

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: FAIL-SAFE

Report Number: P709138

Luminaire Tested: **4APN-39L935-X-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709138  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-39L935-X-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

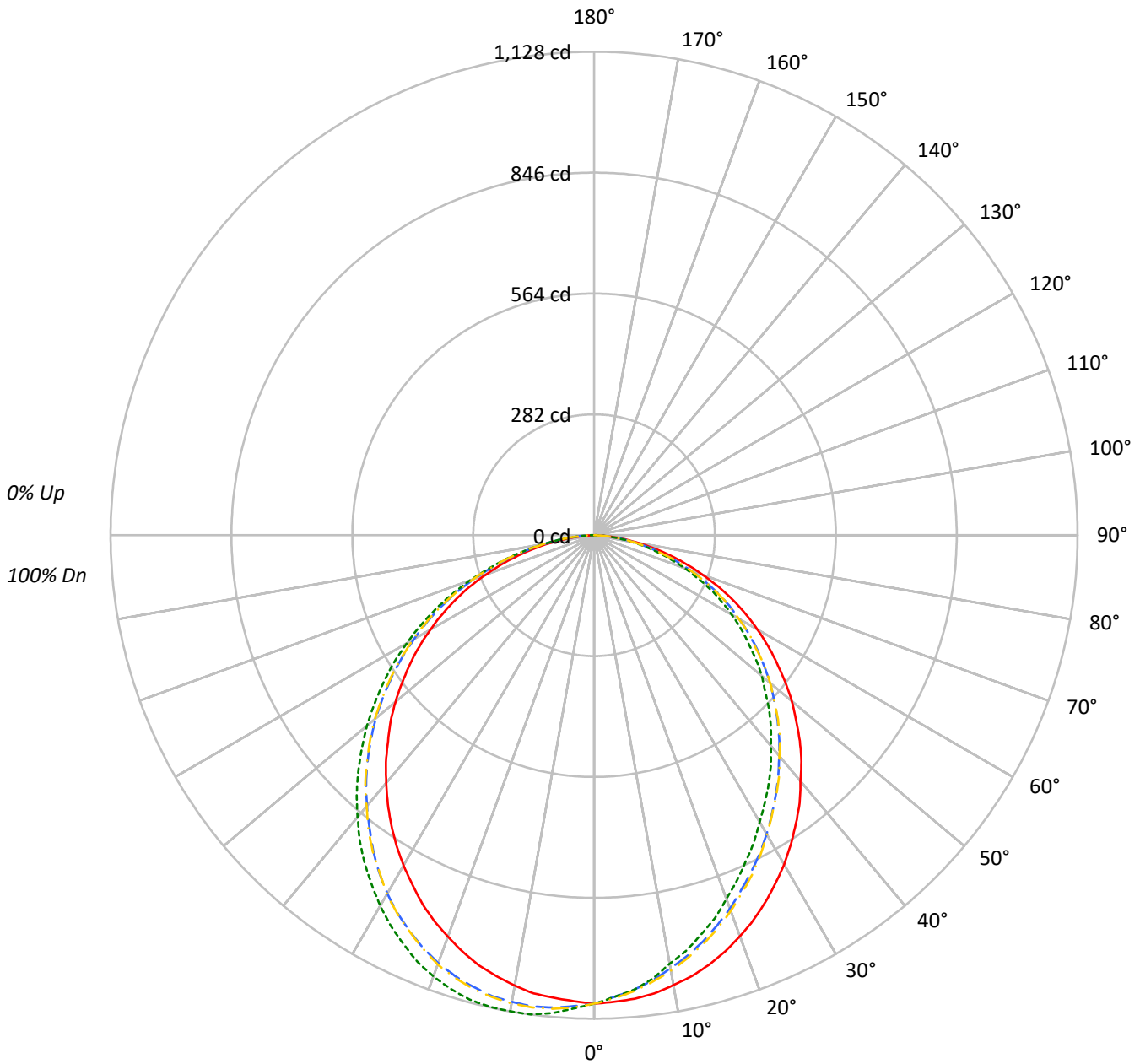
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2931.6 lumens  
Efficiency: N/A  
Efficacy: 64.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.33  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 45.8  
Input Voltage (V): 120  
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: 25 FT

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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - · - · 90°-270°    - · - · 135°-315°



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	61	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	41	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	36	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	32	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	29	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	10085	10085	10085	10085
5°	10055	9860	10032	10364
10°	9986	9511	9997	10565
15°	9909	9213	9921	10712
20°	9773	8863	9785	10756
25°	9617	8535	9655	10712
30°	9445	8233	9472	10631
35°	9247	7995	9290	10515
40°	9025	7729	9085	10335
45°	8857	7535	8874	10149
50°	8644	7330	8680	9921
55°	8374	7061	8434	9646
60°	8123	6846	8145	9309
65°	7802	6560	7802	8907
70°	7273	6070	7238	8306
75°	6613	5511	6523	7450
80°	5717	4729	5520	6370
85°	4446	3536	4192	5240



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	103.3	3.5
10°-20°	293.1	10.0
20°-30°	435.8	14.9
30°-40°	513.6	17.5
40°-50°	523.0	17.8
50°-60°	465.9	15.9
60°-70°	351.0	12.0
70°-80°	195.2	6.7
80°-90°	50.7	1.7
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°-30°	832.2	28.4
0°-40°	1345.8	45.9
0°-60°	2334.7	79.6
0°-90°	2931.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2931.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1093	1093	1093	1093	1093	
5°	1086	1065	1083	1119	1086	103
15°	1037	964	1039	1122	1037	292
25°	945	838	948	1052	945	435
35°	821	710	825	934	821	514
45°	679	578	680	778	679	523
55°	521	439	524	600	521	466
65°	357	300	357	408	357	353
75°	186	155	183	209	186	197
85°	42	33	40	50	42	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1
2.5°	1089.4	1089.4	1090.6	1085.7	1079.5	1077.0	1075.8	1074.5	1077.0	1078.2	1077.0
5°	1085.7	1083.2	1080.7	1074.5	1067.1	1062.2	1059.7	1058.5	1060.9	1064.6	1060.9
7.5°	1078.2	1073.3	1068.3	1059.7	1051.0	1043.6	1039.9	1037.4	1039.9	1043.6	1041.1
10°	1065.9	1059.7	1052.3	1042.4	1030.0	1021.4	1017.6	1013.9	1015.2	1015.2	1015.2
12.5°	1053.5	1044.9	1036.2	1023.8	1010.2	1000.3	994.2	989.2	991.7	992.9	992.9
15°	1037.4	1026.3	1013.9	1000.3	986.7	975.6	968.2	963.2	964.5	964.5	965.7
17.5°	1017.6	1005.3	992.9	976.8	960.8	948.4	939.7	933.6	936.0	937.3	938.5
20°	995.4	981.8	968.2	950.9	933.6	920.0	911.3	903.9	902.7	902.7	903.9
22.5°	971.9	957.1	941.0	922.4	903.9	889.1	880.4	873.0	871.7	871.7	873.0
25°	944.7	928.6	912.5	894.0	874.2	859.4	848.2	840.8	839.6	838.4	840.8
27.5°	916.3	900.2	884.1	865.6	844.5	829.7	818.6	811.2	808.7	807.4	809.9
30°	886.6	868.0	850.7	830.9	812.4	797.5	786.4	777.8	775.3	772.8	775.3
32.5°	854.4	835.9	817.3	797.5	779.0	764.2	753.0	744.4	741.9	740.7	743.1
35°	821.0	802.5	785.2	765.4	746.9	732.0	720.9	713.5	711.0	709.8	711.0
37.5°	787.7	769.1	751.8	732.0	713.5	698.6	687.5	680.1	678.8	677.6	678.8
40°	749.3	733.3	715.9	697.4	678.8	664.0	655.4	646.7	644.2	641.7	645.5
42.5°	715.9	699.9	682.6	665.2	646.7	631.9	622.0	614.5	612.1	610.8	612.1
45°	678.8	661.5	644.2	628.1	610.8	597.2	587.3	579.9	578.7	577.5	578.7
47.5°	639.3	624.4	609.6	593.5	576.2	562.6	554.0	546.5	544.1	541.6	544.1
50°	602.2	587.3	572.5	557.7	541.6	529.2	520.6	513.2	511.9	510.7	511.9
52.5°	562.6	547.8	534.2	519.3	505.7	493.4	484.7	478.5	477.3	476.1	477.3
55°	520.6	508.2	495.8	483.5	469.9	458.7	451.3	443.9	441.4	439.0	441.4
57.5°	481.0	469.9	457.5	445.1	432.8	422.9	415.5	409.3	408.0	406.8	408.0
60°	440.2	430.3	419.2	408.0	395.7	385.8	379.6	374.7	372.2	371.0	372.2
62.5°	399.4	389.5	380.8	369.7	358.6	351.2	345.0	340.0	337.6	336.3	337.6
65°	357.4	348.7	340.0	330.1	321.5	314.1	307.9	302.9	301.7	300.5	300.5
67.5°	314.1	306.7	299.2	290.6	280.7	273.3	267.1	263.4	262.1	260.9	262.1
70°	269.6	263.4	256.0	248.5	241.1	234.9	231.2	227.5	226.3	225.0	225.0
72.5°	227.5	222.6	216.4	210.2	204.0	197.8	194.1	191.7	190.4	189.2	189.2
75°	185.5	180.5	176.8	171.9	165.7	162.0	158.3	155.8	154.6	154.6	154.6
77.5°	145.9	142.2	138.5	133.5	129.8	126.1	123.7	122.4	121.2	121.2	121.2
80°	107.6	105.1	102.6	100.2	96.4	92.7	91.5	90.3	89.0	89.0	89.0
82.5°	73.0	71.7	69.2	66.8	64.3	63.1	61.8	60.6	60.6	60.6	60.6
85°	42.0	40.8	39.6	38.3	37.1	37.1	35.9	34.6	33.4	33.4	33.4
87.5°	17.3	17.3	17.3	16.1	14.8	14.8	14.8	14.8	14.8	14.8	14.8
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):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1
2.5°	1074.5	1077.0	1079.5	1083.2	1086.9	1090.6	1089.4	1088.1	1093.1	1099.3	1100.5
5°	1058.5	1060.9	1064.6	1070.8	1077.0	1081.9	1083.2	1083.2	1093.1	1101.7	1104.2
7.5°	1038.7	1042.4	1047.3	1053.5	1062.2	1069.6	1073.3	1078.2	1088.1	1099.3	1104.2
10°	1013.9	1020.1	1027.5	1036.2	1044.9	1053.5	1060.9	1067.1	1079.5	1091.8	1099.3
12.5°	991.7	997.9	1005.3	1015.2	1026.3	1037.4	1044.9	1053.5	1068.3	1083.2	1091.8
15°	967.0	973.1	981.8	991.7	1004.0	1016.4	1027.5	1038.7	1053.5	1069.6	1079.5
17.5°	939.7	945.9	954.6	967.0	980.6	994.2	1006.5	1018.9	1036.2	1053.5	1064.6
20°	906.4	915.0	926.1	938.5	954.6	970.7	983.0	996.6	1015.2	1033.7	1046.1
22.5°	874.2	882.9	895.2	910.1	927.4	944.7	959.5	974.4	994.2	1012.7	1026.3
25°	843.3	853.2	865.6	880.4	896.5	913.8	931.1	948.4	968.2	988.0	1001.6
27.5°	812.4	821.0	833.4	848.2	866.8	884.1	901.4	918.7	939.7	960.8	975.6
30°	777.8	787.7	798.8	813.6	833.4	853.2	870.5	889.1	910.1	931.1	945.9
32.5°	745.6	754.3	765.4	780.2	800.0	819.8	838.4	858.1	877.9	898.9	913.8
35°	713.5	722.1	733.3	748.1	767.9	787.7	806.2	824.8	844.5	864.3	879.2
37.5°	681.3	690.0	701.1	715.9	734.5	754.3	771.6	790.1	809.9	829.7	843.3
40°	647.9	656.6	665.2	680.1	698.6	718.4	735.7	754.3	774.1	793.8	807.4
42.5°	614.5	623.2	634.3	649.2	666.5	683.8	701.1	718.4	737.0	755.5	769.1
45°	581.2	588.6	599.7	613.3	630.6	646.7	664.0	680.1	698.6	715.9	729.5
47.5°	546.5	554.0	562.6	576.2	593.5	610.8	628.1	644.2	660.3	677.6	690.0
50°	513.2	520.6	530.5	542.8	558.9	575.0	589.8	604.7	620.7	636.8	647.9
52.5°	478.5	485.9	494.6	507.0	520.6	535.4	549.0	563.8	578.7	593.5	604.7
55°	443.9	448.9	456.3	467.4	482.2	497.1	510.7	524.3	537.9	550.2	561.4
57.5°	409.3	415.5	424.1	434.0	446.4	458.7	471.1	483.5	495.8	508.2	518.1
60°	374.7	379.6	385.8	394.4	406.8	417.9	430.3	441.4	452.6	463.7	472.3
62.5°	338.8	343.8	349.9	358.6	368.5	378.4	389.5	399.4	409.3	419.2	427.8
65°	301.7	306.7	312.8	320.3	328.9	337.6	347.5	357.4	364.8	372.2	380.8
67.5°	263.4	268.3	274.5	280.7	288.1	296.8	305.4	314.1	321.5	328.9	335.1
70°	226.3	230.0	236.2	241.1	247.3	253.5	260.9	268.3	273.3	279.5	286.9
72.5°	190.4	194.1	199.1	204.0	207.7	212.7	220.1	226.3	232.5	239.9	243.6
75°	155.8	158.3	162.0	165.7	169.4	173.1	178.1	183.0	187.9	191.7	196.6
77.5°	121.2	123.7	127.4	129.8	132.3	134.8	138.5	142.2	145.9	148.4	153.3
80°	89.0	91.5	94.0	96.4	98.9	101.4	102.6	103.9	108.8	112.5	115.0
82.5°	60.6	61.8	63.1	65.5	66.8	68.0	69.2	69.2	71.7	74.2	77.9
85°	34.6	35.9	37.1	37.1	37.1	37.1	38.3	39.6	40.8	43.3	45.8
87.5°	13.6	13.6	14.8	14.8	14.8	14.8	14.8	14.8	16.1	18.5	19.8
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1	1093.1
2.5°	1099.3	1100.5	1103.0	1104.2	1105.4	1105.4	1106.7	1107.9	1105.4	1103.0	1101.7
5°	1105.4	1106.7	1110.4	1114.1	1116.6	1119.0	1117.8	1116.6	1114.1	1110.4	1107.9
7.5°	1106.7	1110.4	1114.1	1119.0	1122.8	1127.7	1125.2	1122.8	1117.8	1112.9	1109.2
10°	1103.0	1107.9	1114.1	1120.3	1124.0	1127.7	1125.2	1122.8	1117.8	1111.6	1106.7
12.5°	1098.0	1104.2	1111.6	1117.8	1121.5	1126.5	1122.8	1119.0	1112.9	1106.7	1100.5
15°	1086.9	1094.3	1103.0	1110.4	1116.6	1121.5	1117.8	1115.3	1107.9	1099.3	1090.6
17.5°	1073.3	1083.2	1091.8	1100.5	1105.4	1110.4	1107.9	1105.4	1096.8	1086.9	1077.0
20°	1057.2	1067.1	1075.8	1084.4	1090.6	1095.5	1091.8	1088.1	1079.5	1070.8	1060.9
22.5°	1037.4	1047.3	1057.2	1065.9	1072.1	1077.0	1072.1	1065.9	1057.2	1048.6	1038.7
25°	1012.7	1023.8	1035.0	1043.6	1047.3	1052.3	1047.3	1042.4	1033.7	1025.1	1013.9
27.5°	988.0	999.1	1010.2	1018.9	1022.6	1027.5	1022.6	1017.6	1009.0	1000.3	989.2
30°	959.5	970.7	981.8	990.4	994.2	997.9	992.9	988.0	980.6	971.9	960.8
32.5°	927.4	938.5	947.2	955.8	960.8	965.7	960.8	957.1	948.4	937.3	926.1
35°	892.8	903.9	915.0	923.7	928.6	933.6	927.4	921.2	913.8	905.1	895.2
37.5°	854.4	866.8	879.2	889.1	892.8	897.7	892.8	886.6	879.2	870.5	859.4
40°	818.6	829.7	840.8	850.7	854.4	858.1	853.2	848.2	839.6	830.9	819.8
42.5°	781.5	792.6	802.5	811.2	814.9	819.8	814.9	808.7	802.5	795.1	785.2
45°	741.9	753.0	761.7	770.3	774.1	777.8	772.8	766.6	760.5	754.3	744.4
47.5°	701.1	711.0	719.6	728.3	730.8	734.5	729.5	725.8	719.6	713.5	704.8
50°	659.1	669.0	677.6	685.0	687.5	691.2	686.3	681.3	676.4	671.4	664.0
52.5°	615.8	624.4	633.1	640.5	643.0	645.5	640.5	635.6	630.6	625.7	618.3
55°	571.3	579.9	588.6	594.8	597.2	599.7	594.8	591.1	586.1	582.4	575.0
57.5°	526.8	535.4	542.8	549.0	551.5	554.0	549.0	544.1	540.4	536.6	530.5
60°	481.0	489.7	495.8	500.8	503.3	504.5	499.6	495.8	493.4	490.9	484.7
62.5°	436.5	442.7	448.9	452.6	455.0	456.3	452.6	450.1	447.6	445.1	440.2
65°	389.5	396.9	401.9	405.6	406.8	408.0	404.3	401.9	399.4	396.9	393.2
67.5°	342.5	348.7	352.4	356.1	357.4	357.4	357.4	356.1	353.6	349.9	346.2
70°	295.5	300.5	304.2	306.7	307.9	307.9	305.4	302.9	302.9	301.7	299.2
72.5°	247.3	251.0	253.5	256.0	256.0	256.0	256.0	257.2	256.0	253.5	249.8
75°	201.6	205.3	207.7	209.0	209.0	209.0	209.0	210.2	209.0	207.7	205.3
77.5°	158.3	160.7	162.0	163.2	163.2	163.2	164.5	165.7	164.5	163.2	162.0
80°	117.5	118.7	119.9	121.2	119.9	119.9	121.2	123.7	122.4	121.2	119.9
82.5°	80.4	81.6	82.8	82.8	84.1	85.3	85.3	85.3	85.3	84.1	82.8
85°	48.2	49.5	49.5	49.5	49.5	49.5	50.7	51.9	51.9	50.7	50.7
87.5°	22.3	23.5	22.3	21.0	19.8	19.8	22.3	24.7	24.7	23.5	23.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P709138  
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**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1093.1	1093.1	1093.1	1093.1
2.5°	1103.0	1101.7	1095.5	1089.4
5°	1106.7	1103.0	1094.3	1085.7
7.5°	1106.7	1101.7	1089.4	1078.2
10°	1100.5	1093.1	1079.5	1065.9
12.5°	1093.1	1084.4	1068.3	1053.5
15°	1081.9	1072.1	1054.7	1037.4
17.5°	1065.9	1053.5	1036.2	1017.6
20°	1049.8	1036.2	1015.2	995.4
22.5°	1027.5	1015.2	992.9	971.9
25°	1002.8	989.2	967.0	944.7
27.5°	976.8	960.8	938.5	916.3
30°	947.2	931.1	908.8	886.6
32.5°	915.0	900.2	877.9	854.4
35°	882.9	866.8	844.5	821.0
37.5°	847.0	832.2	809.9	787.7
40°	808.7	793.8	771.6	749.3
42.5°	772.8	759.2	737.0	715.9
45°	733.3	719.6	698.6	678.8
47.5°	692.4	678.8	659.1	639.3
50°	652.9	639.3	620.7	602.2
52.5°	608.4	597.2	579.9	562.6
55°	565.1	554.0	536.6	520.6
57.5°	521.8	511.9	495.8	481.0
60°	476.1	466.2	453.8	440.2
62.5°	432.8	424.1	411.8	399.4
65°	387.0	379.6	368.5	357.4
67.5°	340.0	333.9	324.0	314.1
70°	293.1	285.6	278.2	269.6
72.5°	246.1	242.4	234.9	227.5
75°	201.6	197.8	191.7	185.5
77.5°	159.5	155.8	150.9	145.9
80°	117.5	115.0	111.3	107.6
82.5°	81.6	79.1	76.7	73.0
85°	49.5	47.0	44.5	42.0
87.5°	22.3	21.0	18.5	17.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)