

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: P368677

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

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368677
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-25)
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-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS
EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19191 lumens
Efficiency: N/A
Efficacy: 74.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G3

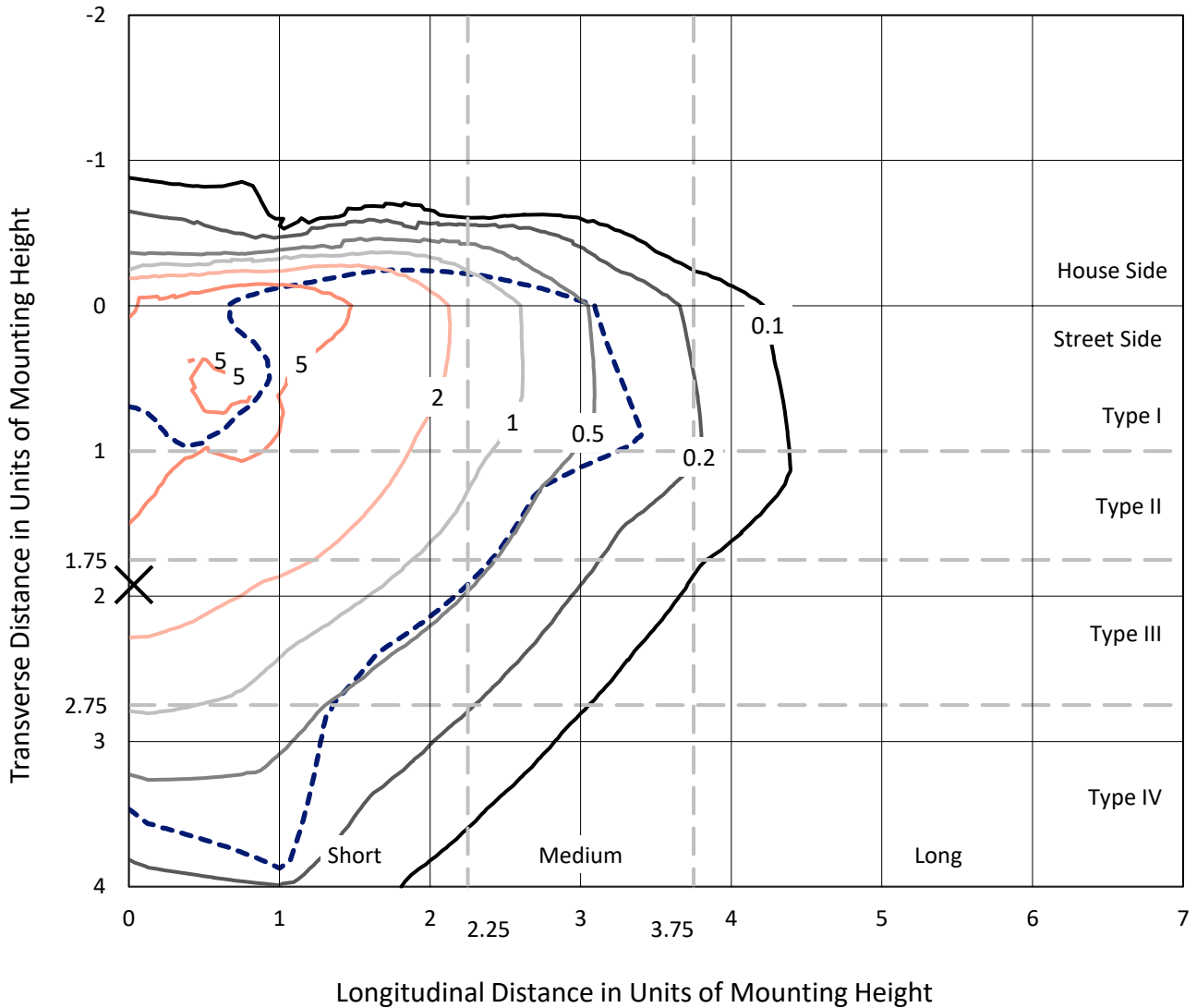
Input Watts (W): 259
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

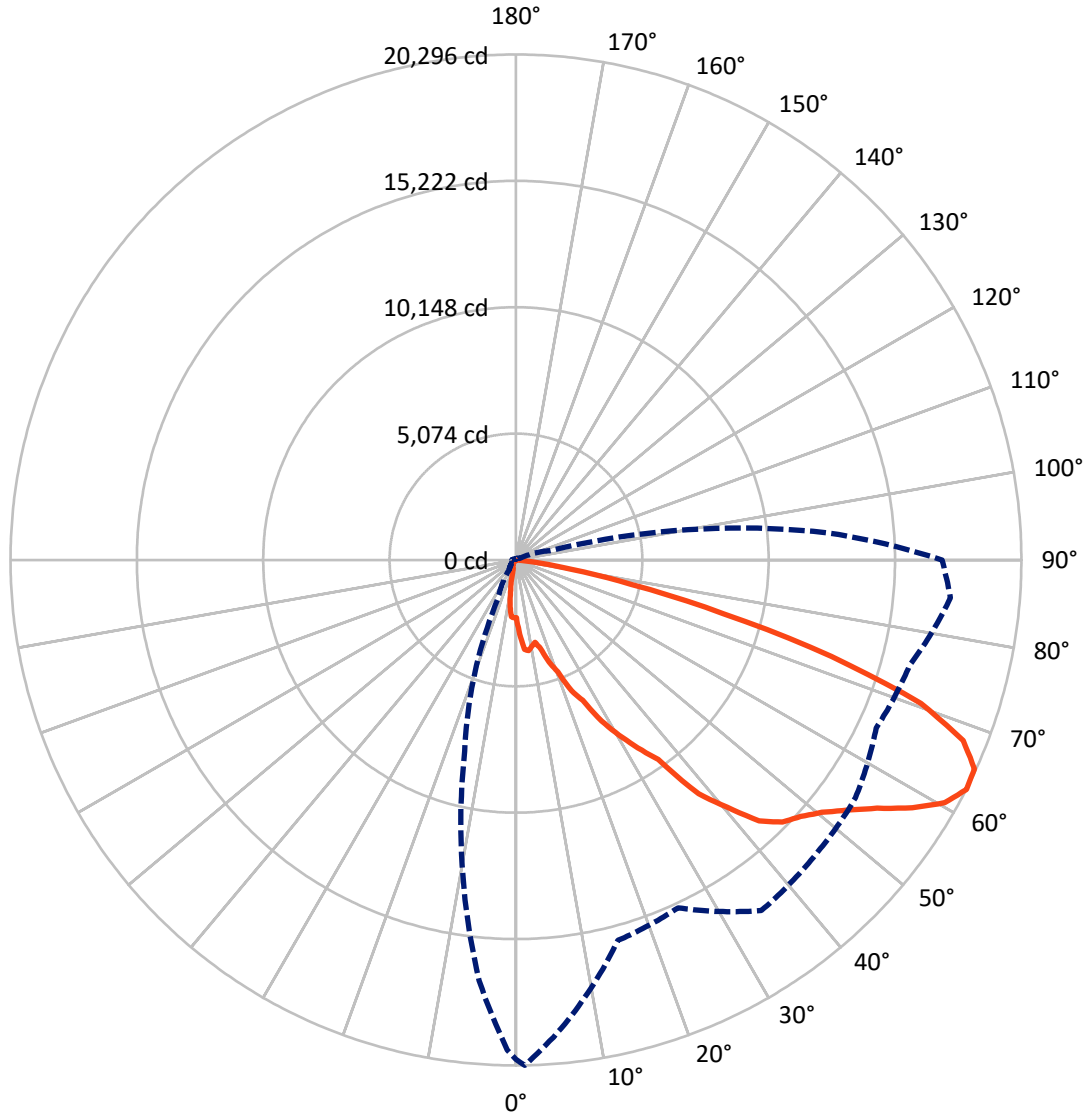
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.9 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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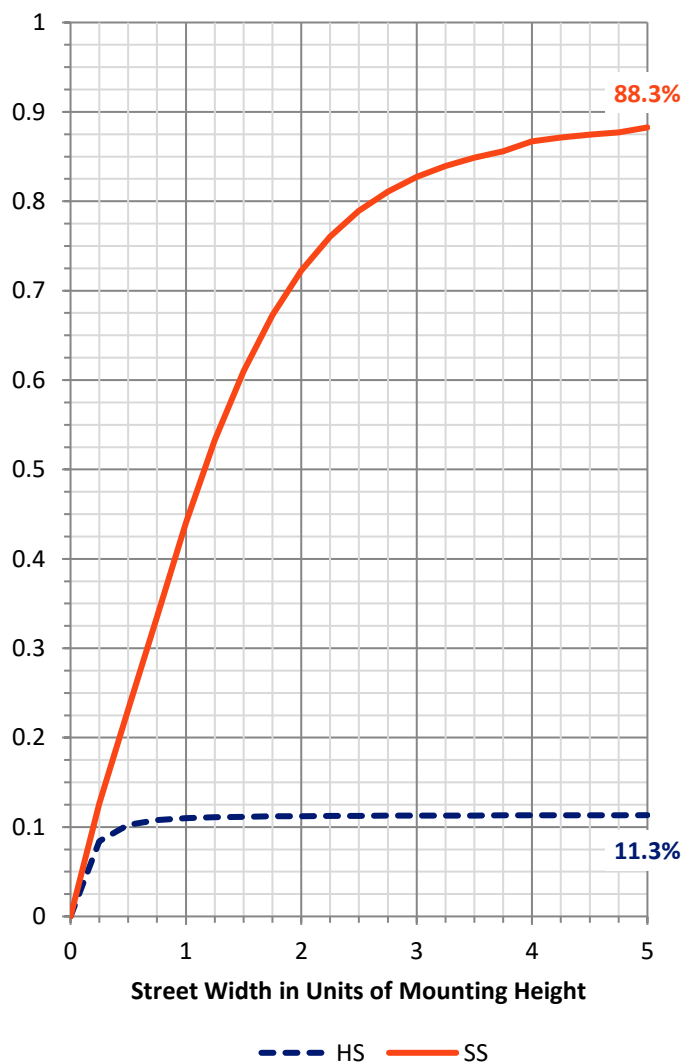
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2194.6	0.0	2194.6
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	16996.4	0.0	16996.4
	% Fixture	88.6	0.0	88.6
Total	Lumens	19191.0	0.0	19191.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.3	1.3
10°-20°	674.7	3.5
20°-30°	1090.6	5.7
30°-40°	1826.9	9.5
40°-50°	2987.2	15.6
50°-60°	4421.8	23.0
60°-70°	5076.6	26.5
70°-80°	2510.4	13.1
80°-90°	344.6	1.8
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°	19191.0	100.0
0°-180°	19191.0	100.0

Coefficient of Utilization



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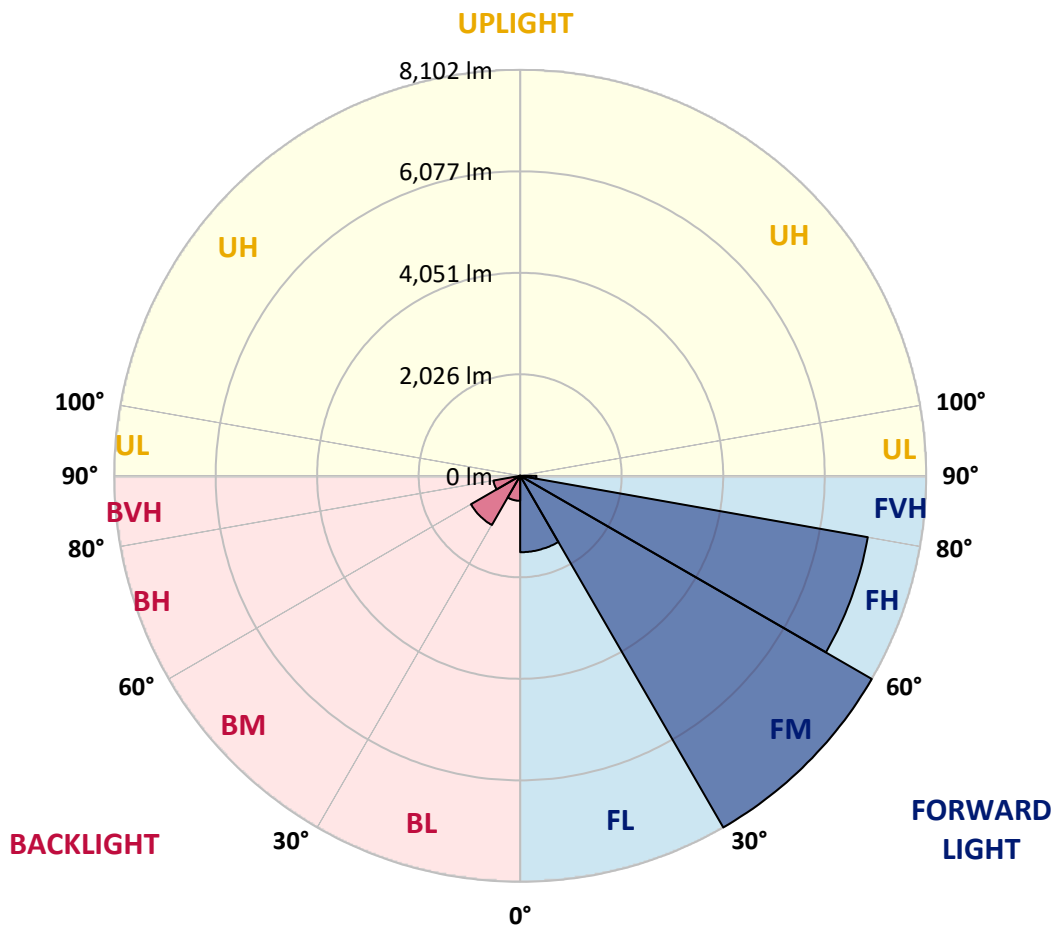
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1524.3	7.9			
FM (30°-60°)	8102.3	42.2			
FH (60°-80°)	7044.3	36.7			G3/7500
FVH (80°-90°)	325.5	1.7			G3/500
BL (0°-30°)	499.3	2.6	B1/500		
BM (30°-60°)	1133.5	5.9	B2/2500		
BH (60°-80°)	542.6	2.8	B2/1000		G2/1000
BVH (80°-90°)	19.1	0.1			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°	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9
2.5°	2981.1	2995.4	2928.7	2919.9	2764.6	2958.2	2963.6	2986.6	2844.4	2568.9	2953.8
5°	3567.3	3606.7	3555.3	3783.8	3849.5	3990.5	3731.4	3963.2	3864.8	3892.1	3947.9
7.5°	3637.3	3677.8	3786.0	4168.8	4522.0	4433.4	4405.0	4492.5	4484.8	4282.5	4383.1
10°	3491.9	3525.8	3706.2	4402.8	4557.0	4955.1	5052.4	4851.2	4769.2	4326.3	4132.7
12.5°	3333.3	3390.1	3619.8	4455.3	4917.9	5320.3	5640.8	5354.2	5081.9	4610.6	4433.4
15°	3637.3	3669.0	4029.9	4564.7	4969.3	5247.1	5509.5	5414.4	5372.8	5033.8	4433.4
17.5°	4233.3	4307.7	4569.0	4832.6	5151.9	5319.3	5256.9	5227.4	5121.3	5653.9	5032.7
20°	4657.6	4796.5	5138.8	5252.5	4998.8	5155.2	5116.9	5090.7	5007.6	5998.4	5721.7
22.5°	5576.2	5704.2	5710.8	5751.2	5160.7	4911.3	4847.9	4855.6	5232.9	6101.2	6579.1
25°	6201.8	6245.5	6591.1	6302.4	5602.5	4985.7	4744.0	4852.3	5395.8	6840.4	7385.1
27.5°	7225.4	7329.3	7544.7	6567.0	5867.1	4938.7	4553.7	4947.4	5824.5	7085.4	8280.7
30°	8059.8	8159.3	8506.0	6929.0	6096.8	5171.6	4635.8	5138.8	6091.3	7589.6	9085.6
32.5°	8736.7	8993.7	9387.4	7487.9	6088.1	5439.6	5054.6	5075.4	6419.4	8242.4	9881.7
35°	9601.8	9841.3	10118.0	7872.8	6486.1	5525.9	5178.2	5698.7	6907.2	8924.8	10953.5
37.5°	11551.7	11913.6	11366.8	8842.8	6949.8	6306.8	5665.9	6082.6	7417.9	9621.5	12426.5
40°	12741.5	13046.6	12518.4	9338.2	7752.5	6700.5	6536.4	6749.7	7917.6	9981.3	13536.5
42.5°	13913.8	14316.3	13433.7	10084.1	8514.7	7811.6	7363.2	7534.9	8640.5	10849.6	14785.4
45°	14762.5	15011.8	13631.7	10474.5	9562.4	9077.9	8779.4	8523.5	9648.8	11407.3	15591.4
47.5°	15189.0	15388.0	14022.1	10598.0	10185.8	10417.6	11071.6	10536.8	10541.2	11810.8	16025.6
50°	15779.5	15918.4	14240.8	10745.7	10862.7	12505.3	12835.5	11697.1	11560.4	12215.5	16096.7
52.5°	16609.5	16677.4	14665.1	11135.0	11876.5	14140.2	14259.4	13799.0	12580.7	12967.9	16254.1
55°	17713.0	17593.8	15423.0	11953.0	12934.0	15337.7	15497.4	15096.0	13863.5	13719.2	16741.9
57.5°	18902.8	18766.1	16546.1	13105.7	14081.2	16253.0	16348.2	16379.9	14715.4	14384.1	17570.8
60°	19755.8	19781.0	17960.1	14427.8	14794.2	17129.0	16938.7	16650.0	15575.0	15358.5	17974.4
62.5°	20054.4	20296.1	19061.4	15813.4	15408.8	17183.7	16888.4	16644.5	15960.0	16363.5	17511.8
65°	19810.5	20232.6	19317.3	17030.6	15780.6	16498.0	16190.7	16034.3	15947.9	16773.6	16488.2
67.5°	18841.6	19369.8	18584.6	17041.5	14428.9	14047.3	14410.3	14905.7	14619.2	16433.5	15054.5
70°	16670.8	17249.3	16884.0	16042.0	12019.7	11051.9	11452.1	12201.3	11998.9	14615.9	12944.9
72.5°	12507.5	13251.1	13323.3	13849.3	9541.6	8317.9	8375.9	8355.1	8703.9	11785.7	10101.6
75°	8034.7	8613.2	9395.1	11175.5	7248.4	6072.7	5517.2	5381.6	6032.3	9209.2	7232.0
77.5°	4664.2	4733.1	5094.0	8431.6	5191.3	4375.5	3997.1	4190.7	4418.1	6427.1	4793.2
80°	2230.9	2265.9	2414.7	4338.3	3606.7	3787.1	3495.1	3712.8	3033.6	3694.2	2719.8
82.5°	707.6	715.2	740.4	2131.4	2239.7	2508.7	1607.6	2155.5	1875.5	2233.1	1811.0
85°	118.1	201.2	248.2	615.7	1264.2	846.4	348.9	768.8	1046.6	1408.6	822.4
87.5°	0.0	0.0	0.0	10.9	102.8	48.1	7.7	43.7	160.8	313.9	37.2
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°	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9
2.5°	3065.4	3140.8	2856.5	2601.7	2666.2	2614.8	2537.1	2404.8	2098.6	2323.9	2308.6
5°	3944.6	3804.6	3419.7	3240.3	3021.6	2688.1	2647.6	2391.7	2279.1	2297.6	2281.2
7.5°	4250.8	4000.4	3660.3	3120.0	2607.1	2126.0	1978.3	1811.0	1777.1	1849.3	1896.3
10°	4010.2	3744.5	3447.0	2775.5	2380.8	2033.0	1668.8	1434.8	1307.9	1292.6	1305.8
12.5°	4120.7	3834.2	3221.7	2707.7	2295.5	1980.5	1573.7	1220.5	944.9	965.6	911.0
15°	4197.2	3868.1	3168.1	2565.6	2119.4	1698.4	1208.4	855.2	629.9	564.3	524.9
17.5°	4646.7	4176.4	3100.3	2401.5	1873.3	1322.2	759.0	495.4	422.1	399.2	380.6
20°	5224.1	4555.9	3099.3	2228.8	1510.3	826.8	473.5	358.7	341.2	354.3	340.1
22.5°	5895.6	5061.2	3264.4	2013.3	1083.8	521.6	368.5	318.2	300.7	311.7	312.8
25°	6571.4	5819.0	3398.9	1808.8	754.6	400.3	328.1	293.1	273.4	283.2	277.8
27.5°	7791.9	6446.8	3368.3	1547.4	555.5	352.1	305.1	274.5	245.0	260.3	259.2
30°	8590.2	7554.6	3487.5	1181.1	440.7	308.4	284.3	250.4	218.7	236.2	235.1
32.5°	9544.9	8030.3	3616.5	906.6	366.4	292.0	255.9	223.1	204.5	215.4	213.3
35°	10617.7	8970.8	3379.2	754.6	318.2	263.6	226.4	201.2	184.8	190.3	190.3
37.5°	12512.9	9757.1	3237.0	614.6	296.4	238.4	212.2	181.5	171.7	171.7	177.2
40°	13589.0	10957.8	2812.7	486.7	302.9	219.8	197.9	166.2	153.1	152.0	157.5
42.5°	14988.8	11650.1	2547.0	393.7	274.5	214.3	181.5	150.9	135.6	134.5	140.0
45°	15818.9	12037.2	2173.0	309.5	246.1	249.3	168.4	138.9	115.9	111.5	121.4
47.5°	16342.7	12550.1	1960.8	246.1	214.3	248.2	164.0	120.3	97.3	91.9	100.6
50°	16608.5	12803.8	1919.3	211.1	185.9	222.0	188.1	100.6	83.1	75.5	83.1
52.5°	16885.1	13216.1	1934.6	194.7	164.0	178.3	178.3	86.4	73.3	64.5	70.0
55°	17444.0	13825.3	1900.7	184.8	150.9	135.6	114.8	76.6	66.7	56.9	62.3
57.5°	18130.7	14262.7	1900.7	176.1	140.0	115.9	91.9	71.1	61.2	49.2	53.6
60°	18000.6	13802.3	1806.6	167.3	131.2	108.3	83.1	65.6	56.9	44.8	48.1
62.5°	17107.1	12550.1	1463.2	154.2	123.6	102.8	75.5	62.3	53.6	39.4	42.7
65°	16057.3	11220.3	1017.0	140.0	114.8	93.0	67.8	59.1	49.2	35.0	37.2
67.5°	14793.1	9635.7	564.3	125.8	106.1	80.9	62.3	58.0	47.0	31.7	33.9
70°	12599.3	7274.6	302.9	114.8	99.5	74.4	59.1	58.0	47.0	30.6	31.7
72.5°	9458.5	4581.1	177.2	105.0	90.8	68.9	55.8	59.1	45.9	29.5	29.5
75°	6435.8	2781.0	126.9	89.7	80.9	58.0	53.6	56.9	47.0	29.5	27.3
77.5°	4375.5	1954.3	103.9	80.9	73.3	51.4	54.7	56.9	47.0	24.1	18.6
80°	2731.8	1008.3	78.7	64.5	63.4	44.8	54.7	49.2	30.6	5.5	0.0
82.5°	1910.5	375.1	45.9	49.2	49.2	31.7	42.7	35.0	17.5	0.0	0.0
85°	801.6	64.5	25.2	35.0	30.6	18.6	33.9	26.2	10.9	0.0	0.0
87.5°	14.2	0.0	9.8	20.8	21.9	10.9	17.5	10.9	0.0	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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CANDELA DISTRIBUTION (continued):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9
2.5°	2380.8	2276.9	2058.1	2163.1	2152.2	2200.3	2204.7	2093.1	2333.7	2482.5	2504.3
5°	2283.4	2213.4	2201.4	2141.3	2126.0	2214.5	2166.4	2163.1	2279.1	2448.6	2449.7
7.5°	1897.4	1843.8	1869.0	1799.0	1618.5	1629.5	1645.9	1714.8	1814.3	1925.8	1966.3
10°	1302.5	1441.4	1339.7	1330.9	1312.3	1254.4	1208.4	1244.5	1373.6	1476.4	1514.6
12.5°	929.6	951.4	1013.8	990.8	1022.5	973.3	954.7	1067.4	1193.1	1298.1	1373.6
15°	543.5	580.7	617.9	696.6	728.3	718.5	775.4	869.4	971.1	1019.2	1112.2
17.5°	382.8	386.0	393.7	479.0	534.8	556.6	590.5	661.6	703.2	725.1	763.3
20°	334.6	324.8	311.7	359.8	412.3	439.6	429.8	485.6	519.5	541.3	568.7
22.5°	302.9	286.5	278.9	295.3	335.7	359.8	364.2	397.0	448.4	463.7	472.4
25°	273.4	262.5	257.0	265.7	287.6	310.6	315.0	357.6	403.5	410.1	427.6
27.5°	253.7	232.9	235.1	241.7	251.5	280.0	288.7	312.8	379.5	387.1	392.6
30°	232.9	211.1	217.6	224.2	219.8	254.8	267.9	295.3	359.8	371.8	378.4
32.5°	212.2	195.8	194.7	201.2	208.9	227.5	255.9	287.6	346.7	363.1	379.5
35°	189.2	176.1	178.3	179.3	189.2	213.3	234.0	250.4	290.9	299.6	305.1
37.5°	172.8	161.9	159.7	170.6	180.4	199.0	206.7	214.3	267.9	287.6	288.7
40°	153.1	146.5	146.5	154.2	176.1	173.9	183.7	207.8	259.2	280.0	282.1
42.5°	138.9	130.1	132.3	140.0	155.3	144.4	164.0	199.0	255.9	276.7	275.6
45°	117.0	114.8	119.2	125.8	132.3	122.5	153.1	190.3	245.0	272.3	264.7
47.5°	97.3	97.3	102.8	109.4	106.1	109.4	138.9	178.3	238.4	263.6	258.1
50°	79.8	80.9	86.4	97.3	87.5	96.2	124.7	166.2	227.5	254.8	250.4
52.5°	67.8	68.9	72.2	79.8	75.5	87.5	114.8	154.2	216.5	239.5	237.3
55°	59.1	61.2	61.2	65.6	67.8	82.0	103.9	142.2	200.1	225.3	220.9
57.5°	52.5	54.7	53.6	56.9	59.1	72.2	93.0	129.0	183.7	204.5	197.9
60°	47.0	49.2	48.1	52.5	51.4	62.3	80.9	114.8	166.2	182.6	177.2
62.5°	41.6	43.7	43.7	45.9	47.0	52.5	70.0	101.7	148.7	161.9	157.5
65°	37.2	39.4	40.5	39.4	41.6	44.8	59.1	91.9	129.0	142.2	135.6
67.5°	33.9	36.1	38.3	33.9	36.1	37.2	50.3	82.0	113.7	124.7	119.2
70°	32.8	33.9	33.9	29.5	28.4	29.5	43.7	70.0	99.5	110.5	102.8
72.5°	30.6	31.7	30.6	24.1	20.8	23.0	37.2	59.1	84.2	93.0	86.4
75°	28.4	29.5	28.4	19.7	13.1	16.4	30.6	51.4	72.2	76.6	73.3
77.5°	24.1	26.2	26.2	14.2	4.4	9.8	23.0	41.6	60.1	60.1	61.2
80°	2.2	6.6	10.9	7.7	0.0	1.1	7.7	21.9	38.3	37.2	40.5
82.5°	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	13.1	9.8	10.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-SA4D-760-U-SLL-HSS

CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9	2311.9
2.5°	2452.9	2419.0	2461.7	2591.8	2539.3	2549.2	2514.2	2729.6	2973.5	2981.1
5°	2451.8	2421.2	2484.7	2479.2	2629.0	2792.0	2949.4	3204.2	3565.1	3567.3
7.5°	1947.7	2129.2	2176.3	2162.0	2354.5	2578.7	2821.5	3309.2	3605.6	3637.3
10°	1756.3	1835.1	1931.3	1966.3	2046.1	2259.4	2533.9	3086.1	3418.6	3491.9
12.5°	1522.3	1773.8	1901.8	2150.0	2195.9	2226.6	2659.6	3139.7	3342.0	3333.3
15°	1260.9	1479.6	1682.0	1984.9	2109.5	2431.1	2772.3	3401.1	3521.4	3637.3
17.5°	892.4	1057.5	1368.1	1686.3	2066.9	2416.8	3082.8	3868.1	4095.5	4233.3
20°	597.1	676.9	958.0	1379.0	1861.3	2209.1	3209.7	4290.2	4538.4	4657.6
22.5°	484.5	522.7	668.2	1010.5	1590.1	2199.2	3261.1	4750.6	5417.7	5576.2
25°	426.5	452.7	530.4	748.0	1320.0	2155.5	3545.4	5268.9	6073.8	6201.8
27.5°	372.9	412.3	470.2	616.8	1131.9	2124.9	3689.8	6139.5	7099.6	7225.4
30°	356.5	404.6	460.4	562.1	1000.6	2006.8	3919.5	6924.7	7835.6	8059.8
32.5°	384.9	401.4	428.7	515.1	898.9	1882.1	4323.0	7863.0	8444.8	8736.7
35°	305.1	334.6	382.8	472.4	856.3	1875.5	4551.5	8466.6	9421.3	9601.8
37.5°	298.6	325.9	388.2	460.4	907.7	1925.8	4890.6	9703.5	11182.0	11551.7
40°	289.8	324.8	383.9	454.9	907.7	1975.0	5107.1	10693.2	12366.4	12741.5
42.5°	286.5	331.4	382.8	477.9	879.3	2002.4	5434.1	11680.7	13617.5	13913.8
45°	284.3	337.9	386.0	505.2	872.7	2092.1	5618.9	12160.8	14422.4	14762.5
47.5°	278.9	337.9	430.9	488.8	836.6	2083.3	5858.4	12872.7	14902.4	15189.0
50°	274.5	340.1	487.7	458.2	842.1	2029.7	6183.2	13540.9	15575.0	15779.5
52.5°	264.7	347.8	479.0	415.6	825.7	2024.2	6667.7	14491.3	16459.7	16609.5
55°	242.8	337.9	433.1	363.1	767.7	1961.9	7309.6	15727.0	17686.7	17713.0
57.5°	223.1	313.9	362.0	333.5	643.0	1969.6	7863.0	16864.4	18780.3	18902.8
60°	203.4	325.9	281.1	310.6	532.6	1829.6	8130.9	17299.6	19576.5	19755.8
62.5°	184.8	300.7	239.5	285.4	474.6	1699.4	7945.0	16949.7	19678.2	20054.4
65°	164.0	208.9	202.3	255.9	480.1	1516.8	7323.8	15925.0	19292.1	19810.5
67.5°	141.1	164.0	178.3	220.9	514.0	1360.4	6258.7	14280.2	18254.3	18841.6
70°	123.6	147.6	155.3	193.6	534.8	1257.6	4938.7	11997.9	16128.4	16670.8
72.5°	102.8	136.7	138.9	169.5	515.1	1155.9	3519.2	8613.2	12247.2	12507.5
75°	88.6	113.7	125.8	142.2	433.1	862.8	1938.9	5331.3	7743.8	8034.7
77.5°	79.8	86.4	95.1	98.4	183.7	449.5	667.1	3287.4	4336.1	4664.2
80°	61.2	67.8	65.6	67.8	100.6	155.3	253.7	1540.9	2048.3	2230.9
82.5°	19.7	32.8	36.1	30.6	65.6	76.6	73.3	532.6	666.0	707.6
85°	4.4	12.0	5.5	0.0	21.9	39.4	5.5	80.9	159.7	118.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

(END OF REPORT)