

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: P366984

Luminaire Tested: **MSA-SA1C-830-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366984
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-SA1C-830-U-SLL
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) 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: 4270 lumens
Efficiency: N/A
Efficacy: 72.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

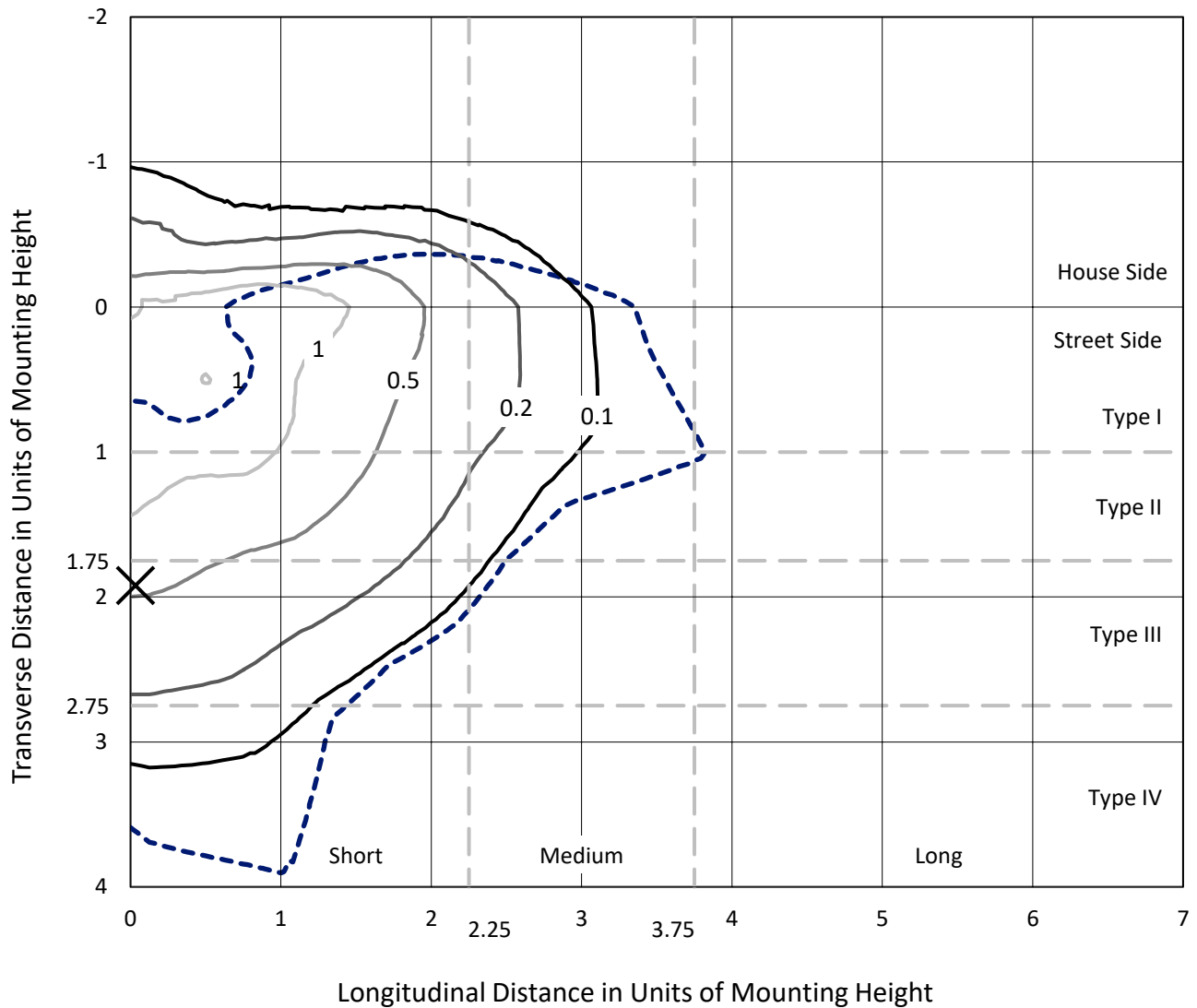
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

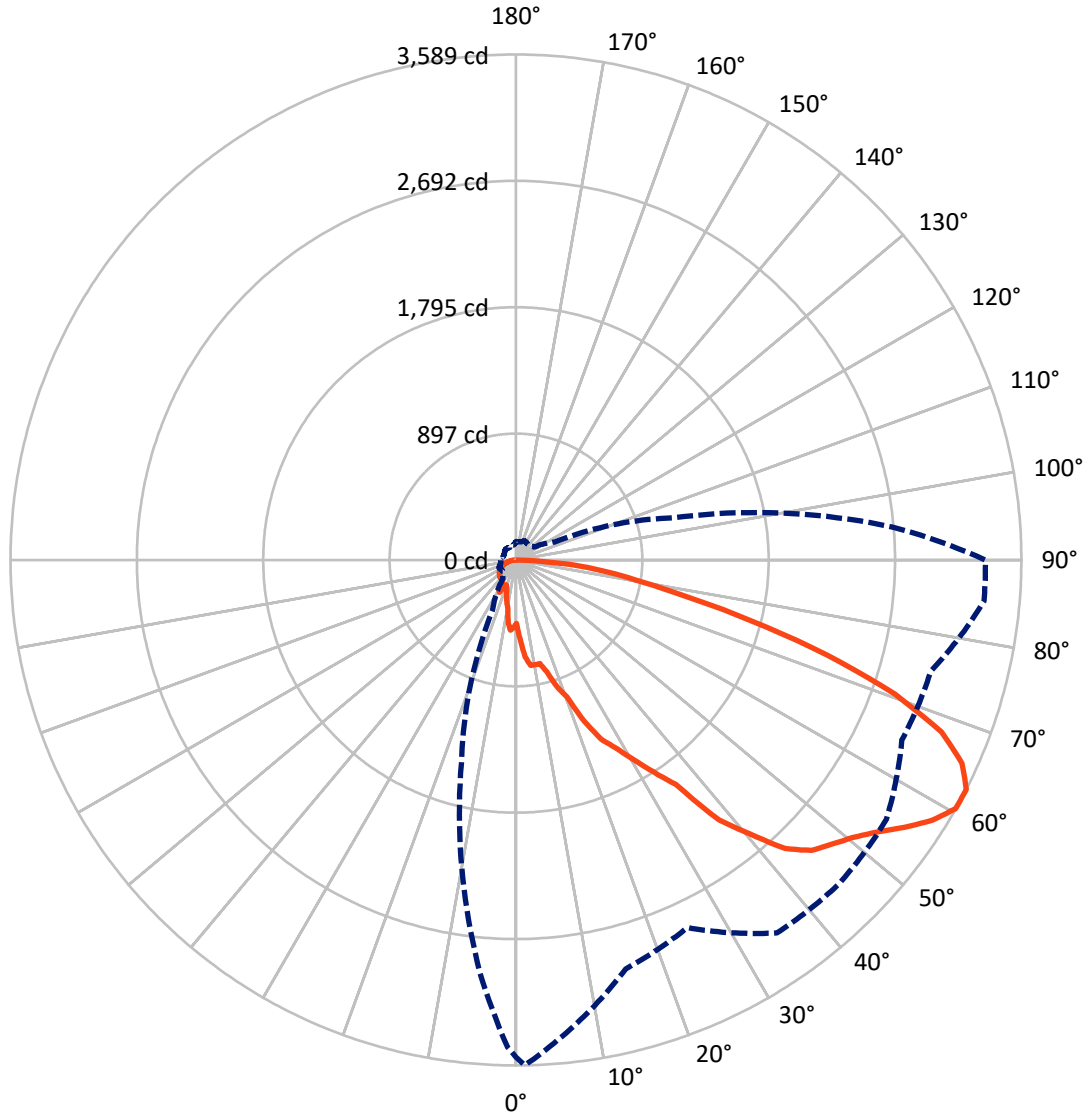
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.8 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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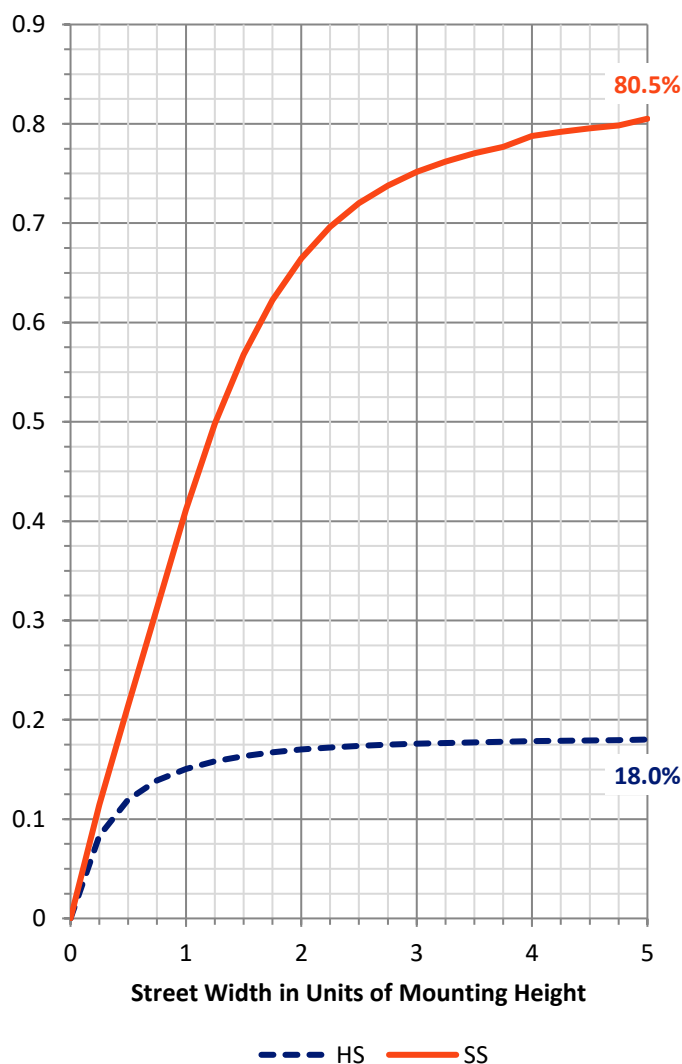
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	777.5	0.0	777.5
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	3492.5	0.0	3492.5
	% Fixture	81.8	0.0	81.8
Total	Lumens	4270.0	0.0	4270.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.6	1.2
10°-20°	150.0	3.5
20°-30°	264.8	6.2
30°-40°	412.5	9.7
40°-50°	679.2	15.9
50°-60°	969.4	22.7
60°-70°	1027.9	24.1
70°-80°	567.8	13.3
80°-90°	146.9	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°	4270.0	100.0
0°-180°	4270.0	100.0

Coefficient of Utilization



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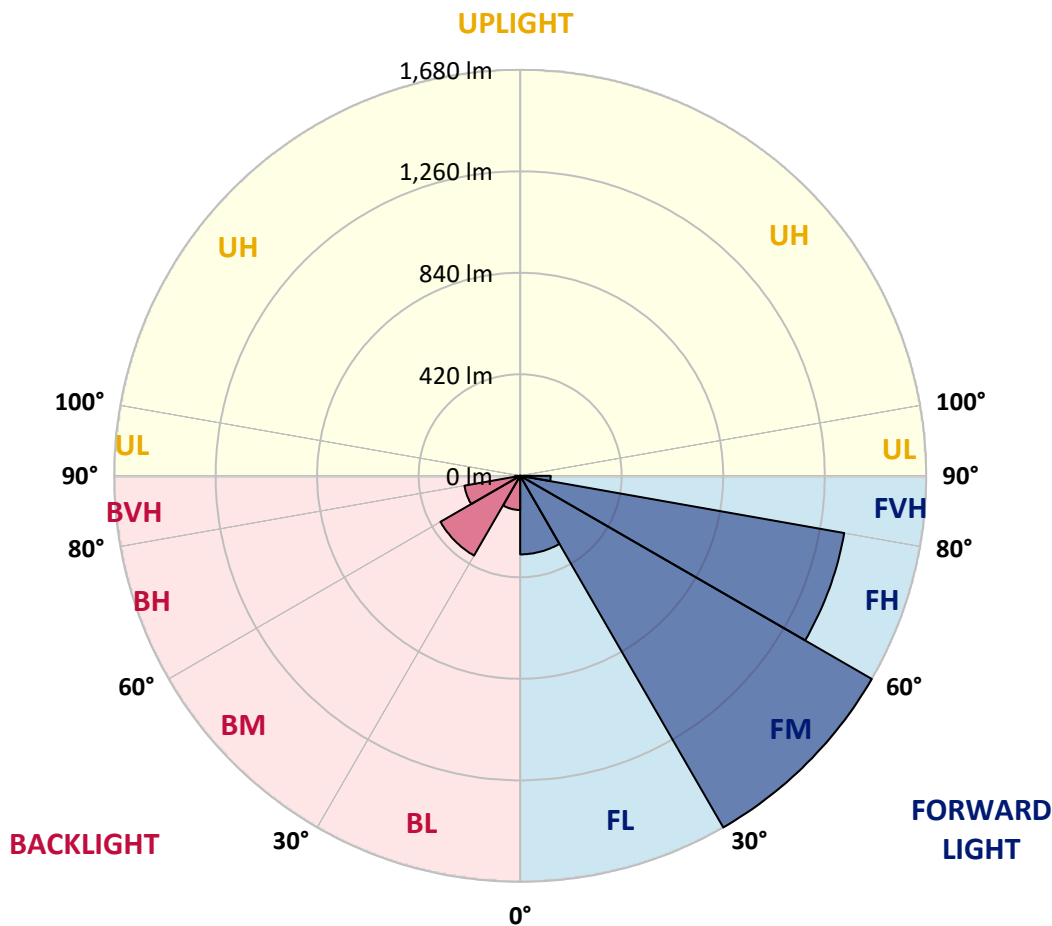
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	325.0	7.6			
FM (30°-60°)	1679.9	39.3			
FH (60°-80°)	1361.4	31.9			G1/1800
FVH (80°-90°)	126.1	3.0			G2/225
BL (0°-30°)	141.4	3.3	B1/500		
BM (30°-60°)	381.2	8.9	B1/1000		
BH (60°-80°)	234.3	5.5	B1/500		G1/500
BVH (80°-90°)	20.7	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: 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°	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
2.5°	553.7	558.4	548.7	537.7	492.3	536.1	523.0	547.2	539.4	486.7	583.1
5°	684.2	692.9	683.4	716.3	718.4	726.9	648.4	697.3	680.3	675.9	724.6
7.5°	747.2	756.1	780.4	839.0	884.8	843.3	797.6	787.4	774.1	739.5	769.0
10°	751.1	756.1	788.6	913.0	935.1	964.6	934.9	865.1	836.3	761.1	738.7
12.5°	739.3	754.9	796.9	948.4	1014.3	1046.4	1053.7	976.0	905.3	819.5	808.1
15°	818.7	824.3	884.6	973.7	1019.1	1046.2	1069.8	1022.0	999.8	931.8	840.4
17.5°	932.4	948.0	997.3	1030.2	1060.9	1066.1	1046.6	1028.0	992.7	1083.5	986.3
20°	1009.5	1039.6	1100.1	1106.3	1041.9	1053.2	1050.6	1051.8	1031.7	1199.5	1146.1
22.5°	1213.4	1246.0	1254.2	1218.2	1096.8	1044.8	1055.1	1085.2	1164.3	1308.1	1368.6
25°	1398.0	1410.7	1486.3	1393.5	1200.0	1086.6	1069.6	1147.3	1276.4	1490.9	1534.0
27.5°	1494.4	1510.8	1561.1	1359.1	1212.8	1032.7	993.0	1111.3	1242.8	1404.9	1594.1
30°	1617.7	1643.8	1712.4	1393.5	1251.5	1068.0	979.9	1093.0	1238.5	1461.2	1721.3
32.5°	1744.7	1795.5	1846.4	1514.7	1246.2	1121.8	1063.4	1072.5	1277.9	1579.4	1853.1
35°	1913.0	1957.7	2001.6	1584.7	1354.7	1166.8	1108.8	1205.3	1379.0	1716.3	2036.9
37.5°	2272.7	2343.5	2227.7	1784.1	1472.8	1369.5	1264.8	1322.0	1485.9	1830.5	2337.1
40°	2501.9	2555.1	2443.2	1919.8	1680.9	1506.0	1488.8	1493.6	1633.2	1928.3	2539.2
42.5°	2729.6	2801.7	2623.7	2106.1	1932.4	1788.0	1699.3	1693.3	1798.2	2104.0	2768.9
45°	2899.5	2942.0	2685.6	2263.1	2202.2	2095.1	2028.6	1923.1	2014.9	2225.6	2911.1
47.5°	2980.3	3014.9	2785.3	2354.5	2377.1	2382.7	2502.7	2322.8	2204.3	2307.9	2985.7
50°	3081.2	3097.6	2844.0	2434.9	2543.3	2789.0	2817.8	2513.0	2388.7	2397.6	3029.8
52.5°	3201.8	3208.6	2929.5	2527.8	2711.3	3056.3	3011.8	2835.5	2564.2	2561.5	3112.9
55°	3353.5	3349.3	3036.9	2652.7	2831.3	3215.3	3181.5	3053.0	2755.5	2697.3	3242.2
57.5°	3488.4	3485.9	3179.2	2767.7	2932.2	3296.9	3306.9	3272.9	2885.6	2794.4	3382.3
60°	3554.5	3586.2	3341.3	2893.5	2938.7	3333.8	3337.5	3283.4	3031.1	2919.2	3419.6
62.5°	3528.8	3589.1	3420.8	3006.6	2879.6	3233.1	3248.6	3211.3	3024.4	3050.1	3336.3
65°	3411.9	3481.5	3351.8	3066.9	2843.3	3064.4	3068.4	2974.1	2929.7	3137.0	3141.1
67.5°	3192.7	3258.0	3132.2	2970.8	2595.1	2609.8	2697.7	2705.3	2640.7	3071.5	2867.0
70°	2808.9	2854.9	2776.2	2733.3	2169.1	2082.9	2178.2	2219.0	2248.4	2835.0	2537.9
72.5°	2223.8	2312.7	2325.1	2353.1	1746.4	1602.8	1673.4	1612.9	1804.6	2413.0	2073.5
75°	1645.2	1720.3	1800.9	1956.9	1376.5	1200.0	1191.2	1160.4	1339.4	1940.5	1537.9
77.5°	1162.7	1210.5	1272.5	1563.2	1038.7	924.2	929.5	898.3	967.3	1466.6	1062.4
80°	833.4	858.5	887.3	1029.8	766.3	797.3	798.2	768.5	719.2	996.1	709.1
82.5°	593.9	613.3	646.3	679.2	571.3	653.5	652.9	651.1	570.2	673.2	443.6
85°	330.7	356.8	414.0	532.1	412.6	467.3	410.9	452.5	418.6	448.2	224.6
87.5°	23.2	20.7	92.6	308.3	192.5	140.7	73.8	146.1	187.3	234.1	31.3
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°	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
2.5°	603.0	610.2	581.8	539.2	550.8	538.1	522.2	497.3	446.1	477.8	478.0
5°	724.2	696.6	674.5	653.5	618.3	565.1	558.0	515.3	491.3	503.9	502.1
7.5°	762.1	723.0	689.6	614.8	549.5	466.8	442.0	416.7	406.1	436.8	449.0
10°	720.5	679.6	646.9	555.9	511.6	460.0	391.6	356.6	335.9	344.0	348.7
12.5°	754.0	712.4	609.4	558.6	485.5	454.0	394.1	342.7	312.1	319.5	310.6
15°	786.4	730.2	627.2	526.1	466.8	421.3	372.8	319.7	283.7	270.8	264.0
17.5°	904.5	811.2	625.2	507.9	439.9	387.5	329.0	271.0	247.0	233.7	222.3
20°	1048.5	918.6	636.3	489.0	411.3	345.2	281.6	227.7	210.9	202.2	199.1
22.5°	1219.8	1056.1	700.4	486.3	384.4	314.3	255.5	221.9	203.1	193.5	189.6
25°	1356.0	1198.5	747.6	504.6	382.9	288.9	239.7	246.6	237.9	240.8	217.8
27.5°	1488.2	1237.3	721.1	496.5	344.4	243.7	236.0	250.3	257.8	260.0	259.2
30°	1599.9	1400.9	726.9	450.9	290.9	198.5	180.7	187.7	208.2	240.8	247.0
32.5°	1763.4	1479.3	776.4	423.3	260.0	177.6	157.7	155.0	159.8	171.6	181.7
35°	1954.6	1659.5	790.3	416.1	238.7	168.3	154.4	148.2	150.6	159.6	161.6
37.5°	2311.2	1790.9	841.7	407.2	230.8	162.7	151.9	149.6	155.0	162.2	166.4
40°	2507.9	2027.1	844.2	399.5	220.7	160.4	153.5	152.5	155.8	165.8	168.3
42.5°	2770.0	2161.8	883.1	390.6	217.2	163.5	156.9	156.4	159.3	165.1	169.7
45°	2929.7	2252.0	885.2	385.4	216.3	177.2	161.2	159.8	159.1	162.7	166.8
47.5°	3032.7	2381.9	910.5	379.6	221.3	180.7	166.4	160.2	158.1	159.6	162.7
50°	3130.3	2485.7	958.3	378.8	226.5	177.2	175.5	160.0	155.8	155.2	157.5
52.5°	3250.1	2656.4	1017.4	386.7	225.2	172.0	182.3	159.1	151.7	150.2	152.5
55°	3424.4	2839.4	1080.2	380.0	212.4	162.0	175.7	158.5	147.3	144.6	146.7
57.5°	3537.3	2944.2	1150.4	374.4	192.9	154.6	169.7	158.9	147.7	141.7	143.0
60°	3499.8	2887.9	1178.0	340.2	174.5	148.8	155.4	155.6	144.0	138.4	139.5
62.5°	3334.0	2683.8	1152.3	300.5	160.8	140.5	140.7	149.4	133.2	129.3	131.0
65°	3102.3	2430.0	1048.3	274.6	154.4	131.8	128.5	131.2	118.7	115.8	119.1
67.5°	2818.1	2117.1	893.5	247.2	152.1	120.0	116.0	115.0	107.1	103.8	107.1
70°	2461.4	1772.7	714.3	227.9	143.4	107.1	104.0	103.0	96.4	93.9	96.8
72.5°	1978.4	1384.2	551.2	213.2	133.9	95.3	92.6	91.4	85.8	82.3	85.8
75°	1407.2	1057.8	409.4	190.6	120.4	83.3	80.2	78.5	73.4	70.0	73.1
77.5°	1000.0	794.0	285.9	157.7	99.3	70.5	68.6	65.9	61.3	57.4	60.5
80°	739.3	567.3	184.4	121.6	75.8	56.4	55.3	53.5	49.1	44.3	46.6
82.5°	486.7	409.0	105.7	82.5	55.1	40.6	41.4	40.2	36.1	31.1	32.3
85°	218.0	242.2	56.2	45.4	35.8	24.5	26.7	25.9	22.8	18.0	18.4
87.5°	20.9	40.8	17.2	16.6	13.3	7.7	9.5	8.1	6.8	4.4	3.3
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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
2.5°	485.3	456.1	426.9	444.7	445.1	449.9	450.5	432.9	447.0	457.7	468.9
5°	493.0	473.9	474.9	457.7	448.4	460.4	457.9	453.2	461.7	473.5	487.8
7.5°	437.4	425.0	422.9	406.3	366.1	357.2	364.7	367.8	379.2	397.4	412.8
10°	341.5	366.1	338.4	332.0	321.4	300.7	288.6	287.2	311.4	326.1	339.0
12.5°	307.7	301.5	298.2	280.6	280.6	258.6	251.6	258.0	295.3	305.8	322.4
15°	262.1	257.6	242.2	233.5	229.4	220.5	227.9	234.1	269.0	269.8	287.2
17.5°	217.6	214.9	200.4	198.7	194.6	190.6	197.5	212.4	231.2	227.9	236.0
20°	194.6	185.2	172.0	176.8	172.4	169.3	166.4	187.5	200.8	205.1	209.9
22.5°	188.8	171.8	163.9	159.6	159.8	154.8	155.4	173.0	193.1	195.8	192.9
25°	215.7	185.5	160.0	147.3	142.6	140.9	145.7	161.2	185.5	191.3	193.5
27.5°	252.4	201.4	164.7	143.2	133.7	134.5	141.3	152.1	180.7	191.0	193.7
30°	242.2	189.4	164.9	140.1	128.3	132.6	135.1	145.5	177.0	192.5	206.0
32.5°	186.9	170.3	166.0	142.6	137.8	131.0	134.5	144.4	166.0	175.7	176.3
35°	158.3	145.7	142.8	137.0	130.3	127.4	131.4	140.1	154.2	160.2	159.3
37.5°	157.1	143.2	131.8	129.3	126.6	125.8	128.1	136.1	150.4	161.0	158.7
40°	159.1	141.9	130.3	126.0	127.0	123.3	125.6	135.5	151.1	161.0	158.9
42.5°	156.7	140.5	128.5	125.2	126.2	121.0	123.7	134.1	149.4	161.2	157.3
45°	151.7	137.2	127.4	121.8	126.6	118.9	122.3	130.3	144.4	157.3	152.7
47.5°	146.7	133.2	123.1	119.6	124.3	116.9	118.3	125.4	139.5	152.1	148.2
50°	141.3	128.3	119.6	118.5	121.8	116.5	114.2	120.0	133.4	146.1	142.8
52.5°	135.5	124.1	117.1	116.7	119.8	113.8	110.4	115.0	127.0	139.7	137.0
55°	129.9	119.6	114.0	115.0	118.5	111.5	107.3	110.2	120.2	132.6	128.9
57.5°	124.3	114.4	109.8	112.7	115.4	108.6	103.4	105.1	113.1	125.4	121.0
60°	119.4	109.8	105.3	108.8	111.3	104.2	98.2	99.3	106.5	117.5	113.6
62.5°	112.9	104.8	98.8	103.4	105.3	98.4	92.0	93.2	99.0	109.4	106.5
65°	103.8	98.6	93.0	96.1	98.6	91.6	85.6	87.0	91.4	101.1	99.0
67.5°	95.9	91.0	87.2	89.7	90.1	84.7	79.4	80.2	83.7	92.8	90.6
70°	87.2	82.5	79.6	81.4	81.2	76.7	72.5	72.7	75.6	83.9	80.8
72.5°	77.7	73.1	71.7	72.7	71.9	67.8	63.8	65.3	67.1	73.4	70.9
75°	67.6	63.4	62.6	63.6	62.4	58.4	54.9	56.4	58.0	63.2	60.1
77.5°	57.0	53.3	53.5	53.7	52.0	49.3	45.8	47.2	48.3	51.8	48.7
80°	45.4	42.5	43.3	43.3	41.4	39.6	36.3	36.7	37.3	38.5	36.3
82.5°	33.2	33.2	33.2	33.4	29.4	30.0	27.1	26.9	26.3	26.1	24.7
85°	19.7	20.5	20.9	21.5	16.0	18.6	16.2	15.5	14.3	13.1	12.6
87.5°	4.4	5.6	5.6	5.4	0.0	2.1	1.0	1.7	0.4	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°	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3	450.3
2.5°	456.1	443.6	466.8	487.6	484.2	496.3	468.3	509.7	553.7	553.7
5°	484.0	473.5	479.5	491.5	500.6	542.5	577.3	611.9	683.4	684.2
7.5°	408.2	431.0	436.4	432.9	472.0	525.9	583.3	681.9	742.4	747.2
10°	381.7	392.0	408.4	417.5	433.5	486.5	557.8	674.9	739.1	751.1
12.5°	345.8	384.2	409.0	460.0	472.6	483.2	596.6	697.9	742.2	739.3
15°	306.7	335.7	371.5	427.9	460.0	540.8	619.6	771.6	796.7	818.7
17.5°	244.5	265.9	313.5	377.7	457.3	531.7	676.3	862.8	909.7	932.4
20°	201.2	201.4	249.1	334.2	420.8	493.6	697.9	938.5	997.9	1009.5
22.5°	190.2	180.7	205.8	275.0	380.6	516.2	741.4	1060.1	1184.2	1213.4
25°	184.2	172.6	188.4	242.6	351.8	528.0	829.0	1227.3	1386.6	1398.0
27.5°	186.7	192.1	197.1	216.3	315.4	505.8	808.7	1302.1	1472.8	1494.4
30°	203.5	212.2	200.8	207.4	285.3	473.7	845.0	1423.5	1581.4	1617.7
32.5°	169.3	166.0	164.9	179.4	255.3	444.7	921.0	1594.5	1699.1	1744.7
35°	152.7	147.5	149.6	166.2	240.6	440.5	963.7	1736.0	1885.0	1913.0
37.5°	152.1	146.1	148.8	161.2	245.8	448.0	1032.1	1963.1	2212.8	2272.7
40°	150.6	147.3	148.8	158.1	240.4	452.1	1071.5	2153.9	2441.1	2501.9
42.5°	150.4	148.8	150.2	160.6	234.8	454.0	1126.0	2326.3	2681.7	2729.6
45°	149.8	151.5	151.5	162.7	232.3	466.4	1158.1	2410.9	2840.4	2899.5
47.5°	146.9	151.9	160.0	162.0	222.1	460.6	1203.5	2539.2	2924.8	2980.3
50°	143.2	151.3	170.7	157.9	220.5	446.5	1256.5	2640.9	3032.9	3081.2
52.5°	138.2	150.2	168.3	149.8	217.6	444.1	1330.9	2773.1	3159.1	3201.8
55°	131.2	146.5	160.6	141.7	210.5	436.2	1444.7	2937.0	3324.3	3353.5
57.5°	124.7	140.9	149.4	137.2	193.7	437.8	1523.8	3070.6	3462.9	3488.4
60°	118.9	140.3	133.4	132.4	176.5	415.7	1549.5	3069.2	3514.5	3554.5
62.5°	112.7	132.4	122.3	126.0	161.4	392.9	1495.0	2937.6	3458.7	3528.8
65°	104.6	113.6	112.9	121.4	161.8	355.8	1370.1	2705.5	3319.7	3411.9
67.5°	95.1	100.5	104.0	114.0	167.0	327.0	1169.1	2426.4	3083.1	3192.7
70°	85.4	90.8	94.7	104.2	171.8	313.7	930.6	2034.4	2697.7	2808.9
72.5°	75.4	81.0	84.1	92.4	165.4	285.3	688.8	1582.9	2165.3	2223.8
75°	65.1	70.5	72.9	80.6	143.6	236.0	475.5	1198.9	1586.0	1645.2
77.5°	54.5	60.3	61.1	67.3	109.6	180.5	304.8	919.6	1123.1	1162.7
80°	43.5	49.3	49.3	52.6	77.1	124.1	182.6	693.7	817.9	833.4
82.5°	31.3	37.5	37.1	37.3	53.3	76.9	105.7	519.9	591.0	593.9
85°	18.4	22.8	22.6	20.7	31.5	41.4	57.2	322.8	329.9	330.7
87.5°	3.5	5.4	4.8	2.1	8.7	12.2	16.6	59.9	23.8	23.2
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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