

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: P366719

Luminaire Tested: **MSA-SA1A-830-U-SLL-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366719  
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-SA1A-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: 2343 lumens  
Efficiency: N/A  
Efficacy: 68.9 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

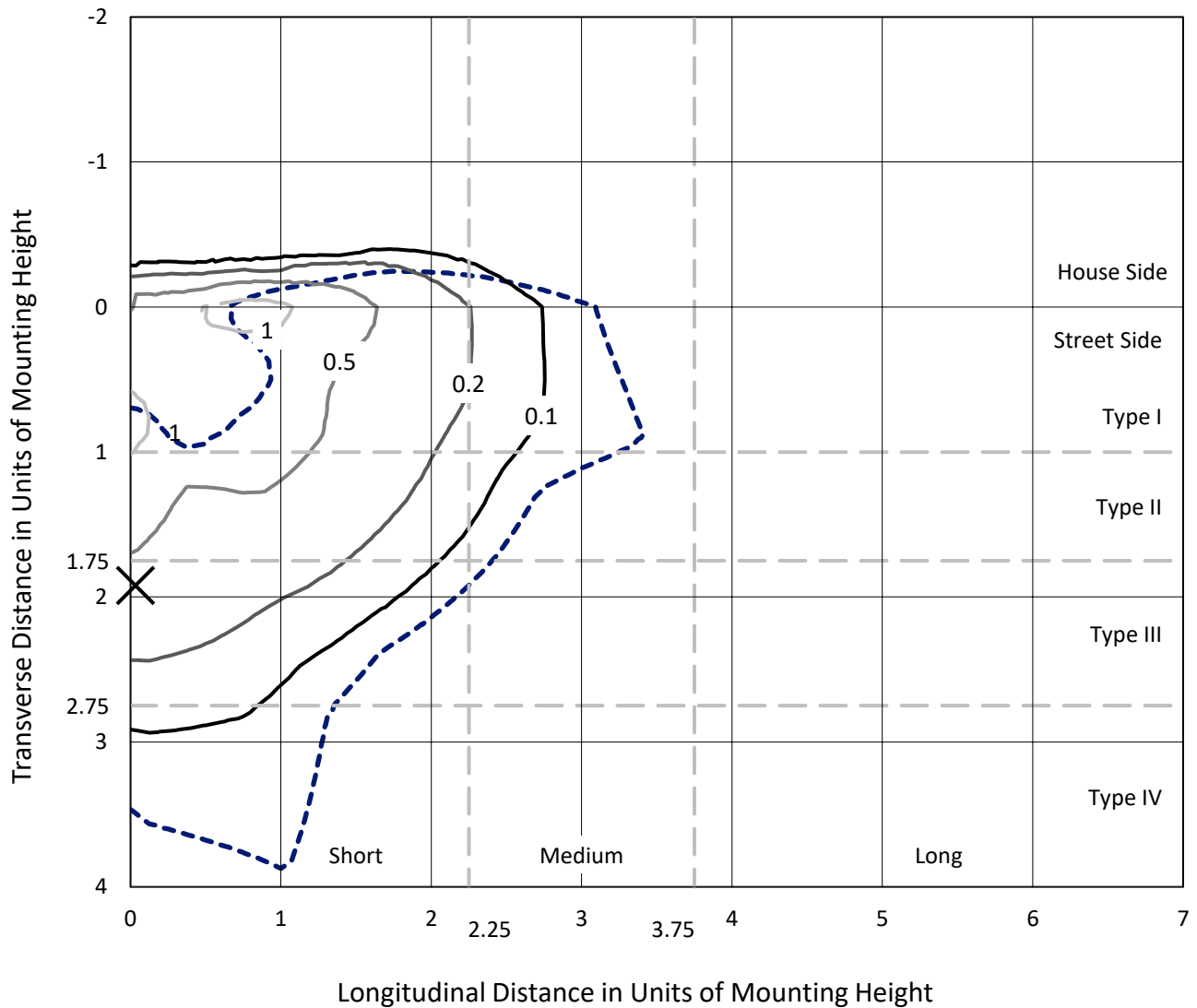
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

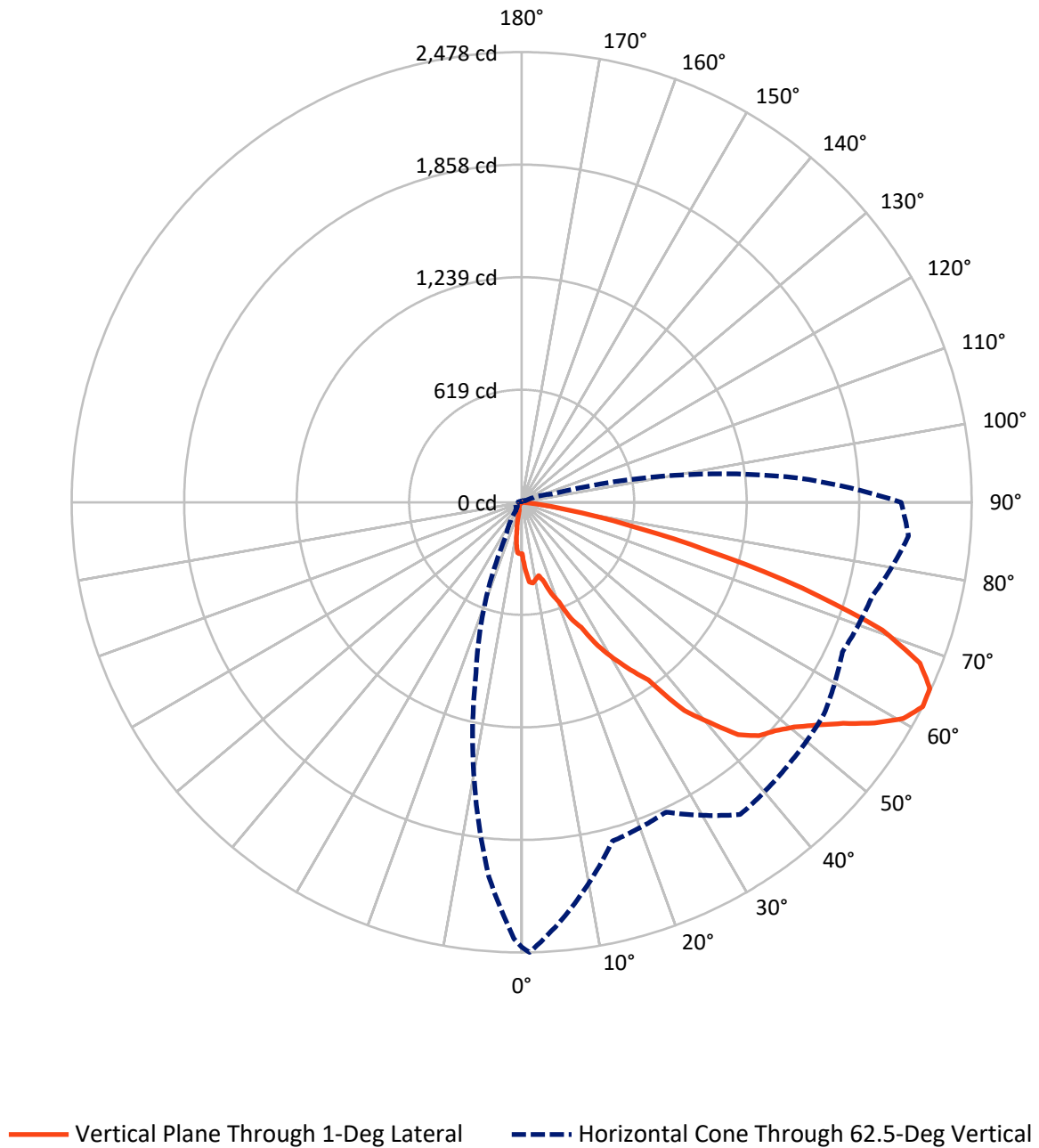
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.2 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



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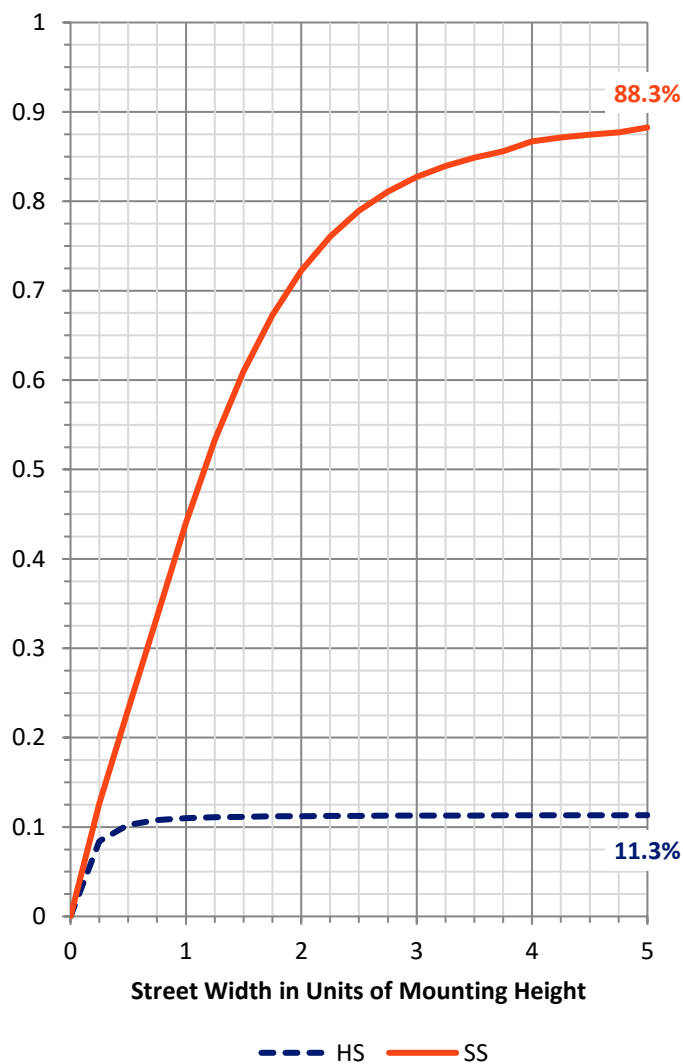
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	267.9	0.0	267.9
	% Fixture	11.4	0.0	11.4
<b>Street Side</b>	Lumens	2075.1	0.0	2075.1
	% Fixture	88.6	0.0	88.6
<b>Total</b>	Lumens	2343.0	0.0	2343.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.5	1.3
10°-20°	82.4	3.5
20°-30°	133.2	5.7
30°-40°	223.0	9.5
40°-50°	364.7	15.6
50°-60°	539.9	23.0
60°-70°	619.8	26.5
70°-80°	306.5	13.1
80°-90°	42.1	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°	2343.0	100.0
0°-180°	2343.0	100.0

**Coefficient of Utilization**

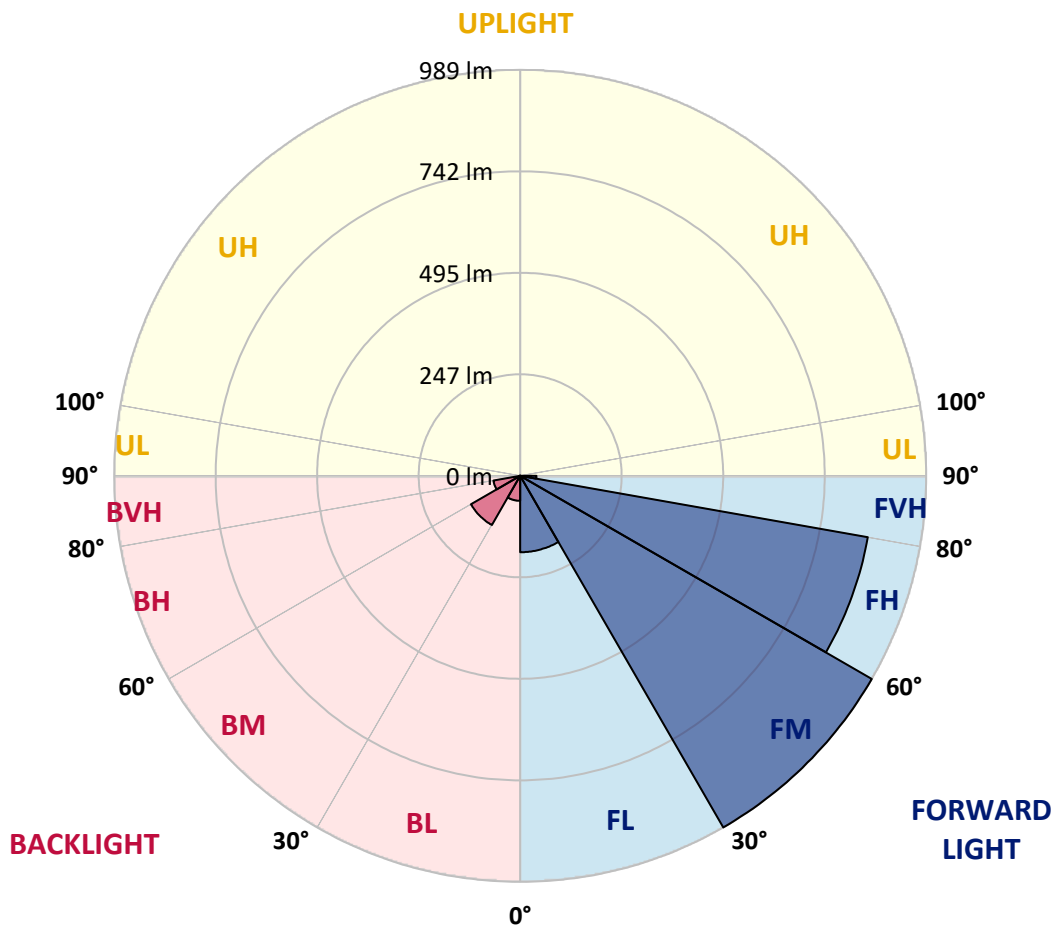


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	186.1	7.9			
FM (30°-60°)	989.2	42.2			
FH (60°-80°)	860.0	36.7			G1/1800
FVH (80°-90°)	39.7	1.7			G1/100
BL (0°-30°)	61.0	2.6	B0/110		
BM (30°-60°)	138.4	5.9	B0/220		
BH (60°-80°)	66.2	2.8	B0/110		G0/110
BVH (80°-90°)	2.3	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°	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3
2.5°	364.0	365.7	357.6	356.5	337.5	361.2	361.8	364.6	347.3	313.6	360.6
5°	435.5	440.3	434.1	462.0	470.0	487.2	455.6	483.9	471.8	475.2	482.0
7.5°	444.1	449.0	462.2	509.0	552.1	541.3	537.8	548.5	547.5	522.8	535.1
10°	426.3	430.5	452.5	537.5	556.4	605.0	616.8	592.3	582.3	528.2	504.6
12.5°	407.0	413.9	441.9	543.9	600.4	649.6	688.7	653.7	620.4	562.9	541.3
15°	444.1	447.9	492.0	557.3	606.7	640.6	672.7	661.0	656.0	614.6	541.3
17.5°	516.8	525.9	557.8	590.0	629.0	649.4	641.8	638.2	625.3	690.3	614.4
20°	568.6	585.6	627.4	641.3	610.3	629.4	624.7	621.5	611.4	732.3	698.6
22.5°	680.8	696.4	697.2	702.2	630.1	599.6	591.9	592.8	638.9	744.9	803.2
25°	757.2	762.5	804.7	769.5	684.0	608.7	579.2	592.4	658.8	835.1	901.6
27.5°	882.1	894.8	921.1	801.8	716.3	603.0	556.0	604.0	711.1	865.0	1011.0
30°	984.0	996.2	1038.5	846.0	744.3	631.4	566.0	627.4	743.7	926.6	1109.2
32.5°	1066.7	1098.0	1146.1	914.2	743.3	664.1	617.1	619.6	783.7	1006.3	1206.4
35°	1172.3	1201.5	1235.3	961.2	791.9	674.7	632.2	695.7	843.3	1089.6	1337.3
37.5°	1410.3	1454.5	1387.8	1079.6	848.5	770.0	691.7	742.6	905.6	1174.7	1517.1
40°	1555.6	1592.8	1528.4	1140.1	946.5	818.0	798.0	824.1	966.7	1218.6	1652.7
42.5°	1698.7	1747.9	1640.1	1231.1	1039.6	953.7	899.0	919.9	1054.9	1324.6	1805.1
45°	1802.3	1832.8	1664.3	1278.8	1167.5	1108.3	1071.9	1040.6	1178.0	1392.7	1903.5
47.5°	1854.4	1878.7	1711.9	1293.9	1243.6	1271.9	1351.7	1286.4	1287.0	1442.0	1956.5
50°	1926.5	1943.5	1738.6	1311.9	1326.2	1526.8	1567.1	1428.1	1411.4	1491.4	1965.2
52.5°	2027.8	2036.1	1790.4	1359.5	1450.0	1726.4	1740.9	1684.7	1536.0	1583.2	1984.4
55°	2162.6	2148.0	1883.0	1459.3	1579.1	1872.6	1892.0	1843.0	1692.6	1675.0	2044.0
57.5°	2307.8	2291.1	2020.1	1600.1	1719.1	1984.3	1995.9	1999.8	1796.6	1756.1	2145.2
60°	2412.0	2415.0	2192.7	1761.5	1806.2	2091.3	2068.0	2032.8	1901.5	1875.1	2194.5
62.5°	2448.4	2477.9	2327.2	1930.6	1881.2	2097.9	2061.9	2032.1	1948.5	1997.8	2138.0
65°	2418.6	2470.2	2358.4	2079.2	1926.6	2014.2	1976.7	1957.6	1947.1	2047.9	2013.0
67.5°	2300.3	2364.8	2269.0	2080.6	1761.6	1715.0	1759.3	1819.8	1784.8	2006.3	1838.0
70°	2035.3	2105.9	2061.3	1958.5	1467.5	1349.3	1398.2	1489.6	1464.9	1784.4	1580.4
72.5°	1527.0	1617.8	1626.6	1690.8	1164.9	1015.5	1022.6	1020.1	1062.7	1438.9	1233.3
75°	980.9	1051.6	1147.0	1364.4	884.9	741.4	673.6	657.0	736.5	1124.3	882.9
77.5°	569.4	577.9	621.9	1029.4	633.8	534.2	488.0	511.6	539.4	784.7	585.2
80°	272.4	276.6	294.8	529.7	440.3	462.4	426.7	453.3	370.4	451.0	332.1
82.5°	86.4	87.3	90.4	260.2	273.4	306.3	196.3	263.2	229.0	272.6	221.1
85°	14.4	24.6	30.3	75.2	154.3	103.3	42.6	93.9	127.8	172.0	100.4
87.5°	0.0	0.0	0.0	1.3	12.6	5.9	0.9	5.3	19.6	38.3	4.5
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°	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3
2.5°	374.2	383.5	348.7	317.6	325.5	319.2	309.8	293.6	256.2	283.7	281.9
5°	481.6	464.5	417.5	395.6	368.9	328.2	323.2	292.0	278.2	280.5	278.5
7.5°	519.0	488.4	446.9	380.9	318.3	259.6	241.5	221.1	217.0	225.8	231.5
10°	489.6	457.2	420.8	338.9	290.7	248.2	203.7	175.2	159.7	157.8	159.4
12.5°	503.1	468.1	393.3	330.6	280.2	241.8	192.1	149.0	115.4	117.9	111.2
15°	512.4	472.2	386.8	313.2	258.8	207.3	147.5	104.4	76.9	68.9	64.1
17.5°	567.3	509.9	378.5	293.2	228.7	161.4	92.7	60.5	51.5	48.7	46.5
20°	637.8	556.2	378.4	272.1	184.4	100.9	57.8	43.8	41.7	43.3	41.5
22.5°	719.8	617.9	398.5	245.8	132.3	63.7	45.0	38.9	36.7	38.1	38.2
25°	802.3	710.4	415.0	220.8	92.1	48.9	40.1	35.8	33.4	34.6	33.9
27.5°	951.3	787.1	411.2	188.9	67.8	43.0	37.3	33.5	29.9	31.8	31.6
30°	1048.8	922.3	425.8	144.2	53.8	37.7	34.7	30.6	26.7	28.8	28.7
32.5°	1165.3	980.4	441.5	110.7	44.7	35.6	31.2	27.2	25.0	26.3	26.0
35°	1296.3	1095.2	412.6	92.1	38.9	32.2	27.6	24.6	22.6	23.2	23.2
37.5°	1527.7	1191.2	395.2	75.0	36.2	29.1	25.9	22.2	21.0	21.0	21.6
40°	1659.1	1337.8	343.4	59.4	37.0	26.8	24.2	20.3	18.7	18.6	19.2
42.5°	1830.0	1422.3	311.0	48.1	33.5	26.2	22.2	18.4	16.6	16.4	17.1
45°	1931.3	1469.6	265.3	37.8	30.0	30.4	20.6	17.0	14.2	13.6	14.8
47.5°	1995.3	1532.2	239.4	30.0	26.2	30.3	20.0	14.7	11.9	11.2	12.3
50°	2027.7	1563.2	234.3	25.8	22.7	27.1	23.0	12.3	10.1	9.2	10.1
52.5°	2061.5	1613.5	236.2	23.8	20.0	21.8	21.8	10.5	8.9	7.9	8.5
55°	2129.7	1687.9	232.1	22.6	18.4	16.6	14.0	9.3	8.1	6.9	7.6
57.5°	2213.6	1741.3	232.1	21.5	17.1	14.2	11.2	8.7	7.5	6.0	6.5
60°	2197.7	1685.1	220.6	20.4	16.0	13.2	10.1	8.0	6.9	5.5	5.9
62.5°	2088.6	1532.2	178.6	18.8	15.1	12.6	9.2	7.6	6.5	4.8	5.2
65°	1960.4	1369.9	124.2	17.1	14.0	11.3	8.3	7.2	6.0	4.3	4.5
67.5°	1806.1	1176.4	68.9	15.4	13.0	9.9	7.6	7.1	5.7	3.9	4.1
70°	1538.2	888.1	37.0	14.0	12.1	9.1	7.2	7.1	5.7	3.7	3.9
72.5°	1154.8	559.3	21.6	12.8	11.1	8.4	6.8	7.2	5.6	3.6	3.6
75°	785.7	339.5	15.5	10.9	9.9	7.1	6.5	6.9	5.7	3.6	3.3
77.5°	534.2	238.6	12.7	9.9	8.9	6.3	6.7	6.9	5.7	2.9	2.3
80°	333.5	123.1	9.6	7.9	7.7	5.5	6.7	6.0	3.7	0.7	0.0
82.5°	233.3	45.8	5.6	6.0	6.0	3.9	5.2	4.3	2.1	0.0	0.0
85°	97.9	7.9	3.1	4.3	3.7	2.3	4.1	3.2	1.3	0.0	0.0
87.5°	1.7	0.0	1.2	2.5	2.7	1.3	2.1	1.3	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°	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3
2.5°	290.7	278.0	251.3	264.1	262.8	268.6	269.2	255.5	284.9	303.1	305.8
5°	278.8	270.2	268.8	261.4	259.6	270.4	264.5	264.1	278.2	298.9	299.1
7.5°	231.6	225.1	228.2	219.6	197.6	198.9	200.9	209.4	221.5	235.1	240.1
10°	159.0	176.0	163.6	162.5	160.2	153.1	147.5	151.9	167.7	180.2	184.9
12.5°	113.5	116.2	123.8	121.0	124.8	118.8	116.6	130.3	145.7	158.5	167.7
15°	66.4	70.9	75.4	85.0	88.9	87.7	94.7	106.1	118.6	124.4	135.8
17.5°	46.7	47.1	48.1	58.5	65.3	68.0	72.1	80.8	85.9	88.5	93.2
20°	40.9	39.7	38.1	43.9	50.3	53.7	52.5	59.3	63.4	66.1	69.4
22.5°	37.0	35.0	34.0	36.0	41.0	43.9	44.5	48.5	54.7	56.6	57.7
25°	33.4	32.0	31.4	32.4	35.1	37.9	38.5	43.7	49.3	50.1	52.2
27.5°	31.0	28.4	28.7	29.5	30.7	34.2	35.2	38.2	46.3	47.3	47.9
30°	28.4	25.8	26.6	27.4	26.8	31.1	32.7	36.0	43.9	45.4	46.2
32.5°	25.9	23.9	23.8	24.6	25.5	27.8	31.2	35.1	42.3	44.3	46.3
35°	23.1	21.5	21.8	21.9	23.1	26.0	28.6	30.6	35.5	36.6	37.3
37.5°	21.1	19.8	19.5	20.8	22.0	24.3	25.2	26.2	32.7	35.1	35.2
40°	18.7	17.9	17.9	18.8	21.5	21.2	22.4	25.4	31.6	34.2	34.4
42.5°	17.0	15.9	16.2	17.1	19.0	17.6	20.0	24.3	31.2	33.8	33.6
45°	14.3	14.0	14.6	15.4	16.2	15.0	18.7	23.2	29.9	33.2	32.3
47.5°	11.9	11.9	12.6	13.4	13.0	13.4	17.0	21.8	29.1	32.2	31.5
50°	9.7	9.9	10.5	11.9	10.7	11.7	15.2	20.3	27.8	31.1	30.6
52.5°	8.3	8.4	8.8	9.7	9.2	10.7	14.0	18.8	26.4	29.2	29.0
55°	7.2	7.5	7.5	8.0	8.3	10.0	12.7	17.4	24.4	27.5	27.0
57.5°	6.4	6.7	6.5	6.9	7.2	8.8	11.3	15.8	22.4	25.0	24.2
60°	5.7	6.0	5.9	6.4	6.3	7.6	9.9	14.0	20.3	22.3	21.6
62.5°	5.1	5.3	5.3	5.6	5.7	6.4	8.5	12.4	18.2	19.8	19.2
65°	4.5	4.8	4.9	4.8	5.1	5.5	7.2	11.2	15.8	17.4	16.6
67.5°	4.1	4.4	4.7	4.1	4.4	4.5	6.1	10.0	13.9	15.2	14.6
70°	4.0	4.1	4.1	3.6	3.5	3.6	5.3	8.5	12.1	13.5	12.6
72.5°	3.7	3.9	3.7	2.9	2.5	2.8	4.5	7.2	10.3	11.3	10.5
75°	3.5	3.6	3.5	2.4	1.6	2.0	3.7	6.3	8.8	9.3	8.9
77.5°	2.9	3.2	3.2	1.7	0.5	1.2	2.8	5.1	7.3	7.3	7.5
80°	0.3	0.8	1.3	0.9	0.0	0.1	0.9	2.7	4.7	4.5	4.9
82.5°	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.6	1.2	1.3
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°	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3	282.3
2.5°	299.5	295.3	300.5	316.4	310.0	311.2	307.0	333.3	363.0	364.0
5°	299.3	295.6	303.3	302.7	321.0	340.9	360.1	391.2	435.3	435.5
7.5°	237.8	260.0	265.7	264.0	287.5	314.8	344.5	404.0	440.2	444.1
10°	214.4	224.0	235.8	240.1	249.8	275.8	309.4	376.8	417.4	426.3
12.5°	185.9	216.6	232.2	262.5	268.1	271.8	324.7	383.3	408.0	407.0
15°	153.9	180.6	205.3	242.3	257.6	296.8	338.5	415.2	429.9	444.1
17.5°	108.9	129.1	167.0	205.9	252.3	295.1	376.4	472.2	500.0	516.8
20°	72.9	82.6	117.0	168.4	227.2	269.7	391.9	523.8	554.1	568.6
22.5°	59.1	63.8	81.6	123.4	194.1	268.5	398.1	580.0	661.4	680.8
25°	52.1	55.3	64.8	91.3	161.2	263.2	432.9	643.3	741.5	757.2
27.5°	45.5	50.3	57.4	75.3	138.2	259.4	450.5	749.6	866.8	882.1
30°	43.5	49.4	56.2	68.6	122.2	245.0	478.5	845.4	956.6	984.0
32.5°	47.0	49.0	52.3	62.9	109.7	229.8	527.8	960.0	1031.0	1066.7
35°	37.3	40.9	46.7	57.7	104.5	229.0	555.7	1033.7	1150.2	1172.3
37.5°	36.4	39.8	47.4	56.2	110.8	235.1	597.1	1184.7	1365.2	1410.3
40°	35.4	39.7	46.9	55.5	110.8	241.1	623.5	1305.5	1509.8	1555.6
42.5°	35.0	40.5	46.7	58.3	107.3	244.5	663.4	1426.1	1662.5	1698.7
45°	34.7	41.3	47.1	61.7	106.5	255.4	686.0	1484.7	1760.8	1802.3
47.5°	34.0	41.3	52.6	59.7	102.1	254.3	715.2	1571.6	1819.4	1854.4
50°	33.5	41.5	59.5	55.9	102.8	247.8	754.9	1653.2	1901.5	1926.5
52.5°	32.3	42.5	58.5	50.7	100.8	247.1	814.0	1769.2	2009.5	2027.8
55°	29.6	41.3	52.9	44.3	93.7	239.5	892.4	1920.1	2159.3	2162.6
57.5°	27.2	38.3	44.2	40.7	78.5	240.5	960.0	2058.9	2292.9	2307.8
60°	24.8	39.8	34.3	37.9	65.0	223.4	992.7	2112.1	2390.1	2412.0
62.5°	22.6	36.7	29.2	34.8	57.9	207.5	970.0	2069.4	2402.5	2448.4
65°	20.0	25.5	24.7	31.2	58.6	185.2	894.2	1944.3	2355.3	2418.6
67.5°	17.2	20.0	21.8	27.0	62.8	166.1	764.1	1743.4	2228.6	2300.3
70°	15.1	18.0	19.0	23.6	65.3	153.5	603.0	1464.8	1969.1	2035.3
72.5°	12.6	16.7	17.0	20.7	62.9	141.1	429.7	1051.6	1495.2	1527.0
75°	10.8	13.9	15.4	17.4	52.9	105.3	236.7	650.9	945.4	980.9
77.5°	9.7	10.5	11.6	12.0	22.4	54.9	81.4	401.3	529.4	569.4
80°	7.5	8.3	8.0	8.3	12.3	19.0	31.0	188.1	250.1	272.4
82.5°	2.4	4.0	4.4	3.7	8.0	9.3	8.9	65.0	81.3	86.4
85°	0.5	1.5	0.7	0.0	2.7	4.8	0.7	9.9	19.5	14.4
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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