

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: P367006

Luminaire Tested: **MSA-SA1D-727-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367006
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-SA1D-727-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: 4913 lumens
Efficiency: N/A
Efficacy: 73.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

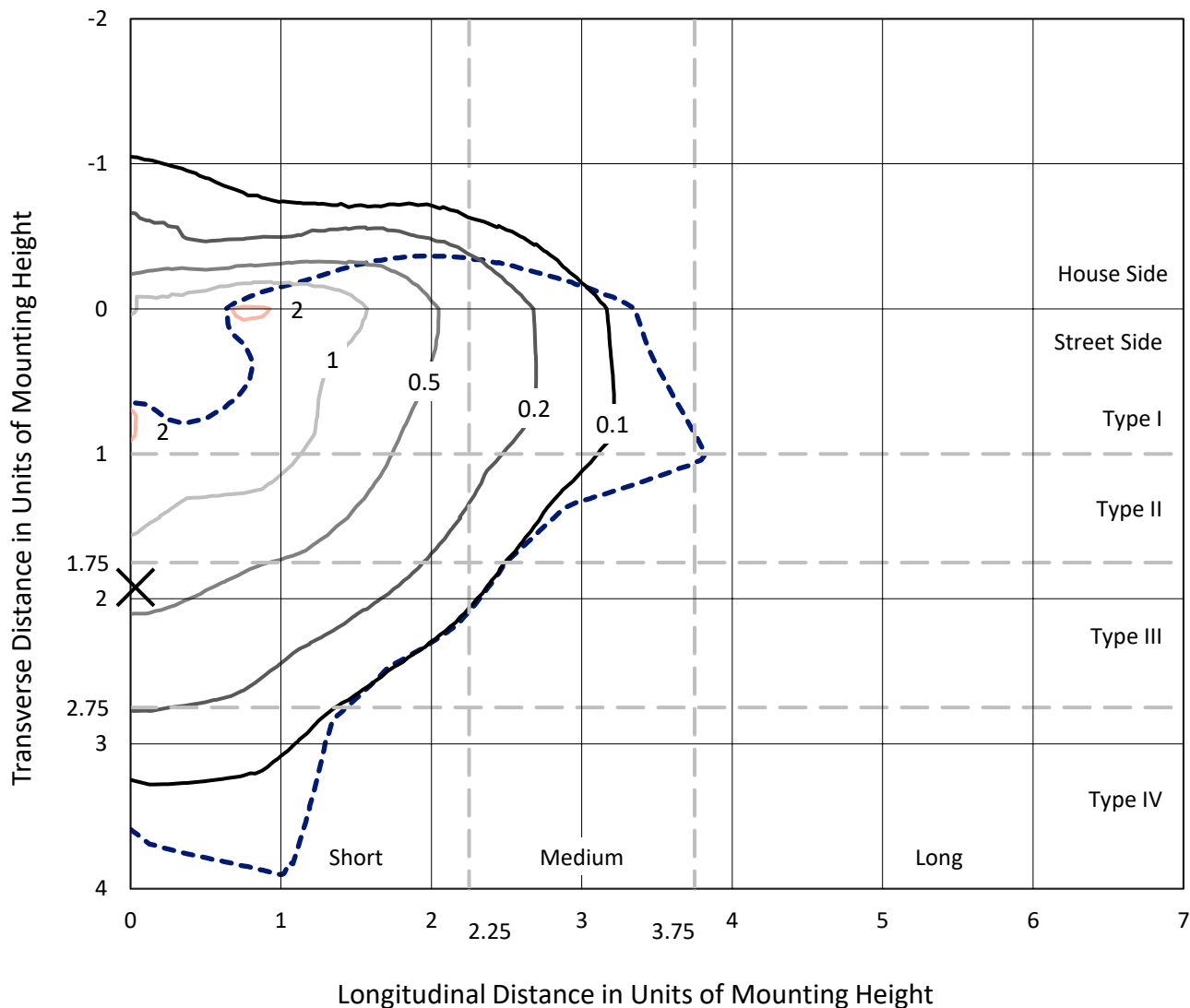
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

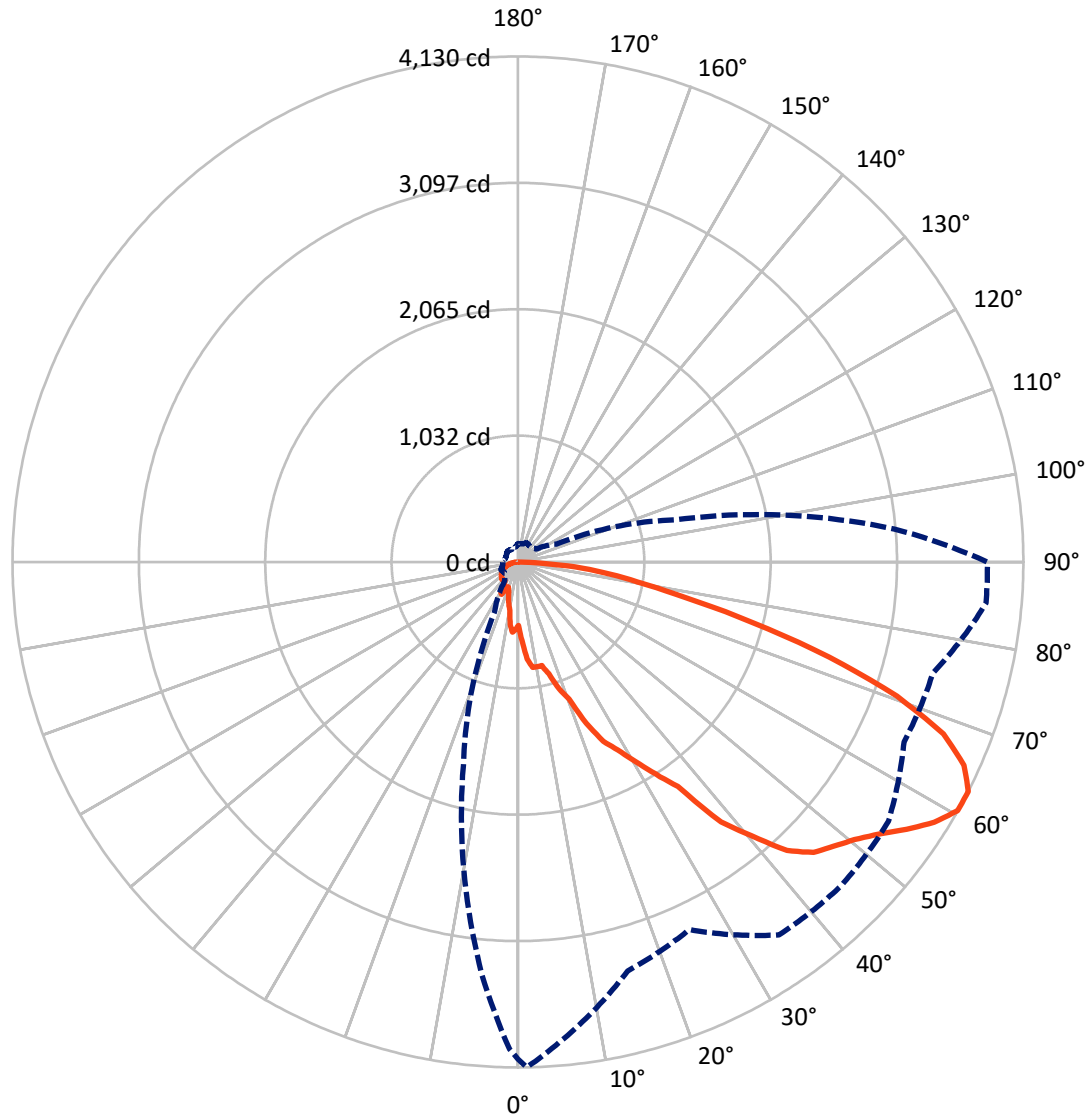
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.1 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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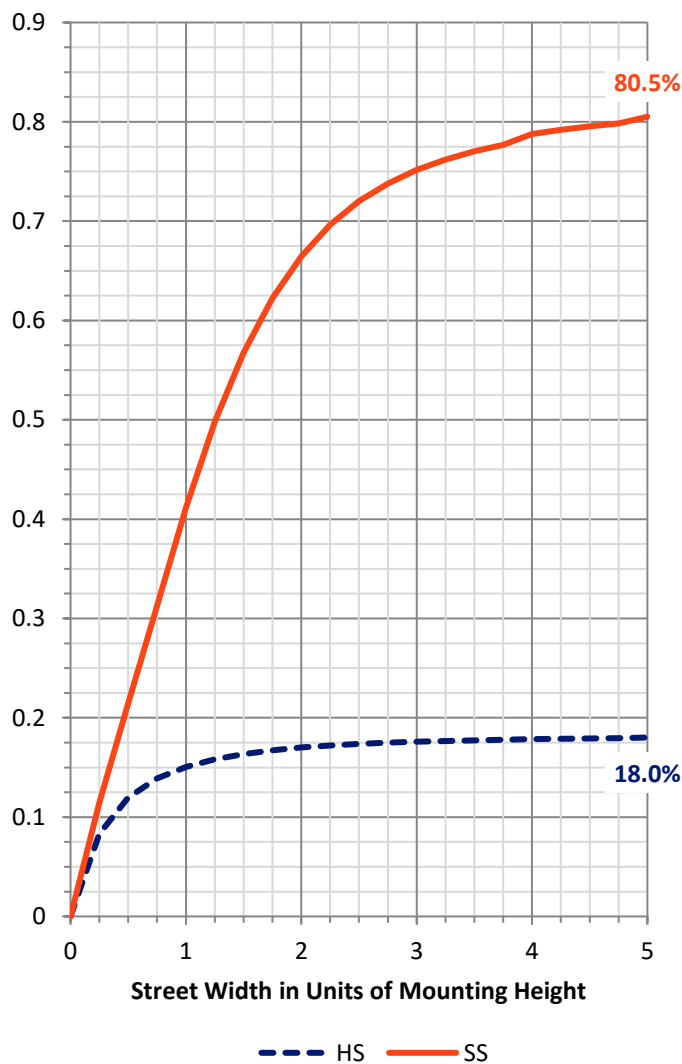
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	894.6	0.0	894.6
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	4018.4	0.0	4018.4
	% Fixture	81.8	0.0	81.8
Total	Lumens	4913.0	0.0	4913.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	1.2
10°-20°	172.6	3.5
20°-30°	304.7	6.2
30°-40°	474.6	9.7
40°-50°	781.5	15.9
50°-60°	1115.3	22.7
60°-70°	1182.7	24.1
70°-80°	653.3	13.3
80°-90°	169.0	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°	4913.0	100.0
0°-180°	4913.0	100.0

Coefficient of Utilization

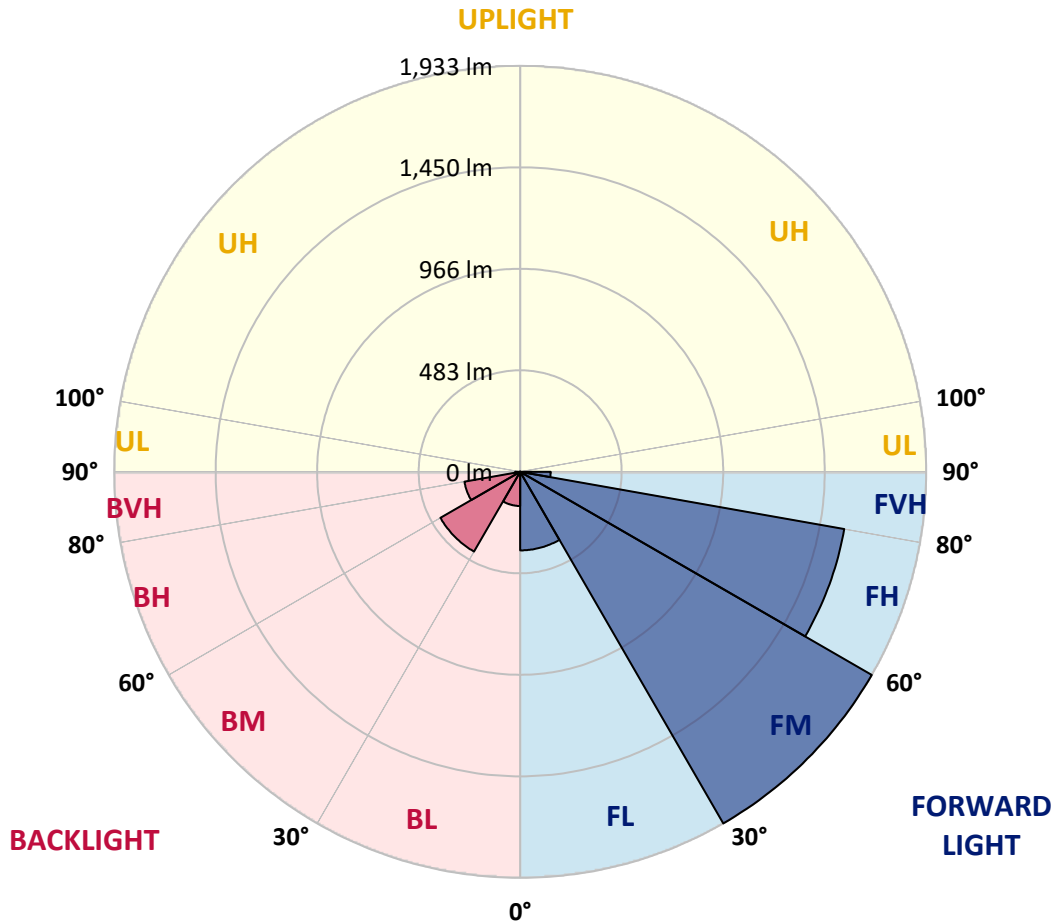


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	374.0	7.6			
FM (30°-60°)	1932.8	39.3			
FH (60°-80°)	1566.5	31.9			G1/1800
FVH (80°-90°)	145.1	3.0			G2/225
BL (0°-30°)	162.7	3.3	B1/500		
BM (30°-60°)	438.6	8.9	B1/1000		
BH (60°-80°)	269.5	5.5	B1/500		G1/500
BVH (80°-90°)	23.8	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°	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1
2.5°	637.0	642.5	631.3	618.7	566.5	616.8	601.8	629.6	620.6	560.0	670.9
5°	787.2	797.3	786.3	824.2	826.6	836.4	746.0	802.3	782.7	777.7	833.7
7.5°	859.7	870.0	897.9	965.3	1018.0	970.3	917.7	906.0	890.7	850.9	884.7
10°	864.2	870.0	907.4	1050.4	1076.0	1109.8	1075.7	995.4	962.2	875.7	849.9
12.5°	850.7	868.5	916.9	1091.2	1167.0	1204.0	1212.3	1122.9	1041.6	942.9	929.8
15°	942.0	948.4	1017.8	1120.3	1172.5	1203.7	1230.9	1175.9	1150.3	1072.1	967.0
17.5°	1072.9	1090.7	1147.5	1185.4	1220.7	1226.6	1204.2	1182.8	1142.2	1246.7	1134.8
20°	1161.5	1196.1	1265.7	1272.9	1198.7	1211.9	1208.8	1210.2	1187.1	1380.2	1318.7
22.5°	1396.1	1433.6	1443.1	1401.6	1261.9	1202.1	1214.0	1248.6	1339.6	1505.1	1574.7
25°	1608.6	1623.1	1710.1	1603.3	1380.6	1250.2	1230.7	1320.1	1468.6	1715.4	1765.0
27.5°	1719.4	1738.3	1796.2	1563.7	1395.4	1188.2	1142.5	1278.6	1430.0	1616.4	1834.1
30°	1861.3	1891.3	1970.2	1603.3	1440.0	1228.8	1127.5	1257.6	1425.0	1681.3	1980.5
32.5°	2007.4	2065.8	2124.5	1742.8	1433.8	1290.8	1223.5	1234.0	1470.3	1817.2	2132.1
35°	2201.0	2252.5	2303.1	1823.4	1558.7	1342.5	1275.7	1386.8	1586.6	1974.8	2343.6
37.5°	2614.9	2696.4	2563.2	2052.7	1694.6	1575.7	1455.3	1521.1	1709.7	2106.1	2689.1
40°	2878.6	2939.9	2811.1	2208.9	1934.0	1732.8	1713.0	1718.5	1879.2	2218.7	2921.5
42.5°	3140.6	3223.6	3018.8	2423.2	2223.4	2057.3	1955.2	1948.3	2068.9	2420.8	3185.9
45°	3336.1	3385.0	3090.1	2603.9	2533.9	2410.6	2334.1	2212.7	2318.3	2560.8	3349.5
47.5°	3429.1	3468.9	3204.7	2709.1	2735.1	2741.5	2879.5	2672.6	2536.2	2655.4	3435.3
50°	3545.2	3564.0	3272.2	2801.6	2926.3	3209.0	3242.2	2891.5	2748.4	2758.7	3486.1
52.5°	3684.0	3691.8	3370.7	2908.4	3119.6	3516.6	3465.3	3262.4	2950.4	2947.3	3581.7
55°	3858.5	3853.7	3494.2	3052.2	3257.7	3699.5	3660.6	3512.8	3170.4	3103.4	3730.4
57.5°	4013.7	4010.8	3658.0	3184.5	3373.8	3793.4	3804.8	3765.7	3320.1	3215.2	3891.6
60°	4089.7	4126.2	3844.4	3329.2	3381.2	3835.8	3840.1	3777.9	3487.5	3358.8	3934.5
62.5°	4060.2	4129.5	3936.0	3459.4	3313.2	3720.0	3737.8	3694.9	3479.9	3509.4	3838.7
65°	3925.7	4005.8	3856.6	3528.7	3271.5	3525.9	3530.4	3421.9	3370.9	3609.3	3614.1
67.5°	3673.5	3748.6	3603.8	3418.1	2985.9	3002.8	3103.9	3112.7	3038.3	3534.0	3298.7
70°	3231.9	3284.9	3194.3	3144.9	2495.7	2396.5	2506.2	2553.2	2587.0	3262.0	2920.1
72.5°	2558.6	2660.9	2675.2	2707.4	2009.3	1844.1	1925.4	1855.8	2076.3	2776.3	2385.8
75°	1893.0	1979.3	2072.0	2251.6	1583.8	1380.6	1370.6	1335.1	1541.1	2232.7	1769.5
77.5°	1337.7	1392.8	1464.1	1798.6	1195.2	1063.3	1069.5	1033.5	1112.9	1687.5	1222.3
80°	958.9	987.7	1020.9	1184.9	881.7	917.4	918.4	884.3	827.5	1146.1	815.8
82.5°	683.3	705.7	743.6	781.5	657.3	752.0	751.2	749.1	656.1	774.6	510.4
85°	380.5	410.5	476.3	612.2	474.7	537.6	472.8	520.7	481.6	515.7	258.4
87.5°	26.7	23.8	106.6	354.8	221.5	161.9	84.9	168.1	215.5	269.4	36.0
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°	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1
2.5°	693.8	702.1	669.5	620.3	633.7	619.2	600.8	572.2	513.3	549.8	550.0
5°	833.3	801.5	776.0	752.0	711.4	650.2	642.0	592.9	565.3	579.8	577.7
7.5°	876.9	831.8	793.4	707.4	632.3	537.1	508.5	479.4	467.3	502.6	516.6
10°	829.0	782.0	744.3	639.7	588.6	529.3	450.6	410.3	386.5	395.8	401.2
12.5°	867.6	819.7	701.2	642.8	558.6	522.4	453.5	394.3	359.0	367.6	357.4
15°	904.8	840.2	721.7	605.3	537.1	484.7	428.9	367.9	326.4	311.6	303.7
17.5°	1040.7	933.4	719.3	584.3	506.2	445.8	378.6	311.8	284.2	268.9	255.8
20°	1206.4	1056.9	732.2	562.7	473.2	397.2	324.0	262.0	242.7	232.7	229.1
22.5°	1403.5	1215.2	805.8	559.6	442.3	361.7	294.0	255.3	233.6	222.7	218.1
25°	1560.2	1379.0	860.2	580.5	440.6	332.3	275.8	283.7	273.7	277.0	250.6
27.5°	1712.3	1423.6	829.7	571.2	396.2	280.4	271.6	288.0	296.6	299.2	298.3
30°	1840.8	1611.9	836.4	518.8	334.7	228.4	207.9	216.0	239.6	277.0	284.2
32.5°	2028.9	1702.0	893.3	487.1	299.2	204.3	181.4	178.3	183.8	197.4	209.1
35°	2248.9	1909.4	909.3	478.7	274.7	193.6	177.6	170.5	173.3	183.6	186.0
37.5°	2659.3	2060.6	968.4	468.5	265.6	187.2	174.8	172.1	178.3	186.7	191.4
40°	2885.5	2332.4	971.3	459.7	253.9	184.5	176.7	175.5	179.3	190.7	193.6
42.5°	3187.1	2487.4	1016.1	449.4	249.9	188.1	180.5	180.0	183.3	190.0	195.3
45°	3370.9	2591.1	1018.5	443.4	248.9	203.8	185.5	183.8	183.1	187.2	191.9
47.5°	3489.4	2740.6	1047.6	436.8	254.6	207.9	191.4	184.3	181.9	183.6	187.2
50°	3601.7	2860.0	1102.7	435.8	260.6	203.8	201.9	184.1	179.3	178.6	181.2
52.5°	3739.5	3056.5	1170.6	444.9	259.2	197.9	209.8	183.1	174.5	172.8	175.5
55°	3940.0	3267.0	1242.8	437.2	244.4	186.4	202.2	182.4	169.5	166.4	168.8
57.5°	4069.9	3387.6	1323.7	430.8	222.0	177.9	195.3	182.9	170.0	163.1	164.5
60°	4026.8	3322.8	1355.4	391.5	200.7	171.2	178.8	179.0	165.7	159.3	160.5
62.5°	3836.1	3087.9	1325.8	345.7	185.0	161.6	161.9	171.9	153.3	148.8	150.7
65°	3569.5	2795.9	1206.1	315.9	177.6	151.6	147.8	150.9	136.6	133.3	137.1
67.5°	3242.4	2435.9	1028.0	284.4	175.0	138.0	133.5	132.3	123.3	119.4	123.3
70°	2832.1	2039.6	821.8	262.3	165.0	123.3	119.7	118.5	110.9	108.0	111.3
72.5°	2276.4	1592.6	634.2	245.3	154.0	109.7	106.6	105.1	98.7	94.6	98.7
75°	1619.1	1217.1	471.1	219.3	138.5	95.8	92.3	90.4	84.4	80.6	84.2
77.5°	1150.6	913.6	329.0	181.4	114.2	81.1	78.9	75.8	70.6	66.0	69.6
80°	850.7	652.8	212.2	139.9	87.3	64.8	63.7	61.5	56.5	51.0	53.6
82.5°	560.0	470.6	121.6	94.9	63.4	46.7	47.7	46.3	41.5	35.8	37.2
85°	250.8	278.7	64.6	52.2	41.2	28.1	30.8	29.8	26.2	20.7	21.2
87.5°	24.1	47.0	19.8	19.1	15.3	8.8	11.0	9.3	7.9	5.0	3.8
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°	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1
2.5°	558.4	524.7	491.1	511.6	512.1	517.6	518.3	498.0	514.3	526.7	539.5
5°	567.2	545.2	546.4	526.7	515.9	529.8	526.9	521.4	531.2	544.8	561.2
7.5°	503.3	489.0	486.6	467.5	421.3	411.0	419.6	423.2	436.3	457.3	474.9
10°	392.9	421.3	389.3	381.9	369.8	345.9	332.1	330.4	358.3	375.3	390.0
12.5°	354.0	346.9	343.1	322.8	322.8	297.5	289.4	296.8	339.7	351.9	371.0
15°	301.6	296.3	278.7	268.7	263.9	253.7	262.3	269.4	309.5	310.4	330.4
17.5°	250.3	247.2	230.5	228.6	223.9	219.3	227.2	244.4	266.1	262.3	271.6
20°	223.9	213.1	197.9	203.4	198.4	194.8	191.4	215.8	231.0	236.0	241.5
22.5°	217.2	197.6	188.6	183.6	183.8	178.1	178.8	199.1	222.2	225.3	222.0
25°	248.2	213.4	184.1	169.5	164.0	162.1	167.6	185.5	213.4	220.1	222.7
27.5°	290.4	231.7	189.5	164.7	153.8	154.7	162.6	175.0	207.9	219.8	222.9
30°	278.7	217.9	189.8	161.2	147.6	152.6	155.4	167.4	203.6	221.5	237.0
32.5°	215.0	196.0	191.0	164.0	158.5	150.7	154.7	166.2	191.0	202.2	202.9
35°	182.1	167.6	164.3	157.6	150.0	146.6	151.2	161.2	177.4	184.3	183.3
37.5°	180.7	164.7	151.6	148.8	145.7	144.7	147.3	156.6	173.1	185.2	182.6
40°	183.1	163.3	150.0	145.0	146.1	141.9	144.5	155.9	173.8	185.2	182.9
42.5°	180.2	161.6	147.8	144.0	145.2	139.2	142.3	154.3	171.9	185.5	181.0
45°	174.5	157.8	146.6	140.2	145.7	136.8	140.7	150.0	166.2	181.0	175.7
47.5°	168.8	153.3	141.6	137.6	143.0	134.5	136.1	144.2	160.5	175.0	170.5
50°	162.6	147.6	137.6	136.4	140.2	134.0	131.4	138.0	153.5	168.1	164.3
52.5°	155.9	142.8	134.7	134.2	137.8	130.9	127.1	132.3	146.1	160.7	157.6
55°	149.5	137.6	131.1	132.3	136.4	128.3	123.5	126.8	138.3	152.6	148.3
57.5°	143.0	131.6	126.4	129.7	132.8	124.9	119.0	120.9	130.2	144.2	139.2
60°	137.3	126.4	121.1	125.2	128.0	119.9	113.0	114.2	122.5	135.2	130.7
62.5°	129.9	120.6	113.7	119.0	121.1	113.2	105.9	107.3	114.0	125.9	122.5
65°	119.4	113.5	107.0	110.6	113.5	105.4	98.5	100.1	105.1	116.3	114.0
67.5°	110.4	104.7	100.4	103.2	103.7	97.5	91.3	92.3	96.3	106.8	104.2
70°	100.4	94.9	91.6	93.7	93.5	88.2	83.4	83.7	87.0	96.6	93.0
72.5°	89.4	84.2	82.5	83.7	82.7	78.0	73.4	75.1	77.2	84.4	81.5
75°	77.7	73.0	72.0	73.2	71.8	67.2	63.2	64.8	66.8	72.7	69.1
77.5°	65.6	61.3	61.5	61.7	59.8	56.7	52.7	54.4	55.6	59.6	56.0
80°	52.2	48.9	49.8	49.8	47.7	45.5	41.7	42.2	42.9	44.3	41.7
82.5°	38.1	38.1	38.1	38.4	33.9	34.6	31.2	31.0	30.3	30.0	28.4
85°	22.6	23.6	24.1	24.8	18.4	21.5	18.6	17.9	16.5	15.0	14.5
87.5°	5.0	6.4	6.4	6.2	0.0	2.4	1.2	1.9	0.5	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°	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1	518.1
2.5°	524.7	510.4	537.1	561.0	557.2	571.0	538.8	586.5	637.0	637.0
5°	556.9	544.8	551.7	565.5	576.0	624.2	664.2	704.0	786.3	787.2
7.5°	469.7	495.9	502.1	498.0	543.1	605.1	671.1	784.6	854.2	859.7
10°	439.2	451.1	469.9	480.4	498.8	559.8	641.8	776.5	850.4	864.2
12.5°	397.9	442.0	470.6	529.3	543.8	556.0	686.4	803.0	854.0	850.7
15°	352.9	386.2	427.5	492.3	529.3	622.3	712.9	887.8	916.7	942.0
17.5°	281.3	305.9	360.7	434.6	526.2	611.8	778.2	992.8	1046.6	1072.9
20°	231.5	231.7	286.6	384.6	484.2	567.9	803.0	1079.8	1148.2	1161.5
22.5°	218.9	207.9	236.7	316.4	438.0	593.9	853.0	1219.7	1362.5	1396.1
25°	211.9	198.6	216.7	279.2	404.8	607.5	953.9	1412.1	1595.5	1608.6
27.5°	214.8	221.0	226.7	248.9	362.9	582.0	930.5	1498.2	1694.6	1719.4
30°	234.1	244.1	231.0	238.7	328.3	545.0	972.2	1637.9	1819.6	1861.3
32.5°	194.8	191.0	189.8	206.5	293.7	511.6	1059.7	1834.6	1955.0	2007.4
35°	175.7	169.7	172.1	191.2	276.8	506.9	1108.9	1997.4	2168.8	2201.0
37.5°	175.0	168.1	171.2	185.5	282.8	515.4	1187.5	2258.7	2546.0	2614.9
40°	173.3	169.5	171.2	181.9	276.6	520.2	1232.8	2478.3	2808.7	2878.6
42.5°	173.1	171.2	172.8	184.8	270.1	522.4	1295.5	2676.7	3085.5	3140.6
45°	172.4	174.3	174.3	187.2	267.3	536.7	1332.5	2773.9	3268.2	3336.1
47.5°	169.0	174.8	184.1	186.4	255.6	530.0	1384.7	2921.5	3365.2	3429.1
50°	164.7	174.0	196.5	181.7	253.7	513.8	1445.7	3038.6	3489.6	3545.2
52.5°	159.0	172.8	193.6	172.4	250.3	510.9	1531.3	3190.7	3634.8	3684.0
55°	150.9	168.6	184.8	163.1	242.2	501.9	1662.2	3379.3	3824.9	3858.5
57.5°	143.5	162.1	171.9	157.8	222.9	503.8	1753.3	3533.0	3984.4	4013.7
60°	136.8	161.4	153.5	152.3	203.1	478.3	1782.9	3531.4	4043.7	4089.7
62.5°	129.7	152.3	140.7	145.0	185.7	452.0	1720.1	3380.0	3979.6	4060.2
65°	120.4	130.7	129.9	139.7	186.2	409.4	1576.4	3113.0	3819.6	3925.7
67.5°	109.4	115.6	119.7	131.1	192.2	376.2	1345.1	2791.8	3547.3	3673.5
70°	98.2	104.4	109.0	119.9	197.6	361.0	1070.7	2340.7	3103.9	3231.9
72.5°	86.8	93.2	96.8	106.3	190.3	328.3	792.5	1821.2	2491.4	2558.6
75°	74.9	81.1	83.9	92.7	165.2	271.6	547.2	1379.5	1824.8	1893.0
77.5°	62.7	69.4	70.3	77.5	126.1	207.7	350.7	1058.1	1292.2	1337.7
80°	50.1	56.7	56.7	60.6	88.7	142.8	210.0	798.2	941.0	958.9
82.5°	36.0	43.2	42.7	42.9	61.3	88.5	121.6	598.2	680.0	683.3
85°	21.2	26.2	26.0	23.8	36.2	47.7	65.8	371.4	379.6	380.5
87.5°	4.1	6.2	5.5	2.4	10.0	14.1	19.1	68.9	27.4	26.7
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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