

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: P596860

Luminaire Tested: **MSA-SA1B-835-U-SLL**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596860  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-24)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1B-835-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: 3577 lumens  
Efficiency: N/A  
Efficacy: 81.3 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

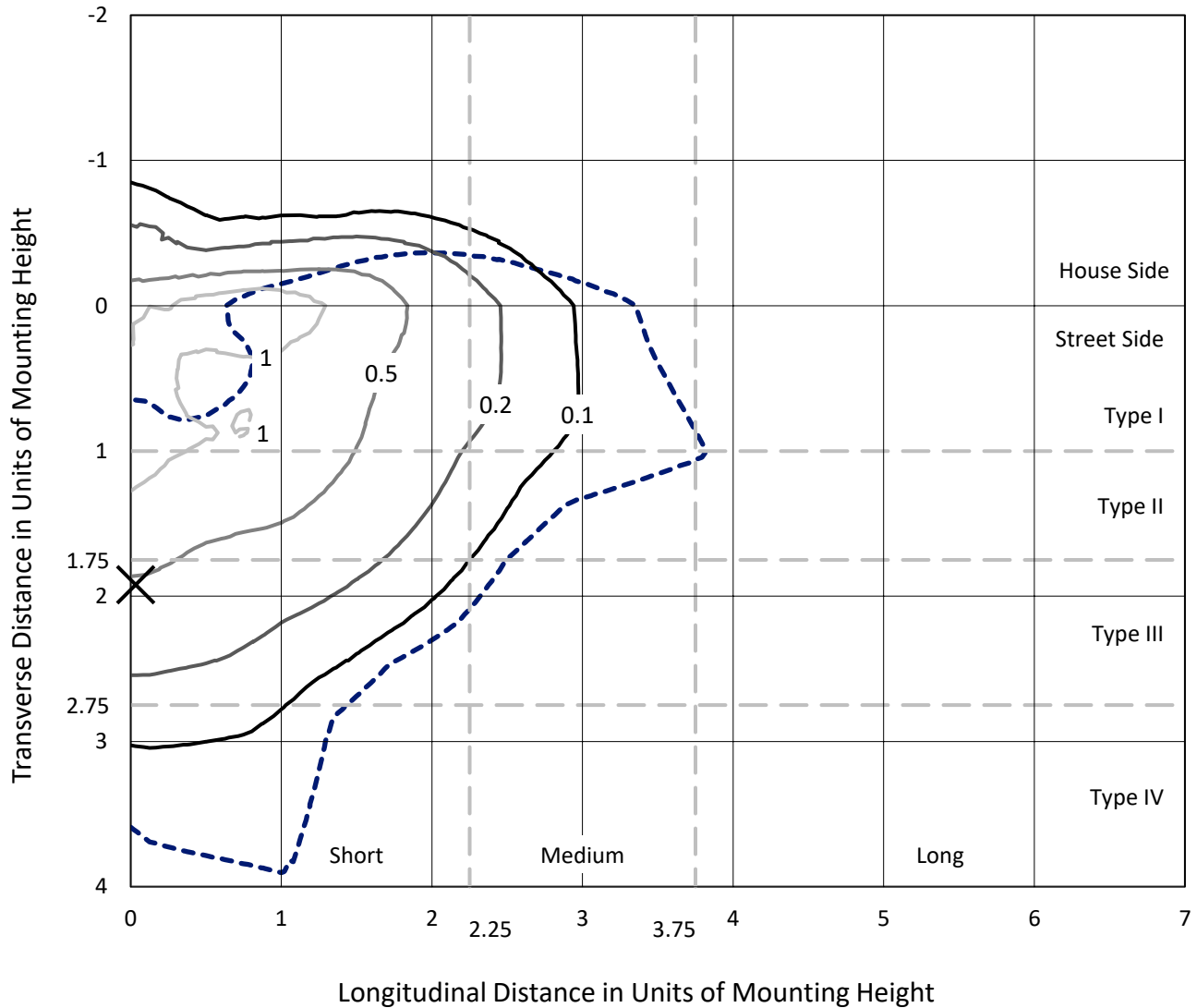
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

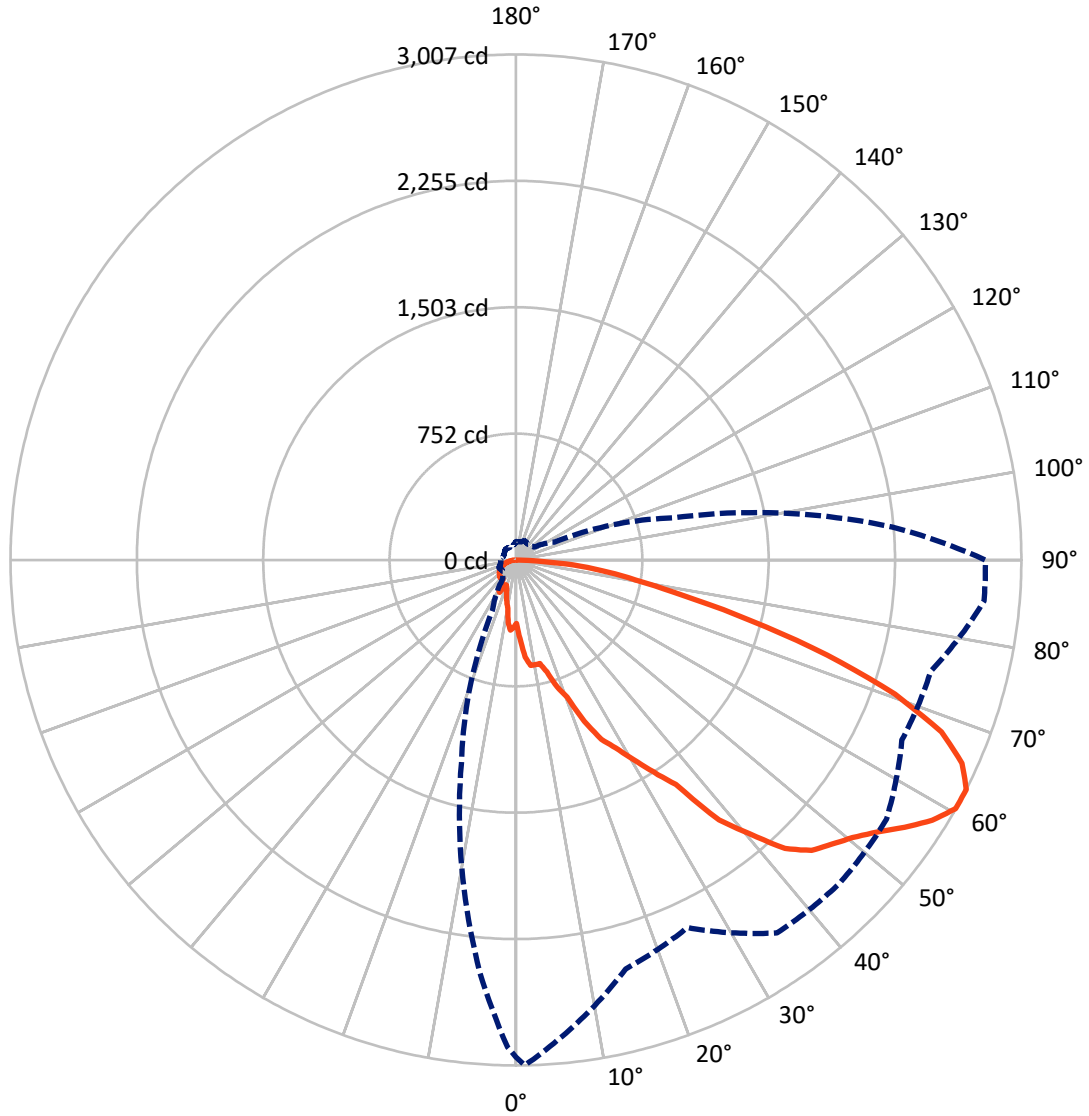
✕ Max cd  
 - - - 1/2 Max cd



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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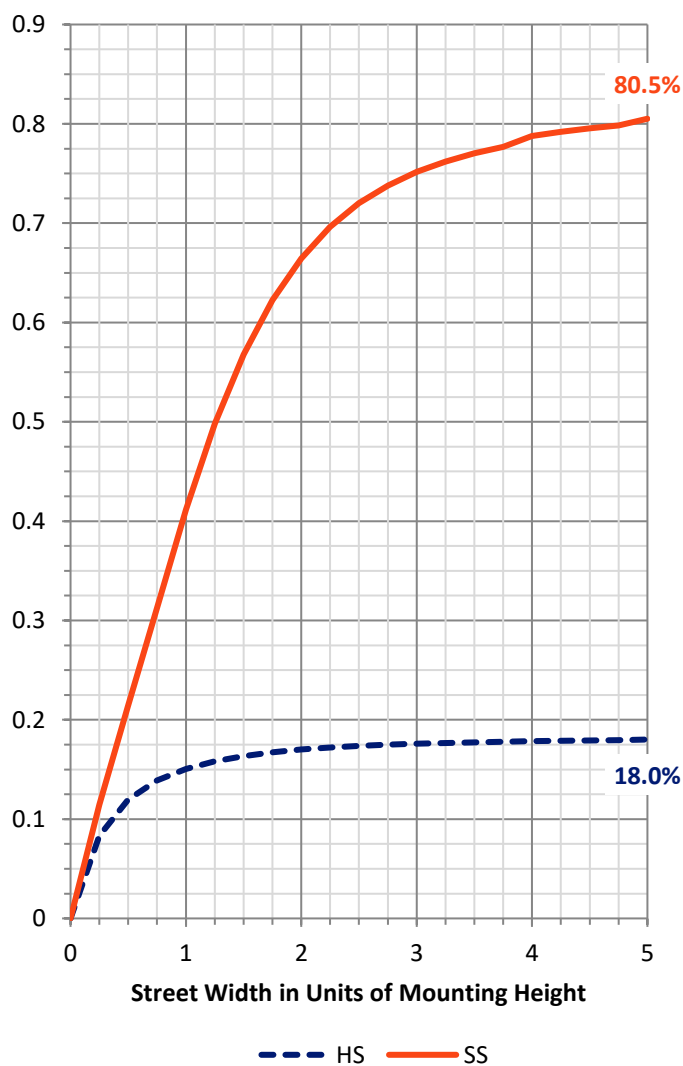
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	651.3	0.0	651.3
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	2925.6	0.0	2925.6
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	3577.0	0.0	3577.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.2	1.2
10°-20°	125.6	3.5
20°-30°	221.8	6.2
30°-40°	345.5	9.7
40°-50°	569.0	15.9
50°-60°	812.0	22.7
60°-70°	861.1	24.1
70°-80°	475.6	13.3
80°-90°	123.0	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°	3577.0	100.0
0°-180°	3577.0	100.0

**Coefficient of Utilization**

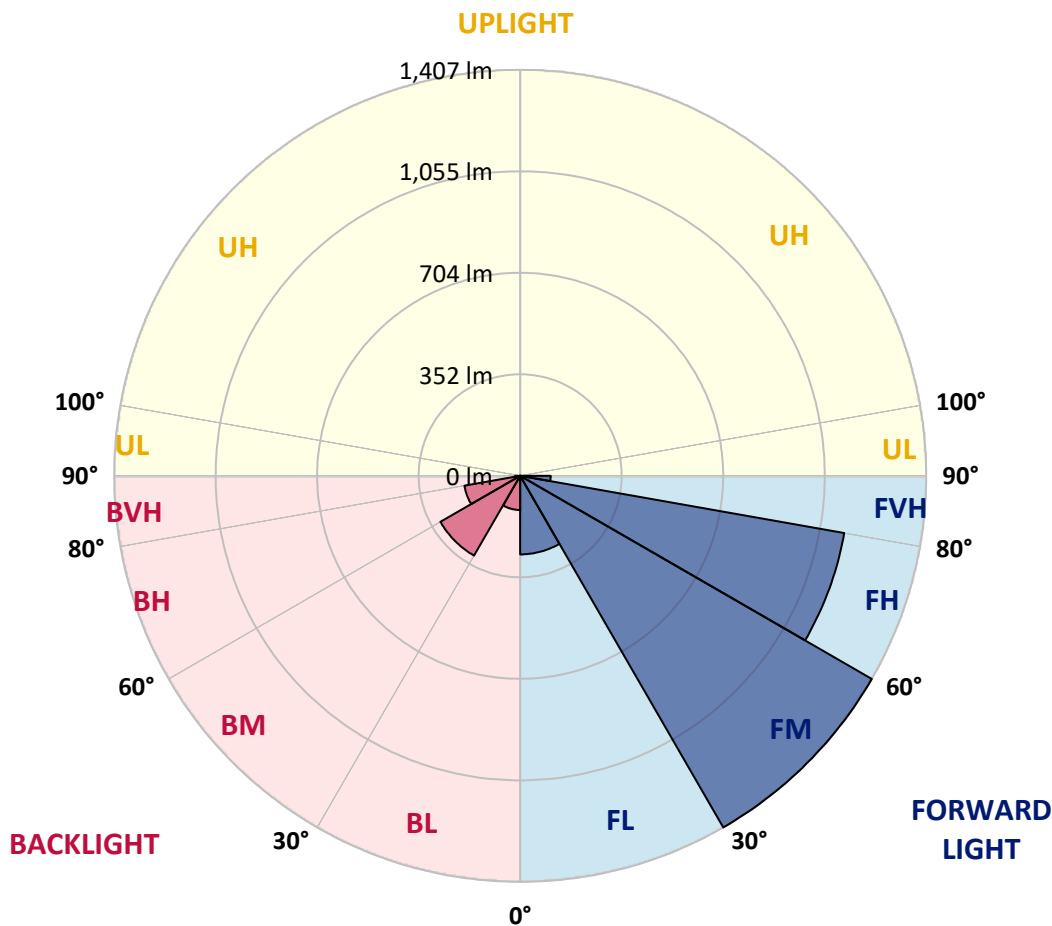


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	272.3	7.6			
FM (30°-60°)	1407.2	39.3			
FH (60°-80°)	1140.5	31.9			G1/1800
FVH (80°-90°)	105.7	3.0			G2/225
BL (0°-30°)	118.5	3.3	B1/500		
BM (30°-60°)	319.3	8.9	B1/1000		
BH (60°-80°)	196.2	5.5	B1/500		G1/500
BVH (80°-90°)	17.3	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°	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2
2.5°	463.8	467.8	459.6	450.4	412.4	449.1	438.1	458.4	451.8	407.7	488.5
5°	573.2	580.5	572.5	600.1	601.8	608.9	543.1	584.1	569.9	566.2	607.0
7.5°	625.9	633.4	653.7	702.8	741.2	706.5	668.1	659.6	648.5	619.5	644.2
10°	629.2	633.4	660.6	764.8	783.4	808.0	783.2	724.7	700.6	637.6	618.8
12.5°	619.3	632.4	667.6	794.5	849.7	876.6	882.7	817.6	758.4	686.5	677.0
15°	685.8	690.5	741.0	815.7	853.7	876.4	896.2	856.1	837.5	780.6	704.0
17.5°	781.1	794.1	835.4	863.0	888.7	893.1	876.8	861.1	831.6	907.7	826.2
20°	845.7	870.9	921.5	926.7	872.8	882.3	880.1	881.1	864.3	1004.9	960.1
22.5°	1016.5	1043.7	1050.7	1020.5	918.8	875.2	883.9	909.0	975.4	1095.8	1146.5
25°	1171.1	1181.7	1245.1	1167.3	1005.2	910.3	896.0	961.1	1069.3	1248.9	1285.0
27.5°	1251.9	1265.6	1307.8	1138.5	1016.0	865.1	831.8	930.9	1041.1	1176.9	1335.4
30°	1355.1	1377.0	1434.5	1167.3	1048.4	894.6	820.9	915.6	1037.5	1224.1	1441.9
32.5°	1461.6	1504.1	1546.8	1268.9	1043.9	939.8	890.8	898.5	1070.5	1323.0	1552.3
35°	1602.5	1640.0	1676.8	1327.5	1134.9	977.4	928.8	1009.7	1155.2	1437.8	1706.3
37.5°	1903.8	1963.2	1866.2	1494.5	1233.8	1147.2	1059.5	1107.4	1244.7	1533.4	1957.8
40°	2095.8	2140.4	2046.7	1608.2	1408.1	1261.6	1247.2	1251.2	1368.2	1615.3	2127.1
42.5°	2286.6	2347.0	2197.9	1764.3	1618.8	1497.8	1423.5	1418.5	1506.3	1762.5	2319.6
45°	2428.9	2464.5	2249.8	1895.8	1844.8	1755.1	1699.4	1611.0	1687.9	1864.4	2438.6
47.5°	2496.6	2525.6	2333.3	1972.4	1991.3	1996.0	2096.5	1945.8	1846.6	1933.3	2501.1
50°	2581.1	2594.9	2382.4	2039.7	2130.5	2336.4	2360.5	2105.2	2001.0	2008.5	2538.1
52.5°	2682.2	2687.9	2454.1	2117.5	2271.3	2560.3	2523.0	2375.3	2148.1	2145.8	2607.7
55°	2809.2	2805.8	2544.0	2222.2	2371.8	2693.5	2665.2	2557.5	2308.3	2259.5	2716.0
57.5°	2922.2	2920.1	2663.3	2318.5	2456.3	2761.8	2770.2	2741.7	2417.3	2340.9	2833.4
60°	2977.6	3004.2	2799.0	2423.9	2461.7	2792.7	2795.9	2750.6	2539.1	2445.4	2864.6
62.5°	2956.1	3006.6	2865.6	2518.7	2412.3	2708.4	2721.4	2690.2	2533.6	2555.1	2794.8
65°	2858.2	2916.5	2807.8	2569.2	2381.9	2567.1	2570.4	2491.4	2454.3	2627.8	2631.3
67.5°	2674.5	2729.2	2623.8	2488.6	2173.9	2186.3	2259.8	2266.3	2212.1	2573.0	2401.7
70°	2353.1	2391.6	2325.6	2289.7	1817.0	1744.8	1824.7	1858.9	1883.5	2374.9	2126.0
72.5°	1862.9	1937.3	1947.8	1971.2	1462.9	1342.6	1401.8	1351.2	1511.7	2021.3	1737.0
75°	1378.2	1441.1	1508.6	1639.3	1153.1	1005.2	997.9	972.1	1122.0	1625.6	1288.3
77.5°	974.0	1014.1	1066.0	1309.5	870.2	774.2	778.7	752.5	810.3	1228.6	889.9
80°	698.1	719.1	743.3	862.7	641.9	667.9	668.6	643.8	602.5	834.4	594.0
82.5°	497.5	513.8	541.4	569.0	478.6	547.5	547.0	545.4	477.7	564.0	371.6
85°	277.0	298.9	346.8	445.8	345.6	391.4	344.2	379.1	350.6	375.5	188.2
87.5°	19.4	17.4	77.6	258.3	161.3	117.9	61.8	122.4	156.9	196.1	26.2
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°	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2
2.5°	505.1	511.2	487.4	451.7	461.4	450.8	437.4	416.6	373.7	400.3	400.5
5°	606.7	583.6	565.0	547.5	518.0	473.4	467.5	431.7	411.6	422.1	420.6
7.5°	638.4	605.6	577.7	515.0	460.3	391.1	370.2	349.1	340.2	365.9	376.1
10°	603.5	569.3	541.9	465.7	428.6	385.3	328.1	298.7	281.4	288.1	292.1
12.5°	631.7	596.8	510.5	468.0	406.7	380.3	330.2	287.1	261.4	267.7	260.2
15°	658.7	611.7	525.4	440.7	391.1	352.9	312.3	267.8	237.6	226.9	221.1
17.5°	757.7	679.6	523.7	425.4	368.5	324.6	275.6	227.0	206.9	195.8	186.3
20°	878.3	769.5	533.1	409.7	344.6	289.2	235.9	190.8	176.7	169.4	166.8
22.5°	1021.9	884.7	586.7	407.4	322.0	263.3	214.0	185.9	170.1	162.1	158.8
25°	1135.9	1004.0	626.3	422.7	320.8	242.0	200.8	206.6	199.3	201.7	182.4
27.5°	1246.7	1036.5	604.1	415.9	288.5	204.1	197.7	209.7	215.9	217.8	217.1
30°	1340.2	1173.6	608.9	377.7	243.7	166.3	151.4	157.3	174.4	201.7	206.9
32.5°	1477.2	1239.2	650.4	354.6	217.8	148.8	132.1	129.8	133.8	143.7	152.2
35°	1637.4	1390.2	662.0	348.6	200.0	140.9	129.3	124.1	126.2	133.7	135.4
37.5°	1936.1	1500.3	705.1	341.1	193.4	136.3	127.2	125.3	129.8	135.9	139.4
40°	2100.8	1698.1	707.2	334.7	184.9	134.4	128.6	127.8	130.5	138.9	140.9
42.5°	2320.4	1811.0	739.8	327.2	181.9	137.0	131.4	131.1	133.5	138.3	142.2
45°	2454.3	1886.5	741.5	322.9	181.2	148.4	135.0	133.8	133.3	136.3	139.7
47.5°	2540.5	1995.3	762.7	318.0	185.4	151.4	139.4	134.2	132.4	133.7	136.3
50°	2622.3	2082.3	802.8	317.3	189.7	148.4	147.0	134.0	130.5	130.0	131.9
52.5°	2722.6	2225.3	852.3	323.9	188.7	144.1	152.8	133.3	127.1	125.8	127.8
55°	2868.6	2378.6	904.9	318.3	177.9	135.7	147.2	132.8	123.4	121.2	122.9
57.5°	2963.2	2466.4	963.7	313.7	161.6	129.5	142.2	133.1	123.8	118.7	119.8
60°	2931.8	2419.2	986.8	285.0	146.2	124.6	130.2	130.4	120.6	116.0	116.8
62.5°	2792.9	2248.2	965.3	251.7	134.7	117.7	117.9	125.2	111.6	108.3	109.7
65°	2598.9	2035.6	878.1	230.0	129.3	110.4	107.6	109.9	99.5	97.0	99.8
67.5°	2360.7	1773.5	748.5	207.1	127.4	100.5	97.2	96.3	89.7	87.0	89.7
70°	2062.0	1485.0	598.3	190.9	120.1	89.7	87.1	86.3	80.7	78.6	81.1
72.5°	1657.3	1159.5	461.7	178.6	112.1	79.8	77.6	76.5	71.9	68.9	71.9
75°	1178.8	886.1	343.0	159.7	100.9	69.8	67.2	65.8	61.4	58.7	61.3
77.5°	837.7	665.2	239.5	132.1	83.1	59.0	57.5	55.2	51.4	48.1	50.7
80°	619.3	475.3	154.5	101.9	63.5	47.2	46.3	44.8	41.1	37.1	39.1
82.5°	407.7	342.6	88.5	69.1	46.2	34.0	34.7	33.7	30.2	26.0	27.1
85°	182.6	202.9	47.0	38.0	30.0	20.5	22.4	21.7	19.1	15.1	15.4
87.5°	17.5	34.2	14.4	13.9	11.1	6.4	8.0	6.8	5.7	3.6	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°	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2
2.5°	406.5	382.1	357.6	372.5	372.9	376.8	377.4	362.6	374.4	383.4	392.8
5°	412.9	397.0	397.8	383.4	375.6	385.7	383.6	379.6	386.7	396.6	408.6
7.5°	366.4	356.0	354.3	340.4	306.7	299.3	305.5	308.1	317.7	332.9	345.8
10°	286.1	306.7	283.5	278.1	269.2	251.9	241.8	240.6	260.9	273.2	284.0
12.5°	257.8	252.6	249.8	235.0	235.0	216.6	210.7	216.1	247.4	256.2	270.1
15°	219.6	215.8	202.9	195.6	192.2	184.7	190.9	196.1	225.3	226.0	240.6
17.5°	182.3	180.0	167.9	166.5	163.0	159.7	165.4	177.9	193.7	190.9	197.7
20°	163.0	155.2	144.1	148.1	144.4	141.8	139.4	157.1	168.2	171.8	175.8
22.5°	158.1	143.9	137.3	133.7	133.8	129.7	130.2	144.9	161.8	164.0	161.6
25°	180.7	155.4	134.0	123.4	119.4	118.0	122.0	135.0	155.4	160.2	162.1
27.5°	211.4	168.7	138.0	119.9	112.0	112.7	118.4	127.4	151.4	160.0	162.3
30°	202.9	158.7	138.2	117.3	107.4	111.1	113.2	121.9	148.2	161.3	172.5
32.5°	156.6	142.7	139.0	119.4	115.4	109.7	112.7	121.0	139.0	147.2	147.7
35°	132.6	122.0	119.6	114.7	109.2	106.8	110.1	117.3	129.1	134.2	133.5
37.5°	131.6	119.9	110.4	108.3	106.1	105.4	107.3	114.0	126.0	134.9	133.0
40°	133.3	118.9	109.2	105.5	106.4	103.3	105.2	113.5	126.5	134.9	133.1
42.5°	131.2	117.7	107.6	104.8	105.7	101.4	103.6	112.3	125.2	135.0	131.7
45°	127.1	114.9	106.8	102.1	106.1	99.6	102.4	109.2	121.0	131.7	127.9
47.5°	122.9	111.6	103.1	100.2	104.1	97.9	99.1	105.0	116.8	127.4	124.1
50°	118.4	107.4	100.2	99.3	102.1	97.6	95.6	100.5	111.8	122.4	119.6
52.5°	113.5	104.0	98.1	97.7	100.3	95.3	92.5	96.3	106.4	117.0	114.7
55°	108.8	100.2	95.5	96.3	99.3	93.4	89.9	92.3	100.7	111.1	108.0
57.5°	104.1	95.8	92.0	94.4	96.7	91.0	86.6	88.0	94.8	105.0	101.4
60°	100.0	92.0	88.2	91.1	93.2	87.3	82.3	83.1	89.2	98.4	95.1
62.5°	94.6	87.8	82.8	86.6	88.2	82.5	77.1	78.1	83.0	91.7	89.2
65°	87.0	82.6	77.9	80.5	82.6	76.7	71.7	72.9	76.5	84.7	83.0
67.5°	80.4	76.2	73.1	75.2	75.5	71.0	66.5	67.2	70.1	77.8	75.9
70°	73.1	69.1	66.7	68.2	68.0	64.2	60.8	60.9	63.4	70.3	67.7
72.5°	65.1	61.3	60.1	60.9	60.2	56.8	53.5	54.7	56.2	61.4	59.4
75°	56.6	53.1	52.4	53.3	52.2	48.9	46.0	47.2	48.6	52.9	50.3
77.5°	47.7	44.6	44.8	45.0	43.6	41.3	38.4	39.6	40.4	43.4	40.8
80°	38.0	35.6	36.3	36.3	34.7	33.2	30.4	30.7	31.2	32.3	30.4
82.5°	27.8	27.8	27.8	27.9	24.6	25.2	22.7	22.6	22.0	21.9	20.7
85°	16.5	17.2	17.5	18.1	13.4	15.6	13.5	13.0	12.0	10.9	10.6
87.5°	3.6	4.7	4.7	4.5	0.0	1.7	0.9	1.4	0.3	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°	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2	377.2
2.5°	382.1	371.6	391.1	408.4	405.7	415.7	392.3	427.0	463.8	463.8
5°	405.5	396.6	401.7	411.7	419.4	454.4	483.6	512.6	572.5	573.2
7.5°	342.0	361.0	365.6	362.6	395.4	440.5	488.6	571.3	621.9	625.9
10°	319.7	328.4	342.1	349.8	363.1	407.6	467.3	565.4	619.2	629.2
12.5°	289.7	321.8	342.6	385.3	395.9	404.8	499.7	584.6	621.8	619.3
15°	256.9	281.2	311.2	358.4	385.3	453.0	519.0	646.4	667.4	685.8
17.5°	204.8	222.7	262.6	316.4	383.1	445.4	566.6	722.8	762.0	781.1
20°	168.5	168.7	208.6	280.0	352.5	413.5	584.6	786.1	836.0	845.7
22.5°	159.3	151.4	172.4	230.3	318.9	432.4	621.1	888.0	992.0	1016.5
25°	154.3	144.6	157.8	203.3	294.7	442.3	694.5	1028.1	1161.6	1171.1
27.5°	156.4	160.9	165.1	181.2	264.2	423.7	677.5	1090.8	1233.8	1251.9
30°	170.5	177.7	168.2	173.8	239.0	396.8	707.9	1192.5	1324.8	1355.1
32.5°	141.8	139.0	138.2	150.3	213.9	372.5	771.6	1335.7	1423.4	1461.6
35°	127.9	123.6	125.3	139.2	201.5	369.0	807.3	1454.3	1579.1	1602.5
37.5°	127.4	122.4	124.6	135.0	205.9	375.3	864.6	1644.5	1853.7	1903.8
40°	126.2	123.4	124.6	132.4	201.4	378.8	897.6	1804.4	2045.0	2095.8
42.5°	126.0	124.6	125.8	134.5	196.7	380.3	943.2	1948.8	2246.5	2286.6
45°	125.5	126.9	126.9	136.3	194.6	390.7	970.1	2019.6	2379.4	2428.9
47.5°	123.1	127.2	134.0	135.7	186.1	385.9	1008.2	2127.1	2450.1	2496.6
50°	119.9	126.7	143.0	132.3	184.7	374.1	1052.6	2212.3	2540.7	2581.1
52.5°	115.8	125.8	140.9	125.5	182.3	372.0	1114.9	2323.0	2646.4	2682.2
55°	109.9	122.7	134.5	118.7	176.4	365.4	1210.2	2460.3	2784.8	2809.2
57.5°	104.5	118.0	125.2	114.9	162.3	366.8	1276.5	2572.3	2900.9	2922.2
60°	99.6	117.5	111.8	110.9	147.9	348.2	1298.0	2571.1	2944.1	2977.6
62.5°	94.4	110.9	102.4	105.5	135.2	329.1	1252.4	2460.9	2897.4	2956.1
65°	87.7	95.1	94.6	101.7	135.6	298.0	1147.7	2266.4	2780.9	2858.2
67.5°	79.7	84.2	87.1	95.5	139.9	273.9	979.3	2032.6	2582.7	2674.5
70°	71.5	76.0	79.3	87.3	143.9	262.8	779.6	1704.2	2259.8	2353.1
72.5°	63.2	67.9	70.5	77.4	138.5	239.0	577.0	1326.0	1813.9	1862.9
75°	54.5	59.0	61.1	67.5	120.3	197.7	398.4	1004.3	1328.6	1378.2
77.5°	45.7	50.5	51.2	56.4	91.8	151.2	255.3	770.4	940.8	974.0
80°	36.5	41.3	41.3	44.1	64.6	104.0	152.9	581.1	685.1	698.1
82.5°	26.2	31.4	31.1	31.2	44.6	64.4	88.5	435.5	495.1	497.5
85°	15.4	19.1	18.9	17.4	26.4	34.7	47.9	270.4	276.3	277.0
87.5°	3.0	4.5	4.0	1.7	7.3	10.2	13.9	50.2	20.0	19.4
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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