

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: P366983

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

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366983
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-SA1C-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: 3636 lumens
Efficiency: N/A
Efficacy: 61.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

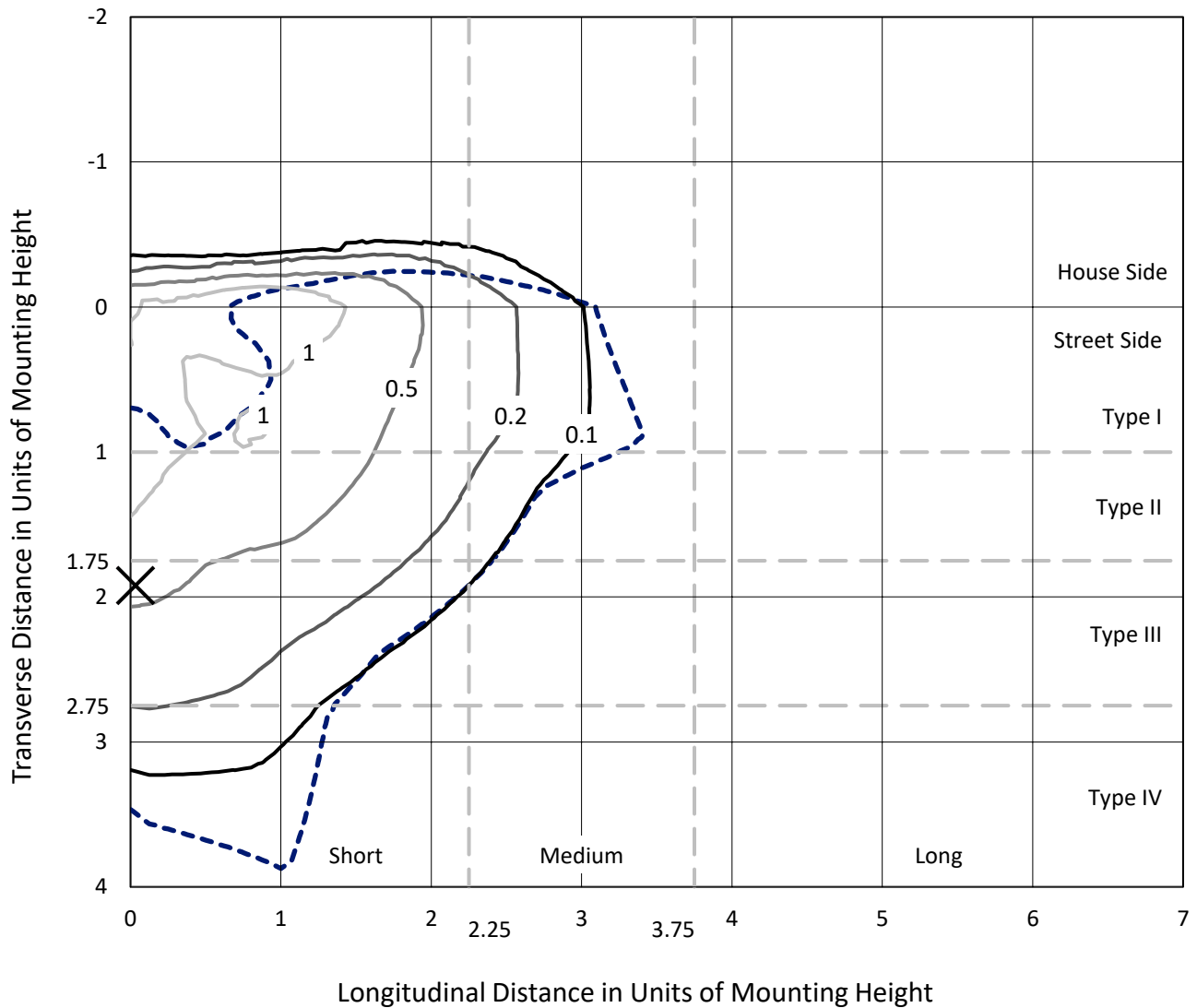
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

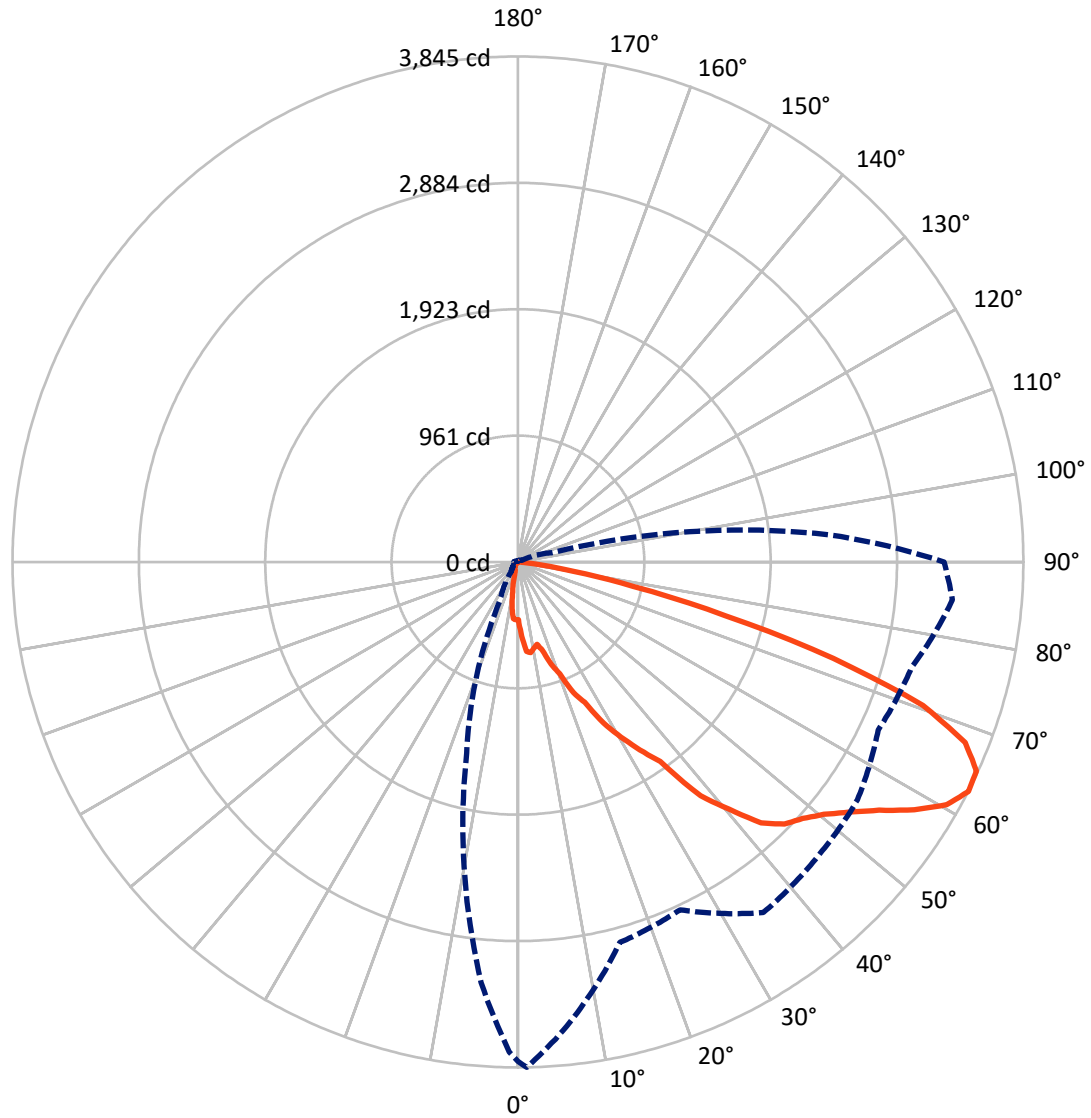
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.9 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	415.8	0.0	415.8
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	3220.2	0.0	3220.2
	% Fixture	88.6	0.0	88.6
Total	Lumens	3636.0	0.0	3636.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.9	1.3
10°-20°	127.8	3.5
20°-30°	206.6	5.7
30°-40°	346.1	9.5
40°-50°	566.0	15.6
50°-60°	837.8	23.0
60°-70°	961.8	26.5
70°-80°	475.6	13.1
80°-90°	65.3	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°	3636.0	100.0
0°-180°	3636.0	100.0

Coefficient of Utilization



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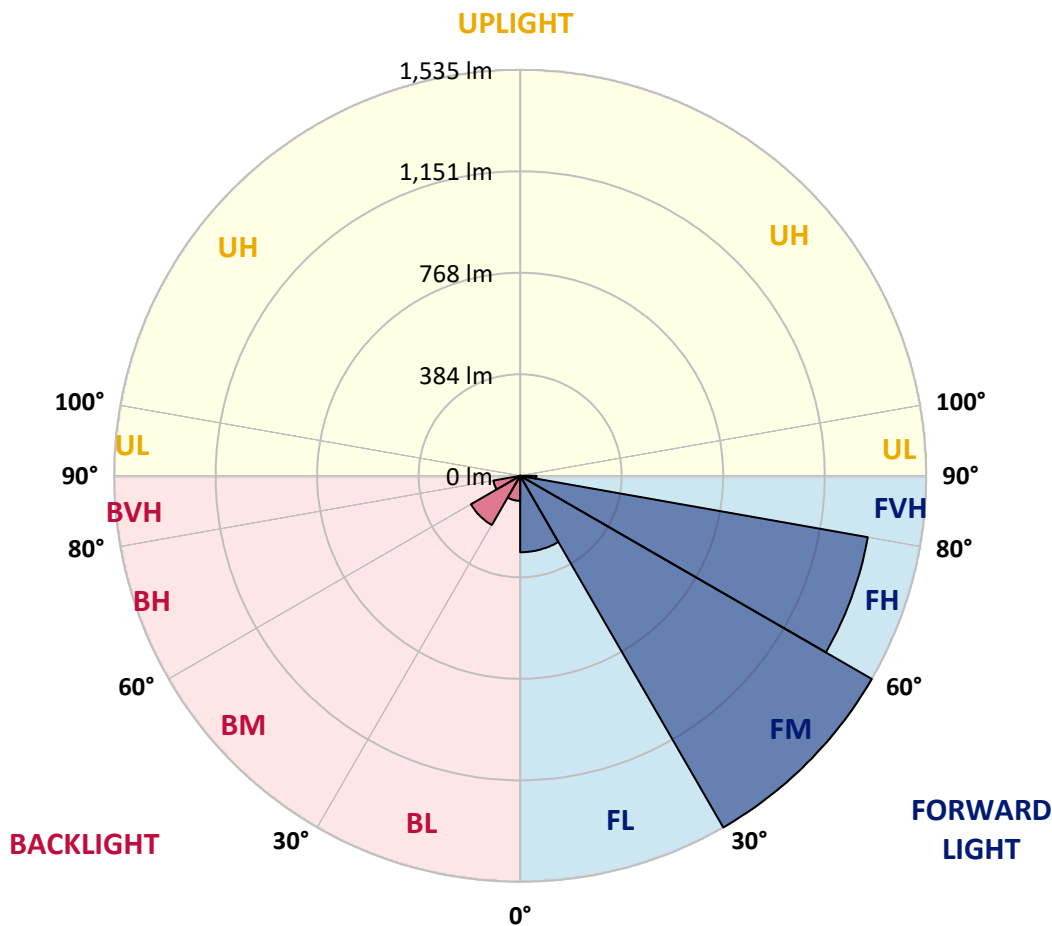
CATALOG NUMBER: MSA-SA1C-830-U-SLL-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	288.8	7.9			
FM (30°-60°)	1535.1	42.2			
FH (60°-80°)	1334.6	36.7			G1/1800
FVH (80°-90°)	61.7	1.7			G1/100
BL (0°-30°)	94.6	2.6	B0/110		
BM (30°-60°)	214.8	5.9	B0/220		
BH (60°-80°)	102.8	2.8	B0/110		G0/110
BVH (80°-90°)	3.6	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0
2.5°	564.8	567.5	554.9	553.2	523.8	560.5	561.5	565.9	538.9	486.7	559.6
5°	675.9	683.3	673.6	716.9	729.3	756.1	707.0	750.9	732.2	737.4	748.0
7.5°	689.1	696.8	717.3	789.8	856.8	840.0	834.6	851.2	849.7	811.4	830.4
10°	661.6	668.0	702.2	834.2	863.4	938.8	957.3	919.1	903.6	819.7	783.0
12.5°	631.5	642.3	685.8	844.1	931.8	1008.0	1068.7	1014.4	962.8	873.5	840.0
15°	689.1	695.1	763.5	864.8	941.5	994.1	1043.9	1025.8	1018.0	953.7	840.0
17.5°	802.1	816.1	865.7	915.6	976.1	1007.8	996.0	990.4	970.3	1071.2	953.5
20°	882.5	908.8	973.6	995.2	947.1	976.7	969.5	964.5	948.8	1136.5	1084.1
22.5°	1056.5	1080.7	1082.0	1089.6	977.8	930.5	918.5	920.0	991.4	1156.0	1246.5
25°	1175.0	1183.3	1248.8	1194.1	1061.5	944.6	898.8	919.3	1022.3	1296.0	1399.2
27.5°	1369.0	1388.6	1429.5	1244.2	1111.6	935.7	862.8	937.4	1103.5	1342.4	1568.9
30°	1527.0	1545.9	1611.6	1312.8	1155.1	979.8	878.3	973.6	1154.1	1437.9	1721.4
32.5°	1655.3	1704.0	1778.6	1418.7	1153.5	1030.6	957.7	961.6	1216.2	1561.6	1872.2
35°	1819.2	1864.6	1917.0	1491.6	1228.9	1047.0	981.1	1079.7	1308.7	1690.9	2075.3
37.5°	2188.6	2257.2	2153.6	1675.4	1316.7	1194.9	1073.5	1152.4	1405.4	1822.9	2354.4
40°	2414.1	2471.9	2371.8	1769.3	1468.8	1269.5	1238.4	1278.8	1500.1	1891.1	2564.7
42.5°	2636.2	2712.4	2545.2	1910.6	1613.2	1480.0	1395.1	1427.6	1637.1	2055.6	2801.3
45°	2797.0	2844.2	2582.7	1984.5	1811.7	1719.9	1663.4	1614.9	1828.1	2161.3	2954.0
47.5°	2877.8	2915.5	2656.7	2007.9	1929.8	1973.8	2097.7	1996.3	1997.2	2237.7	3036.3
50°	2989.6	3016.0	2698.1	2035.9	2058.1	2369.3	2431.9	2216.2	2190.3	2314.4	3049.7
52.5°	3146.9	3159.8	2778.5	2109.7	2250.2	2679.1	2701.6	2614.4	2383.6	2456.9	3079.6
55°	3356.0	3333.4	2922.1	2264.7	2450.5	2905.9	2936.2	2860.1	2626.6	2599.3	3172.0
57.5°	3581.4	3555.5	3134.9	2483.0	2667.9	3079.4	3097.4	3103.4	2788.0	2725.3	3329.0
60°	3743.0	3747.8	3402.8	2733.6	2803.0	3245.3	3209.3	3154.6	2950.9	2909.9	3405.5
62.5°	3799.6	3845.4	3611.4	2996.1	2919.4	3255.7	3199.7	3153.5	3023.8	3100.3	3317.8
65°	3753.4	3833.4	3659.9	3226.7	2989.9	3125.8	3067.6	3037.9	3021.6	3178.0	3123.9
67.5°	3569.8	3669.9	3521.1	3228.8	2733.8	2661.4	2730.2	2824.1	2769.8	3113.5	2852.3
70°	3158.5	3268.1	3198.9	3039.4	2277.3	2093.9	2169.8	2311.7	2273.4	2769.2	2452.6
72.5°	2369.7	2510.6	2524.3	2623.9	1807.8	1575.9	1586.9	1583.0	1649.1	2233.0	1913.9
75°	1522.3	1631.9	1780.0	2117.3	1373.3	1150.6	1045.3	1019.6	1142.9	1744.8	1370.2
77.5°	883.7	896.7	965.1	1597.5	983.6	829.0	757.3	794.0	837.1	1217.7	908.1
80°	422.7	429.3	457.5	822.0	683.3	717.5	662.2	703.4	574.8	699.9	515.3
82.5°	134.1	135.5	140.3	403.8	424.3	475.3	304.6	408.4	355.3	423.1	343.1
85°	22.4	38.1	47.0	116.7	239.5	160.4	66.1	145.7	198.3	266.9	155.8
87.5°	0.0	0.0	0.0	2.1	19.5	9.1	1.5	8.3	30.5	59.5	7.0
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0
2.5°	580.8	595.1	541.2	492.9	505.1	495.4	480.7	455.6	397.6	440.3	437.4
5°	747.4	720.8	647.9	613.9	572.5	509.3	501.6	453.1	431.8	435.3	432.2
7.5°	805.4	757.9	693.5	591.1	494.0	402.8	374.8	343.1	336.7	350.4	359.3
10°	759.8	709.4	653.1	525.9	451.1	385.2	316.2	271.8	247.8	244.9	247.4
12.5°	780.7	726.4	610.4	513.0	434.9	375.2	298.2	231.2	179.0	183.0	172.6
15°	795.2	732.9	600.2	486.1	401.5	321.8	229.0	162.0	119.3	106.9	99.5
17.5°	880.4	791.3	587.4	455.0	354.9	250.5	143.8	93.9	80.0	75.6	72.1
20°	989.8	863.2	587.2	422.3	286.1	156.6	89.7	68.0	64.6	67.1	64.4
22.5°	1117.0	958.9	618.5	381.4	205.3	98.8	69.8	60.3	57.0	59.1	59.3
25°	1245.0	1102.5	644.0	342.7	143.0	75.8	62.2	55.5	51.8	53.7	52.6
27.5°	1476.3	1221.4	638.2	293.2	105.3	66.7	57.8	52.0	46.4	49.3	49.1
30°	1627.5	1431.3	660.8	223.8	83.5	58.4	53.9	47.4	41.4	44.8	44.5
32.5°	1808.4	1521.4	685.2	171.8	69.4	55.3	48.5	42.3	38.7	40.8	40.4
35°	2011.7	1699.6	640.2	143.0	60.3	49.9	42.9	38.1	35.0	36.1	36.1
37.5°	2370.7	1848.6	613.3	116.4	56.2	45.2	40.2	34.4	32.5	32.5	33.6
40°	2574.6	2076.1	532.9	92.2	57.4	41.6	37.5	31.5	29.0	28.8	29.8
42.5°	2839.8	2207.3	482.6	74.6	52.0	40.6	34.4	28.6	25.7	25.5	26.5
45°	2997.1	2280.6	411.7	58.6	46.6	47.2	31.9	26.3	22.0	21.1	23.0
47.5°	3096.4	2377.8	371.5	46.6	40.6	47.0	31.1	22.8	18.4	17.4	19.1
50°	3146.7	2425.9	363.6	40.0	35.2	42.1	35.6	19.1	15.7	14.3	15.7
52.5°	3199.1	2504.0	366.5	36.9	31.1	33.8	33.8	16.4	13.9	12.2	13.3
55°	3305.0	2619.4	360.1	35.0	28.6	25.7	21.8	14.5	12.6	10.8	11.8
57.5°	3435.1	2702.3	360.1	33.4	26.5	22.0	17.4	13.5	11.6	9.3	10.2
60°	3410.5	2615.0	342.3	31.7	24.9	20.5	15.7	12.4	10.8	8.5	9.1
62.5°	3241.2	2377.8	277.2	29.2	23.4	19.5	14.3	11.8	10.2	7.5	8.1
65°	3042.3	2125.8	192.7	26.5	21.8	17.6	12.8	11.2	9.3	6.6	7.0
67.5°	2802.8	1825.6	106.9	23.8	20.1	15.3	11.8	11.0	8.9	6.0	6.4
70°	2387.1	1378.3	57.4	21.8	18.9	14.1	11.2	11.0	8.9	5.8	6.0
72.5°	1792.0	867.9	33.6	19.9	17.2	13.1	10.6	11.2	8.7	5.6	5.6
75°	1219.4	526.9	24.0	17.0	15.3	11.0	10.2	10.8	8.9	5.6	5.2
77.5°	829.0	370.3	19.7	15.3	13.9	9.7	10.4	10.8	8.9	4.6	3.5
80°	517.6	191.0	14.9	12.2	12.0	8.5	10.4	9.3	5.8	1.0	0.0
82.5°	362.0	71.1	8.7	9.3	9.3	6.0	8.1	6.6	3.3	0.0	0.0
85°	151.9	12.2	4.8	6.6	5.8	3.5	6.4	5.0	2.1	0.0	0.0
87.5°	2.7	0.0	1.9	3.9	4.1	2.1	3.3	2.1	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°	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0
2.5°	451.1	431.4	389.9	409.8	407.8	416.9	417.7	396.6	442.2	470.3	474.5
5°	432.6	419.4	417.1	405.7	402.8	419.6	410.5	409.8	431.8	463.9	464.1
7.5°	359.5	349.3	354.1	340.8	306.7	308.7	311.8	324.9	343.7	364.9	372.5
10°	246.8	273.1	253.8	252.2	248.6	237.7	229.0	235.8	260.2	279.7	287.0
12.5°	176.1	180.3	192.1	187.7	193.7	184.4	180.9	202.2	226.1	245.9	260.2
15°	103.0	110.0	117.1	132.0	138.0	136.1	146.9	164.7	184.0	193.1	210.7
17.5°	72.5	73.1	74.6	90.8	101.3	105.5	111.9	125.4	133.2	137.4	144.6
20°	63.4	61.5	59.1	68.2	78.1	83.3	81.4	92.0	98.4	102.6	107.7
22.5°	57.4	54.3	52.8	55.9	63.6	68.2	69.0	75.2	85.0	87.9	89.5
25°	51.8	49.7	48.7	50.3	54.5	58.8	59.7	67.8	76.5	77.7	81.0
27.5°	48.1	44.1	44.5	45.8	47.7	53.0	54.7	59.3	71.9	73.3	74.4
30°	44.1	40.0	41.2	42.5	41.6	48.3	50.8	55.9	68.2	70.4	71.7
32.5°	40.2	37.1	36.9	38.1	39.6	43.1	48.5	54.5	65.7	68.8	71.9
35°	35.8	33.4	33.8	34.0	35.8	40.4	44.3	47.4	55.1	56.8	57.8
37.5°	32.7	30.7	30.3	32.3	34.2	37.7	39.2	40.6	50.8	54.5	54.7
40°	29.0	27.8	27.8	29.2	33.4	32.9	34.8	39.4	49.1	53.0	53.5
42.5°	26.3	24.7	25.1	26.5	29.4	27.4	31.1	37.7	48.5	52.4	52.2
45°	22.2	21.8	22.6	23.8	25.1	23.2	29.0	36.1	46.4	51.6	50.1
47.5°	18.4	18.4	19.5	20.7	20.1	20.7	26.3	33.8	45.2	49.9	48.9
50°	15.1	15.3	16.4	18.4	16.6	18.2	23.6	31.5	43.1	48.3	47.4
52.5°	12.8	13.1	13.7	15.1	14.3	16.6	21.8	29.2	41.0	45.4	45.0
55°	11.2	11.6	11.6	12.4	12.8	15.5	19.7	26.9	37.9	42.7	41.9
57.5°	9.9	10.4	10.2	10.8	11.2	13.7	17.6	24.4	34.8	38.7	37.5
60°	8.9	9.3	9.1	9.9	9.7	11.8	15.3	21.8	31.5	34.6	33.6
62.5°	7.9	8.3	8.3	8.7	8.9	9.9	13.3	19.3	28.2	30.7	29.8
65°	7.0	7.5	7.7	7.5	7.9	8.5	11.2	17.4	24.4	26.9	25.7
67.5°	6.4	6.8	7.3	6.4	6.8	7.0	9.5	15.5	21.5	23.6	22.6
70°	6.2	6.4	6.4	5.6	5.4	5.6	8.3	13.3	18.9	20.9	19.5
72.5°	5.8	6.0	5.8	4.6	3.9	4.4	7.0	11.2	16.0	17.6	16.4
75°	5.4	5.6	5.4	3.7	2.5	3.1	5.8	9.7	13.7	14.5	13.9
77.5°	4.6	5.0	5.0	2.7	0.8	1.9	4.4	7.9	11.4	11.4	11.6
80°	0.4	1.2	2.1	1.5	0.0	0.2	1.5	4.1	7.3	7.0	7.7
82.5°	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.5	1.9	2.1
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°	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0	438.0
2.5°	464.7	458.3	466.4	491.1	481.1	483.0	476.3	517.2	563.4	564.8
5°	464.5	458.7	470.8	469.7	498.1	529.0	558.8	607.1	675.5	675.9
7.5°	369.0	403.4	412.3	409.6	446.1	488.6	534.6	627.0	683.1	689.1
10°	332.8	347.7	365.9	372.5	387.7	428.1	480.1	584.7	647.7	661.6
12.5°	288.4	336.1	360.3	407.3	416.1	421.9	503.9	594.9	633.2	631.5
15°	238.9	280.3	318.7	376.1	399.7	460.6	525.2	644.4	667.2	689.1
17.5°	169.1	200.4	259.2	319.5	391.6	457.9	584.1	732.9	776.0	802.1
20°	113.1	128.3	181.5	261.3	352.6	418.5	608.1	812.8	859.9	882.5
22.5°	91.8	99.0	126.6	191.5	301.3	416.7	617.9	900.1	1026.5	1056.5
25°	80.8	85.8	100.5	141.7	250.1	408.4	671.7	998.3	1150.8	1175.0
27.5°	70.7	78.1	89.1	116.9	214.4	402.6	699.1	1163.2	1345.1	1369.0
30°	67.5	76.7	87.2	106.5	189.6	380.2	742.6	1312.0	1484.6	1527.0
32.5°	72.9	76.0	81.2	97.6	170.3	356.6	819.0	1489.7	1600.0	1655.3
35°	57.8	63.4	72.5	89.5	162.2	355.3	862.4	1604.1	1785.0	1819.2
37.5°	56.6	61.7	73.6	87.2	172.0	364.9	926.6	1838.5	2118.6	2188.6
40°	54.9	61.5	72.7	86.2	172.0	374.2	967.6	2026.0	2343.0	2414.1
42.5°	54.3	62.8	72.5	90.5	166.6	379.4	1029.6	2213.1	2580.0	2636.2
45°	53.9	64.0	73.1	95.7	165.3	396.4	1064.6	2304.0	2732.5	2797.0
47.5°	52.8	64.0	81.6	92.6	158.5	394.7	1110.0	2438.9	2823.5	2877.8
50°	52.0	64.4	92.4	86.8	159.5	384.6	1171.5	2565.5	2950.9	2989.6
52.5°	50.1	65.9	90.8	78.7	156.4	383.5	1263.3	2745.6	3118.5	3146.9
55°	46.0	64.0	82.1	68.8	145.5	371.7	1384.9	2979.7	3351.0	3356.0
57.5°	42.3	59.5	68.6	63.2	121.8	373.2	1489.7	3195.2	3558.2	3581.4
60°	38.5	61.7	53.2	58.8	100.9	346.6	1540.5	3277.6	3709.0	3743.0
62.5°	35.0	57.0	45.4	54.1	89.9	322.0	1505.3	3211.3	3728.3	3799.6
65°	31.1	39.6	38.3	48.5	91.0	287.4	1387.6	3017.2	3655.2	3753.4
67.5°	26.7	31.1	33.8	41.9	97.4	257.8	1185.8	2705.6	3458.5	3569.8
70°	23.4	28.0	29.4	36.7	101.3	238.3	935.7	2273.2	3055.7	3158.5
72.5°	19.5	25.9	26.3	32.1	97.6	219.0	666.8	1631.9	2320.4	2369.7
75°	16.8	21.5	23.8	26.9	82.1	163.5	367.4	1010.1	1467.2	1522.3
77.5°	15.1	16.4	18.0	18.6	34.8	85.2	126.4	622.8	821.5	883.7
80°	11.6	12.8	12.4	12.8	19.1	29.4	48.1	291.9	388.1	422.7
82.5°	3.7	6.2	6.8	5.8	12.4	14.5	13.9	100.9	126.2	134.1
85°	0.8	2.3	1.0	0.0	4.1	7.5	1.0	15.3	30.3	22.4
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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