

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: P367643

Luminaire Tested: **MSA-SA2D-830-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367643
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-830-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: 7818 lumens
Efficiency: N/A
Efficacy: 60.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

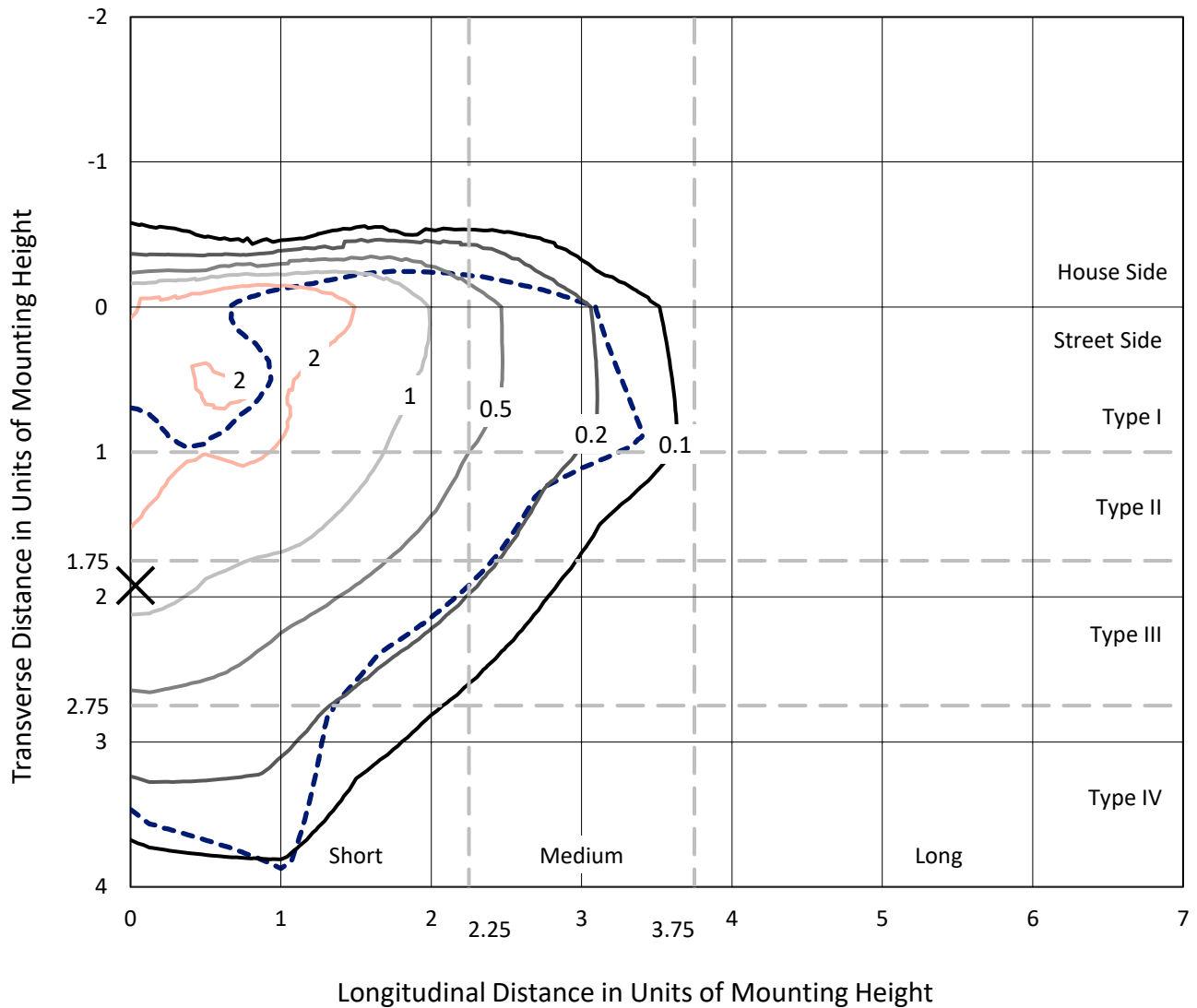
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

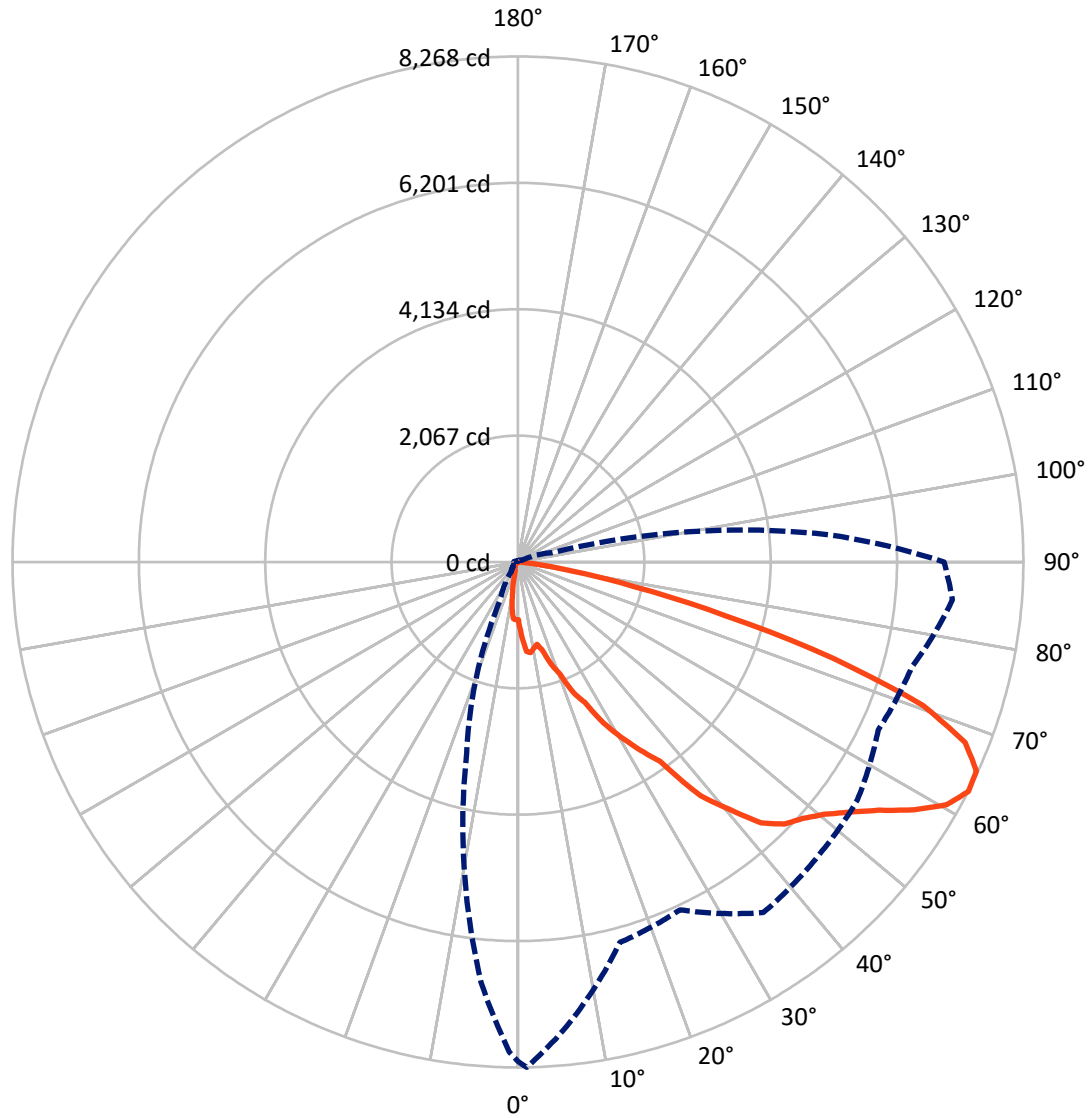
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4 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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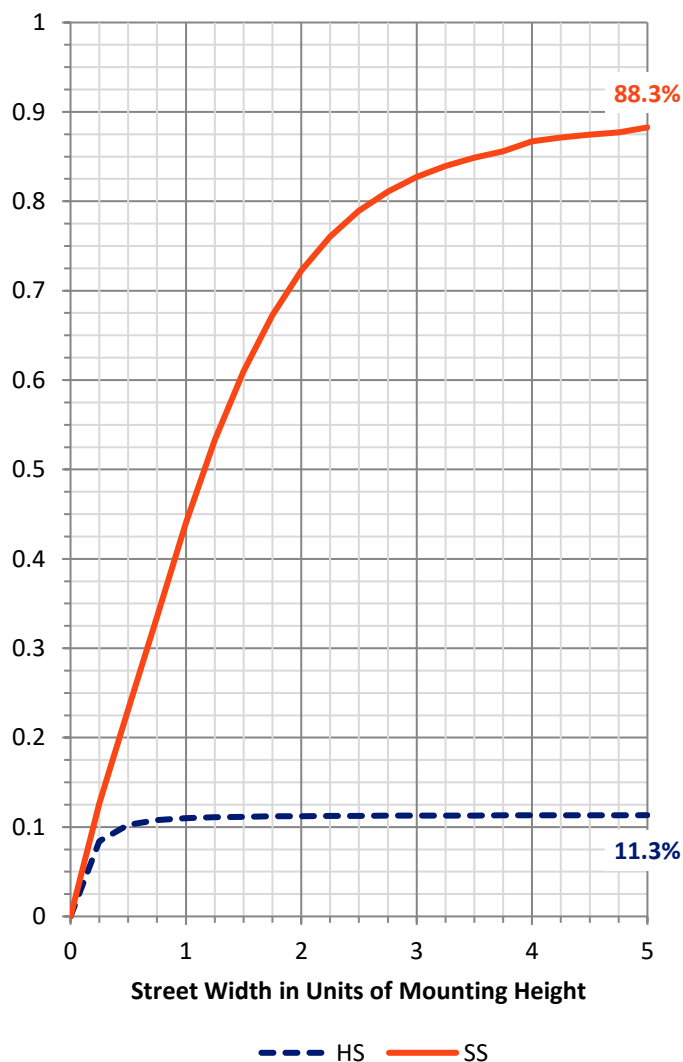
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	894.0	0.0	894.0
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	6924.0	0.0	6924.0
	% Fixture	88.6	0.0	88.6
Total	Lumens	7818.0	0.0	7818.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.2	1.3
10°-20°	274.9	3.5
20°-30°	444.3	5.7
30°-40°	744.2	9.5
40°-50°	1216.9	15.6
50°-60°	1801.4	23.0
60°-70°	2068.1	26.5
70°-80°	1022.7	13.1
80°-90°	140.4	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°	7818.0	100.0
0°-180°	7818.0	100.0

Coefficient of Utilization



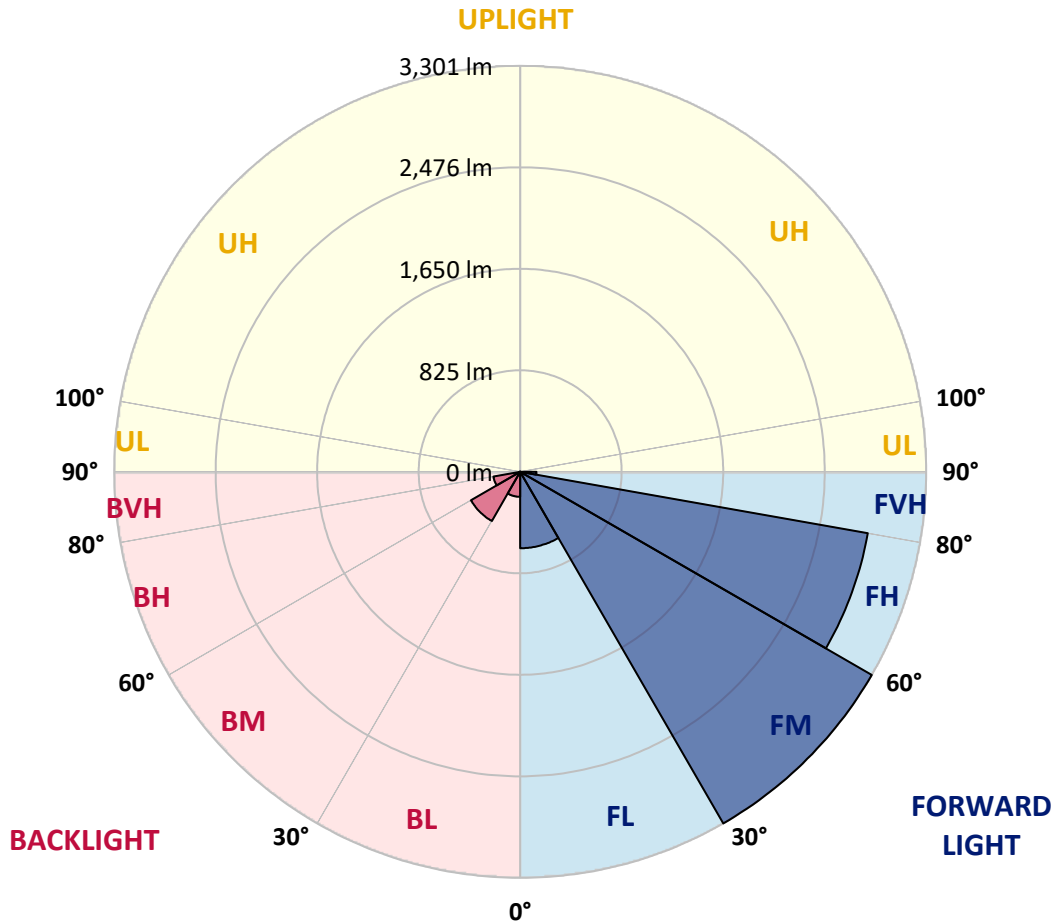
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	621.0	7.9			
FM (30°-60°)	3300.7	42.2			
FH (60°-80°)	2869.7	36.7			G2/5000
FVH (80°-90°)	132.6	1.7			G2/225
BL (0°-30°)	203.4	2.6	B1/500		
BM (30°-60°)	461.8	5.9	B1/1000		
BH (60°-80°)	221.1	2.8	B1/500		G1/500
BVH (80°-90°)	7.8	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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	1214.5	1220.2	1193.1	1189.5	1126.2	1205.1	1207.3	1216.7	1158.8	1046.5	1203.3
5°	1453.2	1469.3	1448.3	1541.5	1568.2	1625.7	1520.1	1614.5	1574.4	1585.6	1608.3
7.5°	1481.8	1498.2	1542.3	1698.3	1842.2	1806.1	1794.5	1830.1	1827.0	1744.6	1785.6
10°	1422.5	1436.3	1509.8	1793.6	1856.4	2018.6	2058.2	1976.3	1942.9	1762.4	1683.6
12.5°	1357.9	1381.1	1474.6	1815.0	2003.4	2167.4	2297.9	2181.2	2070.3	1878.3	1806.1
15°	1481.8	1494.7	1641.7	1859.5	2024.4	2137.5	2244.5	2205.7	2188.8	2050.7	1806.1
17.5°	1724.6	1754.9	1861.3	1968.7	2098.8	2166.9	2141.6	2129.5	2086.3	2303.3	2050.2
20°	1897.4	1954.0	2093.4	2139.8	2036.4	2100.1	2084.5	2073.8	2040.0	2443.6	2330.9
22.5°	2271.6	2323.8	2326.4	2342.9	2102.4	2000.8	1974.9	1978.1	2131.8	2485.5	2680.2
25°	2526.5	2544.3	2685.1	2567.5	2282.3	2031.1	1932.6	1976.7	2198.1	2786.7	3008.5
27.5°	2943.5	2985.8	3073.6	2675.3	2390.1	2011.9	1855.1	2015.5	2372.8	2886.4	3373.4
30°	3283.4	3323.9	3465.2	2822.7	2483.7	2106.8	1888.5	2093.4	2481.5	3091.8	3701.3
32.5°	3559.2	3663.9	3824.2	3050.4	2480.1	2216.0	2059.1	2067.6	2615.1	3357.8	4025.6
35°	3911.6	4009.1	4121.8	3207.2	2642.3	2251.2	2109.5	2321.5	2813.8	3635.8	4462.2
37.5°	4705.9	4853.4	4630.6	3602.4	2831.2	2569.2	2308.2	2477.9	3021.9	3919.6	5062.3
40°	5190.6	5314.9	5099.7	3804.2	3158.2	2729.6	2662.8	2749.7	3225.5	4066.1	5514.5
42.5°	5668.2	5832.1	5472.6	4108.0	3468.7	3182.3	2999.6	3069.5	3520.0	4419.9	6023.3
45°	6013.9	6115.5	5553.3	4267.1	3895.5	3698.2	3576.5	3472.3	3930.7	4647.1	6351.6
47.5°	6187.7	6268.7	5712.3	4317.4	4149.5	4243.9	4510.3	4292.5	4294.2	4811.5	6528.5
50°	6428.2	6484.8	5801.4	4377.6	4425.2	5094.4	5228.9	4765.2	4709.5	4976.3	6557.4
52.5°	6766.4	6794.0	5974.3	4536.2	4838.2	5760.4	5809.0	5621.4	5125.1	5282.8	6621.6
55°	7215.9	7167.3	6283.0	4869.4	5269.0	6248.2	6313.3	6149.8	5647.7	5588.9	6820.3
57.5°	7700.6	7644.9	6740.5	5339.0	5736.4	6621.1	6659.9	6672.8	5994.8	5859.8	7158.0
60°	8048.1	8058.3	7316.6	5877.6	6026.8	6978.0	6900.5	6782.9	6344.9	6256.7	7322.4
62.5°	8169.7	8268.2	7765.2	6442.0	6277.2	7000.3	6880.0	6780.6	6501.7	6666.1	7133.9
65°	8070.4	8242.3	7869.4	6937.9	6428.7	6720.9	6595.7	6532.0	6496.8	6833.2	6716.9
67.5°	7675.7	7890.8	7571.0	6942.3	5878.0	5722.5	5870.5	6072.3	5955.5	6694.6	6132.9
70°	6791.3	7027.0	6878.2	6535.2	4896.6	4502.3	4665.4	4970.5	4888.1	5954.2	5273.5
72.5°	5095.3	5398.2	5427.6	5641.9	3887.1	3388.5	3412.1	3403.7	3545.8	4801.2	4115.2
75°	3273.1	3508.8	3827.4	4552.6	2952.8	2473.9	2247.6	2192.3	2457.4	3751.6	2946.1
77.5°	1900.1	1928.2	2075.2	3434.9	2114.8	1782.5	1628.3	1707.2	1799.9	2618.2	1952.7
80°	908.8	923.1	983.7	1767.3	1469.3	1542.8	1423.8	1512.5	1235.8	1504.9	1108.0
82.5°	288.2	291.4	301.6	868.3	912.4	1022.0	654.9	878.1	764.0	909.7	737.8
85°	48.1	82.0	101.1	250.8	515.0	344.8	142.1	313.2	426.4	573.8	335.0
87.5°	0.0	0.0	0.0	4.5	41.9	19.6	3.1	17.8	65.5	127.9	15.1
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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	1248.8	1279.5	1163.7	1059.9	1086.1	1065.2	1033.6	979.7	854.9	946.7	940.5
5°	1606.9	1549.9	1393.1	1320.0	1230.9	1095.1	1078.6	974.3	928.4	936.0	929.3
7.5°	1731.7	1629.7	1491.1	1271.0	1062.1	866.1	805.9	737.8	724.0	753.4	772.5
10°	1633.7	1525.4	1404.2	1130.7	969.9	828.2	679.8	584.5	532.8	526.6	531.9
12.5°	1678.7	1562.0	1312.5	1103.1	935.1	806.8	641.1	497.2	384.9	393.4	371.1
15°	1709.9	1575.8	1290.6	1045.2	863.4	691.9	492.3	348.4	256.6	229.9	213.8
17.5°	1893.0	1701.4	1263.0	978.3	763.2	538.6	309.2	201.8	172.0	162.6	155.0
20°	2128.2	1856.0	1262.6	907.9	615.2	336.8	192.9	146.1	139.0	144.3	138.6
22.5°	2401.7	2061.8	1329.8	820.2	441.5	212.5	150.1	129.6	122.5	127.0	127.4
25°	2677.1	2370.5	1384.6	736.9	307.4	163.1	133.7	119.4	111.4	115.4	113.2
27.5°	3174.2	2626.3	1372.2	630.4	226.3	143.5	124.3	111.8	99.8	106.0	105.6
30°	3499.5	3077.6	1420.7	481.1	179.5	125.6	115.8	102.0	89.1	96.2	95.8
32.5°	3888.4	3271.4	1473.3	369.3	149.2	119.0	104.2	90.9	83.3	87.8	86.9
35°	4325.4	3654.5	1376.6	307.4	129.6	107.4	92.2	82.0	75.3	77.5	77.5
37.5°	5097.5	3974.8	1318.7	250.4	120.7	97.1	86.4	74.0	69.9	69.9	72.2
40°	5535.9	4464.0	1145.8	198.3	123.4	89.5	80.6	67.7	62.4	61.9	64.2
42.5°	6106.1	4746.0	1037.6	160.4	111.8	87.3	74.0	61.5	55.2	54.8	57.0
45°	6444.3	4903.7	885.2	126.1	100.2	101.6	68.6	56.6	47.2	45.4	49.5
47.5°	6657.7	5112.6	798.8	100.2	87.3	101.1	66.8	49.0	39.7	37.4	41.0
50°	6765.9	5216.0	781.9	86.0	75.7	90.4	76.6	41.0	33.9	30.7	33.9
52.5°	6878.6	5384.0	788.1	79.3	66.8	72.6	72.6	35.2	29.8	26.3	28.5
55°	7106.3	5632.1	774.3	75.3	61.5	55.2	46.8	31.2	27.2	23.2	25.4
57.5°	7386.1	5810.3	774.3	71.7	57.0	47.2	37.4	29.0	24.9	20.0	21.8
60°	7333.1	5622.8	736.0	68.2	53.5	44.1	33.9	26.7	23.2	18.3	19.6
62.5°	6969.1	5112.6	596.1	62.8	50.3	41.9	30.7	25.4	21.8	16.0	17.4
65°	6541.4	4570.9	414.3	57.0	46.8	37.9	27.6	24.1	20.0	14.3	15.1
67.5°	6026.4	3925.4	229.9	51.2	43.2	33.0	25.4	23.6	19.2	12.9	13.8
70°	5132.7	2963.5	123.4	46.8	40.5	30.3	24.1	23.6	19.2	12.5	12.9
72.5°	3853.2	1866.2	72.2	42.8	37.0	28.1	22.7	24.1	18.7	12.0	12.0
75°	2621.8	1132.9	51.7	36.5	33.0	23.6	21.8	23.2	19.2	12.0	11.1
77.5°	1782.5	796.1	42.3	33.0	29.8	20.9	22.3	23.2	19.2	9.8	7.6
80°	1112.9	410.8	32.1	26.3	25.8	18.3	22.3	20.0	12.5	2.2	0.0
82.5°	778.3	152.8	18.7	20.0	20.0	12.9	17.4	14.3	7.1	0.0	0.0
85°	326.6	26.3	10.2	14.3	12.5	7.6	13.8	10.7	4.5	0.0	0.0
87.5°	5.8	0.0	4.0	8.5	8.9	4.5	7.1	4.5	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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	969.9	927.5	838.4	881.2	876.8	896.4	898.1	852.7	950.7	1011.3	1020.2
5°	930.2	901.7	896.8	872.3	866.1	902.2	882.6	881.2	928.4	997.5	997.9
7.5°	773.0	751.1	761.4	732.9	659.4	663.8	670.5	698.6	739.1	784.5	801.0
10°	530.6	587.2	545.7	542.2	534.6	511.0	492.3	507.0	559.6	601.4	617.0
12.5°	378.7	387.6	413.0	403.6	416.5	396.5	388.9	434.8	486.0	528.8	559.6
15°	221.4	236.6	251.7	283.8	296.7	292.7	315.9	354.2	395.6	415.2	453.1
17.5°	155.9	157.3	160.4	195.1	217.9	226.8	240.6	269.5	286.5	295.4	311.0
20°	136.3	132.3	127.0	146.6	168.0	179.1	175.1	197.8	211.6	220.5	231.7
22.5°	123.4	116.7	113.6	120.3	136.8	146.6	148.4	161.7	182.7	188.9	192.5
25°	111.4	106.9	104.7	108.3	117.2	126.5	128.3	145.7	164.4	167.1	174.2
27.5°	103.4	94.9	95.8	98.5	102.5	114.0	117.6	127.4	154.6	157.7	159.9
30°	94.9	86.0	88.7	91.3	89.5	103.8	109.1	120.3	146.6	151.5	154.1
32.5°	86.4	79.7	79.3	82.0	85.1	92.7	104.2	117.2	141.2	147.9	154.6
35°	77.1	71.7	72.6	73.1	77.1	86.9	95.3	102.0	118.5	122.1	124.3
37.5°	70.4	65.9	65.0	69.5	73.5	81.1	84.2	87.3	109.1	117.2	117.6
40°	62.4	59.7	59.7	62.8	71.7	70.8	74.8	84.6	105.6	114.0	114.9
42.5°	56.6	53.0	53.9	57.0	63.3	58.8	66.8	81.1	104.2	112.7	112.3
45°	47.7	46.8	48.6	51.2	53.9	49.9	62.4	77.5	99.8	110.9	107.8
47.5°	39.7	39.7	41.9	44.6	43.2	44.6	56.6	72.6	97.1	107.4	105.1
50°	32.5	33.0	35.2	39.7	35.6	39.2	50.8	67.7	92.7	103.8	102.0
52.5°	27.6	28.1	29.4	32.5	30.7	35.6	46.8	62.8	88.2	97.6	96.7
55°	24.1	24.9	24.9	26.7	27.6	33.4	42.3	57.9	81.5	91.8	90.0
57.5°	21.4	22.3	21.8	23.2	24.1	29.4	37.9	52.6	74.8	83.3	80.6
60°	19.2	20.0	19.6	21.4	20.9	25.4	33.0	46.8	67.7	74.4	72.2
62.5°	16.9	17.8	17.8	18.7	19.2	21.4	28.5	41.4	60.6	65.9	64.2
65°	15.1	16.0	16.5	16.0	16.9	18.3	24.1	37.4	52.6	57.9	55.2
67.5°	13.8	14.7	15.6	13.8	14.7	15.1	20.5	33.4	46.3	50.8	48.6
70°	13.4	13.8	13.8	12.0	11.6	12.0	17.8	28.5	40.5	45.0	41.9
72.5°	12.5	12.9	12.5	9.8	8.5	9.4	15.1	24.1	34.3	37.9	35.2
75°	11.6	12.0	11.6	8.0	5.3	6.7	12.5	20.9	29.4	31.2	29.8
77.5°	9.8	10.7	10.7	5.8	1.8	4.0	9.4	16.9	24.5	24.5	24.9
80°	0.9	2.7	4.5	3.1	0.0	0.4	3.1	8.9	15.6	15.1	16.5
82.5°	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	5.3	4.0	4.5
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°	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8	941.8
2.5°	999.3	985.5	1002.8	1055.9	1034.5	1038.5	1024.2	1112.0	1211.3	1214.5
5°	998.8	986.4	1012.2	1010.0	1071.0	1137.4	1201.5	1305.3	1452.4	1453.2
7.5°	793.4	867.4	886.6	880.8	959.2	1050.5	1149.4	1348.1	1468.8	1481.8
10°	715.5	747.6	786.8	801.0	833.5	920.4	1032.2	1257.2	1392.7	1422.5
12.5°	620.1	722.6	774.7	875.9	894.6	907.1	1083.5	1279.1	1361.5	1357.9
15°	513.7	602.8	685.2	808.6	859.4	990.4	1129.4	1385.5	1434.5	1481.8
17.5°	363.5	430.8	557.3	687.0	842.0	984.6	1255.9	1575.8	1668.4	1724.6
20°	243.2	275.8	390.3	561.8	758.3	899.9	1307.6	1747.7	1848.9	1897.4
22.5°	197.4	213.0	272.2	411.6	647.8	895.9	1328.5	1935.3	2207.0	2271.6
25°	173.7	184.4	216.1	304.7	537.7	878.1	1444.3	2146.5	2474.4	2526.5
27.5°	151.9	168.0	191.6	251.3	461.1	865.6	1503.1	2501.1	2892.2	2943.5
30°	145.2	164.8	187.6	229.0	407.6	817.5	1596.7	2821.0	3192.1	3283.4
32.5°	156.8	163.5	174.6	209.8	366.2	766.7	1761.1	3203.2	3440.2	3559.2
35°	124.3	136.3	155.9	192.5	348.8	764.0	1854.2	3449.1	3838.0	3911.6
37.5°	121.6	132.8	158.2	187.6	369.8	784.5	1992.3	3953.0	4555.3	4705.9
40°	118.1	132.3	156.4	185.3	369.8	804.6	2080.5	4356.2	5037.8	5190.6
42.5°	116.7	135.0	155.9	194.7	358.2	815.7	2213.7	4758.5	5547.5	5668.2
45°	115.8	137.7	157.3	205.8	355.5	852.3	2289.0	4954.0	5875.4	6013.9
47.5°	113.6	137.7	175.5	199.1	340.8	848.7	2386.6	5244.1	6070.9	6187.7
50°	111.8	138.6	198.7	186.7	343.0	826.9	2518.9	5516.3	6344.9	6428.2
52.5°	107.8	141.7	195.1	169.3	336.4	824.6	2716.3	5903.4	6705.3	6766.4
55°	98.9	137.7	176.4	147.9	312.7	799.2	2977.8	6406.8	7205.2	7215.9
57.5°	90.9	127.9	147.5	135.9	262.0	802.4	3203.2	6870.2	7650.7	7700.6
60°	82.9	132.8	114.5	126.5	217.0	745.3	3312.4	7047.5	7975.0	8048.1
62.5°	75.3	122.5	97.6	116.3	193.4	692.3	3236.6	6904.9	8016.5	8169.7
65°	66.8	85.1	82.4	104.2	195.6	617.9	2983.6	6487.5	7859.2	8070.4
67.5°	57.5	66.8	72.6	90.0	209.4	554.2	2549.6	5817.4	7436.4	7675.7
70°	50.3	60.1	63.3	78.9	217.9	512.3	2011.9	4887.7	6570.3	6791.3
72.5°	41.9	55.7	56.6	69.1	209.8	470.9	1433.6	3508.8	4989.2	5095.3
75°	36.1	46.3	51.2	57.9	176.4	351.5	789.9	2171.9	3154.6	3273.1
77.5°	32.5	35.2	38.8	40.1	74.8	183.1	271.8	1339.2	1766.4	1900.1
80°	24.9	27.6	26.7	27.6	41.0	63.3	103.4	627.7	834.4	908.8
82.5°	8.0	13.4	14.7	12.5	26.7	31.2	29.8	217.0	271.3	288.2
85°	1.8	4.9	2.2	0.0	8.9	16.0	2.2	33.0	65.0	48.1
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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