

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: P709061

Luminaire Tested: **4APN-X-37L830-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709061  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-X-37L830-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

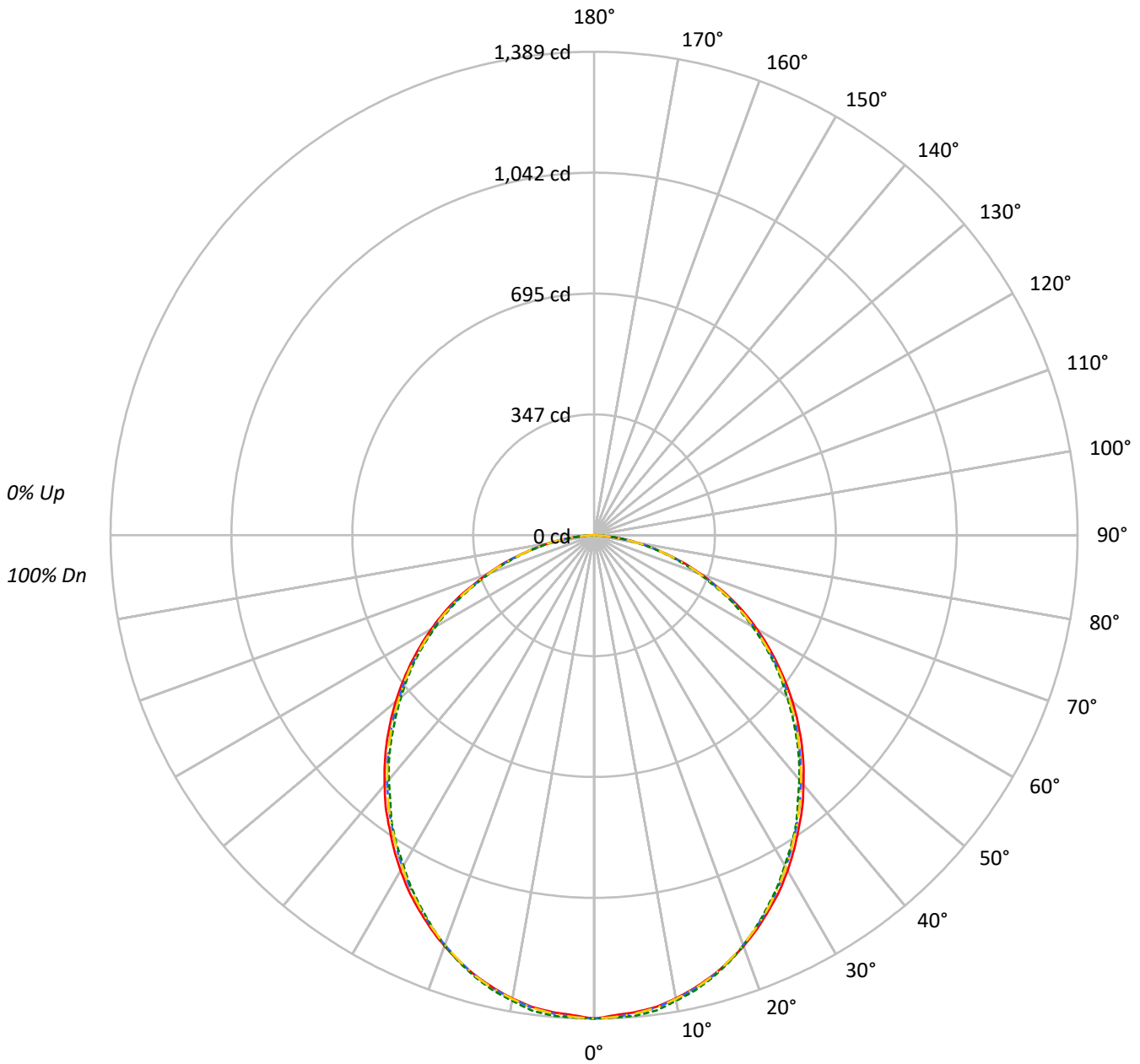
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3612.6 lumens  
Efficiency: N/A  
Efficacy: 88.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.18 / 1.3  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 40.8  
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	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	73	73	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	62	62	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	53	53	53	51
5	76	64	55	48	74	63	54	48	60	53	47	59	52	47	57	51	46	46	46	46	44
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	41	41	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	36	36	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	33	33	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	30	30	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	27	27	27	25

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

	0°	90°	180°	270°
0°	12812	12812	12812	12812
5°	12734	12829	12734	12829
10°	12660	12722	12660	12722
15°	12518	12567	12518	12567
20°	12335	12318	12335	12318
25°	12099	11995	12099	11995
30°	11849	11668	11849	11668
35°	11553	11401	11553	11401
40°	11272	11047	11272	11047
45°	10994	10729	10994	10729
50°	10683	10390	10683	10390
55°	10336	10090	10336	10090
60°	9979	9699	9979	9699
65°	9549	9254	9549	9254
70°	8826	8551	8826	8551
75°	7978	7735	7978	7735
80°	6849	6668	6849	6668
85°	5208	5208	5208	5208



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.1	3.6
10°-20°	370.1	10.2
20°-30°	545.5	15.1
30°-40°	636.8	17.6
40°-50°	642.0	17.8
50°-60°	567.4	15.7
60°-70°	424.3	11.7
70°-80°	235.2	6.5
80°-90°	60.3	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°	1046.6	29.0
0°-40°	1683.4	46.6
0°-60°	2892.8	80.1
0°-90°	3612.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3612.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1389	1389	1389	1389	1389	
5°	1375	1385	1375	1385	1375	131
15°	1311	1316	1311	1316	1311	369
25°	1188	1178	1188	1178	1188	548
35°	1026	1012	1026	1012	1026	642
45°	843	822	843	822	843	650
55°	643	627	643	627	643	575
65°	437	424	437	424	437	431
75°	224	217	224	217	224	238
85°	49	49	49	49	49	59
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°	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6
2.5°	1380.1	1386.9	1393.6	1391.9	1386.9	1383.5	1385.2	1385.2	1386.9	1386.9	1386.9
5°	1375.0	1381.8	1386.9	1385.2	1380.1	1378.4	1378.4	1378.4	1381.8	1385.2	1381.8
7.5°	1366.5	1371.6	1376.7	1375.0	1369.9	1368.2	1368.2	1369.9	1373.3	1376.7	1373.3
10°	1351.3	1358.0	1363.1	1359.7	1354.6	1351.3	1351.3	1351.3	1354.6	1358.0	1354.6
12.5°	1332.6	1337.7	1342.8	1341.1	1336.0	1332.6	1332.6	1332.6	1336.0	1339.4	1336.0
15°	1310.6	1315.7	1320.7	1319.0	1314.0	1310.6	1310.6	1310.6	1314.0	1315.7	1314.0
17.5°	1285.1	1290.2	1295.3	1291.9	1285.1	1281.7	1281.7	1281.7	1285.1	1286.8	1285.1
20°	1256.3	1261.4	1264.8	1261.4	1254.6	1251.2	1249.5	1249.5	1252.9	1254.6	1252.9
22.5°	1224.1	1227.5	1230.9	1227.5	1220.7	1217.3	1215.6	1213.9	1215.6	1217.3	1215.6
25°	1188.5	1191.9	1195.3	1191.9	1185.1	1180.0	1178.3	1176.6	1178.3	1178.3	1178.3
27.5°	1152.9	1154.6	1158.0	1152.9	1146.1	1141.0	1139.3	1137.6	1139.3	1139.3	1139.3
30°	1112.2	1113.9	1117.3	1112.2	1103.7	1098.6	1096.9	1095.2	1095.2	1095.2	1095.2
32.5°	1069.8	1073.2	1076.6	1069.8	1061.3	1056.3	1054.6	1052.9	1054.6	1054.6	1054.6
35°	1025.7	1027.4	1030.8	1025.7	1017.3	1012.2	1008.8	1007.1	1010.5	1012.2	1010.5
37.5°	983.3	985.0	986.7	981.7	973.2	968.1	964.7	963.0	961.3	961.3	961.3
40°	935.9	937.6	941.0	935.9	927.4	922.3	918.9	917.2	917.2	917.2	917.2
42.5°	890.1	891.8	893.5	888.4	879.9	874.8	871.5	869.8	871.5	871.5	871.5
45°	842.6	842.6	844.3	839.2	832.5	827.4	824.0	822.3	822.3	822.3	822.3
47.5°	793.5	795.2	796.9	791.8	785.0	779.9	776.5	773.1	773.1	773.1	773.1
50°	744.3	744.3	746.0	740.9	734.1	729.0	727.3	725.6	723.9	723.9	723.9
52.5°	693.4	695.1	696.8	691.7	686.6	681.6	678.2	676.5	676.5	676.5	676.5
55°	642.6	642.6	644.3	640.9	635.8	630.7	627.3	625.6	627.3	627.3	627.3
57.5°	591.7	593.4	595.1	590.0	584.9	579.8	578.1	576.4	576.4	576.4	576.4
60°	540.8	540.8	542.5	539.1	534.1	529.0	527.3	525.6	525.6	525.6	525.6
62.5°	490.0	490.0	491.7	488.3	483.2	478.1	476.4	474.7	474.7	474.7	474.7
65°	437.4	437.4	437.4	434.0	430.6	428.9	427.2	425.6	423.9	423.9	423.9
67.5°	379.8	379.8	381.5	378.1	374.7	373.0	371.3	369.6	367.9	367.9	367.9
70°	327.2	327.2	328.9	327.2	323.8	322.1	320.4	318.7	317.0	317.0	317.0
72.5°	276.4	276.4	276.4	274.7	273.0	271.3	269.6	267.9	266.2	266.2	266.2
75°	223.8	223.8	225.5	223.8	222.1	220.4	218.7	218.7	217.0	217.0	217.0
77.5°	174.6	176.3	178.0	176.3	174.6	172.9	171.2	171.2	169.5	169.5	169.5
80°	128.9	130.5	132.2	130.5	128.9	127.2	125.5	125.5	125.5	125.5	125.5
82.5°	86.5	88.2	89.9	88.2	86.5	86.5	84.8	84.8	84.8	84.8	84.8
85°	49.2	50.9	52.6	52.6	50.9	50.9	49.2	49.2	49.2	49.2	49.2
87.5°	18.6	20.3	22.0	22.0	20.3	20.3	20.3	20.3	20.3	20.3	20.3
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):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6
2.5°	1385.2	1385.2	1383.5	1386.9	1391.9	1393.6	1386.9	1380.1	1386.9	1393.6	1391.9
5°	1378.4	1378.4	1378.4	1380.1	1385.2	1386.9	1381.8	1375.0	1381.8	1386.9	1385.2
7.5°	1369.9	1368.2	1368.2	1369.9	1375.0	1376.7	1371.6	1366.5	1371.6	1376.7	1375.0
10°	1351.3	1351.3	1351.3	1354.6	1359.7	1363.1	1358.0	1351.3	1358.0	1363.1	1359.7
12.5°	1332.6	1332.6	1332.6	1336.0	1341.1	1342.8	1337.7	1332.6	1337.7	1342.8	1341.1
15°	1310.6	1310.6	1310.6	1314.0	1319.0	1320.7	1315.7	1310.6	1315.7	1320.7	1319.0
17.5°	1281.7	1281.7	1281.7	1285.1	1291.9	1295.3	1290.2	1285.1	1290.2	1295.3	1291.9
20°	1249.5	1249.5	1251.2	1254.6	1261.4	1264.8	1261.4	1256.3	1261.4	1264.8	1261.4
22.5°	1213.9	1215.6	1217.3	1220.7	1227.5	1230.9	1227.5	1224.1	1227.5	1230.9	1227.5
25°	1176.6	1178.3	1180.0	1185.1	1191.9	1195.3	1191.9	1188.5	1191.9	1195.3	1191.9
27.5°	1137.6	1139.3	1141.0	1146.1	1152.9	1158.0	1154.6	1152.9	1154.6	1158.0	1152.9
30°	1095.2	1096.9	1098.6	1103.7	1112.2	1117.3	1113.9	1112.2	1113.9	1117.3	1112.2
32.5°	1052.9	1054.6	1056.3	1061.3	1069.8	1076.6	1073.2	1069.8	1073.2	1076.6	1069.8
35°	1007.1	1008.8	1012.2	1017.3	1025.7	1030.8	1027.4	1025.7	1027.4	1030.8	1025.7
37.5°	963.0	964.7	968.1	973.2	981.7	986.7	985.0	983.3	985.0	986.7	981.7
40°	917.2	918.9	922.3	927.4	935.9	941.0	937.6	935.9	937.6	941.0	935.9
42.5°	869.8	871.5	874.8	879.9	888.4	893.5	891.8	890.1	891.8	893.5	888.4
45°	822.3	824.0	827.4	832.5	839.2	844.3	842.6	842.6	842.6	844.3	839.2
47.5°	773.1	776.5	779.9	785.0	791.8	796.9	795.2	793.5	795.2	796.9	791.8
50°	725.6	727.3	729.0	734.1	740.9	746.0	744.3	744.3	744.3	746.0	740.9
52.5°	676.5	678.2	681.6	686.6	691.7	696.8	695.1	693.4	695.1	696.8	691.7
55°	625.6	627.3	630.7	635.8	640.9	644.3	642.6	642.6	642.6	644.3	640.9
57.5°	576.4	578.1	579.8	584.9	590.0	595.1	593.4	591.7	593.4	595.1	590.0
60°	525.6	527.3	529.0	534.1	539.1	542.5	540.8	540.8	540.8	542.5	539.1
62.5°	474.7	476.4	478.1	483.2	488.3	491.7	490.0	490.0	490.0	491.7	488.3
65°	425.6	427.2	428.9	430.6	434.0	437.4	437.4	437.4	437.4	437.4	434.0
67.5°	369.6	371.3	373.0	374.7	378.1	381.5	379.8	379.8	379.8	381.5	378.1
70°	318.7	320.4	322.1	323.8	327.2	328.9	327.2	327.2	327.2	328.9	327.2
72.5°	267.9	269.6	271.3	273.0	274.7	276.4	276.4	276.4	276.4	276.4	274.7
75°	218.7	218.7	220.4	222.1	223.8	225.5	223.8	223.8	223.8	225.5	223.8
77.5°	171.2	171.2	172.9	174.6	176.3	178.0	176.3	174.6	176.3	178.0	176.3
80°	125.5	125.5	127.2	128.9	130.5	132.2	130.5	128.9	130.5	132.2	130.5
82.5°	84.8	84.8	86.5	86.5	88.2	89.9	88.2	86.5	88.2	89.9	88.2
85°	49.2	49.2	50.9	50.9	52.6	52.6	50.9	49.2	50.9	52.6	52.6
87.5°	20.3	20.3	20.3	20.3	22.0	22.0	20.3	18.6	20.3	22.0	22.0
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6	1388.6
2.5°	1386.9	1383.5	1385.2	1385.2	1386.9	1386.9	1386.9	1385.2	1385.2	1383.5	1386.9
5°	1380.1	1378.4	1378.4	1378.4	1381.8	1385.2	1381.8	1378.4	1378.4	1378.4	1380.1
7.5°	1369.9	1368.2	1368.2	1369.9	1373.3	1376.7	1373.3	1369.9	1368.2	1368.2	1369.9
10°	1354.6	1351.3	1351.3	1351.3	1354.6	1358.0	1354.6	1351.3	1351.3	1351.3	1354.6
12.5°	1336.0	1332.6	1332.6	1332.6	1336.0	1339.4	1336.0	1332.6	1332.6	1332.6	1336.0
15°	1314.0	1310.6	1310.6	1310.6	1314.0	1315.7	1314.0	1310.6	1310.6	1310.6	1314.0
17.5°	1285.1	1281.7	1281.7	1281.7	1285.1	1286.8	1285.1	1281.7	1281.7	1281.7	1285.1
20°	1254.6	1251.2	1249.5	1249.5	1252.9	1254.6	1252.9	1249.5	1249.5	1251.2	1254.6
22.5°	1220.7	1217.3	1215.6	1213.9	1215.6	1217.3	1215.6	1213.9	1215.6	1217.3	1220.7
25°	1185.1	1180.0	1178.3	1176.6	1178.3	1178.3	1178.3	1176.6	1178.3	1180.0	1185.1
27.5°	1146.1	1141.0	1139.3	1137.6	1139.3	1139.3	1139.3	1137.6	1139.3	1141.0	1146.1
30°	1103.7	1098.6	1096.9	1095.2	1095.2	1095.2	1095.2	1095.2	1096.9	1098.6	1103.7
32.5°	1061.3	1056.3	1054.6	1052.9	1054.6	1054.6	1054.6	1052.9	1054.6	1056.3	1061.3
35°	1017.3	1012.2	1008.8	1007.1	1010.5	1012.2	1010.5	1007.1	1008.8	1012.2	1017.3
37.5°	973.2	968.1	964.7	963.0	961.3	961.3	961.3	963.0	964.7	968.1	973.2
40°	927.4	922.3	918.9	917.2	917.2	917.2	917.2	917.2	918.9	922.3	927.4
42.5°	879.9	874.8	871.5	869.8	871.5	871.5	871.5	869.8	871.5	874.8	879.9
45°	832.5	827.4	824.0	822.3	822.3	822.3	822.3	822.3	824.0	827.4	832.5
47.5°	785.0	779.9	776.5	773.1	773.1	773.1	773.1	773.1	776.5	779.9	785.0
50°	734.1	729.0	727.3	725.6	723.9	723.9	723.9	725.6	727.3	729.0	734.1
52.5°	686.6	681.6	678.2	676.5	676.5	676.5	676.5	676.5	678.2	681.6	686.6
55°	635.8	630.7	627.3	625.6	627.3	627.3	627.3	625.6	627.3	630.7	635.8
57.5°	584.9	579.8	578.1	576.4	576.4	576.4	576.4	576.4	578.1	579.8	584.9
60°	534.1	529.0	527.3	525.6	525.6	525.6	525.6	525.6	527.3	529.0	534.1
62.5°	483.2	478.1	476.4	474.7	474.7	474.7	474.7	474.7	476.4	478.1	483.2
65°	430.6	428.9	427.2	425.6	423.9	423.9	423.9	425.6	427.2	428.9	430.6
67.5°	374.7	373.0	371.3	369.6	367.9	367.9	367.9	369.6	371.3	373.0	374.7
70°	323.8	322.1	320.4	318.7	317.0	317.0	317.0	318.7	320.4	322.1	323.8
72.5°	273.0	271.3	269.6	267.9	266.2	266.2	266.2	267.9	269.6	271.3	273.0
75°	222.1	220.4	218.7	218.7	217.0	217.0	217.0	218.7	218.7	220.4	222.1
77.5°	174.6	172.9	171.2	171.2	169.5	169.5	169.5	171.2	171.2	172.9	174.6
80°	128.9	127.2	125.5	125.5	125.5	125.5	125.5	125.5	125.5	127.2	128.9
82.5°	86.5	86.5	84.8	84.8	84.8	84.8	84.8	84.8	84.8	86.5	86.5
85°	50.9	50.9	49.2	49.2	49.2	49.2	49.2	49.2	49.2	50.9	50.9
87.5°	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
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: P709061  
 CATALOG NUMBER: 4APN-X-37L830-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1388.6	1388.6	1388.6	1388.6
2.5°	1391.9	1393.6	1386.9	1380.1
5°	1385.2	1386.9	1381.8	1375.0
7.5°	1375.0	1376.7	1371.6	1366.5
10°	1359.7	1363.1	1358.0	1351.3
12.5°	1341.1	1342.8	1337.7	1332.6
15°	1319.0	1320.7	1315.7	1310.6
17.5°	1291.9	1295.3	1290.2	1285.1
20°	1261.4	1264.8	1261.4	1256.3
22.5°	1227.5	1230.9	1227.5	1224.1
25°	1191.9	1195.3	1191.9	1188.5
27.5°	1152.9	1158.0	1154.6	1152.9
30°	1112.2	1117.3	1113.9	1112.2
32.5°	1069.8	1076.6	1073.2	1069.8
35°	1025.7	1030.8	1027.4	1025.7
37.5°	981.7	986.7	985.0	983.3
40°	935.9	941.0	937.6	935.9
42.5°	888.4	893.5	891.8	890.1
45°	839.2	844.3	842.6	842.6
47.5°	791.8	796.9	795.2	793.5
50°	740.9	746.0	744.3	744.3
52.5°	691.7	696.8	695.1	693.4
55°	640.9	644.3	642.6	642.6
57.5°	590.0	595.1	593.4	591.7
60°	539.1	542.5	540.8	540.8
62.5°	488.3	491.7	490.0	490.0
65°	434.0	437.4	437.4	437.4
67.5°	378.1	381.5	379.8	379.8
70°	327.2	328.9	327.2	327.2
72.5°	274.7	276.4	276.4	276.4
75°	223.8	225.5	223.8	223.8
77.5°	176.3	178.0	176.3	174.6
80°	130.5	132.2	130.5	128.9
82.5°	88.2	89.9	88.2	86.5
85°	52.6	52.6	50.9	49.2
87.5°	22.0	22.0	20.3	18.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)