

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: P366742

Luminaire Tested: **MSA-SA1B-727-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366742  
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-SA1B-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**

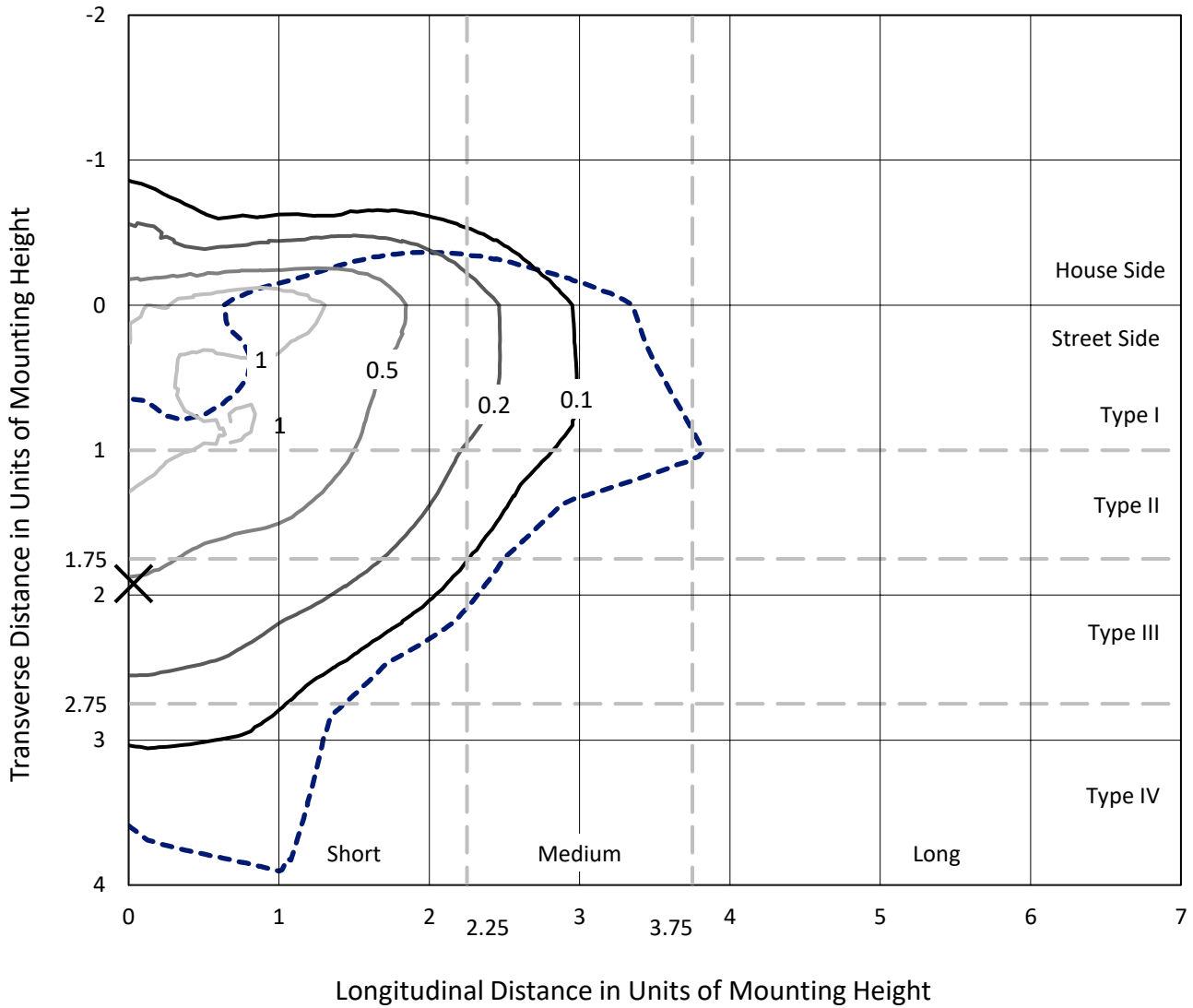
Lumens per Lamp: N/A  
Luminaire Lumens: 3628 lumens  
Efficiency: N/A  
Efficacy: 82.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
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

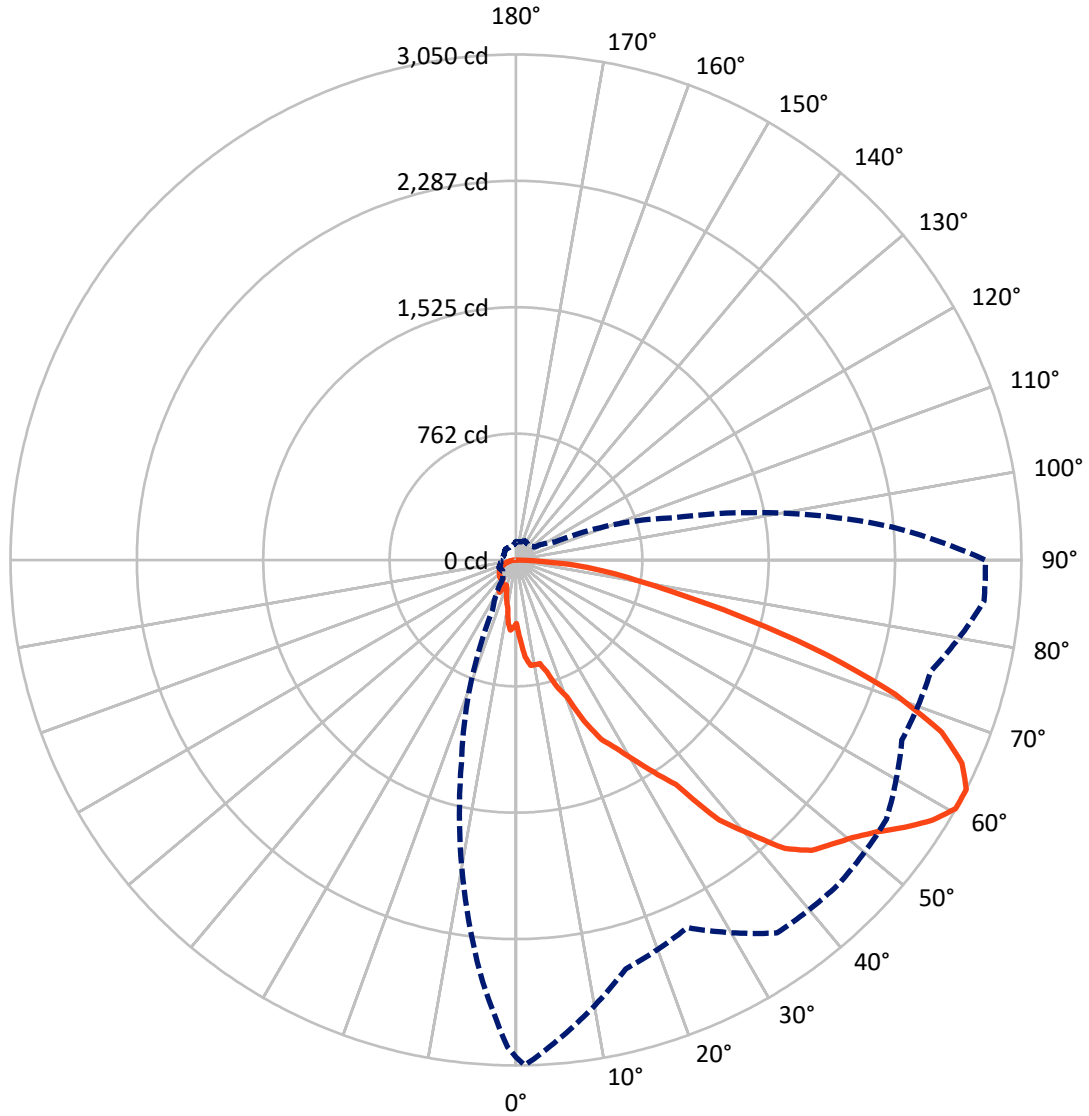
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.5 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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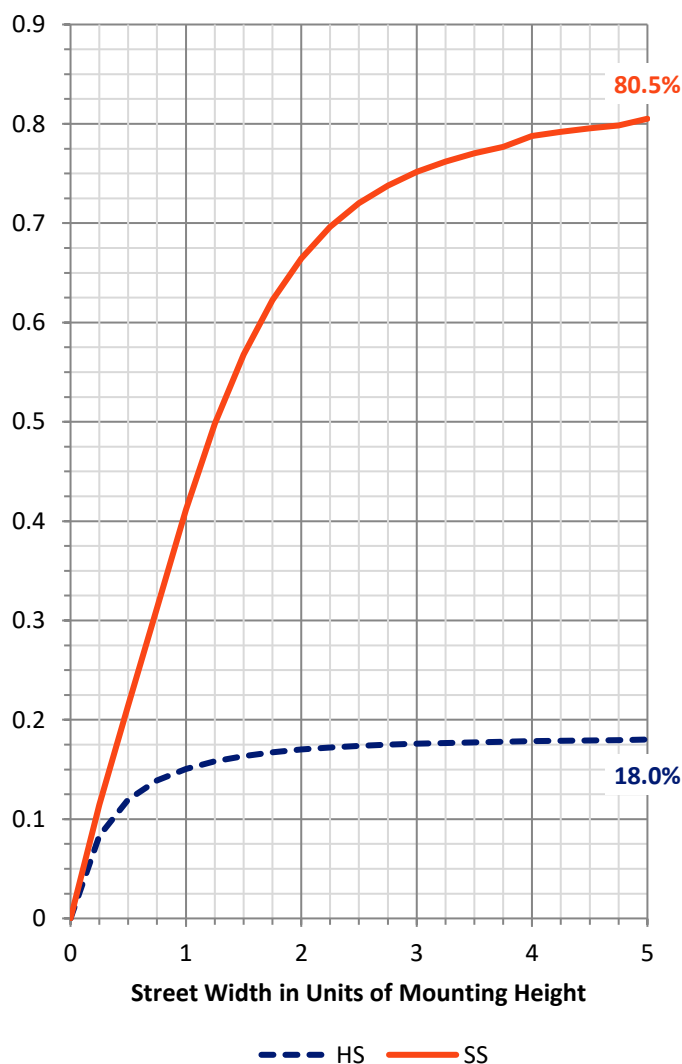
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	660.6	0.0	660.6
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	2967.4	0.0	2967.4
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	3628.0	0.0	3628.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.9	1.2
10°-20°	127.4	3.5
20°-30°	225.0	6.2
30°-40°	350.5	9.7
40°-50°	577.1	15.9
50°-60°	823.6	22.7
60°-70°	873.4	24.1
70°-80°	482.4	13.3
80°-90°	124.8	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°	3628.0	100.0
0°-180°	3628.0	100.0

**Coefficient of Utilization**



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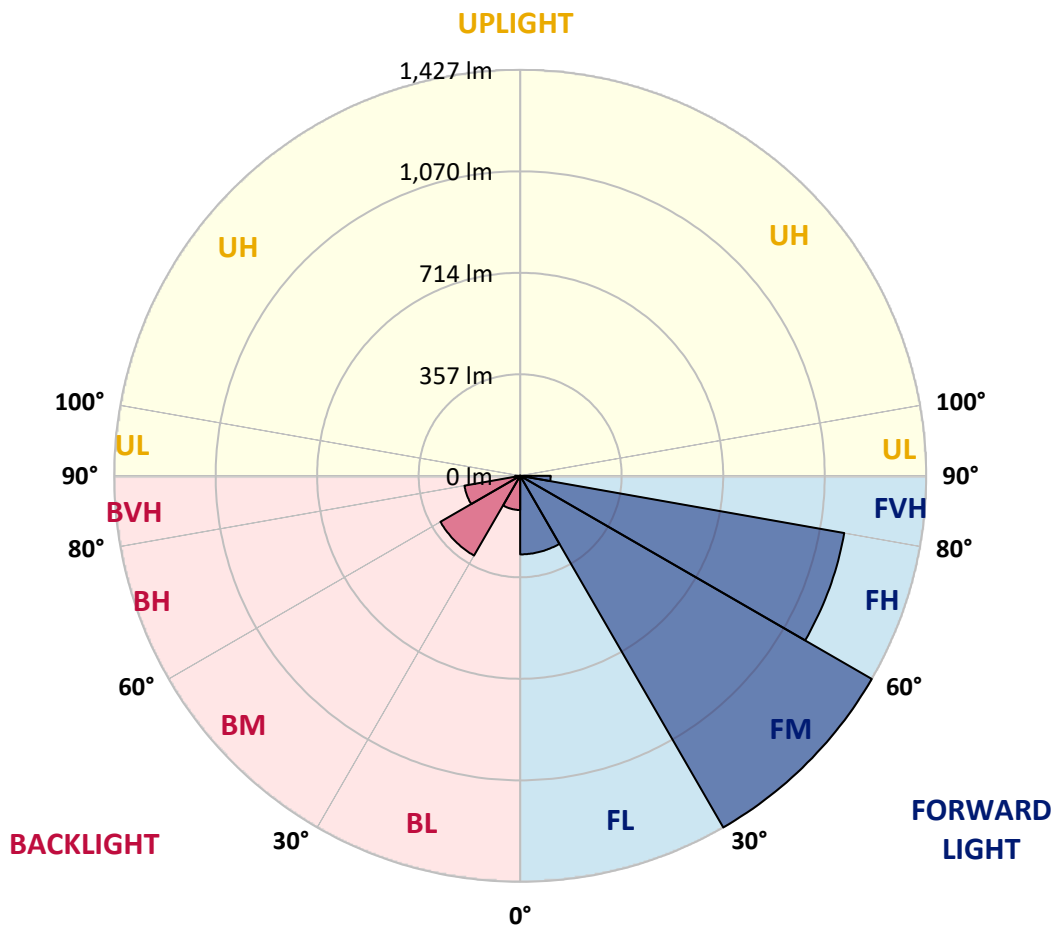
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	276.1	7.6			
FM (30°-60°)	1427.3	39.3			
FH (60°-80°)	1156.8	31.9			G1/1800
FVH (80°-90°)	107.2	3.0			G2/225
BL (0°-30°)	120.2	3.3	B1/500		
BM (30°-60°)	323.9	8.9	B1/1000		
BH (60°-80°)	199.0	5.5	B1/500		G1/500
BVH (80°-90°)	17.6	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°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	470.4	474.5	466.2	456.9	418.3	455.5	444.4	465.0	458.3	413.6	495.4
5°	581.3	588.7	580.6	608.6	610.4	617.6	550.9	592.4	578.0	574.3	615.7
7.5°	634.9	642.4	663.0	712.8	751.8	716.5	677.6	669.0	657.7	628.3	653.3
10°	638.2	642.4	670.1	775.7	794.5	819.5	794.4	735.0	710.6	646.7	627.6
12.5°	628.2	641.4	677.1	805.8	861.8	889.1	895.2	829.2	769.2	696.3	686.6
15°	695.6	700.3	751.6	827.3	865.8	888.9	909.0	868.3	849.5	791.7	714.1
17.5°	792.3	805.5	847.4	875.3	901.4	905.8	889.3	873.4	843.5	920.6	838.0
20°	857.7	883.3	934.7	940.0	885.2	894.9	892.6	893.7	876.6	1019.2	973.8
22.5°	1031.0	1058.6	1065.7	1035.0	931.9	887.7	896.5	922.0	989.3	1111.4	1162.8
25°	1187.8	1198.6	1262.8	1184.0	1019.5	923.2	908.8	974.8	1084.5	1266.7	1303.3
27.5°	1269.7	1283.6	1326.4	1154.7	1030.5	877.5	843.7	944.2	1056.0	1193.7	1354.4
30°	1374.5	1396.6	1454.9	1184.0	1063.4	907.4	832.6	928.7	1052.3	1241.5	1462.5
32.5°	1482.4	1525.5	1568.8	1287.0	1058.8	953.2	903.5	911.3	1085.7	1341.9	1574.5
35°	1625.3	1663.4	1700.7	1346.5	1151.1	991.4	942.1	1024.1	1171.7	1458.3	1730.6
37.5°	1931.0	1991.2	1892.8	1515.8	1251.4	1163.6	1074.6	1123.2	1262.5	1555.3	1985.7
40°	2125.7	2170.9	2075.9	1631.2	1428.2	1279.6	1265.0	1269.0	1387.7	1638.4	2157.4
42.5°	2319.2	2380.4	2229.2	1789.4	1641.9	1519.2	1443.8	1438.7	1527.8	1787.7	2352.6
45°	2463.5	2499.6	2281.9	1922.9	1871.1	1780.1	1723.6	1634.0	1712.0	1891.0	2473.4
47.5°	2532.2	2561.6	2366.5	2000.5	2019.7	2024.5	2126.4	1973.6	1872.9	1960.9	2536.8
50°	2617.9	2631.9	2416.4	2068.8	2160.9	2369.7	2394.2	2135.2	2029.6	2037.1	2574.3
52.5°	2720.4	2726.2	2489.1	2147.7	2303.7	2596.8	2559.0	2409.1	2178.7	2176.4	2644.9
55°	2849.3	2845.8	2580.3	2253.9	2405.6	2731.9	2703.2	2594.0	2341.2	2291.7	2754.7
57.5°	2963.9	2961.8	2701.2	2351.6	2491.4	2801.2	2809.7	2780.8	2451.8	2374.3	2873.8
60°	3020.1	3047.0	2838.9	2458.4	2496.8	2832.6	2835.7	2789.8	2575.3	2480.3	2905.4
62.5°	2998.2	3049.5	2906.5	2554.6	2446.6	2747.0	2760.2	2728.5	2569.7	2591.5	2834.7
65°	2898.9	2958.1	2847.9	2605.8	2415.8	2603.7	2607.0	2526.9	2489.3	2665.3	2668.8
67.5°	2712.7	2768.1	2661.3	2524.1	2204.9	2217.4	2292.1	2298.6	2243.7	2609.7	2435.9
70°	2386.6	2425.7	2358.8	2322.4	1843.0	1769.7	1850.7	1885.4	1910.4	2408.8	2156.3
72.5°	1889.4	1965.0	1975.5	1999.3	1483.8	1361.8	1421.8	1370.4	1533.3	2050.2	1761.8
75°	1397.9	1461.6	1530.1	1662.7	1169.5	1019.5	1012.1	985.9	1138.0	1648.8	1306.7
77.5°	987.8	1028.5	1081.2	1328.2	882.6	785.2	789.8	763.2	821.8	1246.1	902.6
80°	708.1	729.4	753.9	875.0	651.1	677.5	678.2	653.0	611.1	846.3	602.5
82.5°	504.6	521.1	549.1	577.1	485.4	555.3	554.8	553.2	484.5	572.0	376.9
85°	281.0	303.2	351.8	452.1	350.5	397.0	349.1	384.5	355.6	380.8	190.8
87.5°	19.7	17.6	78.7	262.0	163.6	119.5	62.7	124.1	159.2	198.9	26.6
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°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	512.3	518.5	494.4	458.1	468.0	457.2	443.7	422.5	379.0	406.0	406.2
5°	615.3	591.9	573.1	555.3	525.4	480.1	474.1	437.9	417.4	428.2	426.6
7.5°	647.5	614.3	585.9	522.4	466.9	396.7	375.5	354.0	345.1	371.1	381.5
10°	612.1	577.5	549.6	472.4	434.7	390.8	332.7	303.0	285.4	292.3	296.3
12.5°	640.7	605.3	517.8	474.6	412.5	385.7	334.9	291.2	265.1	271.5	263.9
15°	668.1	620.4	532.9	447.0	396.7	357.9	316.7	271.7	241.0	230.1	224.3
17.5°	768.5	689.3	531.2	431.5	373.8	329.2	279.6	230.3	209.9	198.6	188.9
20°	890.8	780.5	540.7	415.5	349.5	293.3	239.3	193.5	179.2	171.8	169.2
22.5°	1036.4	897.4	595.1	413.2	326.6	267.1	217.1	188.6	172.5	164.4	161.1
25°	1152.1	1018.3	635.2	428.7	325.4	245.4	203.7	209.5	202.1	204.6	185.0
27.5°	1264.4	1051.2	612.7	421.8	292.6	207.0	200.5	212.7	219.0	220.9	220.2
30°	1359.3	1190.3	617.6	383.1	247.2	168.7	153.5	159.5	176.9	204.6	209.9
32.5°	1498.2	1256.9	659.7	359.7	220.9	150.9	134.0	131.7	135.7	145.8	154.4
35°	1660.7	1410.0	671.5	353.5	202.8	143.0	131.2	125.9	128.0	135.6	137.3
37.5°	1963.7	1521.6	715.1	345.9	196.1	138.2	129.0	127.1	131.7	137.9	141.4
40°	2130.8	1722.4	717.3	339.4	187.5	136.3	130.5	129.6	132.4	140.8	143.0
42.5°	2353.5	1836.8	750.3	331.9	184.5	138.9	133.3	132.9	135.4	140.3	144.2
45°	2489.3	1913.4	752.1	327.5	183.8	150.5	137.0	135.7	135.2	138.2	141.7
47.5°	2576.8	2023.8	773.6	322.5	188.0	153.5	141.4	136.1	134.3	135.6	138.2
50°	2659.7	2112.0	814.3	321.8	192.4	150.5	149.1	135.9	132.4	131.9	133.8
52.5°	2761.4	2257.0	864.4	328.5	191.4	146.1	154.9	135.2	128.9	127.6	129.6
55°	2909.5	2412.5	917.8	322.9	180.5	137.7	149.3	134.7	125.2	122.9	124.6
57.5°	3005.4	2501.6	977.5	318.1	163.9	131.3	144.2	135.0	125.5	120.4	121.5
60°	2973.6	2453.7	1000.9	289.1	148.2	126.4	132.0	132.2	122.4	117.6	118.5
62.5°	2832.7	2280.3	979.0	255.3	136.6	119.4	119.5	126.9	113.2	109.9	111.3
65°	2635.9	2064.6	890.7	233.3	131.2	112.0	109.2	111.4	100.9	98.4	101.2
67.5°	2394.4	1798.8	759.2	210.0	129.2	101.9	98.6	97.7	91.0	88.2	91.0
70°	2091.4	1506.2	606.9	193.7	121.8	91.0	88.4	87.5	81.9	79.8	82.2
72.5°	1681.0	1176.1	468.3	181.2	113.7	81.0	78.7	77.6	72.9	69.9	72.9
75°	1195.6	898.8	347.9	162.0	102.3	70.8	68.1	66.7	62.3	59.5	62.1
77.5°	849.6	674.6	243.0	134.0	84.3	59.9	58.3	56.0	52.1	48.8	51.4
80°	628.2	482.0	156.7	103.3	64.4	47.9	47.0	45.4	41.7	37.7	39.6
82.5°	413.6	347.5	89.8	70.1	46.8	34.5	35.2	34.2	30.6	26.4	27.5
85°	185.2	205.8	47.7	38.6	30.5	20.8	22.7	22.0	19.4	15.3	15.7
87.5°	17.8	34.7	14.6	14.1	11.3	6.5	8.1	6.9	5.8	3.7	2.8
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°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	412.3	387.5	362.7	377.8	378.2	382.2	382.7	367.8	379.8	388.9	398.4
5°	418.8	402.6	403.5	388.9	381.0	391.2	389.1	385.0	392.3	402.3	414.4
7.5°	371.7	361.1	359.3	345.2	311.1	303.5	309.9	312.5	322.2	337.7	350.7
10°	290.1	311.1	287.5	282.0	273.1	255.5	245.2	244.0	264.6	277.1	288.0
12.5°	261.4	256.2	253.3	238.4	238.4	219.7	213.7	219.2	250.9	259.9	273.9
15°	222.7	218.8	205.8	198.4	194.9	187.3	193.7	198.9	228.5	229.2	244.0
17.5°	184.9	182.6	170.2	168.8	165.3	162.0	167.8	180.5	196.5	193.7	200.5
20°	165.3	157.4	146.1	150.2	146.5	143.8	141.4	159.3	170.6	174.3	178.3
22.5°	160.4	146.0	139.3	135.6	135.7	131.5	132.0	147.0	164.1	166.4	163.9
25°	183.3	157.6	135.9	125.2	121.1	119.7	123.8	137.0	157.6	162.5	164.4
27.5°	214.4	171.1	140.0	121.7	113.6	114.3	120.1	129.2	153.5	162.3	164.6
30°	205.8	160.9	140.1	119.0	109.0	112.7	114.8	123.6	150.4	163.6	175.0
32.5°	158.8	144.7	141.0	121.1	117.1	111.3	114.3	122.7	141.0	149.3	149.8
35°	134.5	123.8	121.3	116.4	110.7	108.3	111.6	119.0	131.0	136.1	135.4
37.5°	133.5	121.7	112.0	109.9	107.6	106.9	108.8	115.7	127.8	136.8	134.9
40°	135.2	120.6	110.7	107.0	107.9	104.8	106.7	115.1	128.3	136.8	135.0
42.5°	133.1	119.4	109.2	106.3	107.2	102.8	105.1	113.9	126.9	137.0	133.6
45°	128.9	116.5	108.3	103.5	107.6	101.1	103.9	110.7	122.7	133.6	129.8
47.5°	124.6	113.2	104.6	101.6	105.6	99.3	100.5	106.5	118.5	129.2	125.9
50°	120.1	109.0	101.6	100.7	103.5	98.9	97.0	101.9	113.4	124.1	121.3
52.5°	115.1	105.5	99.5	99.1	101.8	96.7	93.8	97.7	107.9	118.7	116.4
55°	110.4	101.6	96.8	97.7	100.7	94.7	91.2	93.7	102.1	112.7	109.5
57.5°	105.6	97.2	93.3	95.8	98.1	92.3	87.9	89.3	96.1	106.5	102.8
60°	101.4	93.3	89.4	92.4	94.5	88.6	83.5	84.3	90.5	99.8	96.5
62.5°	96.0	89.1	84.0	87.9	89.4	83.6	78.2	79.2	84.2	93.0	90.5
65°	88.2	83.8	79.0	81.7	83.8	77.8	72.7	73.9	77.6	85.9	84.2
67.5°	81.5	77.3	74.1	76.2	76.6	72.0	67.4	68.1	71.1	78.9	76.9
70°	74.1	70.1	67.6	69.2	69.0	65.1	61.6	61.8	64.3	71.3	68.7
72.5°	66.0	62.1	60.9	61.8	61.1	57.6	54.2	55.5	57.0	62.3	60.2
75°	57.4	53.9	53.2	54.0	53.0	49.6	46.7	47.9	49.3	53.7	51.1
77.5°	48.4	45.2	45.4	45.6	44.2	41.9	38.9	40.1	41.0	44.0	41.4
80°	38.6	36.1	36.8	36.8	35.2	33.6	30.8	31.2	31.7	32.7	30.8
82.5°	28.2	28.2	28.2	28.3	25.0	25.5	23.1	22.9	22.4	22.2	21.0
85°	16.7	17.4	17.8	18.3	13.6	15.8	13.7	13.2	12.1	11.1	10.7
87.5°	3.7	4.8	4.8	4.6	0.0	1.8	0.9	1.4	0.4	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°	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6	382.6
2.5°	387.5	376.9	396.7	414.3	411.4	421.7	397.9	433.1	470.4	470.4
5°	411.3	402.3	407.4	417.6	425.4	460.9	490.5	519.9	580.6	581.3
7.5°	346.8	366.2	370.8	367.8	401.1	446.8	495.6	579.4	630.8	634.9
10°	324.3	333.1	347.0	354.8	368.3	413.4	473.9	573.4	628.0	638.2
12.5°	293.8	326.4	347.5	390.8	401.6	410.6	506.9	593.0	630.6	628.2
15°	260.6	285.2	315.7	363.6	390.8	459.5	526.4	655.6	676.9	695.6
17.5°	207.7	225.9	266.4	320.9	388.6	451.8	574.6	733.1	772.9	792.3
20°	171.0	171.1	211.6	284.0	357.6	419.4	593.0	797.4	847.9	857.7
22.5°	161.6	153.5	174.8	233.6	323.4	438.6	629.9	900.7	1006.2	1031.0
25°	156.5	146.7	160.0	206.2	298.9	448.6	704.4	1042.8	1178.2	1187.8
27.5°	158.6	163.2	167.4	183.8	268.0	429.8	687.1	1106.3	1251.4	1269.7
30°	172.9	180.3	170.6	176.2	242.4	402.5	718.0	1209.5	1343.7	1374.5
32.5°	143.8	141.0	140.1	152.5	216.9	377.8	782.6	1354.7	1443.7	1482.4
35°	129.8	125.4	127.1	141.2	204.4	374.3	818.8	1475.0	1601.6	1625.3
37.5°	129.2	124.1	126.4	137.0	208.8	380.6	876.9	1668.0	1880.1	1931.0
40°	128.0	125.2	126.4	134.3	204.2	384.2	910.4	1830.1	2074.1	2125.7
42.5°	127.8	126.4	127.6	136.4	199.5	385.7	956.7	1976.6	2278.5	2319.2
45°	127.3	128.7	128.7	138.2	197.4	396.3	984.0	2048.4	2413.4	2463.5
47.5°	124.8	129.0	135.9	137.7	188.7	391.4	1022.5	2157.4	2485.0	2532.2
50°	121.7	128.5	145.1	134.2	187.3	379.4	1067.6	2243.8	2576.9	2617.9
52.5°	117.4	127.6	143.0	127.3	184.9	377.3	1130.8	2356.2	2684.1	2720.4
55°	111.4	124.5	136.4	120.4	178.9	370.6	1227.5	2495.4	2824.5	2849.3
57.5°	106.0	119.7	126.9	116.5	164.6	372.0	1294.7	2609.0	2942.2	2963.9
60°	101.1	119.2	113.4	112.5	150.0	353.2	1316.5	2607.7	2986.1	3020.1
62.5°	95.8	112.5	103.9	107.0	137.1	333.8	1270.2	2495.9	2938.7	2998.2
65°	88.9	96.5	96.0	103.2	137.5	302.3	1164.1	2298.8	2820.6	2898.9
67.5°	80.8	85.4	88.4	96.8	141.9	277.8	993.3	2061.6	2619.5	2712.7
70°	72.5	77.1	80.5	88.6	146.0	266.5	790.7	1728.5	2292.1	2386.6
72.5°	64.1	68.8	71.5	78.5	140.5	242.4	585.2	1344.9	1839.8	1889.4
75°	55.3	59.9	62.0	68.5	122.0	200.5	404.0	1018.7	1347.5	1397.9
77.5°	46.3	51.2	51.9	57.2	93.1	153.3	259.0	781.3	954.2	987.8
80°	37.0	41.9	41.9	44.7	65.5	105.5	155.1	589.4	694.9	708.1
82.5°	26.6	31.9	31.5	31.7	45.2	65.3	89.8	441.7	502.1	504.6
85°	15.7	19.4	19.2	17.6	26.8	35.2	48.6	274.3	280.3	281.0
87.5°	3.0	4.6	4.0	1.8	7.4	10.4	14.1	50.9	20.2	19.7
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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