

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: P368282

Luminaire Tested: **MSA-SA4A-760-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368282  
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-SA4A-760-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) 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: 13281 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

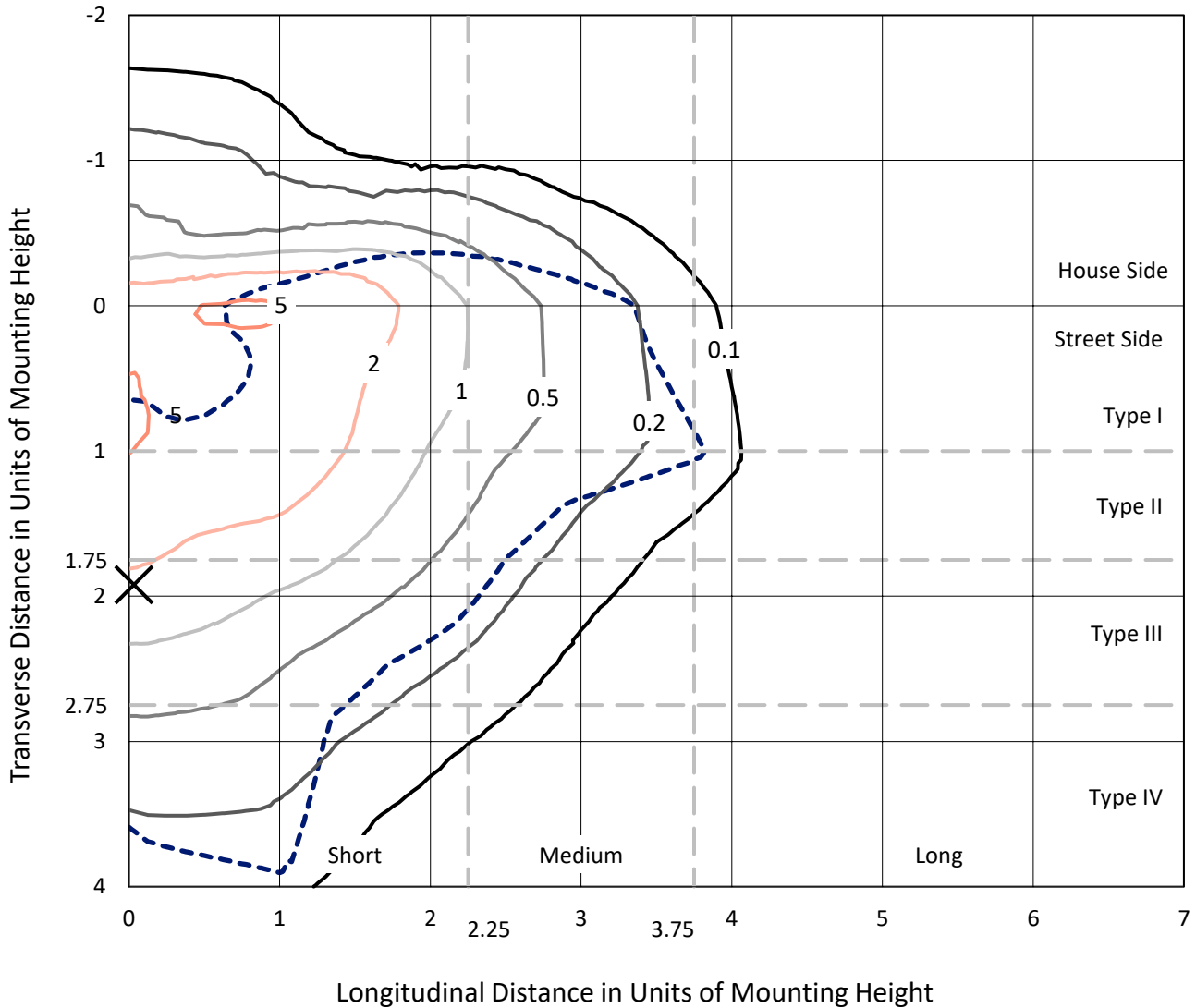
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

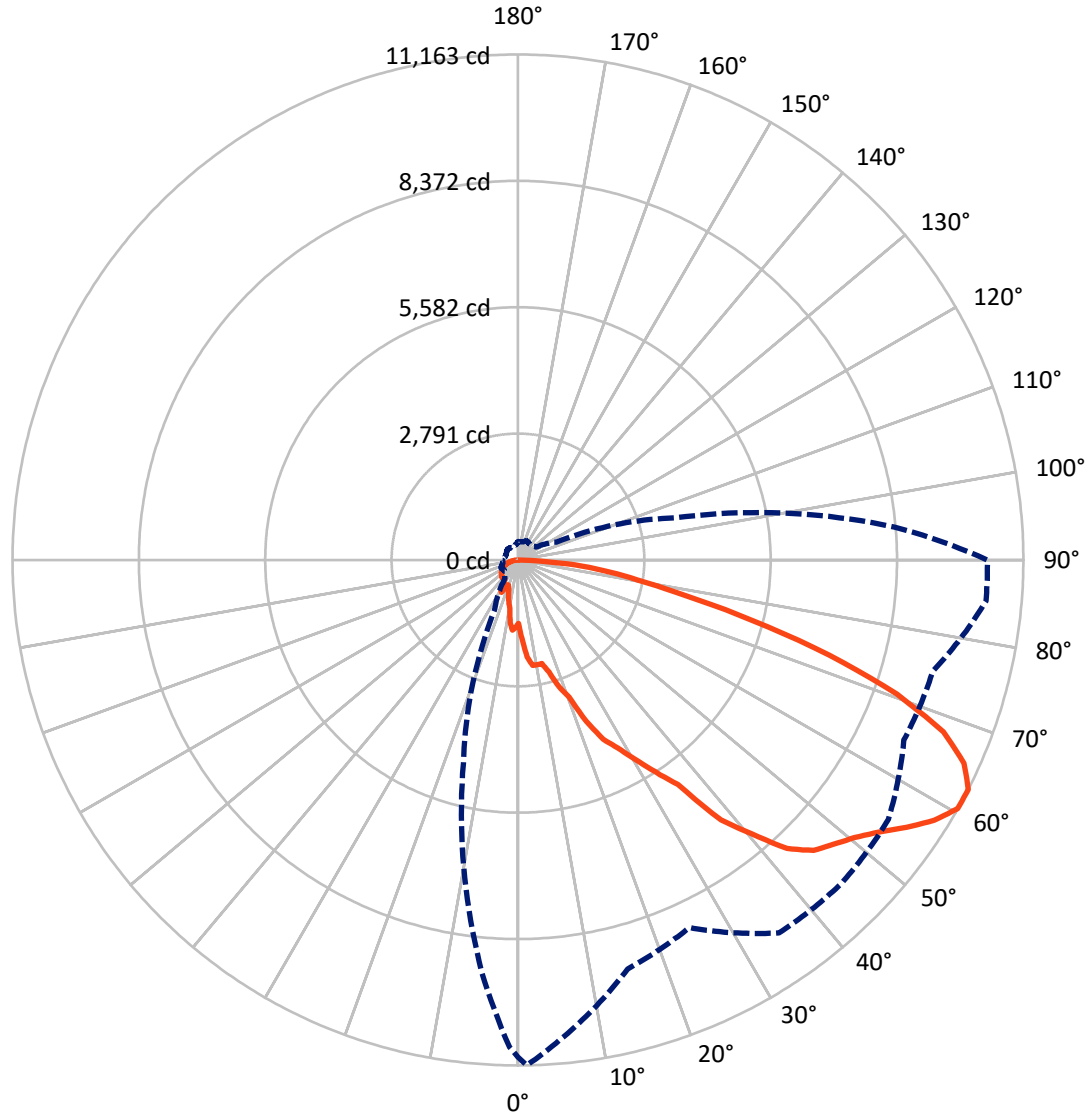
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 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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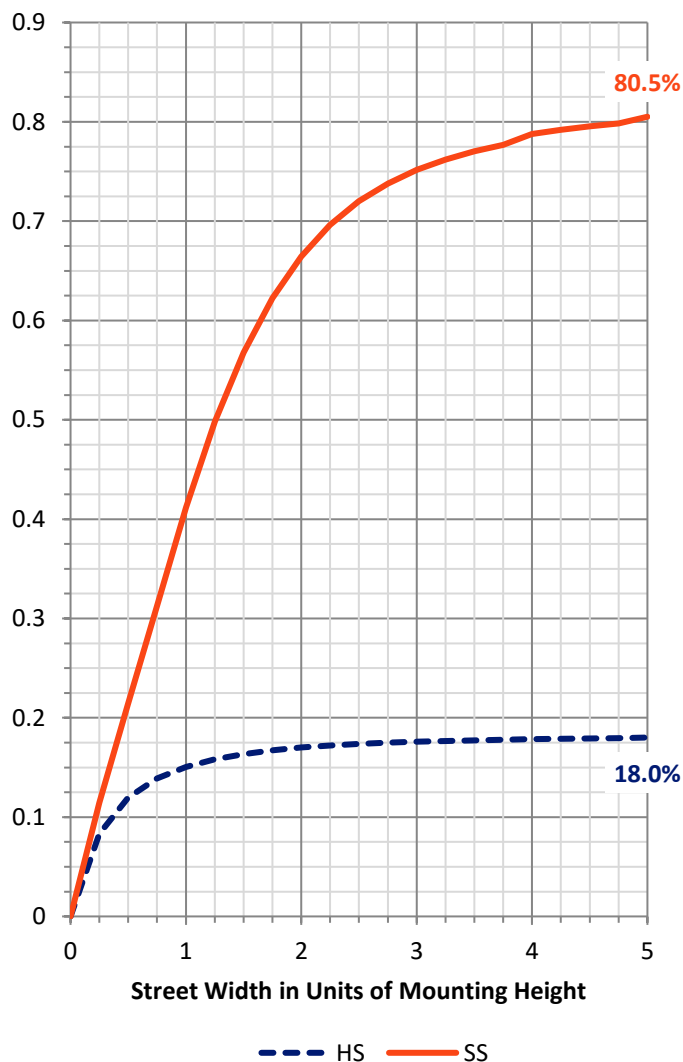
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2418.4	0.0	2418.4
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	10862.6	0.0	10862.6
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	13281.0	0.0	13281.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.5	1.2
10°-20°	466.5	3.5
20°-30°	823.6	6.2
30°-40°	1282.9	9.7
40°-50°	2112.5	15.9
50°-60°	3015.0	22.7
60°-70°	3197.1	24.1
70°-80°	1766.0	13.3
80°-90°	456.8	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°	13281.0	100.0
0°-180°	13281.0	100.0

**Coefficient of Utilization**



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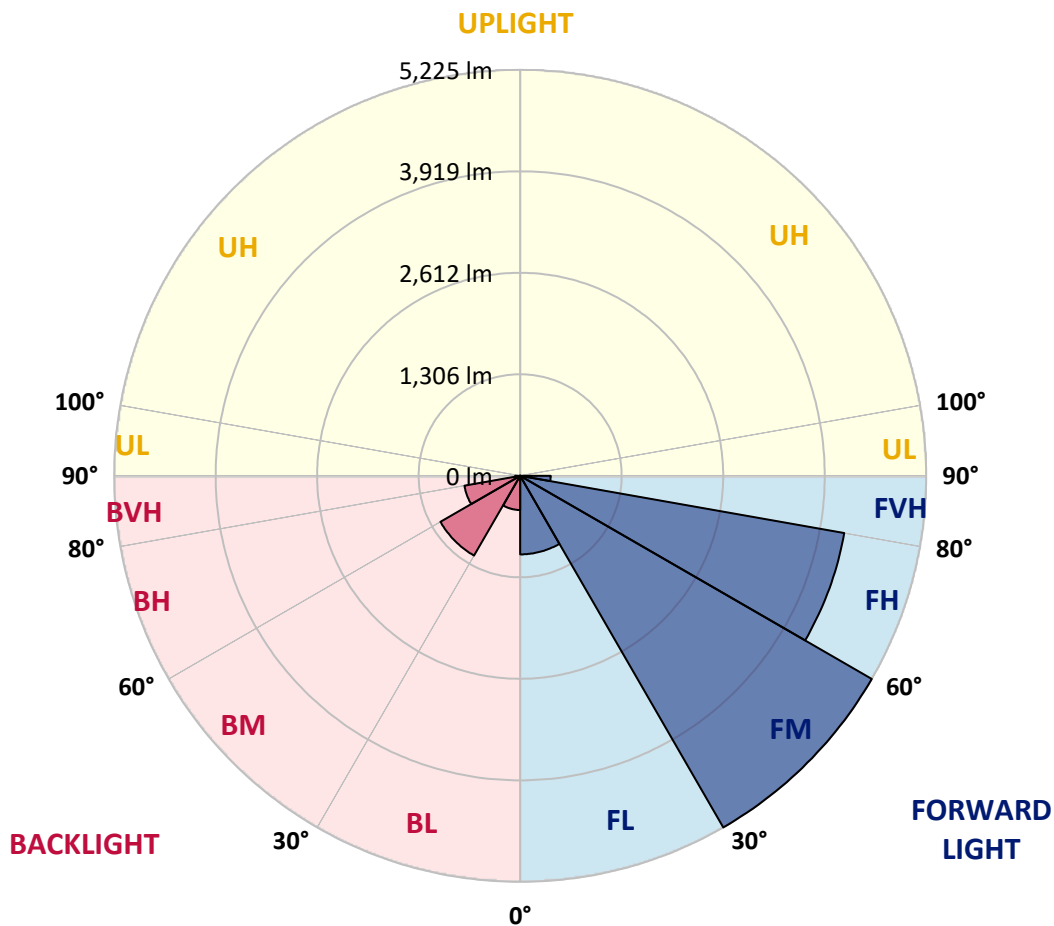
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1010.9	7.6			
FM (30°-60°)	5224.9	39.3			
FH (60°-80°)	4234.5	31.9			G2/5000
FVH (80°-90°)	392.3	3.0			G3/500
BL (0°-30°)	439.8	3.3	B1/500		
BM (30°-60°)	1185.5	8.9	B2/2500		
BH (60°-80°)	728.6	5.5	B2/1000		G2/1000
BVH (80°-90°)	64.4	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5
2.5°	1722.1	1736.9	1706.6	1672.4	1531.3	1667.3	1626.7	1702.1	1677.6	1513.9	1813.6
5°	2128.1	2155.2	2125.5	2228.0	2234.4	2260.9	2016.6	2168.7	2115.8	2102.3	2253.8
7.5°	2324.0	2351.7	2427.1	2609.5	2752.0	2623.1	2480.6	2449.0	2407.8	2300.2	2391.7
10°	2336.3	2351.7	2452.9	2839.6	2908.6	3000.1	2907.9	2690.7	2601.1	2367.2	2297.6
12.5°	2299.5	2347.9	2478.7	2949.8	3154.8	3254.7	3277.2	3035.5	2815.8	2548.9	2513.5
15°	2546.4	2563.8	2751.3	3028.4	3169.6	3254.0	3327.5	3178.6	3109.6	2898.3	2614.0
17.5°	2900.2	2948.5	3101.9	3204.4	3299.8	3315.9	3255.3	3197.3	3087.7	3370.0	3067.8
20°	3139.9	3233.4	3421.6	3440.9	3240.5	3275.9	3267.5	3271.4	3208.9	3730.9	3564.7
22.5°	3774.1	3875.3	3901.1	3788.9	3411.3	3249.5	3281.7	3375.2	3621.4	4068.6	4256.8
25°	4348.3	4387.7	4622.9	4334.2	3732.2	3379.7	3326.8	3568.5	3970.0	4637.1	4771.1
27.5°	4648.0	4698.9	4855.6	4227.2	3772.2	3212.1	3088.4	3456.4	3865.6	4369.6	4958.0
30°	5031.5	5112.7	5326.0	4334.2	3892.7	3321.7	3047.8	3399.7	3852.1	4544.9	5353.7
32.5°	5426.6	5584.5	5743.0	4711.2	3875.9	3489.2	3307.5	3335.9	3974.5	4912.3	5763.6
35°	5949.9	6089.1	6225.7	4929.0	4213.6	3629.1	3448.6	3749.0	4289.1	5338.3	6335.3
37.5°	7068.7	7289.1	6928.9	5549.0	4581.0	4259.4	3933.9	4111.8	4621.6	5693.4	7269.2
40°	7781.5	7947.2	7599.1	5971.2	5228.1	4684.1	4630.6	4645.5	5079.8	5997.6	7897.5
42.5°	8489.8	8714.1	8160.5	6550.6	6010.5	5561.3	5285.4	5266.7	5592.8	6544.1	8612.3
45°	9018.3	9150.4	8353.2	7039.1	6849.6	6516.4	6309.5	5981.5	6267.0	6922.4	9054.4
47.5°	9269.6	9377.3	8663.2	7323.3	7393.5	7410.9	7784.1	7224.7	6856.0	7178.3	9286.4
50°	9583.5	9634.4	8845.6	7573.4	7910.4	8674.8	8764.4	7816.3	7429.6	7457.3	9423.7
52.5°	9958.6	9979.9	9111.7	7862.1	8433.1	9506.2	9367.6	8819.1	7975.5	7967.1	9682.1
55°	10430.4	10417.5	9445.6	8250.7	8806.3	10000.5	9895.4	9495.9	8570.4	8389.3	10084.3
57.5°	10849.9	10842.2	9888.3	8608.4	9120.1	10254.4	10285.4	10179.7	8975.1	8691.5	10519.9
60°	11055.5	11154.1	10392.3	8999.6	9140.1	10369.1	10380.7	10212.5	9427.5	9079.5	10636.0
62.5°	10975.6	11163.1	10639.8	9351.5	8956.4	10055.9	10104.3	9988.2	9406.9	9486.8	10376.9
65°	10612.1	10828.7	10425.2	9539.0	8843.6	9531.3	9543.5	9250.3	9112.4	9756.9	9769.8
67.5°	9930.2	10133.3	9742.1	9240.0	8071.5	8117.3	8390.6	8414.4	8213.3	9553.2	8917.1
70°	8736.7	8879.7	8634.8	8501.4	6746.5	6478.4	6774.8	6901.8	6993.3	8817.9	7893.7
72.5°	6916.6	7193.1	7231.8	7318.8	5431.7	4985.1	5204.9	5016.7	5612.8	7505.0	6449.4
75°	5117.2	5350.5	5601.2	6086.5	4281.3	3732.2	3705.2	3609.1	4166.0	6035.6	4783.4
77.5°	3616.2	3765.1	3957.8	4862.0	3230.8	2874.4	2891.2	2793.8	3008.5	4561.7	3304.3
80°	2592.1	2670.1	2759.7	3203.1	2383.3	2480.0	2482.6	2390.4	2237.0	3098.0	2205.4
82.5°	1847.1	1907.7	2010.2	2112.6	1776.8	2032.7	2030.8	2025.0	1773.6	2093.9	1379.8
85°	1028.6	1109.8	1287.7	1655.0	1283.2	1453.3	1278.0	1407.6	1301.9	1394.0	698.6
87.5°	72.2	64.4	288.1	959.0	598.7	437.6	229.4	454.4	582.6	728.3	97.3
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°	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5
2.5°	1875.5	1898.0	1809.7	1677.0	1713.0	1673.7	1624.1	1546.8	1387.6	1486.2	1486.8
5°	2252.5	2166.8	2097.8	2032.7	1923.1	1757.5	1735.6	1602.8	1528.1	1567.4	1561.6
7.5°	2370.4	2248.6	2144.8	1912.2	1709.2	1452.0	1374.7	1296.1	1263.2	1358.6	1396.6
10°	2240.9	2113.9	2012.1	1729.2	1591.2	1430.8	1218.1	1109.2	1044.7	1069.8	1084.7
12.5°	2345.3	2215.7	1895.4	1737.5	1510.0	1412.1	1225.8	1066.0	970.6	993.8	966.1
15°	2445.8	2271.2	1950.9	1636.3	1452.0	1310.2	1159.4	994.4	882.3	842.3	821.1
17.5°	2813.2	2523.2	1944.4	1579.6	1368.2	1205.2	1023.4	843.0	768.2	727.0	691.5
20°	3261.1	2857.0	1979.2	1521.0	1279.3	1073.7	875.9	708.3	656.1	629.0	619.4
22.5°	3794.1	3284.9	2178.4	1512.6	1195.5	977.7	794.7	690.2	631.6	601.9	589.7
25°	4217.5	3727.7	2325.3	1569.3	1191.0	898.4	745.7	766.9	739.9	748.9	677.4
27.5°	4628.7	3848.2	2242.8	1544.2	1071.1	757.9	734.1	778.5	801.7	808.8	806.3
30°	4976.1	4357.4	2260.9	1402.4	904.9	617.4	562.0	583.9	647.7	748.9	768.2
32.5°	5484.6	4601.0	2414.9	1316.7	808.8	552.3	490.5	482.1	496.9	533.6	565.2
35°	6079.4	5161.7	2458.1	1294.1	742.4	523.3	480.1	460.8	468.5	496.3	502.7
37.5°	7188.6	5570.3	2617.9	1266.4	718.0	505.9	472.4	465.3	482.1	504.6	517.5
40°	7800.2	6305.0	2625.6	1242.6	686.4	498.8	477.6	474.3	484.7	515.6	523.3
42.5°	8615.5	6723.9	2746.8	1214.9	675.4	508.5	487.9	486.6	495.6	513.7	527.8
45°	9112.4	7004.3	2753.2	1198.7	672.8	551.0	501.4	496.9	495.0	505.9	518.8
47.5°	9432.7	7408.4	2831.9	1180.7	688.3	562.0	517.5	498.2	491.7	496.3	505.9
50°	9736.3	7731.3	2980.7	1178.1	704.4	551.0	545.9	497.5	484.7	482.7	489.8
52.5°	10108.8	8262.3	3164.4	1202.6	700.6	534.9	567.1	495.0	471.8	467.3	474.3
55°	10650.8	8831.4	3359.7	1182.0	660.6	504.0	546.5	493.0	458.2	449.9	456.3
57.5°	11002.0	9157.5	3578.2	1164.6	600.0	480.8	527.8	494.3	459.5	440.8	444.7
60°	10885.4	8982.2	3663.9	1058.2	542.7	462.7	483.4	484.0	447.9	430.5	433.7
62.5°	10369.8	8347.4	3584.0	934.5	500.1	437.0	437.6	464.7	414.4	402.2	407.3
65°	9649.2	7557.9	3260.5	853.9	480.1	409.9	399.6	408.0	369.3	360.3	370.6
67.5°	8765.0	6584.7	2779.0	768.9	473.1	373.2	360.9	357.7	333.2	322.9	333.2
70°	7655.8	5513.6	2221.5	708.9	446.0	333.2	323.5	320.3	299.7	292.0	301.0
72.5°	6153.6	4305.2	1714.3	663.2	416.3	296.5	288.1	284.2	266.8	255.9	266.8
75°	4376.7	3290.1	1273.5	592.9	374.4	259.1	249.4	244.3	228.1	217.8	227.5
77.5°	3110.3	2469.7	889.4	490.5	308.7	219.1	213.3	204.9	190.8	178.5	188.2
80°	2299.5	1764.6	573.6	378.3	235.9	175.3	172.1	166.3	152.7	137.9	145.0
82.5°	1513.9	1272.2	328.7	256.5	171.4	126.3	128.9	125.0	112.1	96.7	100.5
85°	678.0	753.4	174.7	141.1	111.5	76.0	83.1	80.6	70.9	56.1	57.4
87.5°	65.1	127.0	53.5	51.6	41.2	23.8	29.6	25.1	21.3	13.5	10.3
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°	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5
2.5°	1509.4	1418.5	1327.6	1383.1	1384.4	1399.2	1401.1	1346.3	1390.2	1423.7	1458.5
5°	1533.2	1473.9	1477.2	1423.7	1394.7	1432.0	1424.3	1409.5	1435.9	1472.7	1517.1
7.5°	1360.5	1321.8	1315.4	1263.8	1138.8	1111.1	1134.3	1144.0	1179.4	1236.1	1283.8
10°	1062.1	1138.8	1052.4	1032.5	999.6	935.1	897.8	893.3	968.7	1014.4	1054.4
12.5°	957.1	937.7	927.4	872.6	872.6	804.3	782.4	802.4	918.4	951.3	1002.8
15°	815.3	801.1	753.4	726.3	713.4	685.7	708.9	728.3	836.5	839.1	893.3
17.5°	676.7	668.3	623.2	618.1	605.2	592.9	614.2	660.6	719.2	708.9	734.1
20°	605.2	576.2	534.9	549.7	536.2	526.5	517.5	583.3	624.5	638.0	652.9
22.5°	587.1	534.3	509.8	496.3	496.9	481.4	483.4	538.1	600.7	609.0	600.0
25°	670.9	576.8	497.5	458.2	443.4	438.3	453.1	501.4	576.8	594.9	601.9
27.5°	785.0	626.4	512.4	445.3	415.7	418.3	439.5	473.1	562.0	594.2	602.6
30°	753.4	589.1	513.0	435.7	398.9	412.5	420.2	452.4	550.4	598.7	640.6
32.5°	581.3	529.8	516.2	443.4	428.6	407.3	418.3	449.2	516.2	546.5	548.5
35°	492.4	453.1	444.1	426.0	405.4	396.4	408.6	435.7	479.5	498.2	495.6
37.5°	488.5	445.3	409.9	402.2	393.8	391.2	398.3	423.4	467.9	500.8	493.7
40°	495.0	441.5	405.4	391.8	395.1	383.5	390.6	421.5	469.8	500.8	494.3
42.5°	487.2	437.0	399.6	389.3	392.5	376.4	384.8	417.0	464.7	501.4	489.2
45°	471.8	426.6	396.4	379.0	393.8	369.9	380.2	405.4	449.2	489.2	475.0
47.5°	456.3	414.4	382.8	371.9	386.7	363.5	368.0	389.9	433.7	473.1	460.8
50°	439.5	398.9	371.9	368.6	379.0	362.2	355.1	373.2	415.0	454.4	444.1
52.5°	421.5	386.0	364.1	362.8	372.5	353.8	343.5	357.7	395.1	434.4	426.0
55°	404.1	371.9	354.5	357.7	368.6	346.7	333.8	342.9	373.8	412.5	400.9
57.5°	386.7	355.8	341.6	350.6	359.0	337.7	321.6	326.8	351.9	389.9	376.4
60°	371.2	341.6	327.4	338.4	346.1	324.2	305.5	308.7	331.3	365.4	353.2
62.5°	351.2	326.1	307.4	321.6	327.4	306.1	286.2	290.0	308.1	340.3	331.3
65°	322.9	306.8	289.4	299.0	306.8	284.9	266.2	270.7	284.2	314.5	308.1
67.5°	298.4	282.9	271.3	279.1	280.4	263.6	246.8	249.4	260.4	288.7	281.6
70°	271.3	256.5	247.5	253.3	252.6	238.5	225.6	226.2	235.2	261.0	251.3
72.5°	241.7	227.5	223.0	226.2	223.6	210.7	198.5	203.0	208.8	228.1	220.4
75°	210.1	197.2	194.6	197.9	194.0	181.7	170.8	175.3	180.5	196.6	186.9
77.5°	177.2	165.6	166.3	166.9	161.8	153.4	142.4	146.9	150.2	161.1	151.5
80°	141.1	132.1	134.7	134.7	128.9	123.1	112.8	114.1	116.0	119.9	112.8
82.5°	103.1	103.1	103.1	103.8	91.5	93.5	84.4	83.8	81.8	81.2	76.7
85°	61.2	63.8	65.1	67.0	49.6	58.0	50.3	48.3	44.5	40.6	39.3
87.5°	13.5	17.4	17.4	16.8	0.0	6.4	3.2	5.2	1.3	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°	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5	1400.5
2.5°	1418.5	1379.8	1452.0	1516.5	1506.2	1543.5	1456.5	1585.4	1722.1	1722.1
5°	1505.5	1472.7	1491.3	1528.7	1557.1	1687.3	1795.5	1903.2	2125.5	2128.1
7.5°	1269.6	1340.5	1357.3	1346.3	1468.1	1635.7	1814.2	2121.0	2309.2	2324.0
10°	1187.1	1219.4	1270.3	1298.6	1348.3	1513.3	1735.0	2099.1	2298.9	2336.3
12.5°	1075.6	1194.9	1272.2	1430.8	1470.1	1502.9	1855.5	2170.6	2308.5	2299.5
15°	953.8	1044.1	1155.6	1330.9	1430.8	1682.1	1927.0	2400.1	2478.0	2546.4
17.5°	760.5	826.9	975.1	1174.9	1422.4	1653.8	2103.6	2683.6	2829.3	2900.2
20°	625.8	626.4	774.7	1039.6	1309.0	1535.2	2170.6	2918.9	3103.8	3139.9
22.5°	591.6	562.0	640.0	855.2	1183.9	1605.4	2306.0	3297.2	3683.2	3774.1
25°	572.9	536.9	585.8	754.7	1094.3	1642.2	2578.6	3817.3	4312.9	4348.3
27.5°	580.7	597.4	612.9	672.8	980.9	1573.2	2515.4	4050.0	4581.0	4648.0
30°	632.9	660.0	624.5	645.1	887.5	1473.3	2628.2	4427.6	4918.7	5031.5
32.5°	526.5	516.2	513.0	558.1	794.0	1383.1	2864.7	4959.3	5284.8	5426.6
35°	475.0	458.9	465.3	516.9	748.2	1370.2	2997.5	5399.5	5862.9	5949.9
37.5°	473.1	454.4	462.7	501.4	764.4	1393.4	3210.2	6105.9	6882.5	7068.7
40°	468.5	458.2	462.7	491.7	747.6	1406.3	3332.6	6699.4	7592.7	7781.5
42.5°	467.9	462.7	467.3	499.5	730.2	1412.1	3502.1	7235.6	8340.9	8489.8
45°	466.0	471.1	471.1	505.9	722.5	1450.7	3602.0	7498.6	8834.6	9018.3
47.5°	456.9	472.4	497.5	504.0	690.9	1432.7	3743.2	7897.5	9096.9	9269.6
50°	445.3	470.5	531.1	491.1	685.7	1388.9	3908.2	8214.0	9433.3	9583.5
52.5°	429.9	467.3	523.3	466.0	676.7	1381.1	4139.5	8625.2	9825.8	9958.6
55°	408.0	455.7	499.5	440.8	654.8	1356.6	4493.4	9134.9	10339.5	10430.4
57.5°	388.0	438.3	464.7	426.6	602.6	1361.8	4739.6	9550.6	10770.7	10849.9
60°	369.9	436.3	415.0	411.8	549.1	1292.8	4819.5	9546.1	10931.1	11055.5
62.5°	350.6	411.8	380.2	391.8	502.1	1221.9	4650.0	9136.9	10757.8	10975.6
65°	325.5	353.2	351.2	377.7	503.3	1106.6	4261.3	8415.1	10325.3	10612.1
67.5°	295.8	312.6	323.5	354.5	519.5	1017.0	3636.2	7546.9	9589.3	9930.2
70°	265.5	282.3	294.5	324.2	534.3	975.8	2894.4	6327.6	8390.6	8736.7
72.5°	234.6	252.0	261.7	287.4	514.3	887.5	2142.3	4923.2	6734.9	6916.6
75°	202.4	219.1	226.9	250.7	446.6	734.1	1479.1	3729.0	4932.9	5117.2
77.5°	169.5	187.5	190.1	209.5	340.9	561.3	948.0	2860.2	3493.1	3616.2
80°	135.3	153.4	153.4	163.7	239.7	386.0	567.8	2157.7	2543.8	2592.1
82.5°	97.3	116.7	115.4	116.0	165.6	239.1	328.7	1617.0	1838.1	1847.1
85°	57.4	70.9	70.2	64.4	98.0	128.9	177.9	1004.1	1026.0	1028.6
87.5°	11.0	16.8	14.8	6.4	27.1	38.0	51.6	186.3	74.1	72.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)