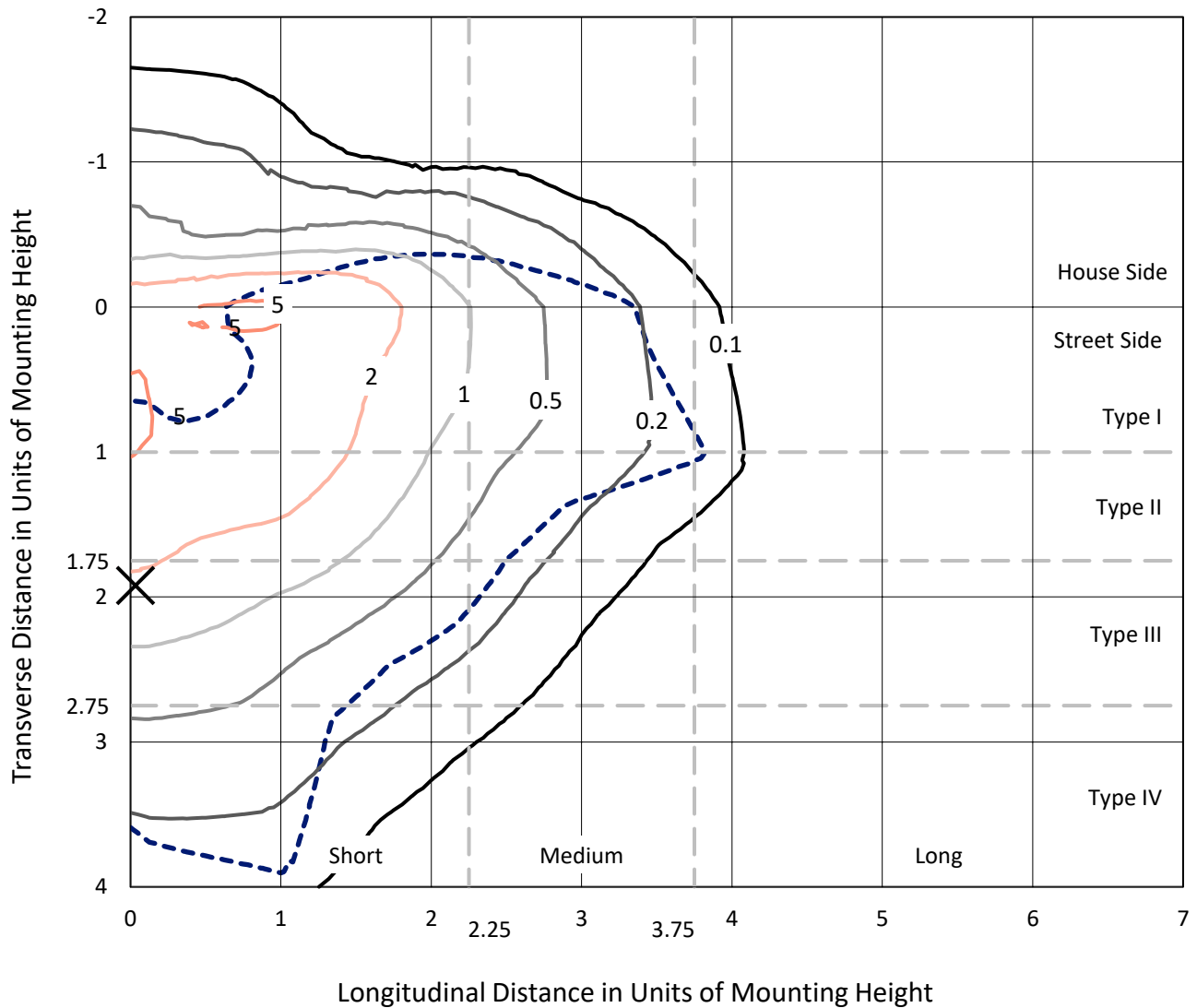
Input Watts (W): 192
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

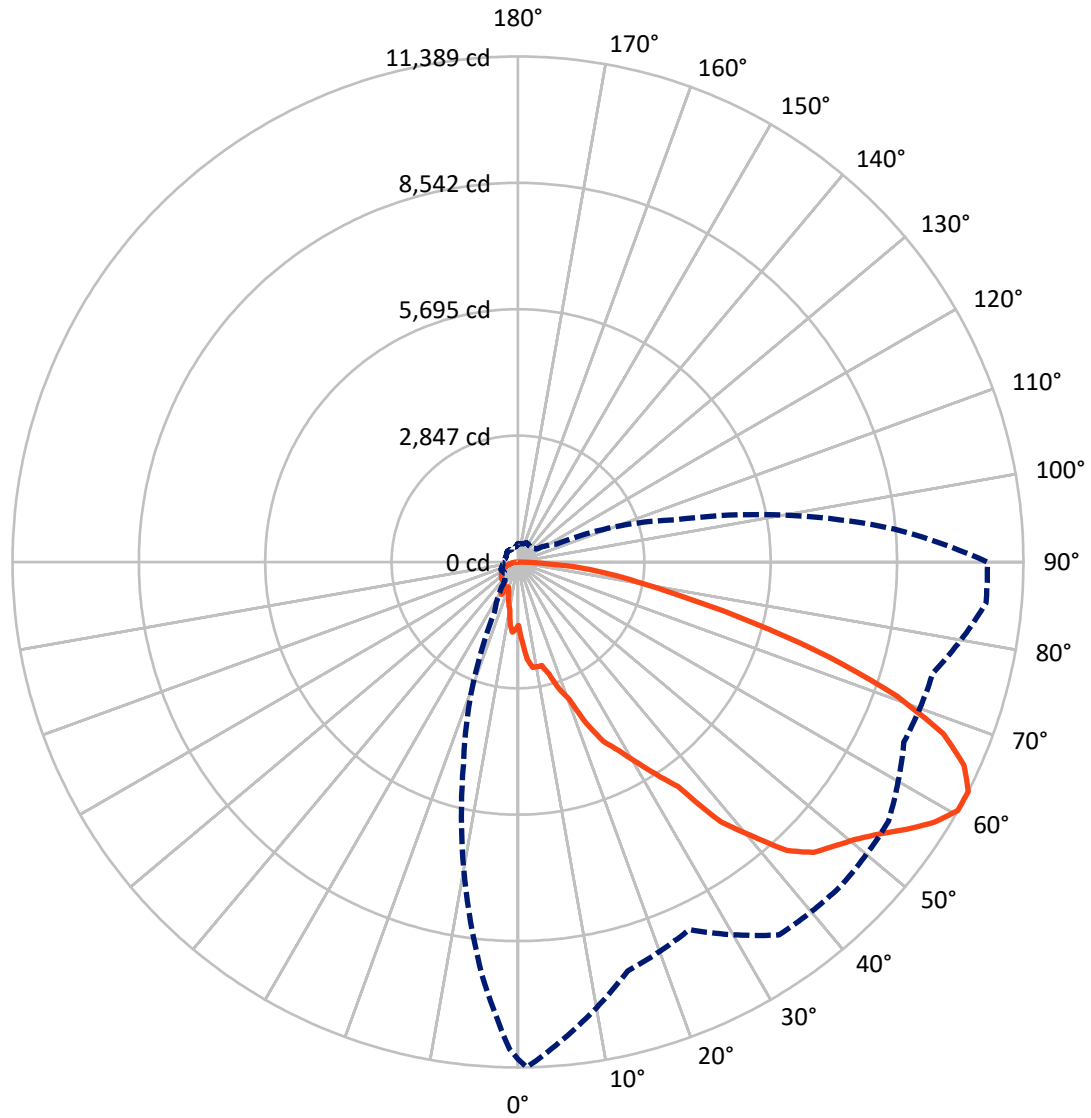
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.8 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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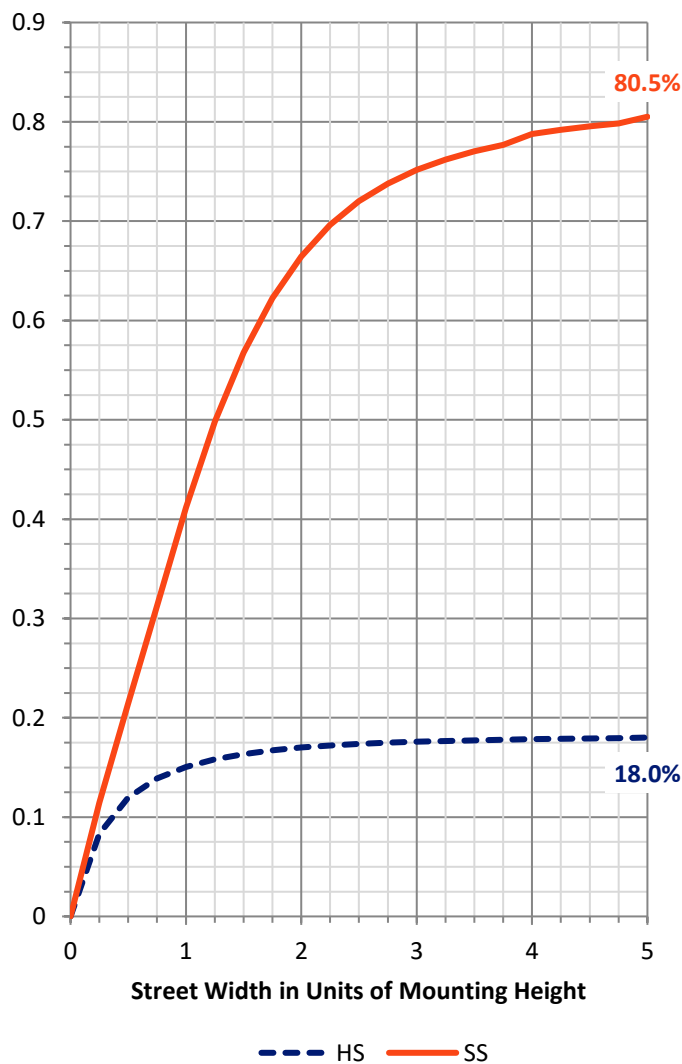
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2467.4	0.0	2467.4
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	11082.6	0.0	11082.6
	% Fixture	81.8	0.0	81.8
Total	Lumens	13550.0	0.0	13550.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.8	1.2
10°-20°	476.0	3.5
20°-30°	840.3	6.2
30°-40°	1308.9	9.7
40°-50°	2155.3	15.9
50°-60°	3076.1	22.7
60°-70°	3261.9	24.1
70°-80°	1801.7	13.3
80°-90°	466.0	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°	13550.0	100.0
0°-180°	13550.0	100.0

Coefficient of Utilization



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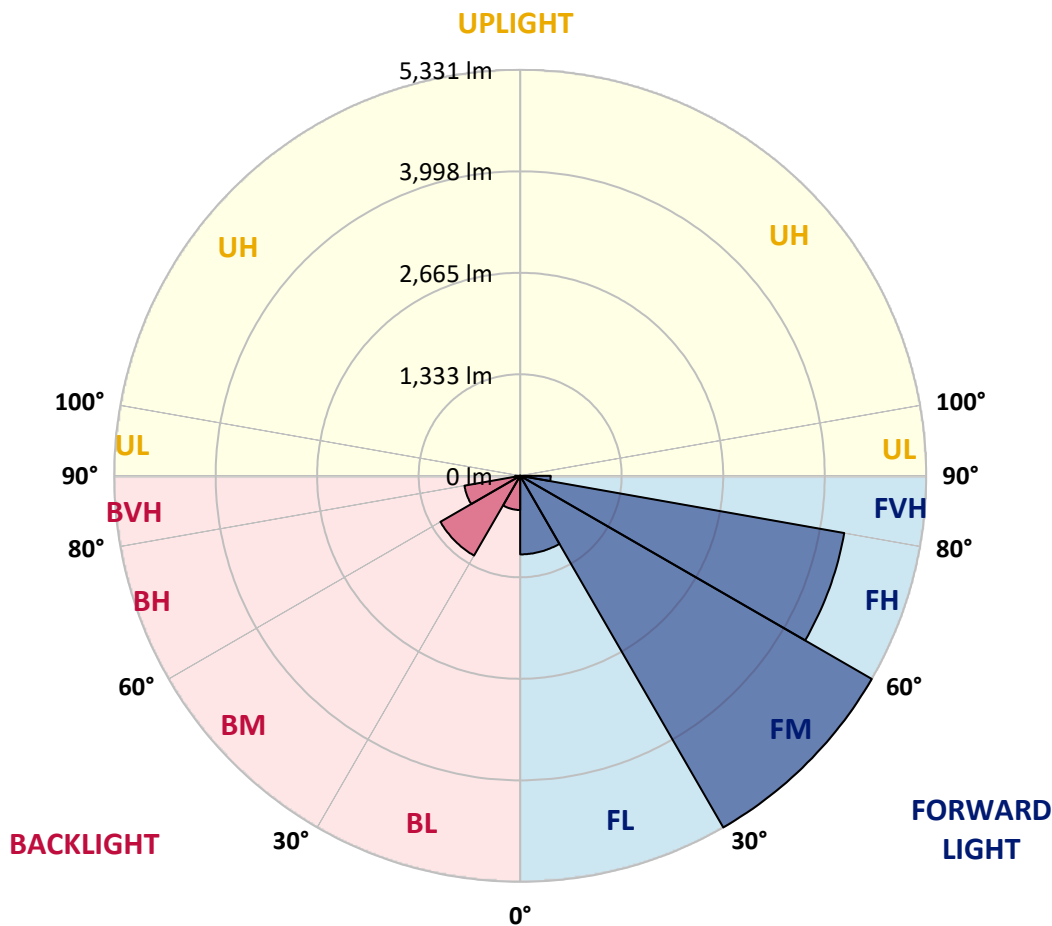
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1031.4	7.6			
FM (30°-60°)	5330.7	39.3			
FH (60°-80°)	4320.3	31.9			G2/5000
FVH (80°-90°)	400.3	3.0			G3/500
BL (0°-30°)	448.7	3.3	B1/500		
BM (30°-60°)	1209.6	8.9	B2/2500		
BH (60°-80°)	743.3	5.5	B2/1000		G2/1000
BVH (80°-90°)	65.7	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°	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8
2.5°	1756.9	1772.1	1741.2	1706.3	1562.3	1701.1	1659.6	1736.6	1711.6	1544.6	1850.3
5°	2171.2	2198.8	2168.6	2273.1	2279.7	2306.6	2057.4	2212.6	2158.7	2144.9	2299.4
7.5°	2371.1	2399.4	2476.3	2662.4	2807.7	2676.2	2530.9	2498.7	2456.6	2346.8	2440.1
10°	2383.6	2399.4	2502.6	2897.1	2967.5	3060.8	2966.8	2745.2	2653.8	2415.1	2344.1
12.5°	2346.1	2395.4	2528.9	3009.6	3218.7	3320.6	3343.6	3097.0	2872.8	2600.6	2564.4
15°	2597.9	2615.7	2807.0	3089.8	3233.8	3319.9	3394.9	3243.0	3172.6	2957.0	2667.0
17.5°	2958.9	3008.2	3164.7	3269.3	3366.6	3383.0	3321.2	3262.1	3150.3	3438.3	3129.9
20°	3203.5	3298.9	3490.9	3510.6	3306.1	3342.3	3333.7	3337.7	3273.9	3806.5	3636.9
22.5°	3850.6	3953.8	3980.1	3865.7	3480.4	3315.3	3348.2	3443.5	3694.7	4151.0	4343.1
25°	4436.4	4476.5	4716.5	4422.0	3807.8	3448.1	3394.2	3640.8	4050.4	4731.0	4867.8
27.5°	4742.2	4794.1	4953.9	4312.8	3848.6	3277.2	3150.9	3526.4	3943.9	4458.1	5058.5
30°	5133.4	5216.3	5433.9	4422.0	3971.5	3389.0	3109.5	3468.5	3930.1	4637.0	5462.2
32.5°	5536.5	5697.6	5859.3	4806.6	3954.4	3559.9	3374.5	3403.4	4055.0	5011.8	5880.4
35°	6070.4	6212.4	6351.8	5028.9	4299.0	3702.6	3518.5	3824.9	4375.9	5446.4	6463.6
37.5°	7211.9	7436.8	7069.2	5661.4	4673.8	4345.7	4013.6	4195.1	4715.2	5808.7	7416.4
40°	7939.1	8108.1	7753.1	6092.1	5334.0	4779.0	4724.4	4739.5	5182.7	6119.1	8057.5
42.5°	8661.8	8890.6	8325.8	6683.2	6132.2	5673.9	5392.5	5373.4	5706.1	6676.7	8786.7
45°	9201.0	9335.7	8522.4	7181.6	6988.3	6648.4	6437.3	6102.6	6393.9	7062.6	9237.8
47.5°	9457.4	9567.2	8838.6	7471.6	7543.3	7561.0	7941.8	7371.0	6994.9	7323.7	9474.5
50°	9777.6	9829.6	9024.7	7726.7	8070.6	8850.5	8941.9	7974.6	7580.1	7608.4	9614.5
52.5°	10160.3	10182.0	9296.3	8021.3	8603.9	9698.7	9557.3	8997.8	8137.1	8128.5	9878.2
55°	10641.6	10628.5	9636.9	8417.8	8984.6	10203.0	10095.9	9688.2	8744.0	8559.2	10288.5
57.5°	11069.7	11061.8	10088.6	8782.8	9304.8	10462.1	10493.7	10385.8	9156.9	8867.6	10733.0
60°	11279.4	11380.0	10602.8	9181.9	9325.2	10579.2	10591.0	10419.4	9618.5	9263.4	10851.4
62.5°	11197.9	11389.2	10855.3	9540.9	9137.8	10259.6	10308.9	10190.6	9597.5	9679.0	10587.0
65°	10827.0	11048.0	10636.4	9732.2	9022.8	9724.4	9736.8	9437.7	9297.0	9954.5	9967.6
67.5°	10131.4	10338.5	9939.4	9427.1	8235.0	8281.7	8560.5	8584.8	8379.7	9746.7	9097.7
70°	8913.6	9059.6	8809.7	8673.6	6883.1	6609.6	6912.1	7041.6	7135.0	8996.5	8053.5
72.5°	7056.7	7338.8	7378.3	7467.0	5541.7	5086.1	5310.3	5118.3	5726.5	7657.1	6580.0
75°	5220.9	5458.9	5714.7	6209.8	4368.0	3807.8	3780.2	3682.2	4250.3	6157.9	4880.3
77.5°	3689.5	3841.3	4038.0	4960.5	3296.2	2932.6	2949.7	2850.4	3069.4	4654.1	3371.2
80°	2644.6	2724.2	2815.6	3268.0	2431.6	2530.2	2532.8	2438.8	2282.3	3160.8	2250.1
82.5°	1884.5	1946.3	2050.9	2155.4	1812.8	2073.9	2071.9	2066.0	1809.5	2136.3	1407.8
85°	1049.4	1132.3	1313.8	1688.6	1309.2	1482.8	1303.9	1436.1	1328.2	1422.3	712.8
87.5°	73.6	65.8	293.9	978.4	610.9	446.5	234.1	463.6	594.4	743.0	99.3
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°	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8
2.5°	1913.4	1936.5	1846.4	1710.9	1747.7	1707.6	1657.0	1578.1	1415.7	1516.3	1516.9
5°	2298.1	2210.6	2140.3	2073.9	1962.1	1793.1	1770.8	1635.3	1559.0	1599.1	1593.2
7.5°	2418.4	2294.2	2188.3	1950.9	1743.8	1481.4	1402.5	1322.3	1288.8	1386.1	1424.9
10°	2286.3	2156.7	2052.8	1764.2	1623.5	1459.7	1242.8	1131.6	1065.9	1091.5	1106.6
12.5°	2392.8	2260.6	1933.8	1772.7	1540.6	1440.7	1250.6	1087.6	990.3	1013.9	985.7
15°	2495.4	2317.2	1990.4	1669.5	1481.4	1336.8	1182.9	1014.6	900.2	859.4	837.7
17.5°	2870.2	2574.3	1983.8	1611.6	1396.0	1229.6	1044.2	860.1	783.8	741.7	705.5
20°	3327.2	2914.9	2019.3	1551.8	1305.2	1095.5	893.6	722.6	669.4	641.8	631.9
22.5°	3870.9	3351.5	2222.5	1543.2	1219.7	997.5	810.7	704.2	644.4	614.1	601.6
25°	4302.9	3803.2	2372.4	1601.1	1215.1	916.6	760.8	782.5	754.9	764.1	691.1
27.5°	4722.5	3926.2	2288.2	1575.5	1092.8	773.3	748.9	794.3	818.0	825.2	822.6
30°	5076.9	4445.6	2306.6	1430.8	923.2	629.9	573.4	595.7	660.8	764.1	783.8
32.5°	5595.7	4694.2	2463.8	1343.4	825.2	563.5	500.4	491.8	507.0	544.4	576.7
35°	6202.6	5266.2	2507.9	1320.3	757.5	533.9	489.9	470.1	478.0	506.3	512.9
37.5°	7334.2	5683.1	2670.9	1292.1	732.5	516.2	482.0	474.7	491.8	514.9	528.0
40°	7958.2	6432.7	2678.8	1267.7	700.3	508.9	487.2	483.9	494.5	526.0	533.9
42.5°	8790.0	6860.1	2802.4	1239.5	689.1	518.8	497.8	496.4	505.6	524.1	538.5
45°	9297.0	7146.1	2809.0	1223.0	686.5	562.2	511.6	507.0	505.0	516.2	529.3
47.5°	9623.8	7558.4	2889.2	1204.6	702.3	573.4	528.0	508.3	501.7	506.3	516.2
50°	9933.5	7887.8	3041.1	1202.0	718.7	562.2	556.9	507.6	494.5	492.5	499.7
52.5°	10313.5	8429.7	3228.5	1227.0	714.7	545.8	578.6	505.0	481.3	476.7	483.9
55°	10866.5	9010.3	3427.8	1205.9	674.0	514.2	557.6	503.0	467.5	459.0	465.5
57.5°	11224.9	9343.0	3650.7	1188.2	612.2	490.5	538.5	504.3	468.8	449.8	453.7
60°	11105.8	9164.1	3738.1	1079.7	553.6	472.1	493.2	493.8	457.0	439.2	442.5
62.5°	10579.8	8516.5	3656.6	953.4	510.3	445.8	446.5	474.1	422.8	410.3	415.6
65°	9844.7	7711.0	3326.5	871.2	489.9	418.2	407.7	416.2	376.8	367.6	378.1
67.5°	8942.5	6718.1	2835.3	784.4	482.6	380.7	368.2	364.9	339.9	329.4	339.9
70°	7810.9	5625.3	2266.5	723.3	455.0	339.9	330.1	326.8	305.8	297.9	307.1
72.5°	6278.2	4392.4	1749.1	676.6	424.8	302.5	293.9	290.0	272.2	261.0	272.2
75°	4465.4	3356.7	1299.3	604.9	382.0	264.3	254.5	249.2	232.8	222.2	232.1
77.5°	3173.3	2519.7	907.4	500.4	315.0	223.6	217.6	209.1	194.6	182.1	192.0
80°	2346.1	1800.3	585.2	386.0	240.7	178.9	175.6	169.6	155.8	140.7	147.9
82.5°	1544.6	1298.0	335.3	261.7	174.9	128.9	131.5	127.6	114.4	98.6	102.6
85°	691.7	768.7	178.2	144.0	113.8	77.6	84.8	82.2	72.3	57.2	58.5
87.5°	66.4	129.5	54.6	52.6	42.1	24.3	30.2	25.6	21.7	13.8	10.5
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°	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8
2.5°	1540.0	1447.2	1354.5	1411.1	1412.4	1427.5	1429.5	1373.6	1418.3	1452.5	1488.0
5°	1564.3	1503.8	1507.1	1452.5	1422.9	1461.1	1453.2	1438.0	1465.0	1502.5	1547.8
7.5°	1388.1	1348.6	1342.0	1289.4	1161.9	1133.6	1157.3	1167.1	1203.3	1261.2	1309.8
10°	1083.6	1161.9	1073.8	1053.4	1019.8	954.1	916.0	911.4	988.3	1035.0	1075.7
12.5°	976.4	956.7	946.2	890.3	890.3	820.6	798.3	818.6	937.0	970.5	1023.1
15°	831.8	817.3	768.7	741.0	727.9	699.6	723.3	743.0	853.5	856.1	911.4
17.5°	690.4	681.9	635.8	630.6	617.4	604.9	626.6	674.0	733.8	723.3	748.9
20°	617.4	587.8	545.8	560.9	547.1	537.2	528.0	595.1	637.2	651.0	666.1
22.5°	599.0	545.1	520.1	506.3	507.0	491.2	493.2	549.0	612.8	621.4	612.2
25°	684.5	588.5	507.6	467.5	452.4	447.1	462.3	511.6	588.5	606.9	614.1
27.5°	800.9	639.1	522.7	454.4	424.1	426.7	448.4	482.6	573.4	606.3	614.8
30°	768.7	601.0	523.4	444.5	407.0	420.8	428.7	461.6	561.5	610.9	653.6
32.5°	593.1	540.5	526.7	452.4	437.3	415.6	426.7	458.3	526.7	557.6	559.6
35°	502.4	462.3	453.0	434.6	413.6	404.4	416.9	444.5	489.2	508.3	505.6
37.5°	498.4	454.4	418.2	410.3	401.8	399.1	406.4	432.0	477.4	510.9	503.7
40°	505.0	450.4	413.6	399.8	403.1	391.2	398.5	430.0	479.3	510.9	504.3
42.5°	497.1	445.8	407.7	397.2	400.4	384.0	392.6	425.4	474.1	511.6	499.1
45°	481.3	435.3	404.4	386.6	401.8	377.4	387.9	413.6	458.3	499.1	484.6
47.5°	465.5	422.8	390.6	379.4	394.5	370.9	375.5	397.8	442.5	482.6	470.1
50°	448.4	407.0	379.4	376.1	386.6	369.5	362.3	380.7	423.5	463.6	453.0
52.5°	430.0	393.9	371.5	370.2	380.1	361.0	350.5	364.9	403.1	443.2	434.6
55°	412.3	379.4	361.6	364.9	376.1	353.8	340.6	349.8	381.4	420.8	409.0
57.5°	394.5	363.0	348.5	357.7	366.2	344.6	328.1	333.4	359.0	397.8	384.0
60°	378.7	348.5	334.0	345.2	353.1	330.7	311.7	315.0	338.0	372.8	360.3
62.5°	358.4	332.7	313.6	328.1	334.0	312.3	291.9	295.9	314.3	347.2	338.0
65°	329.4	313.0	295.2	305.1	313.0	290.6	271.6	276.2	290.0	320.9	314.3
67.5°	304.4	288.7	276.8	284.7	286.0	268.9	251.8	254.5	265.6	294.6	287.3
70°	276.8	261.7	252.5	258.4	257.8	243.3	230.1	230.8	240.0	266.3	256.4
72.5°	246.6	232.1	227.5	230.8	228.2	215.0	202.5	207.1	213.0	232.8	224.9
75°	214.4	201.2	198.6	201.9	197.9	185.4	174.2	178.9	184.1	200.5	190.7
77.5°	180.8	169.0	169.6	170.3	165.0	156.5	145.3	149.9	153.2	164.4	154.5
80°	144.0	134.8	137.4	137.4	131.5	125.6	115.1	116.4	118.4	122.3	115.1
82.5°	105.2	105.2	105.2	105.9	93.4	95.3	86.1	85.5	83.5	82.9	78.2
85°	62.5	65.1	66.4	68.4	50.6	59.2	51.3	49.3	45.4	41.4	40.1
87.5°	13.8	17.8	17.8	17.1	0.0	6.6	3.3	5.3	1.3	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-SA3D-830-U-SLL

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8	1428.8
2.5°	1447.2	1407.8	1481.4	1547.2	1536.7	1574.8	1486.0	1617.5	1756.9	1756.9
5°	1536.0	1502.5	1521.5	1559.7	1588.6	1721.4	1831.9	1941.7	2168.6	2171.2
7.5°	1295.4	1367.7	1384.8	1373.6	1497.9	1668.8	1851.0	2164.0	2356.0	2371.1
10°	1211.2	1244.1	1296.0	1324.9	1375.6	1543.9	1770.1	2141.6	2345.4	2383.6
12.5°	1097.4	1219.1	1298.0	1459.7	1499.8	1533.4	1893.1	2214.6	2355.3	2346.1
15°	973.2	1065.2	1179.0	1357.8	1459.7	1716.2	1966.0	2448.7	2528.2	2597.9
17.5°	775.9	843.6	994.9	1198.7	1451.2	1687.2	2146.2	2738.0	2886.6	2958.9
20°	638.5	639.1	790.4	1060.6	1335.5	1566.3	2214.6	2978.0	3166.7	3203.5
22.5°	603.6	573.4	652.9	872.6	1207.9	1637.9	2352.7	3364.0	3757.8	3850.6
25°	584.6	547.7	597.7	770.0	1116.5	1675.4	2630.8	3894.6	4400.3	4436.4
27.5°	592.4	609.5	625.3	686.5	1000.8	1605.1	2566.4	4132.0	4673.8	4742.2
30°	645.7	673.3	637.2	658.2	905.4	1503.1	2681.4	4517.3	5018.3	5133.4
32.5°	537.2	526.7	523.4	569.4	810.1	1411.1	2922.8	5059.8	5391.8	5536.5
35°	484.6	468.2	474.7	527.3	763.4	1397.9	3058.2	5508.9	5981.6	6070.4
37.5°	482.6	463.6	472.1	511.6	779.8	1421.6	3275.2	6229.5	7021.9	7211.9
40°	478.0	467.5	472.1	501.7	762.7	1434.8	3400.1	6835.1	7746.5	7939.1
42.5°	477.4	472.1	476.7	509.6	745.0	1440.7	3573.1	7382.2	8509.9	8661.8
45°	475.4	480.7	480.7	516.2	737.1	1480.1	3675.0	7650.5	9013.6	9201.0
47.5°	466.2	482.0	507.6	514.2	704.9	1461.7	3819.0	8057.5	9281.2	9457.4
50°	454.4	480.0	541.8	501.0	699.6	1417.0	3987.3	8380.3	9624.4	9777.6
52.5°	438.6	476.7	533.9	475.4	690.4	1409.1	4223.4	8799.9	10024.9	10160.3
55°	416.2	464.9	509.6	449.8	668.1	1384.1	4584.4	9320.0	10548.9	10641.6
57.5°	395.8	447.1	474.1	435.3	614.8	1389.4	4835.5	9744.1	10988.8	11069.7
60°	377.4	445.2	423.5	420.2	560.2	1319.0	4917.1	9739.5	11152.5	11279.4
62.5°	357.7	420.2	387.9	399.8	512.2	1246.7	4744.1	9321.9	10975.7	11197.9
65°	332.1	360.3	358.4	385.3	513.5	1129.0	4347.7	8585.5	10534.4	10827.0
67.5°	301.8	318.9	330.1	361.6	530.0	1037.6	3709.8	7699.8	9783.5	10131.4
70°	270.9	288.0	300.5	330.7	545.1	995.5	2953.0	6455.7	8560.5	8913.6
72.5°	239.3	257.1	267.0	293.3	524.7	905.4	2185.7	5022.9	6871.3	7056.7
75°	206.5	223.6	231.5	255.8	455.7	748.9	1509.1	3804.5	5032.8	5220.9
77.5°	172.9	191.3	194.0	213.7	347.8	572.7	967.2	2918.2	3563.9	3689.5
80°	138.1	156.5	156.5	167.0	244.6	393.9	579.3	2201.4	2595.3	2644.6
82.5°	99.3	119.0	117.7	118.4	169.0	243.9	335.3	1649.8	1875.3	1884.5
85°	58.5	72.3	71.7	65.8	99.9	131.5	181.5	1024.4	1046.8	1049.4
87.5°	11.2	17.1	15.1	6.6	27.6	38.8	52.6	190.0	75.6	73.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)