

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: P366874

Luminaire Tested: **MSA-SA1C-727-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366874  
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-SA1C-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**

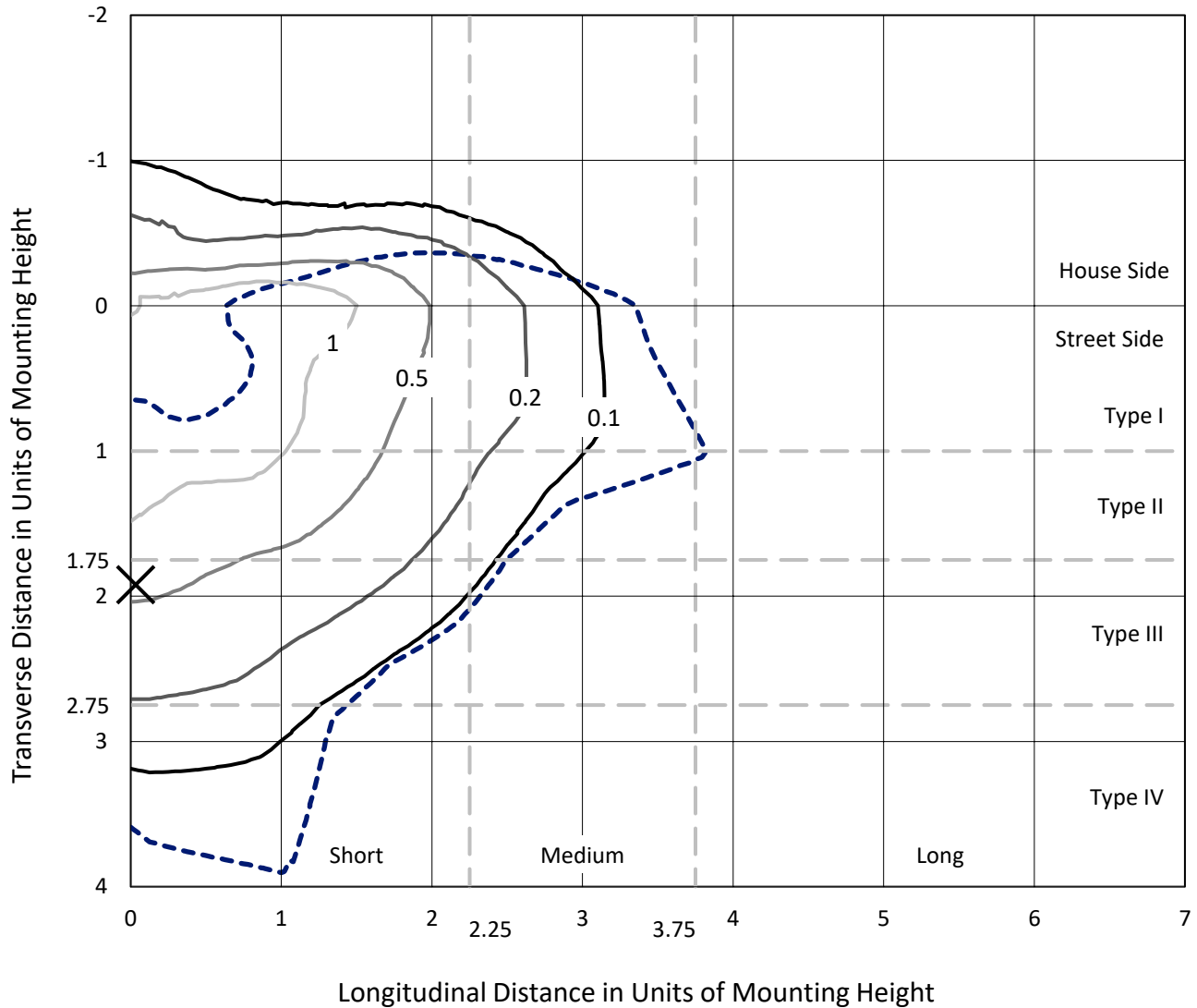
Lumens per Lamp: N/A  
Luminaire Lumens: 4493 lumens  
Efficiency: N/A  
Efficacy: 76.2 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2  
  
Input Watts (W): 59  
Input Voltage (V): NR  
Input Current (Ain): NR  
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

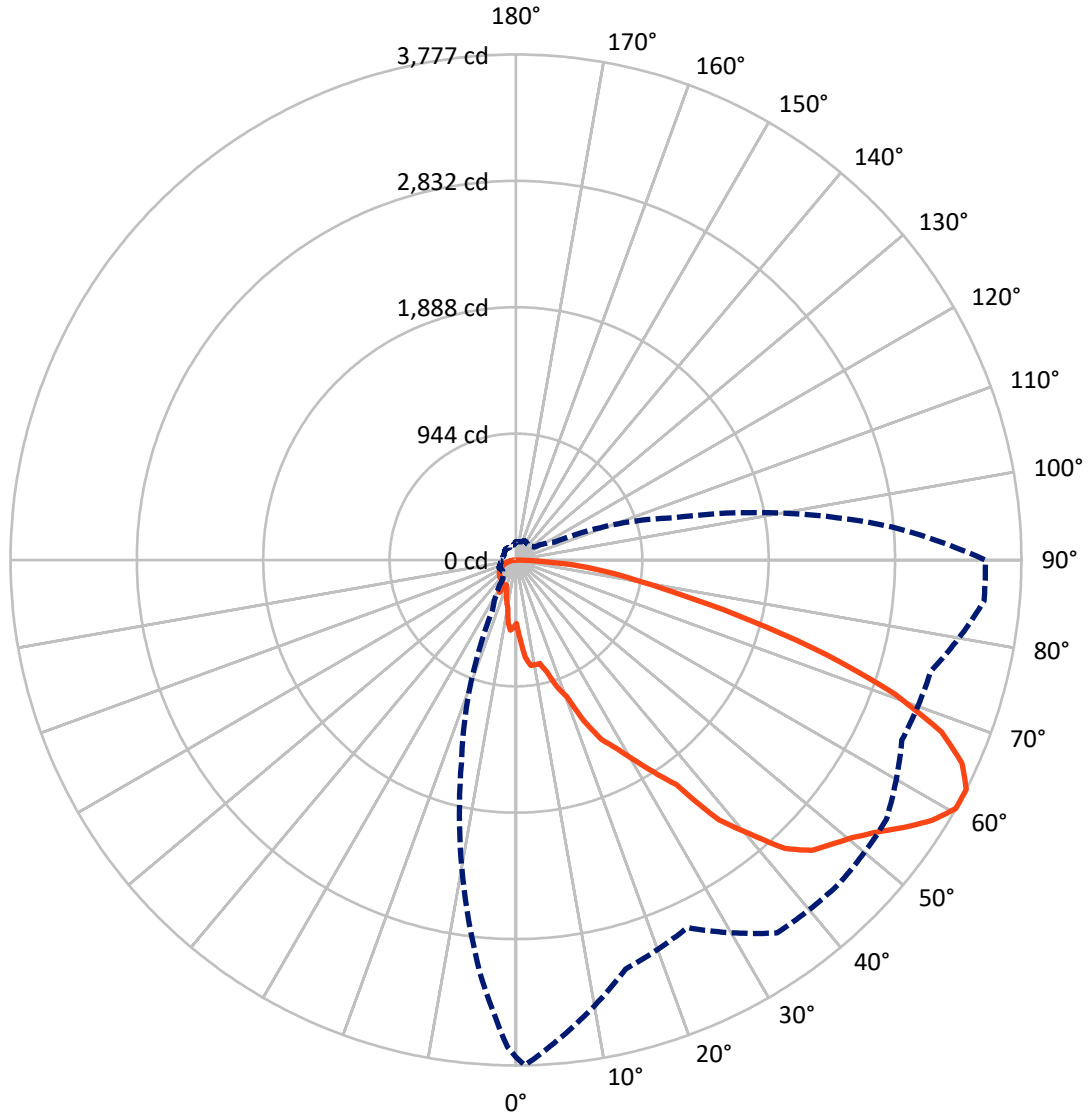
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.9 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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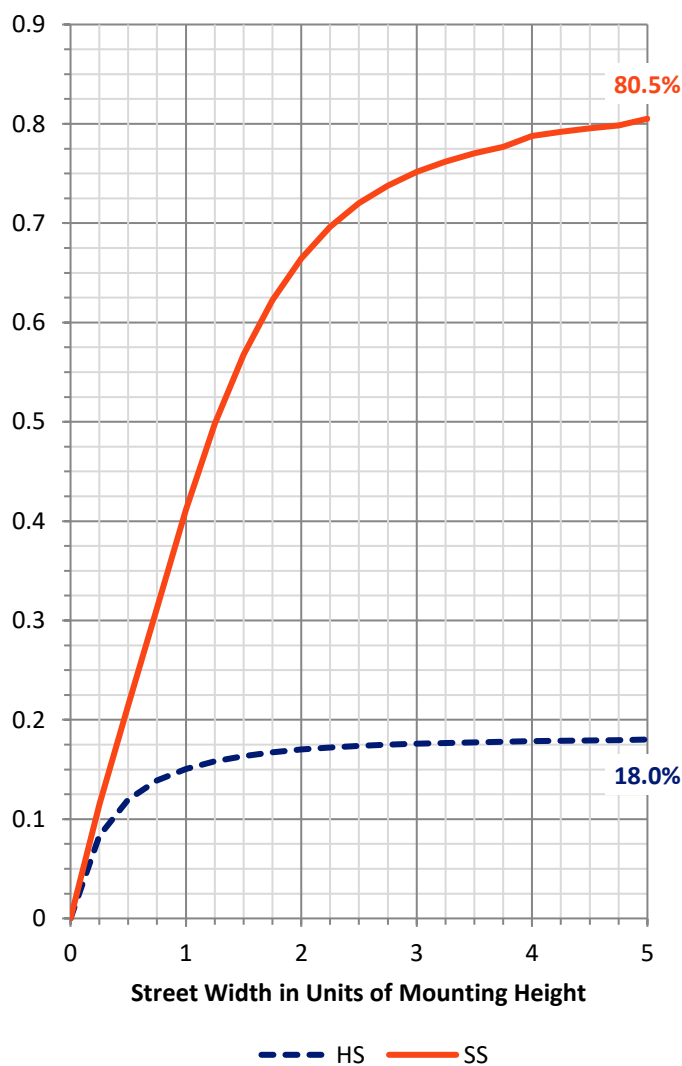
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	818.1	0.0	818.1
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	3674.8	0.0	3674.8
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	4493.0	0.0	4493.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.3	1.2
10°-20°	157.8	3.5
20°-30°	278.6	6.2
30°-40°	434.0	9.7
40°-50°	714.7	15.9
50°-60°	1020.0	22.7
60°-70°	1081.6	24.1
70°-80°	597.4	13.3
80°-90°	154.5	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°	4493.0	100.0
0°-180°	4493.0	100.0

**Coefficient of Utilization**

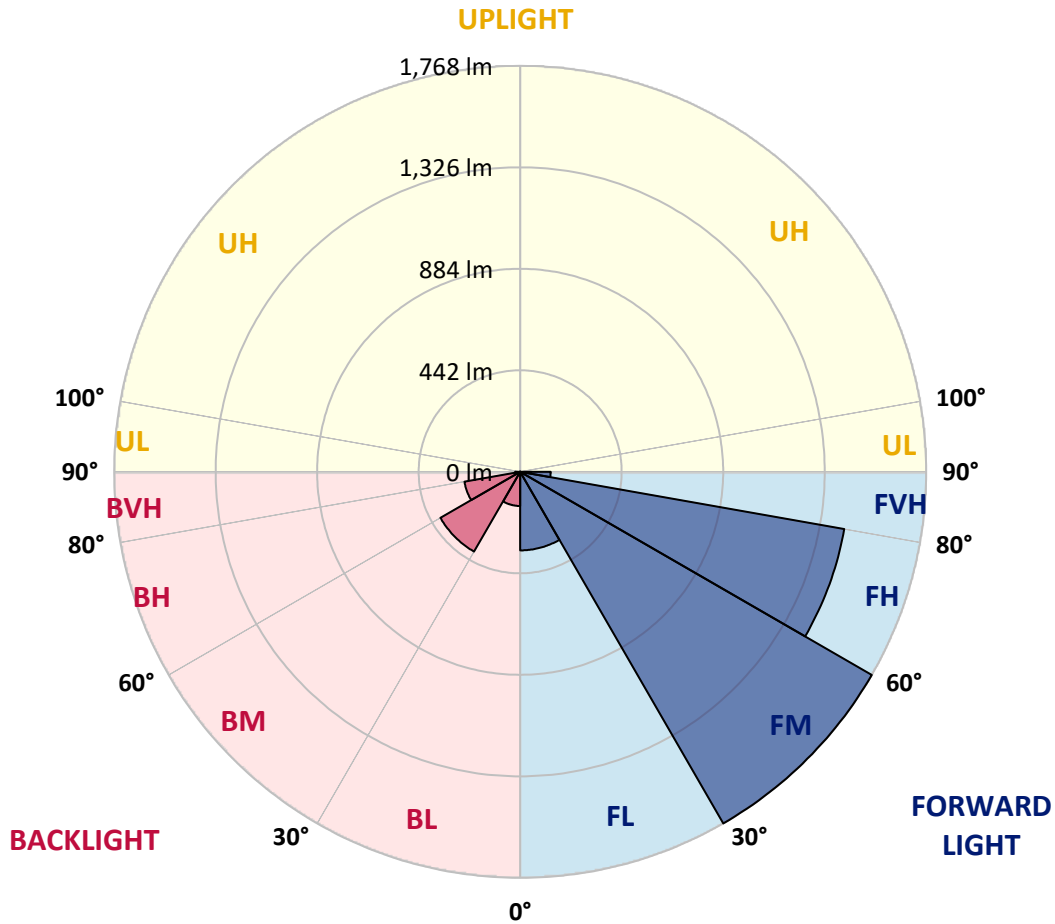


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	342.0	7.6			
FM (30°-60°)	1767.6	39.3			
FH (60°-80°)	1432.5	31.9			G1/1800
FVH (80°-90°)	132.7	3.0			G2/225
BL (0°-30°)	148.8	3.3	B1/500		
BM (30°-60°)	401.1	8.9	B1/1000		
BH (60°-80°)	246.5	5.5	B1/500		G1/500
BVH (80°-90°)	21.8	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°	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8
2.5°	582.6	587.6	577.3	565.8	518.0	564.0	550.3	575.8	567.5	512.2	613.5
5°	719.9	729.1	719.1	753.7	755.9	764.9	682.2	733.7	715.8	711.2	762.5
7.5°	786.2	795.6	821.1	882.8	931.0	887.4	839.2	828.5	814.6	778.2	809.1
10°	790.4	795.6	829.8	960.6	984.0	1014.9	983.8	910.3	880.0	800.8	777.3
12.5°	777.9	794.3	838.5	997.9	1067.3	1101.1	1108.7	1026.9	952.6	862.3	850.3
15°	861.4	867.3	930.8	1024.5	1072.3	1100.8	1125.7	1075.3	1052.0	980.5	884.3
17.5°	981.1	997.5	1049.4	1084.1	1116.3	1121.8	1101.3	1081.7	1044.6	1140.1	1037.8
20°	1062.2	1093.9	1157.5	1164.1	1096.3	1108.3	1105.4	1106.7	1085.6	1262.2	1205.9
22.5°	1276.8	1311.0	1319.7	1281.8	1154.0	1099.3	1110.2	1141.8	1225.1	1376.4	1440.1
25°	1471.1	1484.4	1563.9	1466.3	1262.6	1143.4	1125.5	1207.2	1343.1	1568.7	1614.1
27.5°	1572.4	1589.7	1642.6	1430.1	1276.1	1086.7	1044.8	1169.3	1307.8	1478.3	1677.3
30°	1702.2	1729.6	1801.8	1466.3	1316.9	1123.7	1031.1	1150.1	1303.2	1537.6	1811.2
32.5°	1835.8	1889.2	1942.9	1593.8	1311.2	1180.4	1118.9	1128.5	1344.6	1661.8	1949.9
35°	2012.9	2060.0	2106.2	1667.5	1425.5	1227.7	1166.7	1268.3	1451.0	1806.0	2143.2
37.5°	2391.4	2465.9	2344.1	1877.3	1549.8	1441.0	1330.9	1391.0	1563.5	1926.1	2459.2
40°	2632.5	2688.5	2570.8	2020.1	1768.7	1584.7	1566.6	1571.6	1718.5	2029.0	2671.8
42.5°	2872.1	2948.0	2760.7	2216.1	2033.4	1881.4	1788.1	1781.8	1892.1	2213.9	2913.6
45°	3050.9	3095.6	2825.9	2381.3	2317.2	2204.5	2134.5	2023.5	2120.1	2341.9	3063.1
47.5°	3135.9	3172.4	2930.8	2477.5	2501.3	2507.1	2633.4	2444.1	2319.4	2428.4	3141.6
50°	3242.1	3259.4	2992.5	2562.1	2676.1	2934.7	2965.0	2644.3	2513.5	2522.8	3188.1
52.5°	3369.0	3376.2	3082.5	2659.8	2852.9	3216.0	3169.1	2983.5	2698.1	2695.3	3275.5
55°	3528.6	3524.3	3195.5	2791.2	2979.2	3383.2	3347.7	3212.5	2899.4	2838.1	3411.5
57.5°	3670.6	3667.9	3345.3	2912.2	3085.4	3469.1	3479.6	3443.8	3036.3	2940.4	3558.9
60°	3740.1	3773.5	3515.8	3044.6	3092.1	3507.9	3511.8	3454.9	3189.4	3071.6	3598.2
62.5°	3713.1	3776.5	3599.5	3163.6	3030.0	3401.9	3418.3	3379.1	3182.4	3209.4	3510.5
65°	3590.1	3663.4	3526.9	3227.1	2991.8	3224.5	3228.6	3129.4	3082.7	3300.8	3305.1
67.5°	3359.4	3428.1	3295.8	3125.9	2730.6	2746.1	2838.6	2846.6	2778.6	3231.9	3016.7
70°	2955.6	3004.0	2921.2	2876.1	2282.4	2191.7	2291.9	2334.9	2365.9	2983.1	2670.4
72.5°	2339.9	2433.4	2446.5	2476.0	1837.6	1686.5	1760.8	1697.2	1898.8	2539.0	2181.8
75°	1731.2	1810.1	1894.9	2059.1	1448.4	1262.6	1253.5	1221.0	1409.4	2041.9	1618.2
77.5°	1223.4	1273.7	1338.9	1644.8	1093.0	972.4	978.1	945.2	1017.8	1543.2	1117.8
80°	876.9	903.3	933.6	1083.6	806.3	839.0	839.9	808.7	756.8	1048.1	746.1
82.5°	624.9	645.4	680.0	714.7	601.1	687.7	687.0	685.1	600.0	708.4	466.8
85°	348.0	375.5	435.6	559.9	434.1	491.7	432.4	476.2	440.4	471.6	236.3
87.5°	24.4	21.8	97.5	324.4	202.6	148.0	77.6	153.7	197.1	246.4	32.9
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°	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8
2.5°	634.5	642.1	612.2	567.3	579.5	566.2	549.4	523.3	469.4	502.8	503.0
5°	762.0	733.0	709.7	687.7	650.6	594.6	587.2	542.2	517.0	530.3	528.3
7.5°	801.9	760.7	725.6	646.9	578.2	491.2	465.1	438.5	427.3	459.6	472.5
10°	758.1	715.1	680.7	585.0	538.3	484.0	412.1	375.2	353.4	361.9	366.9
12.5°	793.4	749.6	641.2	587.8	510.8	477.7	414.7	360.6	328.4	336.2	326.8
15°	827.4	768.3	660.0	553.6	491.2	443.3	392.2	336.4	298.5	285.0	277.8
17.5°	951.7	853.6	657.8	534.4	462.9	407.7	346.2	285.2	259.9	245.9	233.9
20°	1103.2	966.5	669.6	514.6	432.8	363.2	296.3	239.6	222.0	212.8	209.5
22.5°	1283.6	1111.3	736.9	511.7	404.4	330.8	268.8	233.5	213.7	203.6	199.5
25°	1426.8	1261.1	786.7	530.9	402.9	303.9	252.3	259.5	250.3	253.4	229.2
27.5°	1565.9	1301.9	758.7	522.4	362.4	256.4	248.3	263.4	271.2	273.6	272.8
30°	1683.4	1474.1	764.9	474.4	306.1	208.9	190.1	197.5	219.1	253.4	259.9
32.5°	1855.4	1556.5	817.0	445.4	273.6	186.9	165.9	163.1	168.1	180.5	191.2
35°	2056.7	1746.2	831.6	437.8	251.2	177.0	162.4	155.9	158.5	167.9	170.1
37.5°	2431.9	1884.4	885.6	428.4	242.9	171.2	159.8	157.4	163.1	170.7	175.1
40°	2638.8	2133.0	888.3	420.4	232.2	168.8	161.6	160.5	164.0	174.4	177.0
42.5°	2914.6	2274.7	929.3	411.0	228.5	172.0	165.0	164.6	167.7	173.8	178.6
45°	3082.7	2369.6	931.4	405.5	227.6	186.4	169.6	168.1	167.4	171.2	175.5
47.5°	3191.1	2506.3	958.0	399.4	232.9	190.1	175.1	168.5	166.4	167.9	171.2
50°	3293.8	2615.5	1008.4	398.6	238.3	186.4	184.7	168.3	164.0	163.3	165.7
52.5°	3419.8	2795.2	1070.5	406.8	237.0	181.0	191.9	167.4	159.6	158.1	160.5
55°	3603.2	2987.7	1136.6	399.9	223.5	170.5	184.9	166.8	155.0	152.2	154.4
57.5°	3722.0	3098.0	1210.5	394.0	203.0	162.7	178.6	167.2	155.5	149.1	150.4
60°	3682.6	3038.7	1239.5	358.0	183.6	156.5	163.5	163.7	151.5	145.6	146.7
62.5°	3508.1	2823.9	1212.5	316.1	169.2	147.8	148.0	157.2	140.2	136.1	137.8
65°	3264.4	2556.9	1103.0	288.9	162.4	138.7	135.2	138.0	124.9	121.9	125.4
67.5°	2965.2	2227.6	940.2	260.1	160.0	126.2	122.1	121.0	112.7	109.2	112.7
70°	2590.0	1865.3	751.6	239.8	150.9	112.7	109.5	108.4	101.4	98.8	101.8
72.5°	2081.8	1456.5	580.0	224.4	140.8	100.3	97.5	96.2	90.3	86.6	90.3
75°	1480.7	1113.1	430.8	200.6	126.7	87.6	84.4	82.6	77.2	73.7	77.0
77.5°	1052.2	835.5	300.9	165.9	104.4	74.1	72.2	69.3	64.5	60.4	63.7
80°	777.9	597.0	194.0	128.0	79.8	59.3	58.2	56.3	51.7	46.7	49.1
82.5°	512.2	430.4	111.2	86.8	58.0	42.7	43.6	42.3	37.9	32.7	34.0
85°	229.4	254.9	59.1	47.7	37.7	25.7	28.1	27.3	24.0	19.0	19.4
87.5°	22.0	43.0	18.1	17.4	14.0	8.1	10.0	8.5	7.2	4.6	3.5
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):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8
2.5°	510.6	479.9	449.1	467.9	468.3	473.3	474.0	455.5	470.3	481.6	493.4
5°	518.7	498.6	499.7	481.6	471.8	484.5	481.8	476.8	485.8	498.2	513.2
7.5°	460.3	447.2	445.0	427.6	385.3	375.9	383.7	387.0	399.0	418.2	434.3
10°	359.3	385.3	356.0	349.3	338.2	316.4	303.7	302.2	327.7	343.2	356.7
12.5°	323.8	317.2	313.7	295.2	295.2	272.1	264.7	271.4	310.7	321.8	339.3
15°	275.8	271.0	254.9	245.7	241.4	232.0	239.8	246.4	283.0	283.9	302.2
17.5°	228.9	226.1	210.8	209.1	204.7	200.6	207.8	223.5	243.3	239.8	248.3
20°	204.7	194.9	181.0	186.0	181.4	178.1	175.1	197.3	211.3	215.9	220.9
22.5°	198.6	180.7	172.5	167.9	168.1	162.9	163.5	182.1	203.2	206.0	203.0
25°	227.0	195.1	168.3	155.0	150.0	148.3	153.3	169.6	195.1	201.2	203.6
27.5°	265.6	211.9	173.3	150.7	140.6	141.5	148.7	160.0	190.1	201.0	203.9
30°	254.9	199.3	173.6	147.4	135.0	139.5	142.2	153.1	186.2	202.6	216.7
32.5°	196.7	179.2	174.6	150.0	145.0	137.8	141.5	152.0	174.6	184.9	185.5
35°	166.6	153.3	150.2	144.1	137.1	134.1	138.2	147.4	162.2	168.5	167.7
37.5°	165.3	150.7	138.7	136.1	133.2	132.3	134.7	143.2	158.3	169.4	167.0
40°	167.4	149.4	137.1	132.6	133.7	129.7	132.1	142.6	158.9	169.4	167.2
42.5°	164.8	147.8	135.2	131.7	132.8	127.3	130.2	141.1	157.2	169.6	165.5
45°	159.6	144.3	134.1	128.2	133.2	125.2	128.6	137.1	152.0	165.5	160.7
47.5°	154.4	140.2	129.5	125.8	130.8	123.0	124.5	131.9	146.7	160.0	155.9
50°	148.7	135.0	125.8	124.7	128.2	122.5	120.1	126.2	140.4	153.7	150.2
52.5°	142.6	130.6	123.2	122.8	126.0	119.7	116.2	121.0	133.7	147.0	144.1
55°	136.7	125.8	119.9	121.0	124.7	117.3	112.9	116.0	126.5	139.5	135.6
57.5°	130.8	120.4	115.6	118.6	121.4	114.2	108.8	110.5	119.0	131.9	127.3
60°	125.6	115.6	110.8	114.5	117.1	109.7	103.3	104.4	112.1	123.6	119.5
62.5°	118.8	110.3	104.0	108.8	110.8	103.6	96.8	98.1	104.2	115.1	112.1
65°	109.2	103.8	97.9	101.2	103.8	96.4	90.0	91.6	96.2	106.4	104.2
67.5°	100.9	95.7	91.8	94.4	94.8	89.2	83.5	84.4	88.1	97.7	95.3
70°	91.8	86.8	83.7	85.7	85.5	80.7	76.3	76.5	79.6	88.3	85.0
72.5°	81.8	77.0	75.4	76.5	75.7	71.3	67.2	68.7	70.6	77.2	74.6
75°	71.1	66.7	65.8	66.9	65.6	61.5	57.8	59.3	61.0	66.5	63.2
77.5°	60.0	56.0	56.3	56.5	54.7	51.9	48.2	49.7	50.8	54.5	51.2
80°	47.7	44.7	45.6	45.6	43.6	41.6	38.2	38.6	39.2	40.6	38.2
82.5°	34.9	34.9	34.9	35.1	31.0	31.6	28.6	28.3	27.7	27.5	25.9
85°	20.7	21.6	22.0	22.7	16.8	19.6	17.0	16.4	15.0	13.7	13.3
87.5°	4.6	5.9	5.9	5.7	0.0	2.2	1.1	1.7	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°	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8	473.8
2.5°	479.9	466.8	491.2	513.0	509.5	522.2	492.8	536.4	582.6	582.6
5°	509.3	498.2	504.5	517.2	526.8	570.8	607.4	643.8	719.1	719.9
7.5°	429.5	453.5	459.2	455.5	496.7	553.4	613.8	717.5	781.2	786.2
10°	401.6	412.5	429.7	439.3	456.1	511.9	586.9	710.1	777.7	790.4
12.5°	363.9	404.2	430.4	484.0	497.3	508.4	627.7	734.3	781.0	777.9
15°	322.7	353.2	390.9	450.2	484.0	569.1	651.9	811.9	838.3	861.4
17.5°	257.3	279.7	329.9	397.5	481.2	559.5	711.7	907.9	957.2	981.1
20°	211.7	211.9	262.1	351.7	442.8	519.4	734.3	987.5	1050.0	1062.2
22.5°	200.2	190.1	216.5	289.3	400.5	543.1	780.1	1115.4	1246.0	1276.8
25°	193.8	181.6	198.2	255.3	370.2	555.5	872.3	1291.4	1459.1	1471.1
27.5°	196.4	202.1	207.3	227.6	331.8	532.2	851.0	1370.1	1549.8	1572.4
30°	214.1	223.3	211.3	218.2	300.2	498.4	889.1	1497.9	1664.0	1702.2
32.5°	178.1	174.6	173.6	188.8	268.6	467.9	969.1	1677.8	1787.9	1835.8
35°	160.7	155.2	157.4	174.9	253.1	463.5	1014.1	1826.7	1983.4	2012.9
37.5°	160.0	153.7	156.5	169.6	258.6	471.4	1086.0	2065.6	2328.4	2391.4
40°	158.5	155.0	156.5	166.4	252.9	475.7	1127.4	2266.4	2568.6	2632.5
42.5°	158.3	156.5	158.1	169.0	247.0	477.7	1184.8	2447.8	2821.8	2872.1
45°	157.6	159.4	159.4	171.2	244.4	490.8	1218.6	2536.8	2988.8	3050.9
47.5°	154.6	159.8	168.3	170.5	233.7	484.7	1266.3	2671.8	3077.5	3135.9
50°	150.7	159.2	179.7	166.1	232.0	469.9	1322.1	2778.8	3191.3	3242.1
52.5°	145.4	158.1	177.0	157.6	228.9	467.2	1400.4	2917.9	3324.1	3369.0
55°	138.0	154.1	169.0	149.1	221.5	459.0	1520.1	3090.4	3497.9	3528.6
57.5°	131.3	148.3	157.2	144.3	203.9	460.7	1603.4	3231.0	3643.7	3670.6
60°	125.2	147.6	140.4	139.3	185.8	437.4	1630.4	3229.5	3698.0	3740.1
62.5°	118.6	139.3	128.6	132.6	169.8	413.4	1573.1	3091.0	3639.4	3713.1
65°	110.1	119.5	118.8	127.8	170.3	374.4	1441.6	2846.8	3493.1	3590.1
67.5°	100.1	105.7	109.5	119.9	175.7	344.1	1230.1	2553.1	3244.1	3359.4
70°	89.8	95.5	99.6	109.7	180.7	330.1	979.2	2140.6	2838.6	2955.6
72.5°	79.4	85.3	88.5	97.2	174.0	300.2	724.7	1665.5	2278.4	2339.9
75°	68.5	74.1	76.7	84.8	151.1	248.3	500.4	1261.5	1668.8	1731.2
77.5°	57.3	63.4	64.3	70.9	115.3	189.9	320.7	967.6	1181.7	1223.4
80°	45.8	51.9	51.9	55.4	81.1	130.6	192.1	730.0	860.6	876.9
82.5°	32.9	39.5	39.0	39.2	56.0	80.9	111.2	547.0	621.8	624.9
85°	19.4	24.0	23.8	21.8	33.1	43.6	60.2	339.7	347.1	348.0
87.5°	3.7	5.7	5.0	2.2	9.2	12.9	17.4	63.0	25.1	24.4
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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