

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: P367533

Luminaire Tested: **MSA-SA2D-727-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367533
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-727-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: 8228 lumens
Efficiency: N/A
Efficacy: 63.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

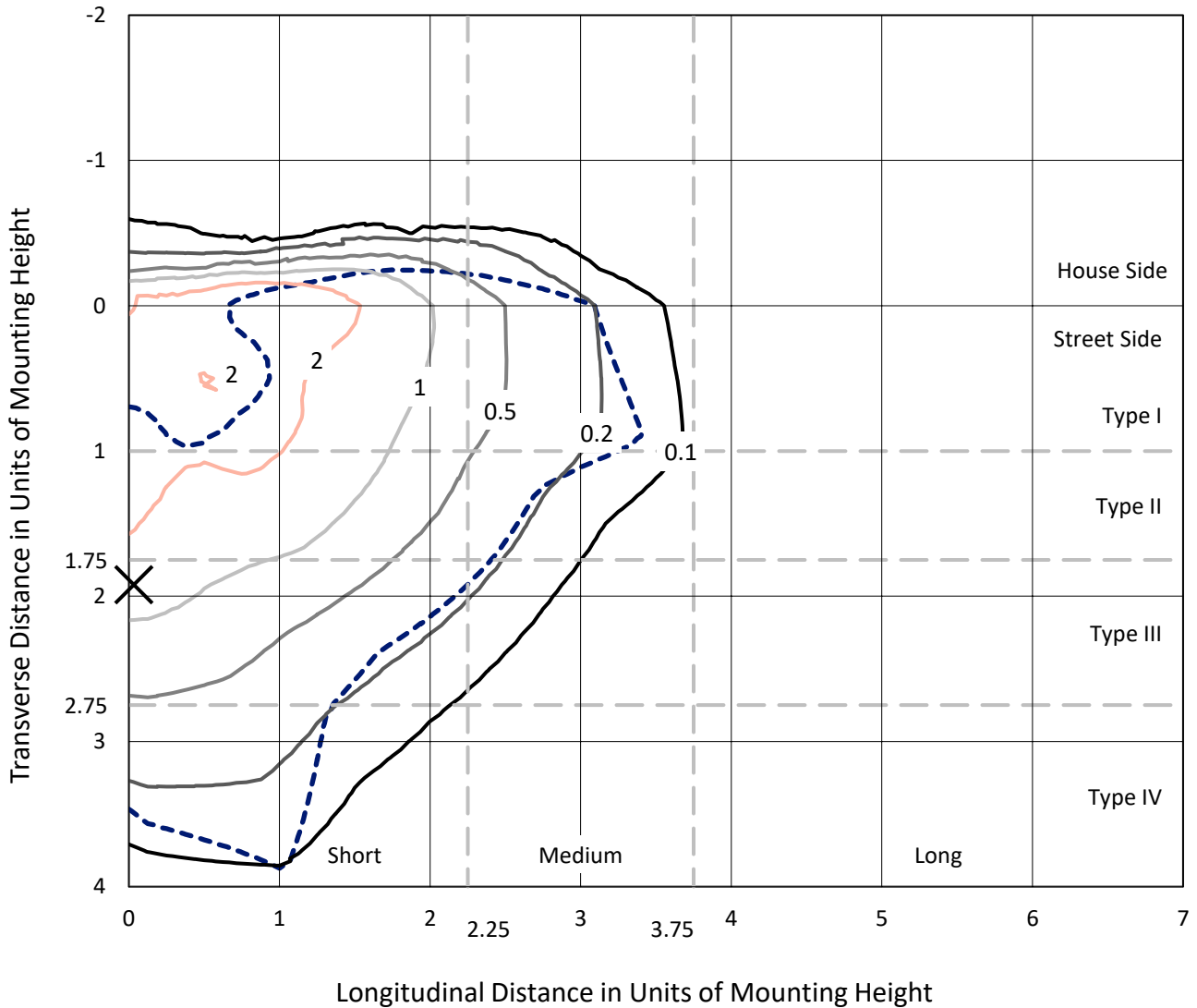
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

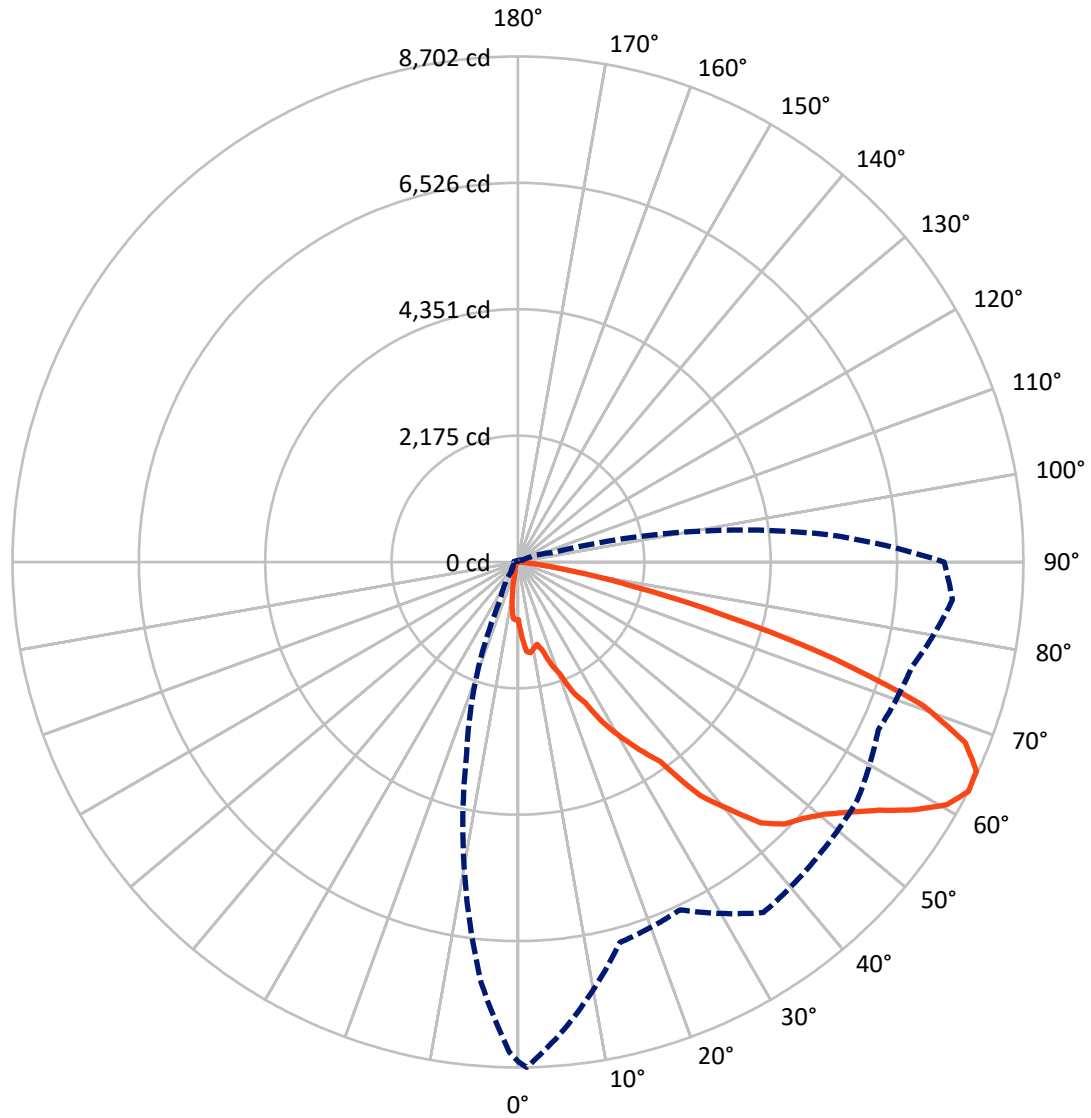
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.2 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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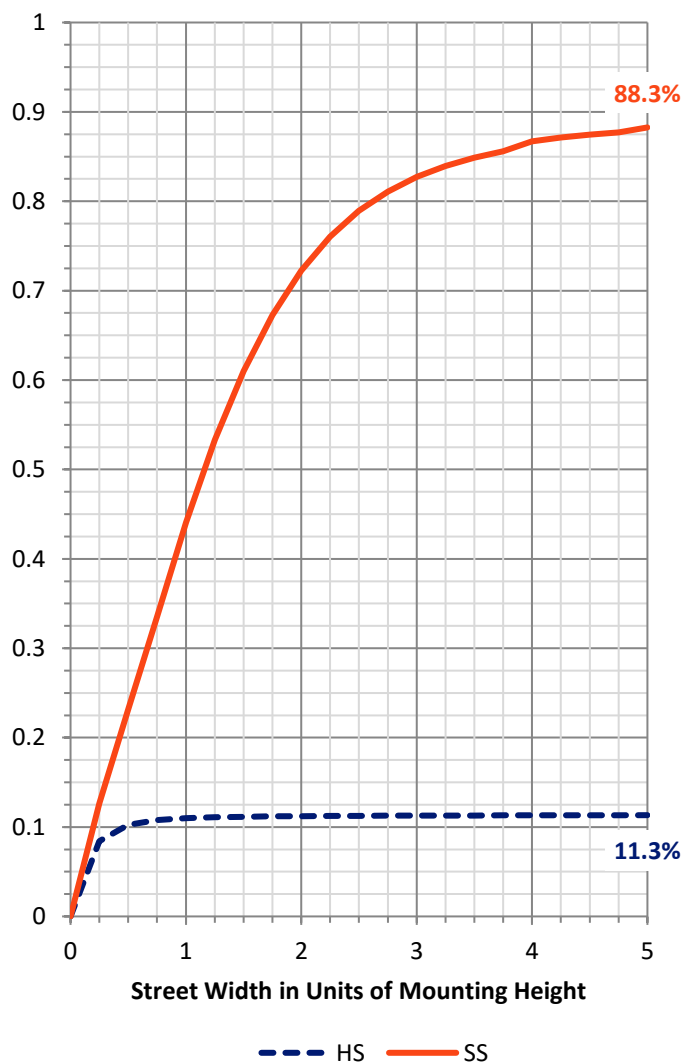
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	940.9	0.0	940.9
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	7287.1	0.0	7287.1
	% Fixture	88.6	0.0	88.6
Total	Lumens	8228.0	0.0	8228.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.8	1.3
10°-20°	289.3	3.5
20°-30°	467.6	5.7
30°-40°	783.3	9.5
40°-50°	1280.7	15.6
50°-60°	1895.8	23.0
60°-70°	2176.5	26.5
70°-80°	1076.3	13.1
80°-90°	147.8	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°	8228.0	100.0
0°-180°	8228.0	100.0

Coefficient of Utilization



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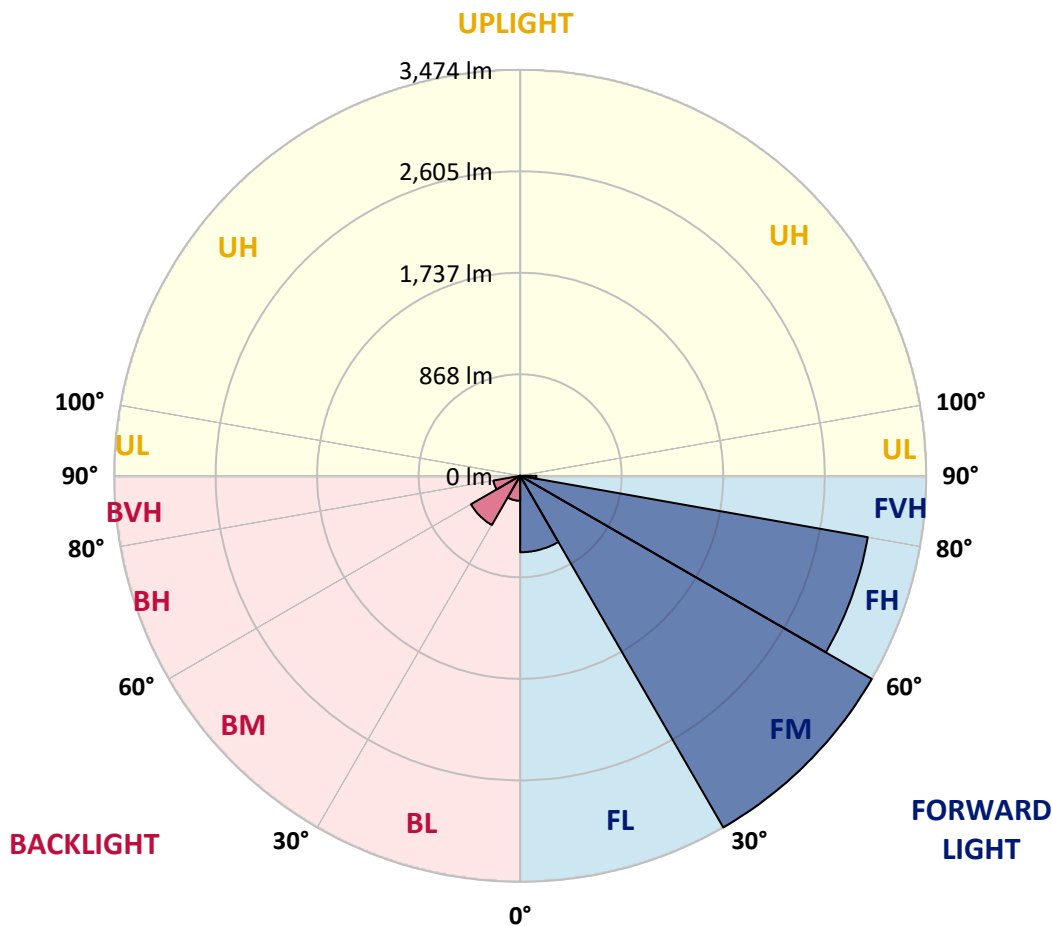
CATALOG NUMBER: MSA-SA2D-727-U-SLL-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	653.5	7.9			
FM (30°-60°)	3473.8	42.2			
FH (60°-80°)	3020.2	36.7			G2/5000
FVH (80°-90°)	139.6	1.7			G2/225
BL (0°-30°)	214.1	2.6	B1/500		
BM (30°-60°)	486.0	5.9	B1/1000		
BH (60°-80°)	232.7	2.8	B1/500		G1/500
BVH (80°-90°)	8.2	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°	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2
2.5°	1278.1	1284.2	1255.6	1251.9	1185.3	1268.3	1270.6	1280.5	1219.5	1101.4	1266.4
5°	1529.5	1546.3	1524.3	1622.3	1650.4	1710.9	1599.8	1699.2	1657.0	1668.7	1692.6
7.5°	1559.5	1576.8	1623.2	1787.3	1938.8	1900.8	1888.6	1926.1	1922.8	1836.1	1879.2
10°	1497.1	1511.6	1589.0	1887.7	1953.8	2124.5	2166.2	2079.9	2044.7	1854.9	1771.9
12.5°	1429.1	1453.5	1552.0	1910.2	2108.5	2281.1	2418.4	2295.6	2178.8	1976.8	1900.8
15°	1559.5	1573.1	1727.8	1957.1	2130.6	2249.6	2362.2	2321.4	2303.6	2158.2	1900.8
17.5°	1815.0	1846.9	1958.9	2071.9	2208.9	2280.6	2253.9	2241.2	2195.7	2424.1	2157.7
20°	1996.9	2056.5	2203.2	2252.0	2143.2	2210.3	2193.9	2182.6	2147.0	2571.8	2453.1
22.5°	2390.8	2445.6	2448.4	2465.8	2212.6	2105.7	2078.5	2081.8	2243.6	2615.8	2820.7
25°	2659.0	2677.7	2825.9	2702.1	2402.0	2137.6	2034.0	2080.4	2313.4	2932.8	3166.3
27.5°	3097.8	3142.4	3234.7	2815.6	2515.5	2117.4	1952.4	2121.2	2497.2	3037.8	3550.3
30°	3455.6	3498.3	3646.9	2970.8	2614.0	2217.3	1987.5	2203.2	2611.6	3254.0	3895.4
32.5°	3745.8	3856.0	4024.8	3210.4	2610.2	2332.2	2167.1	2176.0	2752.3	3533.9	4236.7
35°	4116.7	4219.4	4338.0	3375.4	2780.9	2369.2	2220.1	2443.3	2961.4	3826.5	4696.2
37.5°	4952.7	5107.9	4873.5	3791.3	2979.7	2704.0	2429.2	2607.9	3180.4	4125.1	5327.8
40°	5462.8	5593.6	5367.2	4003.7	3323.8	2872.8	2802.4	2893.9	3394.6	4279.4	5803.7
42.5°	5965.5	6138.0	5759.6	4323.5	3650.6	3349.1	3156.9	3230.5	3704.6	4651.7	6339.1
45°	6329.3	6436.2	5844.5	4490.9	4099.8	3892.1	3764.1	3654.4	4136.9	4890.8	6684.7
47.5°	6512.2	6597.5	6011.9	4543.8	4367.1	4466.5	4746.9	4517.6	4519.5	5063.8	6870.8
50°	6765.3	6824.9	6105.6	4607.1	4657.3	5361.5	5503.1	5015.1	4956.4	5237.3	6901.3
52.5°	7121.2	7150.3	6287.6	4774.1	5091.9	6062.5	6113.6	5916.2	5393.9	5559.9	6968.8
55°	7594.3	7543.2	6612.5	5124.8	5545.3	6575.9	6644.4	6472.3	5943.9	5882.0	7178.0
57.5°	8104.4	8045.8	7094.0	5619.0	6037.2	6968.4	7009.2	7022.8	6309.1	6167.1	7533.4
60°	8470.2	8480.9	7700.3	6185.8	6342.9	7343.9	7262.4	7138.6	6677.7	6584.8	7706.4
62.5°	8598.2	8701.8	8172.4	6779.9	6606.4	7367.4	7240.8	7136.2	6842.7	7015.7	7508.0
65°	8493.6	8674.6	8282.1	7301.7	6765.8	7073.4	6941.6	6874.6	6837.6	7191.6	7069.2
67.5°	8078.2	8304.7	7968.0	7306.4	6186.3	6022.7	6178.3	6390.7	6267.9	7045.7	6454.5
70°	7147.5	7395.5	7238.9	6877.9	5153.4	4738.4	4910.0	5231.2	5144.5	6266.5	5550.0
72.5°	5362.5	5681.3	5712.3	5937.8	4090.9	3566.2	3591.1	3582.2	3731.7	5053.0	4331.0
75°	3444.8	3692.8	4028.1	4791.4	3107.7	2603.6	2365.5	2307.3	2586.3	3948.4	3100.6
77.5°	1999.7	2029.3	2184.0	3615.0	2225.7	1876.0	1713.7	1796.7	1894.2	2755.6	2055.1
80°	956.5	971.5	1035.3	1860.0	1546.3	1623.7	1498.5	1591.8	1300.6	1583.8	1166.1
82.5°	303.4	306.6	317.4	913.8	960.2	1075.6	689.2	924.1	804.1	957.4	776.5
85°	50.6	86.3	106.4	264.0	542.0	362.9	149.6	329.6	448.7	603.9	352.6
87.5°	0.0	0.0	0.0	4.7	44.1	20.6	3.3	18.8	68.9	134.6	15.9
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°	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2
2.5°	1314.2	1346.6	1224.7	1115.4	1143.1	1121.1	1087.8	1031.0	899.8	996.4	989.8
5°	1691.2	1631.2	1466.2	1389.3	1295.5	1152.5	1135.1	1025.4	977.1	985.1	978.1
7.5°	1822.5	1715.1	1569.3	1337.7	1117.8	911.5	848.2	776.5	761.9	792.9	813.0
10°	1719.4	1605.4	1477.9	1190.0	1020.7	871.6	715.5	615.2	560.8	554.2	559.8
12.5°	1766.7	1643.9	1381.3	1160.9	984.2	849.1	674.7	523.3	405.1	414.0	390.6
15°	1799.5	1658.4	1358.3	1100.0	908.7	728.2	518.1	366.7	270.1	241.9	225.1
17.5°	1992.2	1790.6	1329.3	1029.6	803.2	566.9	325.4	212.4	181.0	171.1	163.2
20°	2239.8	1953.3	1328.8	955.6	647.5	354.5	203.0	153.8	146.3	151.9	145.8
22.5°	2527.7	2169.9	1399.6	863.2	464.7	223.7	158.0	136.4	128.9	133.6	134.1
25°	2817.4	2494.9	1457.3	775.5	323.5	171.6	140.7	125.7	117.2	121.4	119.1
27.5°	3340.7	2764.0	1444.1	663.5	238.2	151.0	130.8	117.7	105.0	111.6	111.1
30°	3683.0	3239.0	1495.2	506.4	189.0	132.2	121.9	107.4	93.8	101.3	100.8
32.5°	4092.3	3442.9	1550.6	388.7	157.1	125.2	109.7	95.6	87.7	92.4	91.4
35°	4552.3	3846.2	1448.8	323.5	136.4	113.0	97.1	86.3	79.2	81.6	81.6
37.5°	5364.8	4183.3	1387.9	263.5	127.1	102.2	91.0	77.8	73.6	73.6	76.0
40°	5826.2	4698.1	1205.9	208.6	129.9	94.2	84.9	71.3	65.6	65.2	67.5
42.5°	6426.4	4994.9	1092.0	168.8	117.7	91.9	77.8	64.7	58.1	57.7	60.0
45°	6782.2	5160.9	931.6	132.7	105.5	106.9	72.2	59.5	49.7	47.8	52.0
47.5°	7006.8	5380.8	840.7	105.5	91.9	106.4	70.3	51.6	41.7	39.4	43.1
50°	7120.8	5489.5	822.9	90.5	79.7	95.2	80.6	43.1	35.6	32.4	35.6
52.5°	7239.4	5666.3	829.4	83.5	70.3	76.4	76.4	37.0	31.4	27.7	30.0
55°	7479.0	5927.5	814.9	79.2	64.7	58.1	49.2	32.8	28.6	24.4	26.7
57.5°	7773.4	6115.0	814.9	75.5	60.0	49.7	39.4	30.5	26.3	21.1	23.0
60°	7717.6	5917.6	774.6	71.7	56.3	46.4	35.6	28.1	24.4	19.2	20.6
62.5°	7334.6	5380.8	627.4	66.1	53.0	44.1	32.4	26.7	23.0	16.9	18.3
65°	6884.4	4810.6	436.1	60.0	49.2	39.9	29.1	25.3	21.1	15.0	15.9
67.5°	6342.4	4131.2	241.9	53.9	45.5	34.7	26.7	24.9	20.2	13.6	14.5
70°	5401.9	3118.9	129.9	49.2	42.7	31.9	25.3	24.9	20.2	13.1	13.6
72.5°	4055.3	1964.1	76.0	45.0	38.9	29.5	23.9	25.3	19.7	12.7	12.7
75°	2759.3	1192.3	54.4	38.4	34.7	24.9	23.0	24.4	20.2	12.7	11.7
77.5°	1876.0	837.9	44.5	34.7	31.4	22.0	23.4	24.4	20.2	10.3	8.0
80°	1171.2	432.3	33.8	27.7	27.2	19.2	23.4	21.1	13.1	2.3	0.0
82.5°	819.1	160.8	19.7	21.1	21.1	13.6	18.3	15.0	7.5	0.0	0.0
85°	343.7	27.7	10.8	15.0	13.1	8.0	14.5	11.3	4.7	0.0	0.0
87.5°	6.1	0.0	4.2	8.9	9.4	4.7	7.5	4.7	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°	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2
2.5°	1020.7	976.2	882.4	927.4	922.7	943.4	945.2	897.4	1000.6	1064.3	1073.7
5°	979.0	949.0	943.8	918.1	911.5	949.5	928.8	927.4	977.1	1049.8	1050.3
7.5°	813.5	790.5	801.3	771.3	693.9	698.6	705.7	735.2	777.9	825.7	843.0
10°	558.4	618.0	574.4	570.6	562.6	537.8	518.1	533.6	588.9	633.0	649.4
12.5°	398.5	407.9	434.6	424.8	438.4	417.3	409.3	457.6	511.5	556.6	588.9
15°	233.0	249.0	264.9	298.7	312.3	308.0	332.4	372.8	416.4	437.0	476.8
17.5°	164.1	165.5	168.8	205.4	229.3	238.7	253.2	283.7	301.5	310.9	327.3
20°	143.5	139.3	133.6	154.3	176.8	188.5	184.3	208.2	222.7	232.1	243.8
22.5°	129.9	122.8	119.6	126.6	143.9	154.3	156.1	170.2	192.2	198.8	202.6
25°	117.2	112.5	110.2	113.9	123.3	133.2	135.0	153.3	173.0	175.8	183.3
27.5°	108.8	99.9	100.8	103.6	107.8	120.0	123.8	134.1	162.7	166.0	168.3
30°	99.9	90.5	93.3	96.1	94.2	109.2	114.9	126.6	154.3	159.4	162.2
32.5°	91.0	83.9	83.5	86.3	89.6	97.5	109.7	123.3	148.6	155.7	162.7
35°	81.1	75.5	76.4	76.9	81.1	91.4	100.3	107.4	124.7	128.5	130.8
37.5°	74.1	69.4	68.5	73.1	77.4	85.3	88.6	91.9	114.9	123.3	123.8
40°	65.6	62.8	62.8	66.1	75.5	74.6	78.8	89.1	111.1	120.0	121.0
42.5°	59.5	55.8	56.7	60.0	66.6	61.9	70.3	85.3	109.7	118.6	118.2
45°	50.2	49.2	51.1	53.9	56.7	52.5	65.6	81.6	105.0	116.7	113.5
47.5°	41.7	41.7	44.1	46.9	45.5	46.9	59.5	76.4	102.2	113.0	110.7
50°	34.2	34.7	37.0	41.7	37.5	41.3	53.5	71.3	97.5	109.2	107.4
52.5°	29.1	29.5	30.9	34.2	32.4	37.5	49.2	66.1	92.8	102.7	101.7
55°	25.3	26.3	26.3	28.1	29.1	35.2	44.5	61.0	85.8	96.6	94.7
57.5°	22.5	23.4	23.0	24.4	25.3	30.9	39.9	55.3	78.8	87.7	84.9
60°	20.2	21.1	20.6	22.5	22.0	26.7	34.7	49.2	71.3	78.3	76.0
62.5°	17.8	18.8	18.8	19.7	20.2	22.5	30.0	43.6	63.8	69.4	67.5
65°	15.9	16.9	17.3	16.9	17.8	19.2	25.3	39.4	55.3	61.0	58.1
67.5°	14.5	15.5	16.4	14.5	15.5	15.9	21.6	35.2	48.8	53.5	51.1
70°	14.1	14.5	14.5	12.7	12.2	12.7	18.8	30.0	42.7	47.4	44.1
72.5°	13.1	13.6	13.1	10.3	8.9	9.8	15.9	25.3	36.1	39.9	37.0
75°	12.2	12.7	12.2	8.4	5.6	7.0	13.1	22.0	30.9	32.8	31.4
77.5°	10.3	11.3	11.3	6.1	1.9	4.2	9.8	17.8	25.8	25.8	26.3
80°	0.9	2.8	4.7	3.3	0.0	0.5	3.3	9.4	16.4	15.9	17.3
82.5°	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	5.6	4.2	4.7
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°	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2	991.2
2.5°	1051.7	1037.1	1055.4	1111.2	1088.7	1092.9	1077.9	1170.3	1274.9	1278.1
5°	1051.2	1038.1	1065.3	1062.9	1127.2	1197.0	1264.5	1373.8	1528.5	1529.5
7.5°	835.1	912.9	933.1	927.0	1009.5	1105.6	1209.7	1418.8	1545.9	1559.5
10°	753.0	786.8	828.0	843.0	877.3	968.7	1086.4	1323.2	1465.7	1497.1
12.5°	652.7	760.5	815.4	921.8	941.5	954.6	1140.3	1346.1	1432.9	1429.1
15°	540.6	634.4	721.1	851.0	904.5	1042.3	1188.6	1458.2	1509.8	1559.5
17.5°	382.6	453.4	586.6	723.0	886.2	1036.2	1321.7	1658.4	1755.9	1815.0
20°	256.0	290.2	410.7	591.2	798.0	947.1	1376.1	1839.4	1945.8	1996.9
22.5°	207.7	224.1	286.5	433.2	681.7	942.9	1398.2	2036.8	2322.8	2390.8
25°	182.9	194.1	227.4	320.7	565.9	924.1	1520.1	2259.0	2604.1	2659.0
27.5°	159.9	176.8	201.6	264.4	485.3	911.0	1582.0	2632.2	3043.9	3097.8
30°	152.9	173.5	197.4	241.0	429.0	860.4	1680.4	2968.9	3359.5	3455.6
32.5°	165.0	172.1	183.8	220.8	385.4	806.9	1853.4	3371.2	3620.6	3745.8
35°	130.8	143.5	164.1	202.6	367.1	804.1	1951.4	3630.0	4039.3	4116.7
37.5°	128.0	139.7	166.4	197.4	389.2	825.7	2096.8	4160.3	4794.2	4952.7
40°	124.3	139.3	164.6	195.1	389.2	846.8	2189.6	4584.6	5302.0	5462.8
42.5°	122.8	142.1	164.1	204.9	377.0	858.5	2329.8	5008.0	5838.4	5965.5
45°	121.9	144.9	165.5	216.6	374.2	897.0	2409.1	5213.9	6183.5	6329.3
47.5°	119.6	144.9	184.7	209.6	358.7	893.2	2511.7	5519.1	6389.3	6512.2
50°	117.7	145.8	209.1	196.5	361.0	870.2	2651.0	5805.6	6677.7	6765.3
52.5°	113.5	149.1	205.4	178.2	354.0	867.9	2858.7	6213.0	7057.0	7121.2
55°	104.1	144.9	185.7	155.7	329.1	841.2	3133.9	6742.8	7583.1	7594.3
57.5°	95.6	134.6	155.2	143.0	275.7	844.4	3371.2	7230.5	8051.9	8104.4
60°	87.2	139.7	120.5	133.2	228.3	784.4	3486.1	7417.1	8393.3	8470.2
62.5°	79.2	128.9	102.7	122.4	203.5	728.6	3406.4	7267.0	8436.9	8598.2
65°	70.3	89.6	86.7	109.7	205.8	650.3	3140.0	6827.7	8271.4	8493.6
67.5°	60.5	70.3	76.4	94.7	220.4	583.3	2683.4	6122.5	7826.4	8078.2
70°	53.0	63.3	66.6	83.0	229.3	539.2	2117.4	5144.0	6914.9	7147.5
72.5°	44.1	58.6	59.5	72.7	220.8	495.6	1508.8	3692.8	5250.9	5362.5
75°	38.0	48.8	53.9	61.0	185.7	369.9	831.3	2285.7	3320.1	3444.8
77.5°	34.2	37.0	40.8	42.2	78.8	192.7	286.0	1409.4	1859.1	1999.7
80°	26.3	29.1	28.1	29.1	43.1	66.6	108.8	660.6	878.2	956.5
82.5°	8.4	14.1	15.5	13.1	28.1	32.8	31.4	228.3	285.5	303.4
85°	1.9	5.2	2.3	0.0	9.4	16.9	2.3	34.7	68.5	50.6
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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