

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: P367115

Luminaire Tested: **MSA-SA1D-830-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367115
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-SA1D-830-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) 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: 3975 lumens
Efficiency: N/A
Efficacy: 59.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

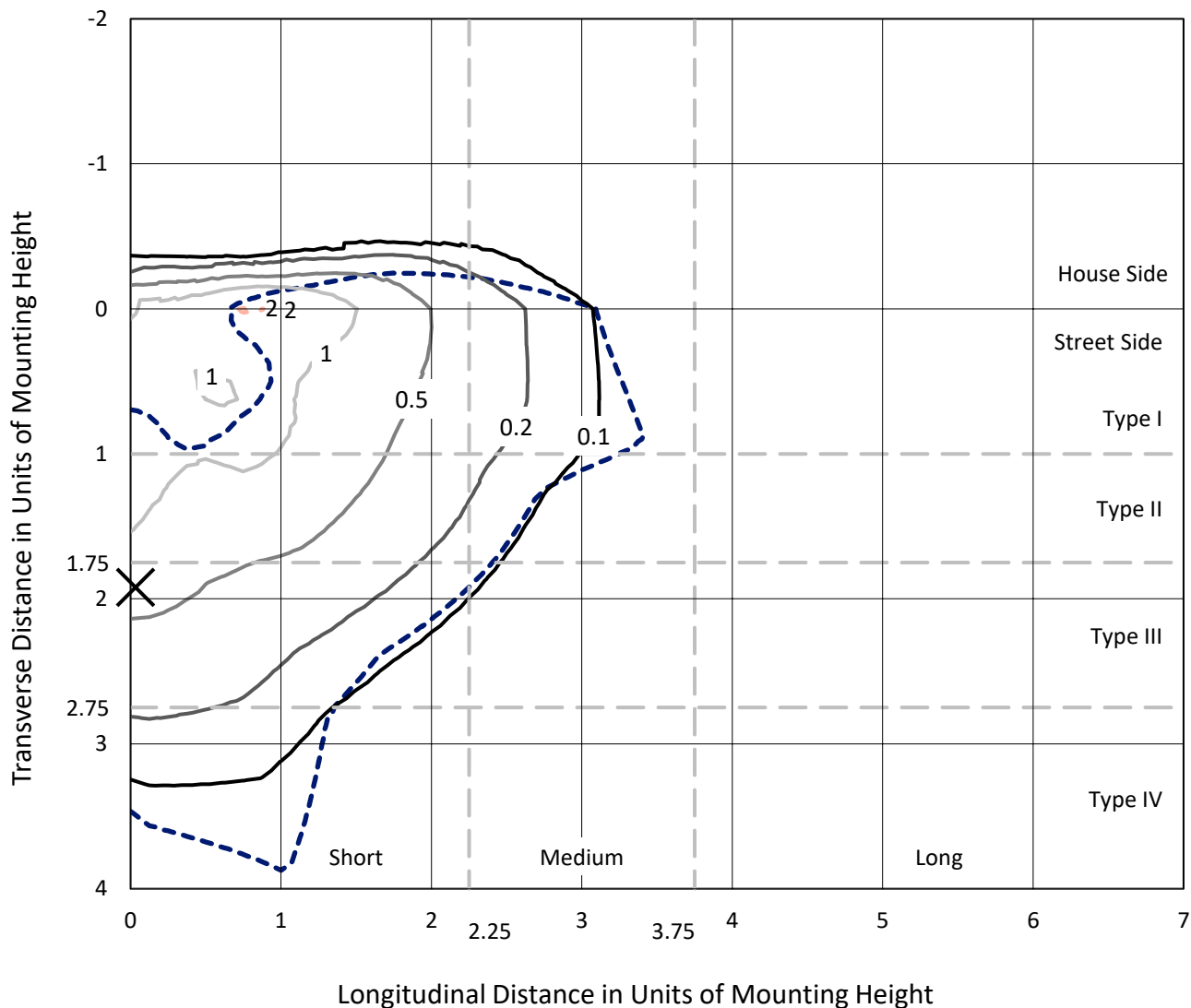
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

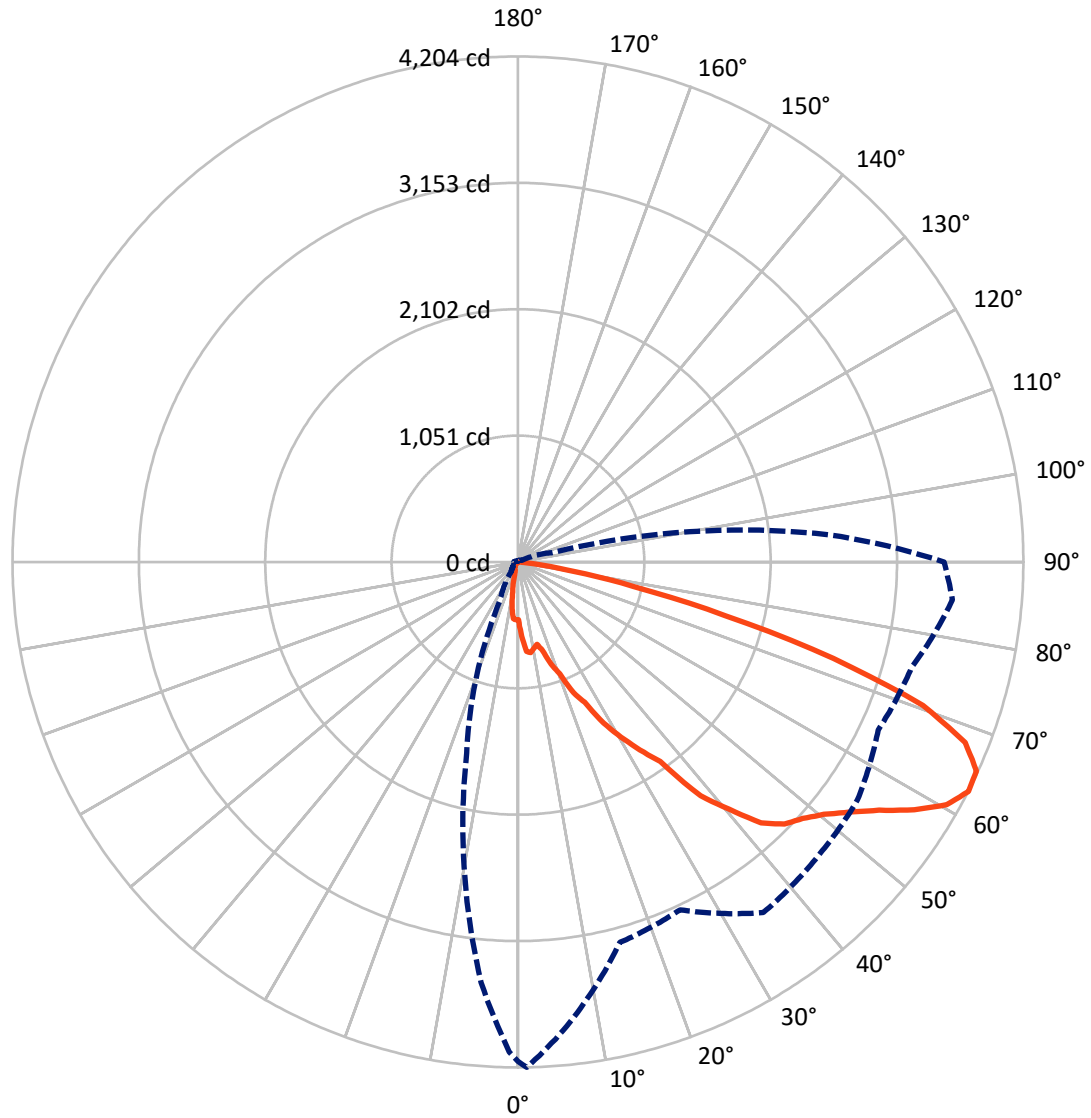
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 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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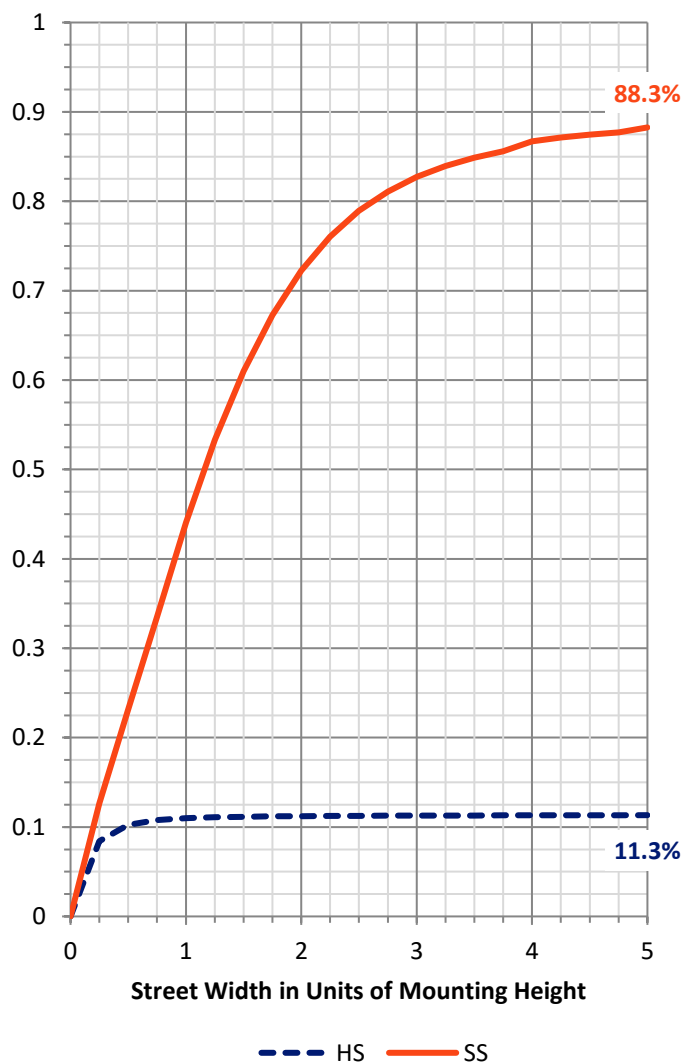
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	454.6	0.0	454.6
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	3520.4	0.0	3520.4
	% Fixture	88.6	0.0	88.6
Total	Lumens	3975.0	0.0	3975.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.5	1.3
10°-20°	139.7	3.5
20°-30°	225.9	5.7
30°-40°	378.4	9.5
40°-50°	618.7	15.6
50°-60°	915.9	23.0
60°-70°	1051.5	26.5
70°-80°	520.0	13.1
80°-90°	71.4	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°	3975.0	100.0
0°-180°	3975.0	100.0

Coefficient of Utilization

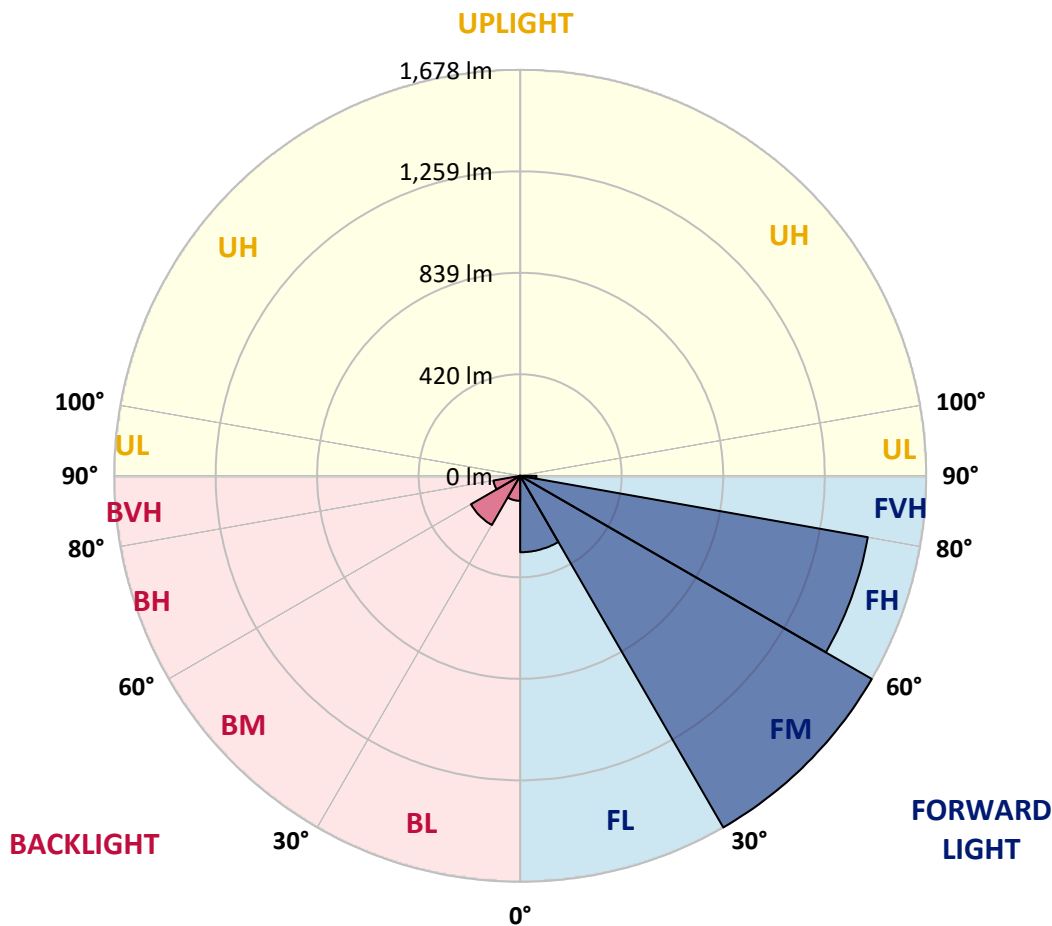


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	315.7	7.9			
FM (30°-60°)	1678.2	42.2			
FH (60°-80°)	1459.1	36.7			G1/1800
FVH (80°-90°)	67.4	1.7			G1/100
BL (0°-30°)	103.4	2.6	B0/110		
BM (30°-60°)	234.8	5.9	B1/1000		
BH (60°-80°)	112.4	2.8	B1/500		G1/500
BVH (80°-90°)	4.0	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-G1
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9
2.5°	617.5	620.4	606.6	604.8	572.6	612.7	613.9	618.6	589.2	532.1	611.8
5°	738.9	747.0	736.4	783.7	797.3	826.6	772.9	820.9	800.5	806.2	817.7
7.5°	753.4	761.8	784.2	863.5	936.6	918.3	912.4	930.5	928.9	887.0	907.9
10°	723.3	730.3	767.7	911.9	943.9	1026.3	1046.5	1004.8	987.8	896.1	856.0
12.5°	690.4	702.2	749.8	922.8	1018.6	1102.0	1168.4	1109.0	1052.6	955.0	918.3
15°	753.4	760.0	834.7	945.5	1029.3	1086.8	1141.2	1121.5	1112.9	1042.6	918.3
17.5°	876.8	892.2	946.4	1001.0	1067.1	1101.8	1088.9	1082.7	1060.8	1171.1	1042.4
20°	964.7	993.5	1064.4	1088.0	1035.4	1067.8	1059.9	1054.4	1037.2	1242.4	1185.1
22.5°	1155.0	1181.5	1182.9	1191.2	1068.9	1017.3	1004.1	1005.7	1083.9	1263.7	1362.7
25°	1284.6	1293.6	1365.2	1305.4	1160.4	1032.7	982.6	1005.0	1117.6	1416.9	1529.7
27.5°	1496.6	1518.1	1562.7	1360.2	1215.3	1022.9	943.2	1024.8	1206.4	1467.6	1715.2
30°	1669.4	1690.0	1761.8	1435.2	1262.8	1071.2	960.2	1064.4	1261.7	1572.0	1881.9
32.5°	1809.6	1862.9	1944.4	1550.9	1261.0	1126.7	1047.0	1051.3	1329.6	1707.2	2046.8
35°	1988.8	2038.4	2095.7	1630.7	1343.5	1144.6	1072.5	1180.4	1430.7	1848.6	2268.8
37.5°	2392.7	2467.7	2354.4	1831.6	1439.5	1306.3	1173.6	1259.9	1536.5	1992.9	2573.9
40°	2639.1	2702.3	2592.9	1934.2	1605.8	1387.9	1353.9	1398.0	1640.0	2067.4	2803.8
42.5°	2881.9	2965.3	2782.5	2088.7	1763.6	1618.0	1525.1	1560.7	1789.7	2247.3	3062.5
45°	3057.7	3109.4	2823.5	2169.6	1980.6	1880.3	1818.5	1765.5	1998.5	2362.8	3229.4
47.5°	3146.1	3187.3	2904.4	2195.2	2109.8	2157.8	2293.2	2182.5	2183.4	2446.4	3319.3
50°	3268.4	3297.2	2949.7	2225.7	2250.0	2590.2	2658.6	2422.8	2394.5	2530.2	3334.1
52.5°	3440.3	3454.4	3037.6	2306.4	2460.0	2928.8	2953.5	2858.2	2605.8	2686.0	3366.7
55°	3668.9	3644.2	3194.5	2475.8	2679.0	3176.9	3209.9	3126.8	2871.5	2841.6	3467.7
57.5°	3915.3	3887.0	3427.2	2714.6	2916.6	3366.5	3386.2	3392.7	3048.0	2979.4	3639.4
60°	4092.0	4097.2	3720.1	2988.4	3064.3	3547.9	3508.5	3448.7	3226.0	3181.2	3723.0
62.5°	4153.8	4203.9	3948.2	3275.4	3191.6	3559.2	3498.1	3447.6	3305.8	3389.3	3627.2
65°	4103.3	4190.8	4001.2	3527.5	3268.6	3417.2	3353.6	3321.2	3303.3	3474.3	3415.2
67.5°	3902.6	4012.0	3849.4	3529.8	2988.6	2909.6	2984.8	3087.4	3028.1	3403.8	3118.2
70°	3453.0	3572.8	3497.2	3322.7	2489.6	2289.2	2372.1	2527.2	2485.3	3027.4	2681.3
72.5°	2590.7	2744.7	2759.6	2868.6	1976.3	1722.9	1734.9	1730.6	1802.8	2441.2	2092.3
75°	1664.2	1784.0	1946.0	2314.8	1501.3	1257.8	1142.8	1114.7	1249.5	1907.5	1497.9
77.5°	966.1	980.4	1055.1	1746.4	1075.3	906.3	827.9	868.0	915.1	1331.2	992.8
80°	462.1	469.3	500.1	898.6	747.0	784.4	723.9	769.0	628.4	765.2	563.3
82.5°	146.6	148.1	153.4	441.5	463.9	519.6	333.0	446.5	388.5	462.5	375.1
85°	24.5	41.7	51.4	127.5	261.9	175.3	72.3	159.2	216.8	291.8	170.3
87.5°	0.0	0.0	0.0	2.3	21.3	10.0	1.6	9.1	33.3	65.0	7.7
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°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9
2.5°	634.9	650.6	591.7	538.9	552.2	541.6	525.5	498.1	434.7	481.3	478.2
5°	817.0	788.0	708.3	671.2	625.9	556.8	548.4	495.4	472.1	475.9	472.5
7.5°	880.5	828.6	758.1	646.2	540.0	440.3	409.8	375.1	368.1	383.0	392.8
10°	830.6	775.6	714.0	574.9	493.1	421.1	345.7	297.2	270.9	267.7	270.5
12.5°	853.5	794.2	667.3	560.9	475.5	410.2	326.0	252.8	195.7	200.0	188.7
15°	869.4	801.2	656.2	531.4	439.0	351.8	250.3	177.1	130.5	116.9	108.7
17.5°	962.5	865.1	642.2	497.4	388.0	273.9	157.2	102.6	87.4	82.7	78.8
20°	1082.1	943.7	641.9	461.6	312.8	171.2	98.1	74.3	70.7	73.4	70.4
22.5°	1221.1	1048.3	676.1	417.0	224.5	108.0	76.3	65.9	62.3	64.6	64.8
25°	1361.1	1205.3	704.0	374.7	156.3	82.9	68.0	60.7	56.6	58.7	57.5
27.5°	1613.9	1335.3	697.7	320.5	115.1	72.9	63.2	56.9	50.7	53.9	53.7
30°	1779.3	1564.8	722.4	244.6	91.3	63.9	58.9	51.9	45.3	48.9	48.7
32.5°	1977.0	1663.3	749.1	187.8	75.9	60.5	53.0	46.2	42.4	44.6	44.2
35°	2199.2	1858.1	699.9	156.3	65.9	54.6	46.9	41.7	38.3	39.4	39.4
37.5°	2591.8	2021.0	670.5	127.3	61.4	49.4	43.9	37.6	35.6	35.6	36.7
40°	2814.7	2269.7	582.6	100.8	62.7	45.5	41.0	34.4	31.7	31.5	32.6
42.5°	3104.6	2413.1	527.6	81.5	56.9	44.4	37.6	31.3	28.1	27.9	29.0
45°	3276.5	2493.2	450.1	64.1	51.0	51.6	34.9	28.8	24.0	23.1	25.1
47.5°	3385.0	2599.5	406.1	51.0	44.4	51.4	34.0	24.9	20.2	19.0	20.8
50°	3440.1	2652.0	397.5	43.7	38.5	46.0	39.0	20.8	17.2	15.6	17.2
52.5°	3497.4	2737.4	400.7	40.3	34.0	36.9	36.9	17.9	15.2	13.4	14.5
55°	3613.1	2863.6	393.7	38.3	31.3	28.1	23.8	15.9	13.8	11.8	12.9
57.5°	3755.4	2954.2	393.7	36.5	29.0	24.0	19.0	14.7	12.7	10.2	11.1
60°	3728.4	2858.8	374.2	34.7	27.2	22.4	17.2	13.6	11.8	9.3	10.0
62.5°	3543.4	2599.5	303.1	31.9	25.6	21.3	15.6	12.9	11.1	8.2	8.8
65°	3325.9	2324.0	210.7	29.0	23.8	19.3	14.0	12.2	10.2	7.2	7.7
67.5°	3064.1	1995.8	116.9	26.0	22.0	16.8	12.9	12.0	9.7	6.6	7.0
70°	2609.7	1506.8	62.7	23.8	20.6	15.4	12.2	12.0	9.7	6.3	6.6
72.5°	1959.1	948.9	36.7	21.7	18.8	14.3	11.6	12.2	9.5	6.1	6.1
75°	1333.0	576.0	26.3	18.6	16.8	12.0	11.1	11.8	9.7	6.1	5.7
77.5°	906.3	404.8	21.5	16.8	15.2	10.6	11.3	11.8	9.7	5.0	3.9
80°	565.8	208.8	16.3	13.4	13.1	9.3	11.3	10.2	6.3	1.1	0.0
82.5°	395.7	77.7	9.5	10.2	10.2	6.6	8.8	7.2	3.6	0.0	0.0
85°	166.0	13.4	5.2	7.2	6.3	3.9	7.0	5.4	2.3	0.0	0.0
87.5°	2.9	0.0	2.0	4.3	4.5	2.3	3.6	2.3	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°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9
2.5°	493.1	471.6	426.3	448.0	445.8	455.7	456.7	433.5	483.4	514.2	518.7
5°	473.0	458.5	456.0	443.5	440.3	458.7	448.7	448.0	472.1	507.2	507.4
7.5°	393.0	381.9	387.1	372.6	335.2	337.5	340.9	355.2	375.8	398.9	407.3
10°	269.8	298.5	277.5	275.7	271.8	259.8	250.3	257.8	284.5	305.8	313.7
12.5°	192.5	197.1	210.0	205.2	211.8	201.6	197.7	221.1	247.1	268.9	284.5
15°	112.6	120.3	128.0	144.3	150.9	148.8	160.6	180.1	201.1	211.1	230.4
17.5°	79.3	80.0	81.5	99.2	110.8	115.3	122.3	137.0	145.6	150.2	158.1
20°	69.3	67.3	64.6	74.5	85.4	91.1	89.0	100.6	107.6	112.1	117.8
22.5°	62.7	59.3	57.8	61.2	69.5	74.5	75.4	82.2	92.9	96.0	97.9
25°	56.6	54.4	53.2	55.0	59.6	64.3	65.2	74.1	83.6	84.9	88.6
27.5°	52.6	48.2	48.7	50.1	52.1	58.0	59.8	64.8	78.6	80.2	81.3
30°	48.2	43.7	45.1	46.4	45.5	52.8	55.5	61.2	74.5	77.0	78.4
32.5°	43.9	40.5	40.3	41.7	43.3	47.1	53.0	59.6	71.8	75.2	78.6
35°	39.2	36.5	36.9	37.1	39.2	44.2	48.5	51.9	60.3	62.1	63.2
37.5°	35.8	33.5	33.1	35.3	37.4	41.2	42.8	44.4	55.5	59.6	59.8
40°	31.7	30.4	30.4	31.9	36.5	36.0	38.1	43.0	53.7	58.0	58.4
42.5°	28.8	27.0	27.4	29.0	32.2	29.9	34.0	41.2	53.0	57.3	57.1
45°	24.2	23.8	24.7	26.0	27.4	25.4	31.7	39.4	50.7	56.4	54.8
47.5°	20.2	20.2	21.3	22.7	22.0	22.7	28.8	36.9	49.4	54.6	53.5
50°	16.5	16.8	17.9	20.2	18.1	19.9	25.8	34.4	47.1	52.8	51.9
52.5°	14.0	14.3	14.9	16.5	15.6	18.1	23.8	31.9	44.8	49.6	49.2
55°	12.2	12.7	12.7	13.6	14.0	17.0	21.5	29.4	41.5	46.7	45.8
57.5°	10.9	11.3	11.1	11.8	12.2	14.9	19.3	26.7	38.1	42.4	41.0
60°	9.7	10.2	10.0	10.9	10.6	12.9	16.8	23.8	34.4	37.8	36.7
62.5°	8.6	9.1	9.1	9.5	9.7	10.9	14.5	21.1	30.8	33.5	32.6
65°	7.7	8.2	8.4	8.2	8.6	9.3	12.2	19.0	26.7	29.4	28.1
67.5°	7.0	7.5	7.9	7.0	7.5	7.7	10.4	17.0	23.6	25.8	24.7
70°	6.8	7.0	7.0	6.1	5.9	6.1	9.1	14.5	20.6	22.9	21.3
72.5°	6.3	6.6	6.3	5.0	4.3	4.8	7.7	12.2	17.4	19.3	17.9
75°	5.9	6.1	5.9	4.1	2.7	3.4	6.3	10.6	14.9	15.9	15.2
77.5°	5.0	5.4	5.4	2.9	0.9	2.0	4.8	8.6	12.5	12.5	12.7
80°	0.5	1.4	2.3	1.6	0.0	0.2	1.6	4.5	7.9	7.7	8.4
82.5°	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.7	2.0	2.3
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°	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9	478.9
2.5°	508.1	501.1	509.9	536.8	526.0	528.0	520.8	565.4	615.9	617.5
5°	507.8	501.5	514.6	513.5	544.5	578.3	610.9	663.7	738.4	738.9
7.5°	403.4	441.0	450.8	447.8	487.7	534.1	584.4	685.4	746.8	753.4
10°	363.8	380.1	400.0	407.3	423.8	468.0	524.8	639.2	708.1	723.3
12.5°	315.3	367.4	393.9	445.3	454.8	461.2	550.9	650.3	692.2	690.4
15°	261.2	306.5	348.4	411.1	436.9	503.5	574.2	704.5	729.4	753.4
17.5°	184.8	219.0	283.4	349.3	428.1	500.6	638.5	801.2	848.3	876.8
20°	123.7	140.2	198.4	285.6	385.5	457.6	664.8	888.6	940.0	964.7
22.5°	100.3	108.3	138.4	209.3	329.4	455.5	675.5	984.0	1122.2	1155.0
25°	88.3	93.8	109.9	154.9	273.4	446.5	734.4	1091.3	1258.1	1284.6
27.5°	77.2	85.4	97.4	127.8	234.4	440.1	764.3	1271.7	1470.5	1496.6
30°	73.8	83.8	95.4	116.4	207.3	415.7	811.8	1434.3	1623.0	1669.4
32.5°	79.7	83.1	88.8	106.7	186.2	389.8	895.4	1628.6	1749.1	1809.6
35°	63.2	69.3	79.3	97.9	177.4	388.5	942.8	1753.7	1951.4	1988.8
37.5°	61.8	67.5	80.4	95.4	188.0	398.9	1013.0	2009.9	2316.1	2392.7
40°	60.0	67.3	79.5	94.2	188.0	409.1	1057.8	2214.9	2561.4	2639.1
42.5°	59.3	68.6	79.3	99.0	182.1	414.7	1125.6	2419.4	2820.6	2881.9
45°	58.9	70.0	80.0	104.6	180.8	433.3	1163.8	2518.8	2987.3	3057.7
47.5°	57.8	70.0	89.2	101.3	173.3	431.5	1213.4	2666.3	3086.7	3146.1
50°	56.9	70.4	101.0	94.9	174.4	420.4	1280.7	2804.7	3226.0	3268.4
52.5°	54.8	72.0	99.2	86.1	171.0	419.3	1381.1	3001.5	3409.3	3440.3
55°	50.3	70.0	89.7	75.2	159.0	406.4	1514.0	3257.5	3663.4	3668.9
57.5°	46.2	65.0	75.0	69.1	133.2	408.0	1628.6	3493.1	3889.9	3915.3
60°	42.1	67.5	58.2	64.3	110.3	379.0	1684.1	3583.2	4054.8	4092.0
62.5°	38.3	62.3	49.6	59.1	98.3	352.0	1645.6	3510.8	4075.9	4153.8
65°	34.0	43.3	41.9	53.0	99.4	314.2	1517.0	3298.5	3995.9	4103.3
67.5°	29.2	34.0	36.9	45.8	106.5	281.8	1296.3	2957.8	3781.0	3902.6
70°	25.6	30.6	32.2	40.1	110.8	260.5	1022.9	2485.1	3340.6	3453.0
72.5°	21.3	28.3	28.8	35.1	106.7	239.4	728.9	1784.0	2536.7	2590.7
75°	18.3	23.6	26.0	29.4	89.7	178.7	401.6	1104.3	1604.0	1664.2
77.5°	16.5	17.9	19.7	20.4	38.1	93.1	138.2	680.9	898.1	966.1
80°	12.7	14.0	13.6	14.0	20.8	32.2	52.6	319.2	424.3	462.1
82.5°	4.1	6.8	7.5	6.3	13.6	15.9	15.2	110.3	137.9	146.6
85°	0.9	2.5	1.1	0.0	4.5	8.2	1.1	16.8	33.1	24.5
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

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