

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: P367621

Luminaire Tested: **MSA-SA2D-760-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367621
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-SA2D-760-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) 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: 9839 lumens
Efficiency: N/A
Efficacy: 76.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

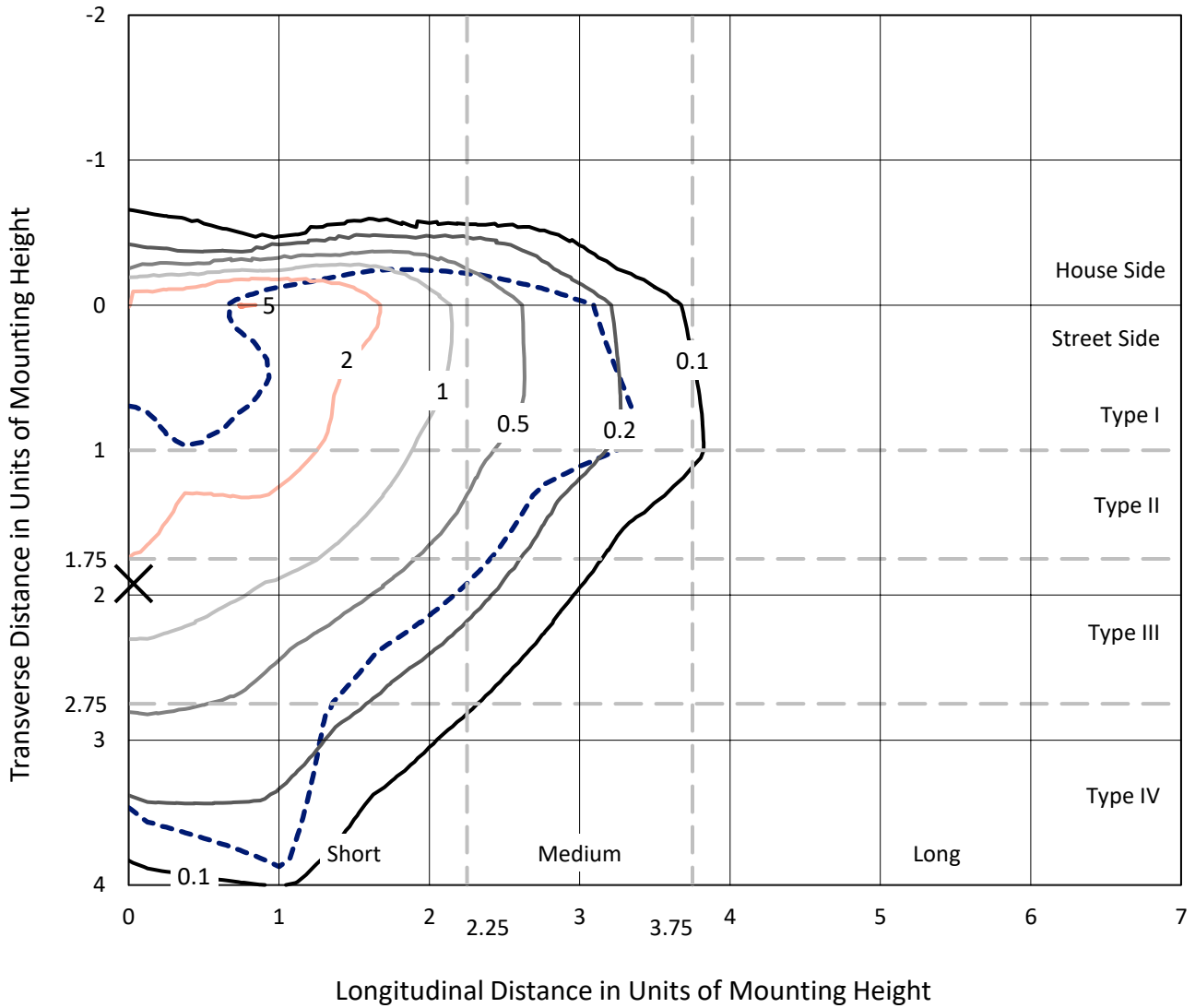
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

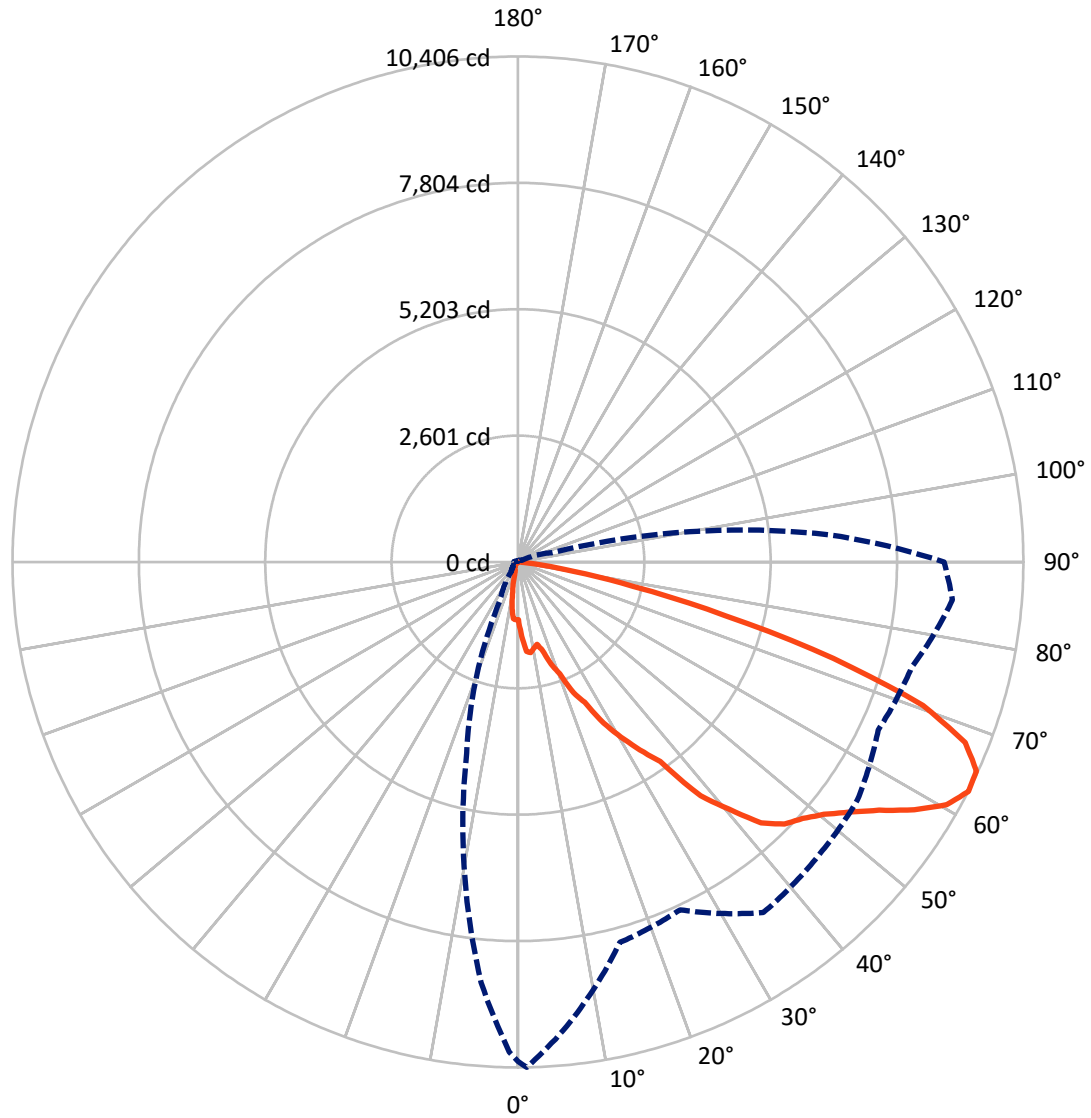
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.1 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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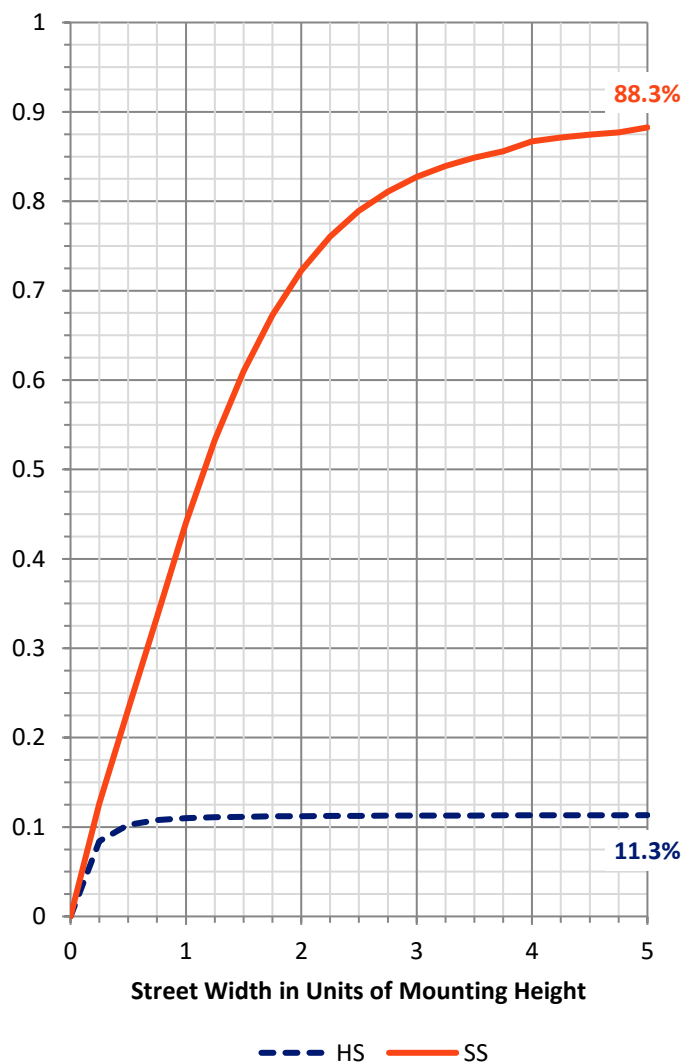
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1125.1	0.0	1125.1
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	8713.9	0.0	8713.9
	% Fixture	88.6	0.0	88.6
Total	Lumens	9839.0	0.0	9839.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.4	1.3
10°-20°	345.9	3.5
20°-30°	559.1	5.7
30°-40°	936.6	9.5
40°-50°	1531.5	15.6
50°-60°	2267.0	23.0
60°-70°	2602.7	26.5
70°-80°	1287.0	13.1
80°-90°	176.7	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°	9839.0	100.0
0°-180°	9839.0	100.0

Coefficient of Utilization



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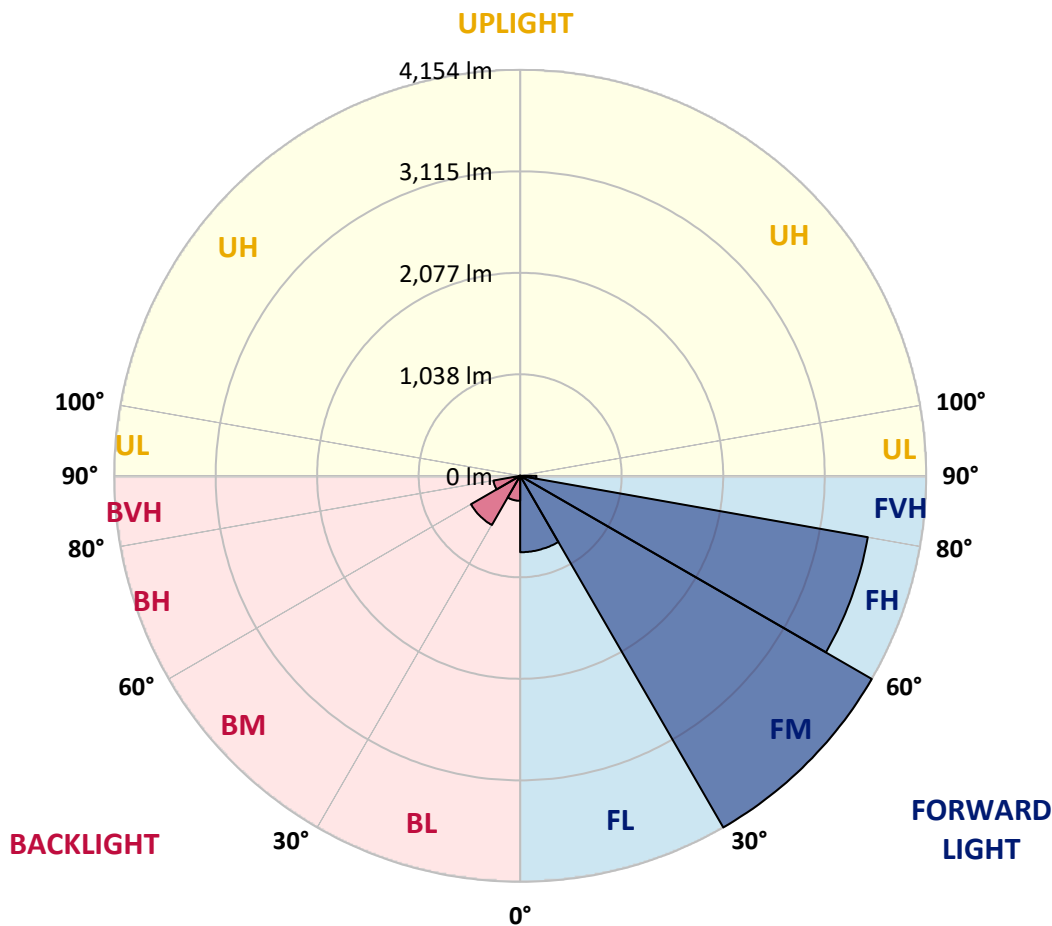
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	781.5	7.9			
FM (30°-60°)	4154.0	42.2			
FH (60°-80°)	3611.5	36.7			G2/5000
FVH (80°-90°)	166.9	1.7			G2/225
BL (0°-30°)	256.0	2.6	B1/500		
BM (30°-60°)	581.2	5.9	B1/1000		
BH (60°-80°)	278.2	2.8	B1/500		G1/500
BVH (80°-90°)	9.8	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3
2.5°	1528.4	1535.7	1501.5	1497.0	1417.4	1516.6	1519.4	1531.2	1458.3	1317.0	1514.4
5°	1828.9	1849.1	1822.8	1939.9	1973.6	2045.9	1913.0	2031.9	1981.4	1995.4	2024.0
7.5°	1864.8	1885.5	1941.1	2137.3	2318.4	2273.0	2258.4	2303.2	2299.3	2195.6	2247.2
10°	1790.2	1807.6	1900.1	2257.3	2336.3	2540.4	2590.3	2487.2	2445.1	2218.0	2118.8
12.5°	1708.9	1738.1	1855.8	2284.2	2521.4	2727.7	2892.0	2745.1	2605.5	2363.8	2273.0
15°	1864.8	1881.1	2066.1	2340.3	2547.7	2690.1	2824.7	2775.9	2754.6	2580.8	2273.0
17.5°	2170.4	2208.5	2342.5	2477.6	2641.3	2727.1	2695.2	2680.0	2625.6	2898.7	2580.2
20°	2387.9	2459.1	2634.6	2692.9	2562.8	2643.0	2623.4	2609.9	2567.3	3075.3	2933.4
22.5°	2858.9	2924.5	2927.8	2948.6	2645.8	2518.0	2485.5	2489.4	2682.8	3128.0	3373.0
25°	3179.6	3202.0	3379.2	3231.2	2872.3	2556.1	2432.2	2487.7	2766.4	3507.0	3786.2
27.5°	3704.4	3757.6	3868.1	3366.8	3008.0	2532.0	2334.6	2536.5	2986.2	3632.6	4245.4
30°	4132.2	4183.2	4360.9	3552.4	3125.8	2651.4	2376.7	2634.6	3123.0	3891.1	4658.1
32.5°	4479.2	4611.0	4812.8	3838.9	3121.3	2788.8	2591.4	2602.1	3291.2	4225.8	5066.3
35°	4922.7	5045.5	5187.4	4036.3	3325.4	2833.1	2654.8	2921.7	3541.2	4575.7	5615.7
37.5°	5922.4	6108.0	5827.6	4533.6	3563.1	3233.4	2904.9	3118.5	3803.1	4932.8	6370.9
40°	6532.4	6688.8	6418.0	4787.6	3974.6	3435.3	3351.1	3460.5	4059.3	5117.3	6940.0
42.5°	7133.5	7339.8	6887.3	5170.0	4365.4	4004.9	3775.0	3863.0	4429.9	5562.4	7580.3
45°	7568.5	7696.4	6988.8	5370.1	4902.5	4654.2	4501.1	4369.9	4946.8	5848.4	7993.5
47.5°	7787.2	7889.2	7189.0	5433.5	5222.1	5341.0	5676.3	5402.1	5404.3	6055.3	8216.1
50°	8090.0	8161.2	7301.1	5509.2	5569.2	6411.3	6580.6	5997.0	5926.9	6262.7	8252.6
52.5°	8515.5	8550.3	7518.6	5708.8	6088.9	7249.5	7310.6	7074.6	6450.0	6648.5	8333.3
55°	9081.2	9020.1	7907.2	6128.2	6631.1	7863.5	7945.3	7739.5	7107.7	7033.7	8583.4
57.5°	9691.3	9621.2	8483.0	6719.1	7219.2	8332.7	8381.5	8397.8	7544.4	7374.5	9008.4
60°	10128.6	10141.5	9208.0	7397.0	7584.8	8781.8	8684.3	8536.3	7985.1	7874.1	9215.2
62.5°	10281.6	10405.6	9772.6	8107.3	7899.9	8809.9	8658.5	8533.5	8182.5	8389.4	8978.1
65°	10156.6	10373.0	9903.7	8731.4	8090.5	8458.3	8300.8	8220.6	8176.3	8599.6	8453.3
67.5°	9659.9	9930.7	9528.1	8737.0	7397.5	7201.9	7388.0	7642.0	7495.1	8425.3	7718.2
70°	8546.9	8843.5	8656.2	8224.5	6162.4	5666.2	5871.4	6255.4	6151.7	7493.4	6636.7
72.5°	6412.4	6793.7	6830.7	7100.4	4891.9	4264.5	4294.2	4283.6	4462.4	6042.4	5178.9
75°	4119.3	4415.9	4816.8	5729.5	3716.1	3113.4	2828.6	2759.1	3092.7	4721.4	3707.7
77.5°	2391.3	2426.6	2611.6	4322.8	2661.5	2243.3	2049.3	2148.5	2265.1	3295.1	2457.4
80°	1143.8	1161.7	1238.0	2224.2	1849.1	1941.6	1791.9	1903.5	1555.3	1894.0	1394.4
82.5°	362.8	366.7	379.6	1092.8	1148.3	1286.2	824.2	1105.1	961.6	1144.9	928.5
85°	60.6	103.2	127.3	315.7	648.1	434.0	178.9	394.2	536.6	722.1	421.6
87.5°	0.0	0.0	0.0	5.6	52.7	24.7	3.9	22.4	82.4	160.9	19.1
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°	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3
2.5°	1571.6	1610.3	1464.5	1333.8	1366.9	1340.6	1300.8	1232.9	1075.9	1191.4	1183.6
5°	2022.4	1950.6	1753.2	1661.3	1549.1	1378.1	1357.4	1226.2	1168.4	1178.0	1169.6
7.5°	2179.3	2050.9	1876.6	1599.6	1336.6	1090.0	1014.3	928.5	911.1	948.1	972.2
10°	2056.0	1919.7	1767.2	1423.0	1220.6	1042.3	855.6	735.6	670.6	662.7	669.4
12.5°	2112.6	1965.7	1651.7	1388.2	1176.9	1015.4	806.8	625.7	484.4	495.1	467.0
15°	2151.9	1983.1	1624.3	1315.3	1086.6	870.7	619.5	438.4	322.9	289.3	269.1
17.5°	2382.3	2141.2	1589.5	1231.2	960.4	677.9	389.1	254.0	216.4	204.6	195.1
20°	2678.3	2335.8	1589.0	1142.7	774.3	423.9	242.8	183.9	174.9	181.7	174.4
22.5°	3022.6	2594.8	1673.6	1032.2	555.6	267.4	188.9	163.2	154.2	159.8	160.4
25°	3369.1	2983.3	1742.6	927.4	386.9	205.2	168.2	150.3	140.2	145.2	142.4
27.5°	3994.8	3305.2	1726.9	793.4	284.8	180.5	156.4	140.7	125.6	133.4	132.9
30°	4404.1	3873.1	1788.0	605.5	226.0	158.1	145.8	128.4	112.1	121.1	120.5
32.5°	4893.6	4117.0	1854.1	464.8	187.8	149.7	131.2	114.4	104.8	110.5	109.3
35°	5443.6	4599.2	1732.5	386.9	163.2	135.1	116.1	103.2	94.8	97.6	97.6
37.5°	6415.2	5002.3	1659.6	315.1	151.9	122.2	108.8	93.1	88.0	88.0	90.8
40°	6966.9	5618.0	1442.1	249.5	155.3	112.7	101.5	85.2	78.5	77.9	80.7
42.5°	7684.6	5972.9	1305.8	201.8	140.7	109.9	93.1	77.4	69.5	69.0	71.8
45°	8110.2	6171.3	1114.1	158.7	126.2	127.8	86.3	71.2	59.4	57.2	62.2
47.5°	8378.7	6434.3	1005.3	126.2	109.9	127.3	84.1	61.7	49.9	47.1	51.6
50°	8515.0	6564.4	984.0	108.2	95.3	113.8	96.4	51.6	42.6	38.7	42.6
52.5°	8656.8	6775.7	991.8	99.8	84.1	91.4	91.4	44.3	37.6	33.1	35.9
55°	8943.3	7088.0	974.5	94.8	77.4	69.5	58.9	39.2	34.2	29.2	32.0
57.5°	9295.4	7312.3	974.5	90.3	71.8	59.4	47.1	36.4	31.4	25.2	27.5
60°	9228.7	7076.3	926.2	85.8	67.3	55.5	42.6	33.6	29.2	23.0	24.7
62.5°	8770.6	6434.3	750.2	79.1	63.4	52.7	38.7	32.0	27.5	20.2	21.9
65°	8232.4	5752.5	521.4	71.8	58.9	47.7	34.8	30.3	25.2	17.9	19.1
67.5°	7584.2	4940.1	289.3	64.5	54.4	41.5	32.0	29.7	24.1	16.3	17.4
70°	6459.5	3729.6	155.3	58.9	51.0	38.1	30.3	29.7	24.1	15.7	16.3
72.5°	4849.3	2348.7	90.8	53.8	46.5	35.3	28.6	30.3	23.5	15.1	15.1
75°	3299.6	1425.8	65.0	46.0	41.5	29.7	27.5	29.2	24.1	15.1	14.0
77.5°	2243.3	1001.9	53.3	41.5	37.6	26.4	28.0	29.2	24.1	12.3	9.5
80°	1400.6	516.9	40.4	33.1	32.5	23.0	28.0	25.2	15.7	2.8	0.0
82.5°	979.5	192.3	23.5	25.2	25.2	16.3	21.9	17.9	9.0	0.0	0.0
85°	411.0	33.1	12.9	17.9	15.7	9.5	17.4	13.5	5.6	0.0	0.0
87.5°	7.3	0.0	5.0	10.7	11.2	5.6	9.0	5.6	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°	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3
2.5°	1220.6	1167.3	1055.2	1109.0	1103.4	1128.1	1130.3	1073.1	1196.5	1272.7	1283.9
5°	1170.7	1134.8	1128.6	1097.8	1090.0	1135.4	1110.7	1109.0	1168.4	1255.3	1255.9
7.5°	972.8	945.3	958.2	922.3	829.8	835.4	843.8	879.1	930.2	987.3	1008.1
10°	667.8	739.0	686.8	682.3	672.8	643.1	619.5	638.0	704.2	756.9	776.5
12.5°	476.6	487.8	519.7	508.0	524.2	499.0	489.5	547.2	611.7	665.5	704.2
15°	278.7	297.7	316.8	357.1	373.4	368.4	397.5	445.7	497.9	522.5	570.2
17.5°	196.2	197.9	201.8	245.6	274.2	285.4	302.8	339.2	360.5	371.7	391.4
20°	171.6	166.5	159.8	184.5	211.4	225.4	220.3	248.9	266.3	277.5	291.6
22.5°	155.3	146.9	143.0	151.4	172.1	184.5	186.7	203.5	229.9	237.7	242.2
25°	140.2	134.6	131.8	136.2	147.5	159.2	161.5	183.3	206.9	210.3	219.2
27.5°	130.1	119.4	120.5	123.9	129.0	143.5	148.0	160.4	194.6	198.5	201.3
30°	119.4	108.2	111.6	114.9	112.7	130.6	137.4	151.4	184.5	190.6	194.0
32.5°	108.8	100.4	99.8	103.2	107.1	116.6	131.2	147.5	177.7	186.1	194.6
35°	97.0	90.3	91.4	92.0	97.0	109.3	120.0	128.4	149.1	153.6	156.4
37.5°	88.6	83.0	81.9	87.5	92.5	102.0	106.0	109.9	137.4	147.5	148.0
40°	78.5	75.1	75.1	79.1	90.3	89.1	94.2	106.5	132.9	143.5	144.7
42.5°	71.2	66.7	67.8	71.8	79.6	74.0	84.1	102.0	131.2	141.9	141.3
45°	60.0	58.9	61.1	64.5	67.8	62.8	78.5	97.6	125.6	139.6	135.7
47.5°	49.9	49.9	52.7	56.1	54.4	56.1	71.2	91.4	122.2	135.1	132.3
50°	40.9	41.5	44.3	49.9	44.9	49.3	63.9	85.2	116.6	130.6	128.4
52.5°	34.8	35.3	37.0	40.9	38.7	44.9	58.9	79.1	111.0	122.8	121.7
55°	30.3	31.4	31.4	33.6	34.8	42.1	53.3	72.9	102.6	115.5	113.3
57.5°	26.9	28.0	27.5	29.2	30.3	37.0	47.7	66.2	94.2	104.8	101.5
60°	24.1	25.2	24.7	26.9	26.4	32.0	41.5	58.9	85.2	93.6	90.8
62.5°	21.3	22.4	22.4	23.5	24.1	26.9	35.9	52.1	76.3	83.0	80.7
65°	19.1	20.2	20.7	20.2	21.3	23.0	30.3	47.1	66.2	72.9	69.5
67.5°	17.4	18.5	19.6	17.4	18.5	19.1	25.8	42.1	58.3	63.9	61.1
70°	16.8	17.4	17.4	15.1	14.6	15.1	22.4	35.9	51.0	56.6	52.7
72.5°	15.7	16.3	15.7	12.3	10.7	11.8	19.1	30.3	43.2	47.7	44.3
75°	14.6	15.1	14.6	10.1	6.7	8.4	15.7	26.4	37.0	39.2	37.6
77.5°	12.3	13.5	13.5	7.3	2.2	5.0	11.8	21.3	30.8	30.8	31.4
80°	1.1	3.4	5.6	3.9	0.0	0.6	3.9	11.2	19.6	19.1	20.7
82.5°	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	6.7	5.0	5.6
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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CANDELA DISTRIBUTION (continued):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3	1185.3
2.5°	1257.6	1240.2	1262.1	1328.8	1301.9	1306.9	1289.0	1399.4	1524.5	1528.4
5°	1257.0	1241.3	1273.9	1271.0	1347.9	1431.4	1512.1	1642.8	1827.8	1828.9
7.5°	998.6	1091.6	1115.7	1108.5	1207.1	1322.1	1446.5	1696.6	1848.5	1864.8
10°	900.4	940.8	990.2	1008.1	1049.0	1158.4	1299.1	1582.2	1752.7	1790.2
12.5°	780.5	909.4	975.0	1102.3	1125.8	1141.5	1363.6	1609.7	1713.4	1708.9
15°	646.5	758.6	862.3	1017.6	1081.5	1246.4	1421.3	1743.7	1805.4	1864.8
17.5°	457.5	542.2	701.4	864.6	1059.7	1239.1	1580.5	1983.1	2099.7	2170.4
20°	306.1	347.1	491.2	707.0	954.3	1132.6	1645.6	2199.5	2326.8	2387.9
22.5°	248.4	268.0	342.6	518.1	815.2	1127.5	1671.9	2435.6	2777.6	2858.9
25°	218.7	232.1	271.9	383.5	676.7	1105.1	1817.7	2701.3	3114.0	3179.6
27.5°	191.2	211.4	241.1	316.2	580.3	1089.4	1891.7	3147.6	3639.9	3704.4
30°	182.8	207.4	236.0	288.2	513.0	1028.8	2009.5	3550.2	4017.2	4132.2
32.5°	197.4	205.8	219.8	264.1	460.9	964.9	2216.3	4031.2	4329.5	4479.2
35°	156.4	171.6	196.2	242.2	439.0	961.6	2333.5	4340.7	4830.2	4922.7
37.5°	153.1	167.1	199.0	236.0	465.4	987.3	2507.3	4974.9	5732.9	5922.4
40°	148.6	166.5	196.8	233.2	465.4	1012.6	2618.3	5482.3	6340.1	6532.4
42.5°	146.9	169.9	196.2	245.0	450.8	1026.6	2786.0	5988.6	6981.5	7133.5
45°	145.8	173.2	197.9	259.0	447.4	1072.6	2880.7	6234.7	7394.2	7568.5
47.5°	143.0	173.2	220.9	250.6	428.9	1068.1	3003.5	6599.7	7640.3	7787.2
50°	140.7	174.4	250.1	234.9	431.7	1040.6	3170.1	6942.3	7985.1	8090.0
52.5°	135.7	178.3	245.6	213.1	423.3	1037.8	3418.4	7429.5	8438.7	8515.5
55°	124.5	173.2	222.0	186.1	393.6	1005.8	3747.5	8063.1	9067.8	9081.2
57.5°	114.4	160.9	185.6	171.0	329.7	1009.8	4031.2	8646.2	9628.5	9691.3
60°	104.3	167.1	144.1	159.2	273.0	938.0	4168.6	8869.3	10036.6	10128.6
62.5°	94.8	154.2	122.8	146.3	243.3	871.3	4073.3	8689.9	10088.8	10281.6
65°	84.1	107.1	103.7	131.2	246.1	777.7	3754.8	8164.5	9890.9	10156.6
67.5°	72.3	84.1	91.4	113.3	263.5	697.5	3208.7	7321.3	9358.8	9659.9
70°	63.4	75.7	79.6	99.2	274.2	644.8	2532.0	6151.2	8268.8	8546.9
72.5°	52.7	70.1	71.2	86.9	264.1	592.6	1804.2	4415.9	6279.0	6412.4
75°	45.4	58.3	64.5	72.9	222.0	442.4	994.1	2733.3	3970.1	4119.3
77.5°	40.9	44.3	48.8	50.5	94.2	230.4	342.0	1685.4	2223.1	2391.3
80°	31.4	34.8	33.6	34.8	51.6	79.6	130.1	790.0	1050.1	1143.8
82.5°	10.1	16.8	18.5	15.7	33.6	39.2	37.6	273.0	341.5	362.8
85°	2.2	6.2	2.8	0.0	11.2	20.2	2.8	41.5	81.9	60.6
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)