

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: P368171

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

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368171
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-SA3D-830-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 11538 lumens
Efficiency: N/A
Efficacy: 60.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

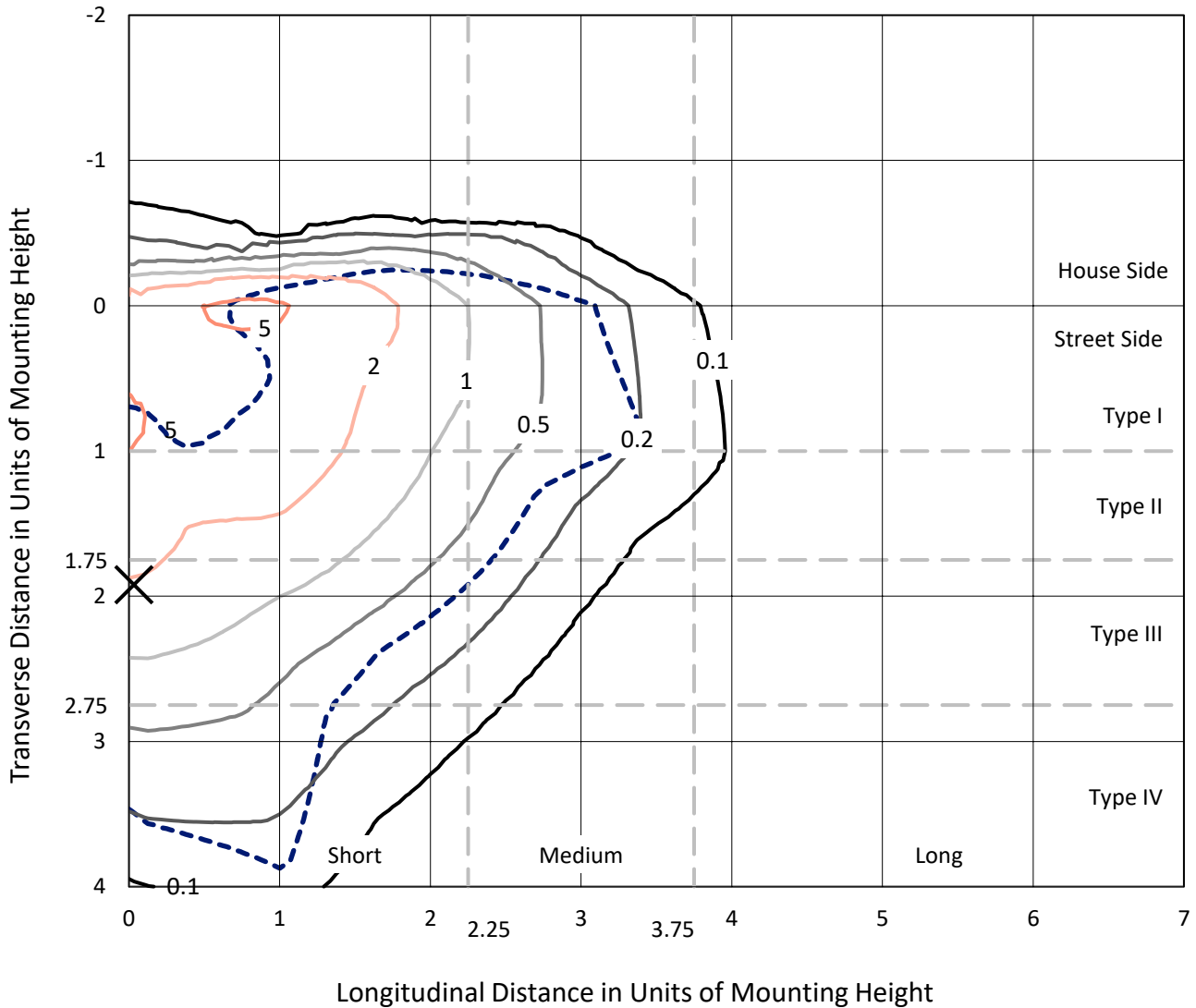
Input Watts (W): 192
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

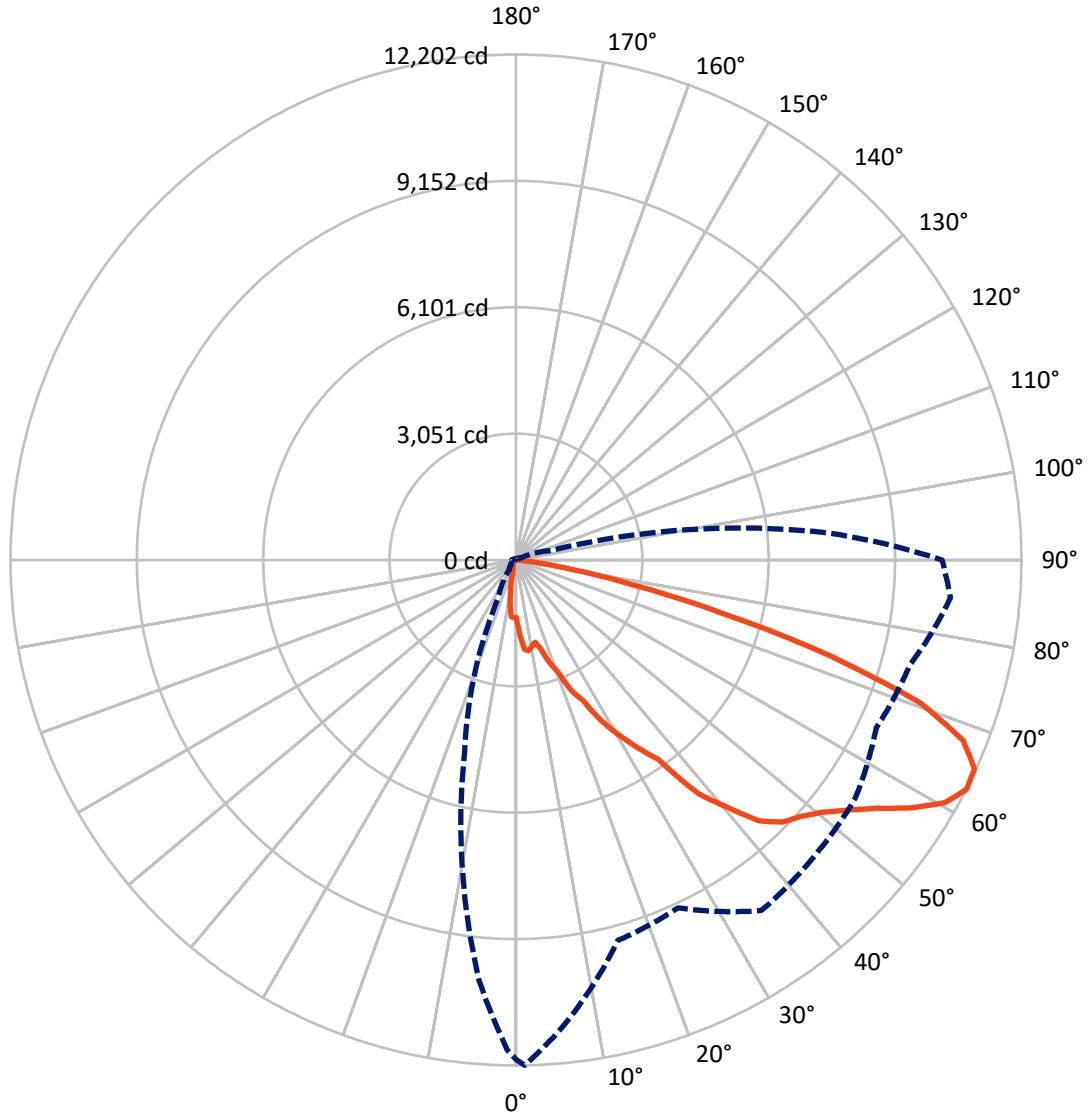
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.9 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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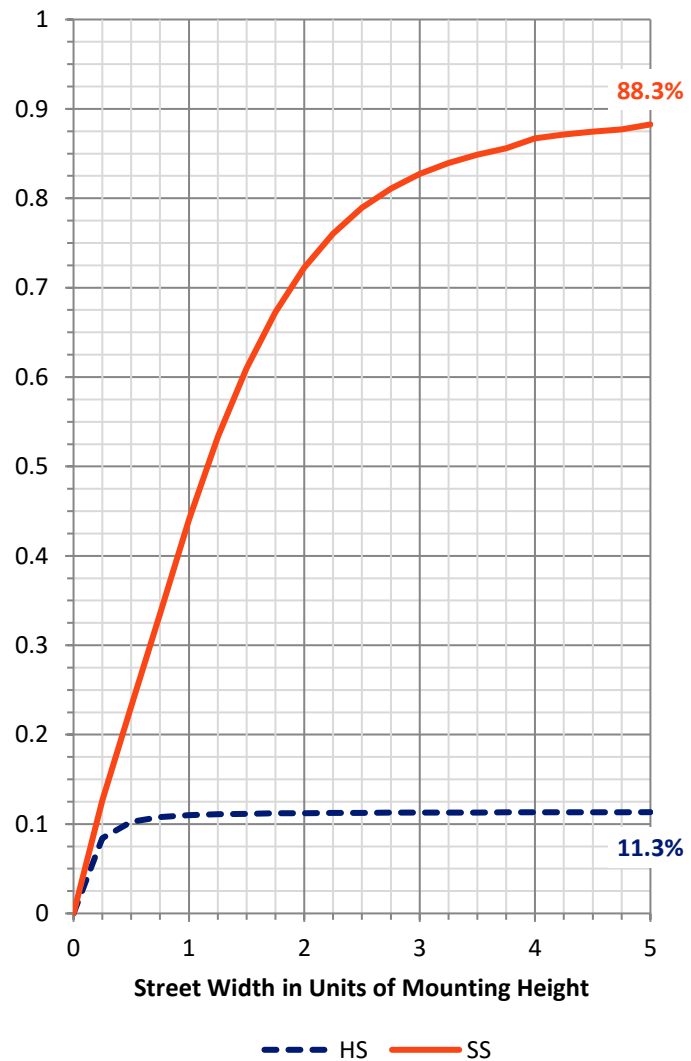
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1319.4	0.0	1319.4
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	10218.6	0.0	10218.6
	% Fixture	88.6	0.0	88.6
Total	Lumens	11538.0	0.0	11538.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.3	1.3
10°-20°	405.6	3.5
20°-30°	655.7	5.7
30°-40°	1098.3	9.5
40°-50°	1795.9	15.6
50°-60°	2658.5	23.0
60°-70°	3052.1	26.5
70°-80°	1509.3	13.1
80°-90°	207.2	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°	11538.0	100.0
0°-180°	11538.0	100.0

Coefficient of Utilization

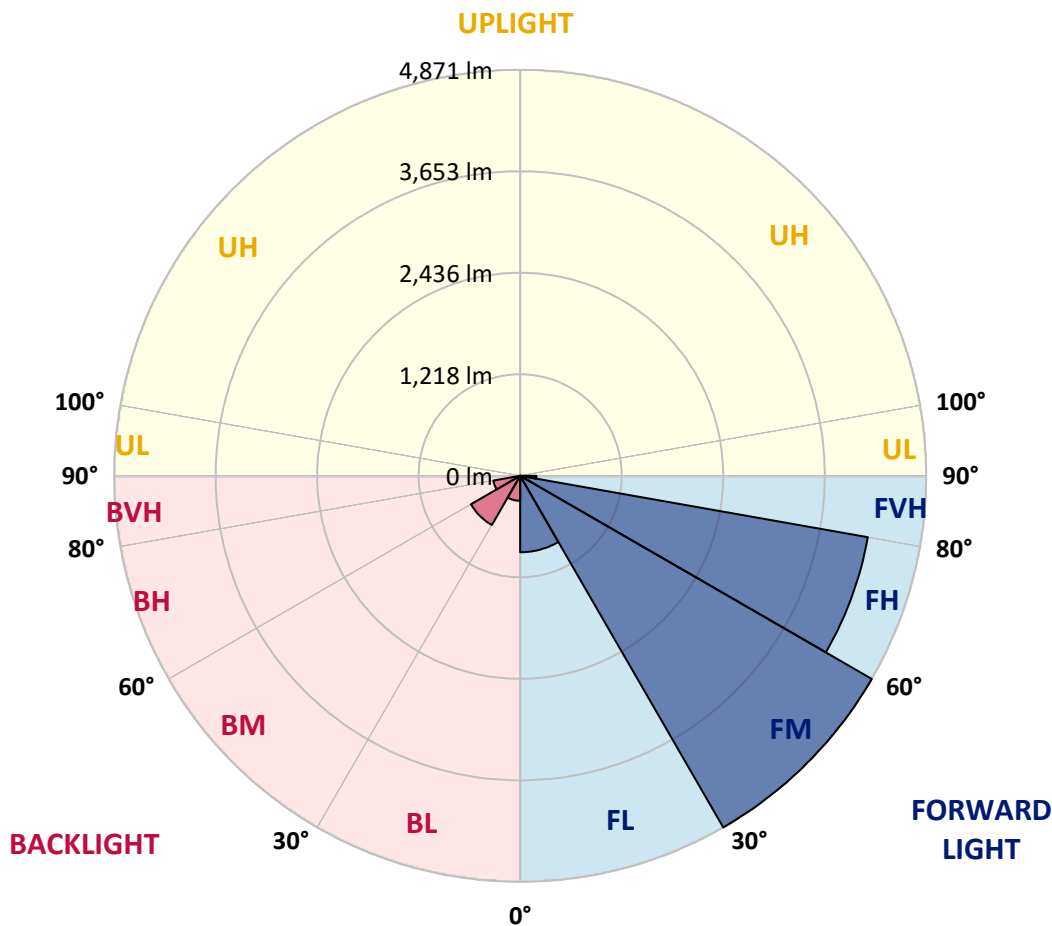


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	916.4	7.9			
FM (30°-60°)	4871.3	42.2			
FH (60°-80°)	4235.2	36.7			G2/5000
FVH (80°-90°)	195.7	1.7			G2/225
BL (0°-30°)	300.2	2.6	B1/500		
BM (30°-60°)	681.5	5.9	B1/1000		
BH (60°-80°)	326.2	2.8	B1/500		G1/500
BVH (80°-90°)	11.5	0.1			G1/100
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°	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9
2.5°	1792.3	1800.9	1760.8	1755.5	1662.1	1778.5	1781.8	1795.6	1710.1	1544.4	1775.9
5°	2144.7	2168.4	2137.5	2274.9	2314.4	2399.2	2243.4	2382.7	2323.6	2340.0	2373.5
7.5°	2186.8	2211.1	2276.2	2506.4	2718.7	2665.5	2648.4	2701.0	2696.4	2574.7	2635.2
10°	2099.4	2119.8	2228.2	2647.1	2739.8	2979.1	3037.6	2916.6	2867.3	2601.0	2484.7
12.5°	2004.0	2038.2	2176.3	2678.6	2956.7	3198.7	3391.3	3219.1	3055.4	2772.0	2665.5
15°	2186.8	2205.9	2422.9	2744.4	2987.6	3154.6	3312.4	3255.2	3230.3	3026.4	2665.5
17.5°	2545.1	2589.9	2747.0	2905.5	3097.4	3198.0	3160.6	3142.8	3079.0	3399.2	3025.8
20°	2800.3	2883.8	3089.6	3157.9	3005.4	3099.4	3076.4	3060.6	3010.7	3606.3	3440.0
22.5°	3352.5	3429.5	3433.4	3457.7	3102.7	2952.8	2914.7	2919.3	3146.1	3668.1	3955.5
25°	3728.6	3754.9	3962.7	3789.1	3368.3	2997.5	2852.2	2917.3	3244.1	4112.6	4440.0
27.5°	4344.0	4406.5	4536.0	3948.2	3527.4	2969.2	2737.8	2974.5	3501.8	4259.9	4978.5
30°	4845.7	4905.5	5114.0	4165.9	3665.5	3109.3	2787.1	3089.6	3662.2	4563.0	5462.4
32.5°	5252.7	5407.2	5643.9	4501.8	3660.3	3270.4	3038.9	3051.4	3859.5	4955.5	5941.1
35°	5772.8	5916.8	6083.1	4733.3	3899.6	3322.3	3113.2	3426.2	4152.7	5365.8	6585.4
37.5°	6945.1	7162.7	6834.0	5316.5	4178.4	3791.8	3406.5	3657.0	4459.8	5784.6	7471.1
40°	7660.4	7843.9	7526.3	5614.3	4661.0	4028.5	3929.8	4058.0	4760.2	6000.9	8138.4
42.5°	8365.3	8607.2	8076.6	6062.7	5119.2	4696.5	4426.9	4530.1	5194.8	6523.0	8889.3
45°	8875.5	9025.4	8195.6	6297.5	5749.1	5457.8	5278.3	5124.5	5801.0	6858.3	9373.9
47.5°	9131.9	9251.6	8430.4	6371.8	6123.9	6263.3	6656.4	6334.9	6337.6	7100.9	9634.9
50°	9486.9	9570.4	8561.9	6460.5	6530.9	7518.4	7717.0	7032.5	6950.3	7344.2	9677.6
52.5°	9986.0	10026.7	8817.0	6694.6	7140.4	8501.4	8573.0	8296.2	7563.8	7796.5	9772.3
55°	10649.4	10577.7	9272.6	7186.4	7776.2	9221.3	9317.3	9076.0	8335.0	8248.2	10065.5
57.5°	11364.7	11282.6	9947.8	7879.4	8465.9	9771.6	9828.8	9847.9	8847.2	8648.0	10563.9
60°	11877.6	11892.7	10798.0	8674.3	8894.5	10298.3	10183.9	10010.3	9364.0	9233.8	10806.5
62.5°	12057.1	12202.4	11460.1	9507.3	9264.1	10331.2	10153.6	10007.0	9595.4	9838.0	10528.4
65°	11910.5	12164.3	11613.9	10239.1	9487.6	9918.9	9734.2	9640.1	9588.2	10084.6	9913.0
67.5°	11327.9	11645.5	11173.4	10245.7	8674.9	8445.5	8663.8	8961.6	8789.3	9880.1	9051.0
70°	10022.8	10370.6	10151.0	9644.7	7226.5	6644.6	6885.3	7335.6	7214.0	8787.4	7782.7
72.5°	7519.7	7966.8	8010.2	8326.5	5736.6	5000.9	5035.7	5023.2	5233.0	7085.8	6073.2
75°	4830.6	5178.4	5648.5	6718.9	4357.9	3651.1	3317.0	3235.5	3626.7	5536.7	4348.0
77.5°	2804.2	2845.6	3062.6	5069.3	3121.1	2630.6	2403.1	2519.5	2656.3	3864.1	2881.8
80°	1341.3	1362.3	1451.7	2608.3	2168.4	2276.9	2101.3	2232.2	1823.9	2221.0	1635.2
82.5°	425.4	430.0	445.1	1281.5	1346.5	1508.3	966.5	1295.9	1127.6	1342.6	1088.8
85°	71.0	121.0	149.3	370.2	760.1	508.9	209.7	462.2	629.2	846.8	494.4
87.5°	0.0	0.0	0.0	6.6	61.8	28.9	4.6	26.3	96.7	188.7	22.4
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°	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9
2.5°	1842.9	1888.3	1717.4	1564.2	1603.0	1572.1	1525.4	1445.8	1261.7	1397.2	1388.0
5°	2371.6	2287.4	2056.0	1948.1	1816.6	1616.1	1591.8	1437.9	1370.2	1381.4	1371.5
7.5°	2555.7	2405.1	2200.6	1875.8	1567.5	1278.2	1189.4	1088.8	1068.4	1111.8	1140.1
10°	2411.0	2251.3	2072.4	1668.7	1431.4	1222.3	1003.3	862.6	786.4	777.2	785.0
12.5°	2477.4	2305.2	1937.0	1627.9	1380.1	1190.7	946.1	733.8	568.1	580.6	547.7
15°	2523.5	2325.5	1904.8	1542.5	1274.2	1021.1	726.5	514.2	378.7	339.3	315.6
17.5°	2793.7	2511.0	1864.0	1443.9	1126.3	794.9	456.3	297.8	253.8	240.0	228.8
20°	3140.8	2739.1	1863.3	1340.0	908.0	497.1	284.7	215.7	205.1	213.0	204.5
22.5°	3544.5	3042.9	1962.6	1210.4	651.6	313.6	221.6	191.3	180.8	187.4	188.0
25°	3950.9	3498.5	2043.5	1087.5	453.7	240.6	197.2	176.2	164.4	170.3	167.0
27.5°	4684.6	3875.9	2025.1	930.4	334.0	211.7	183.4	165.0	147.3	156.5	155.8
30°	5164.6	4542.0	2096.7	710.1	265.0	185.4	170.9	150.6	131.5	142.0	141.4
32.5°	5738.6	4828.0	2174.3	545.1	220.3	175.6	153.9	134.1	123.0	129.5	128.2
35°	6383.6	5393.4	2031.6	453.7	191.3	158.5	136.1	121.0	111.1	114.4	114.4
37.5°	7523.0	5866.1	1946.2	369.5	178.2	143.3	127.6	109.1	103.2	103.2	106.5
40°	8170.0	6588.1	1691.1	292.6	182.1	132.2	119.0	99.9	92.0	91.4	94.7
42.5°	9011.6	7004.3	1531.3	236.7	165.0	128.9	109.1	90.7	81.5	80.9	84.2
45°	9510.6	7237.0	1306.4	186.1	147.9	149.9	101.3	83.5	69.7	67.1	73.0
47.5°	9825.6	7545.4	1178.9	147.9	128.9	149.3	98.6	72.3	58.5	55.2	60.5
50°	9985.3	7697.9	1153.9	126.9	111.8	133.5	113.1	60.5	50.0	45.4	50.0
52.5°	10151.7	7945.8	1163.1	117.0	98.6	107.2	107.2	51.9	44.1	38.8	42.1
55°	10487.6	8312.0	1142.7	111.1	90.7	81.5	69.0	46.0	40.1	34.2	37.5
57.5°	10900.6	8575.0	1142.7	105.9	84.2	69.7	55.2	42.7	36.8	29.6	32.2
60°	10822.3	8298.2	1086.2	100.6	78.9	65.1	50.0	39.4	34.2	27.0	28.9
62.5°	10285.1	7545.4	879.7	92.7	74.3	61.8	45.4	37.5	32.2	23.7	25.6
65°	9653.9	6745.9	611.5	84.2	69.0	55.9	40.8	35.5	29.6	21.0	22.4
67.5°	8893.9	5793.2	339.3	75.6	63.8	48.7	37.5	34.8	28.3	19.1	20.4
70°	7575.0	4373.6	182.1	69.0	59.8	44.7	35.5	34.8	28.3	18.4	19.1
72.5°	5686.6	2754.2	106.5	63.1	54.6	41.4	33.5	35.5	27.6	17.8	17.8
75°	3869.3	1672.0	76.3	53.9	48.7	34.8	32.2	34.2	28.3	17.8	16.4
77.5°	2630.6	1174.9	62.5	48.7	44.1	30.9	32.9	34.2	28.3	14.5	11.2
80°	1642.4	606.2	47.3	38.8	38.1	27.0	32.9	29.6	18.4	3.3	0.0
82.5°	1148.6	225.5	27.6	29.6	29.6	19.1	25.6	21.0	10.5	0.0	0.0
85°	481.9	38.8	15.1	21.0	18.4	11.2	20.4	15.8	6.6	0.0	0.0
87.5°	8.5	0.0	5.9	12.5	13.1	6.6	10.5	6.6	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°	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9
2.5°	1431.4	1368.9	1237.4	1300.5	1293.9	1322.9	1325.5	1258.4	1403.1	1492.5	1505.7
5°	1372.8	1330.8	1323.5	1287.4	1278.2	1331.4	1302.5	1300.5	1370.2	1472.1	1472.8
7.5°	1140.7	1108.5	1123.7	1081.6	973.1	979.7	989.5	1030.9	1090.8	1157.8	1182.2
10°	783.1	866.6	805.4	800.2	789.0	754.1	726.5	748.2	825.8	887.6	910.6
12.5°	558.9	572.0	609.5	595.7	614.8	585.2	574.0	641.7	717.3	780.4	825.8
15°	326.8	349.1	371.5	418.8	437.9	432.0	466.2	522.7	583.9	612.8	668.7
17.5°	230.1	232.1	236.7	288.0	321.5	334.7	355.0	397.8	422.8	435.9	458.9
20°	201.2	195.3	187.4	216.3	247.9	264.3	258.4	291.9	312.3	325.5	341.9
22.5°	182.1	172.3	167.7	177.5	201.8	216.3	218.9	238.7	269.6	278.8	284.0
25°	164.4	157.8	154.5	159.8	172.9	186.7	189.4	215.0	242.6	246.6	257.1
27.5°	152.5	140.0	141.4	145.3	151.2	168.3	173.6	188.0	228.1	232.8	236.0
30°	140.0	126.9	130.8	134.8	132.2	153.2	161.1	177.5	216.3	223.5	227.5
32.5°	127.6	117.7	117.0	121.0	125.6	136.8	153.9	172.9	208.4	218.3	228.1
35°	113.7	105.9	107.2	107.8	113.7	128.2	140.7	150.6	174.9	180.2	183.4
37.5°	103.9	97.3	96.0	102.6	108.5	119.7	124.3	128.9	161.1	172.9	173.6
40°	92.0	88.1	88.1	92.7	105.9	104.5	110.5	124.9	155.8	168.3	169.6
42.5°	83.5	78.2	79.6	84.2	93.4	86.8	98.6	119.7	153.9	166.3	165.7
45°	70.4	69.0	71.7	75.6	79.6	73.6	92.0	114.4	147.3	163.7	159.1
47.5°	58.5	58.5	61.8	65.7	63.8	65.7	83.5	107.2	143.3	158.5	155.2
50°	48.0	48.7	51.9	58.5	52.6	57.9	75.0	99.9	136.8	153.2	150.6
52.5°	40.8	41.4	43.4	48.0	45.4	52.6	69.0	92.7	130.2	144.0	142.7
55°	35.5	36.8	36.8	39.4	40.8	49.3	62.5	85.5	120.3	135.4	132.8
57.5°	31.6	32.9	32.2	34.2	35.5	43.4	55.9	77.6	110.5	123.0	119.0
60°	28.3	29.6	28.9	31.6	30.9	37.5	48.7	69.0	99.9	109.8	106.5
62.5°	25.0	26.3	26.3	27.6	28.3	31.6	42.1	61.1	89.4	97.3	94.7
65°	22.4	23.7	24.3	23.7	25.0	27.0	35.5	55.2	77.6	85.5	81.5
67.5°	20.4	21.7	23.0	20.4	21.7	22.4	30.2	49.3	68.4	75.0	71.7
70°	19.7	20.4	20.4	17.8	17.1	17.8	26.3	42.1	59.8	66.4	61.8
72.5°	18.4	19.1	18.4	14.5	12.5	13.8	22.4	35.5	50.6	55.9	51.9
75°	17.1	17.8	17.1	11.8	7.9	9.9	18.4	30.9	43.4	46.0	44.1
77.5°	14.5	15.8	15.8	8.5	2.6	5.9	13.8	25.0	36.2	36.2	36.8
80°	1.3	3.9	6.6	4.6	0.0	0.7	4.6	13.1	23.0	22.4	24.3
82.5°	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	7.9	5.9	6.6
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°	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9	1389.9
2.5°	1474.8	1454.4	1480.0	1558.3	1526.7	1532.6	1511.6	1641.1	1787.7	1792.3
5°	1474.1	1455.7	1493.8	1490.5	1580.6	1678.6	1773.3	1926.5	2143.4	2144.7
7.5°	1171.0	1280.1	1308.4	1299.9	1415.6	1550.4	1696.3	1989.6	2167.7	2186.8
10°	1055.9	1103.3	1161.1	1182.2	1230.2	1358.4	1523.4	1855.4	2055.3	2099.4
12.5°	915.2	1066.5	1143.4	1292.6	1320.2	1338.7	1599.0	1887.7	2009.3	2004.0
15°	758.1	889.6	1011.2	1193.3	1268.3	1461.6	1666.7	2044.8	2117.1	2186.8
17.5°	536.5	635.8	822.5	1013.9	1242.7	1453.1	1853.5	2325.5	2462.3	2545.1
20°	359.0	407.0	576.0	829.1	1119.1	1328.1	1929.7	2579.3	2728.6	2800.3
22.5°	291.3	314.3	401.7	607.5	956.0	1322.2	1960.6	2856.1	3257.2	3352.5
25°	256.4	272.2	318.9	449.7	793.6	1295.9	2131.6	3167.8	3651.7	3728.6
27.5°	224.2	247.9	282.7	370.8	680.5	1277.5	2218.4	3691.2	4268.4	4344.0
30°	214.3	243.3	276.8	338.0	601.6	1206.5	2356.4	4163.2	4710.9	4845.7
32.5°	231.4	241.3	257.7	309.7	540.5	1131.5	2599.1	4727.4	5077.1	5252.7
35°	183.4	201.2	230.1	284.0	514.8	1127.6	2736.5	5090.3	5664.3	5772.8
37.5°	179.5	195.9	233.4	276.8	545.7	1157.8	2940.3	5833.9	6722.9	6945.1
40°	174.2	195.3	230.8	273.5	545.7	1187.4	3070.5	6429.0	7434.9	7660.4
42.5°	172.3	199.2	230.1	287.3	528.6	1203.9	3267.1	7022.7	8187.1	8365.3
45°	170.9	203.2	232.1	303.8	524.7	1257.8	3378.2	7311.3	8671.0	8875.5
47.5°	167.7	203.2	259.1	293.9	503.0	1252.5	3522.2	7739.3	8959.6	9131.9
50°	165.0	204.5	293.2	275.5	506.3	1220.3	3717.5	8141.1	9364.0	9486.9
52.5°	159.1	209.1	288.0	249.8	496.4	1217.0	4008.7	8712.4	9895.9	9986.0
55°	146.0	203.2	260.4	218.3	461.6	1179.5	4394.7	9455.4	10633.6	10649.4
57.5°	134.1	188.7	217.6	200.5	386.6	1184.1	4727.4	10139.2	11291.1	11364.7
60°	122.3	195.9	169.0	186.7	320.2	1100.0	4888.4	10400.9	11769.8	11877.6
62.5°	111.1	180.8	144.0	171.6	285.4	1021.7	4776.7	10190.5	11830.9	12057.1
65°	98.6	125.6	121.6	153.9	288.6	911.9	4403.2	9574.4	11598.8	11910.5
67.5°	84.8	98.6	107.2	132.8	309.0	817.9	3762.8	8585.5	10974.8	11327.9
70°	74.3	88.8	93.4	116.4	321.5	756.1	2969.2	7213.3	9696.7	10022.8
72.5°	61.8	82.2	83.5	101.9	309.7	695.0	2115.8	5178.4	7363.2	7519.7
75°	53.3	68.4	75.6	85.5	260.4	518.8	1165.7	3205.3	4655.7	4830.6
77.5°	48.0	51.9	57.2	59.2	110.5	270.2	401.1	1976.4	2607.0	2804.2
80°	36.8	40.8	39.4	40.8	60.5	93.4	152.5	926.4	1231.5	1341.3
82.5°	11.8	19.7	21.7	18.4	39.4	46.0	44.1	320.2	400.4	425.4
85°	2.6	7.2	3.3	0.0	13.1	23.7	3.3	48.7	96.0	71.0
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)