

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: P709073

Luminaire Tested: **4APN-X-37L840-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709073  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-X-37L840-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture EXAM Light  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

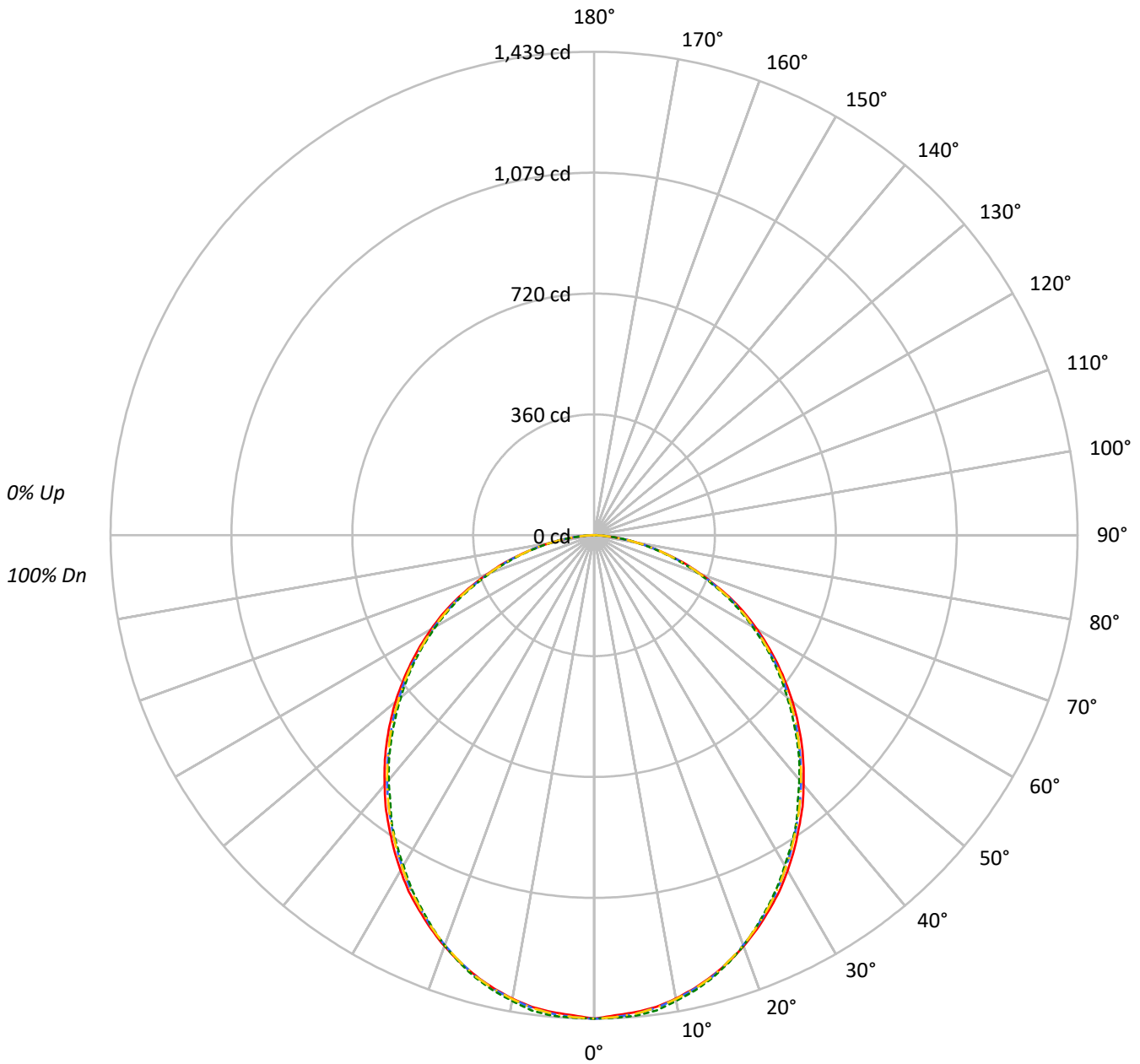
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3743.7 lumens  
Efficiency: N/A  
Efficacy: 91.8 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				
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°	13276	13276	13276	13276
5°	13197	13294	13197	13294
10°	13119	13184	13119	13184
15°	12972	13023	12972	13023
20°	12782	12765	12782	12765
25°	12538	12431	12538	12431
30°	12278	12092	12278	12092
35°	11972	11814	11972	11814
40°	11680	11448	11680	11448
45°	11393	11118	11393	11118
50°	11071	10768	11071	10768
55°	10711	10457	10711	10457
60°	10343	10049	10343	10049
65°	9896	9588	9896	9588
70°	9147	8861	9147	8861
75°	8267	8017	8267	8017
80°	7093	6907	7093	6907
85°	5399	5399	5399	5399



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.8	3.6
10°-20°	383.5	10.2
20°-30°	565.3	15.1
30°-40°	659.9	17.6
40°-50°	665.3	17.8
50°-60°	588.0	15.7
60°-70°	439.7	11.7
70°-80°	243.7	6.5
80°-90°	62.5	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°	1084.6	29.0
0°-40°	1744.5	46.6
0°-60°	2997.8	80.1
0°-90°	3743.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3743.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1439	1439	1439	1439	1439	
5°	1425	1435	1425	1435	1425	135
15°	1358	1363	1358	1363	1358	383
25°	1232	1221	1232	1221	1232	568
35°	1063	1049	1063	1049	1063	666
45°	873	852	873	852	873	673
55°	666	650	666	650	666	596
65°	453	439	453	439	453	446
75°	232	225	232	225	232	247
85°	51	51	51	51	51	62
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°	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9
2.5°	1430.1	1437.2	1444.2	1442.4	1437.2	1433.6	1435.4	1435.4	1437.2	1437.2	1437.2
5°	1424.9	1431.9	1437.2	1435.4	1430.1	1428.4	1428.4	1428.4	1431.9	1435.4	1431.9
7.5°	1416.1	1421.3	1426.6	1424.9	1419.6	1417.8	1417.8	1419.6	1423.1	1426.6	1423.1
10°	1400.3	1407.3	1412.6	1409.1	1403.8	1400.3	1400.3	1400.3	1403.8	1407.3	1403.8
12.5°	1380.9	1386.2	1391.5	1389.7	1384.5	1380.9	1380.9	1380.9	1384.5	1388.0	1384.5
15°	1358.1	1363.4	1368.6	1366.9	1361.6	1358.1	1358.1	1358.1	1361.6	1363.4	1361.6
17.5°	1331.7	1337.0	1342.3	1338.8	1331.7	1328.2	1328.2	1328.2	1331.7	1333.5	1331.7
20°	1301.9	1307.1	1310.7	1307.1	1300.1	1296.6	1294.9	1294.9	1298.4	1300.1	1298.4
22.5°	1268.5	1272.0	1275.5	1272.0	1265.0	1261.5	1259.7	1258.0	1259.7	1261.5	1259.7
25°	1231.6	1235.1	1238.6	1235.1	1228.1	1222.8	1221.1	1219.3	1221.1	1221.1	1221.1
27.5°	1194.7	1196.5	1200.0	1194.7	1187.7	1182.4	1180.7	1178.9	1180.7	1180.7	1180.7
30°	1152.5	1154.3	1157.8	1152.5	1143.8	1138.5	1136.7	1135.0	1135.0	1135.0	1135.0
32.5°	1108.6	1112.1	1115.6	1108.6	1099.8	1094.6	1092.8	1091.0	1092.8	1092.8	1092.8
35°	1062.9	1064.7	1068.2	1062.9	1054.2	1048.9	1045.4	1043.6	1047.1	1048.9	1047.1
37.5°	1019.0	1020.8	1022.5	1017.3	1008.5	1003.2	999.7	997.9	996.2	996.2	996.2
40°	969.8	971.6	975.1	969.8	961.0	955.8	952.3	950.5	950.5	950.5	950.5
42.5°	922.4	924.1	925.9	920.6	911.8	906.6	903.1	901.3	903.1	903.1	903.1
45°	873.2	873.2	874.9	869.7	862.6	857.4	853.9	852.1	852.1	852.1	852.1
47.5°	822.2	824.0	825.8	820.5	813.5	808.2	804.7	801.2	801.2	801.2	801.2
50°	771.3	771.3	773.0	767.8	760.7	755.5	753.7	752.0	750.2	750.2	750.2
52.5°	718.6	720.3	722.1	716.8	711.6	706.3	702.8	701.0	701.0	701.0	701.0
55°	665.9	665.9	667.6	664.1	658.8	653.6	650.1	648.3	650.1	650.1	650.1
57.5°	613.2	614.9	616.7	611.4	606.1	600.9	599.1	597.4	597.4	597.4	597.4
60°	560.5	560.5	562.2	558.7	553.4	548.2	546.4	544.6	544.6	544.6	544.6
62.5°	507.8	507.8	509.5	506.0	500.7	495.5	493.7	491.9	491.9	491.9	491.9
65°	453.3	453.3	453.3	449.8	446.3	444.5	442.7	441.0	439.2	439.2	439.2
67.5°	393.6	393.6	395.3	391.8	388.3	386.5	384.8	383.0	381.3	381.3	381.3
70°	339.1	339.1	340.8	339.1	335.6	333.8	332.1	330.3	328.5	328.5	328.5
72.5°	286.4	286.4	286.4	284.6	282.9	281.1	279.4	277.6	275.8	275.8	275.8
75°	231.9	231.9	233.7	231.9	230.2	228.4	226.6	226.6	224.9	224.9	224.9
77.5°	181.0	182.7	184.5	182.7	181.0	179.2	177.4	177.4	175.7	175.7	175.7
80°	133.5	135.3	137.0	135.3	133.5	131.8	130.0	130.0	130.0	130.0	130.0
82.5°	89.6	91.4	93.1	91.4	89.6	89.6	87.8	87.8	87.8	87.8	87.8
85°	51.0	52.7	54.5	54.5	52.7	52.7	51.0	51.0	51.0	51.0	51.0
87.5°	19.3	21.1	22.8	22.8	21.1	21.1	21.1	21.1	21.1	21.1	21.1
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°	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9
2.5°	1435.4	1435.4	1433.6	1437.2	1442.4	1444.2	1437.2	1430.1	1437.2	1444.2	1442.4
5°	1428.4	1428.4	1428.4	1430.1	1435.4	1437.2	1431.9	1424.9	1431.9	1437.2	1435.4
7.5°	1419.6	1417.8	1417.8	1419.6	1424.9	1426.6	1421.3	1416.1	1421.3	1426.6	1424.9
10°	1400.3	1400.3	1400.3	1403.8	1409.1	1412.6	1407.3	1400.3	1407.3	1412.6	1409.1
12.5°	1380.9	1380.9	1380.9	1384.5	1389.7	1391.5	1386.2	1380.9	1386.2	1391.5	1389.7
15°	1358.1	1358.1	1358.1	1361.6	1366.9	1368.6	1363.4	1358.1	1363.4	1368.6	1366.9
17.5°	1328.2	1328.2	1328.2	1331.7	1338.8	1342.3	1337.0	1331.7	1337.0	1342.3	1338.8
20°	1294.9	1294.9	1296.6	1300.1	1307.1	1310.7	1307.1	1301.9	1307.1	1310.7	1307.1
22.5°	1258.0	1259.7	1261.5	1265.0	1272.0	1275.5	1272.0	1268.5	1272.0	1275.5	1272.0
25°	1219.3	1221.1	1222.8	1228.1	1235.1	1238.6	1235.1	1231.6	1235.1	1238.6	1235.1
27.5°	1178.9	1180.7	1182.4	1187.7	1194.7	1200.0	1196.5	1194.7	1196.5	1200.0	1194.7
30°	1135.0	1136.7	1138.5	1143.8	1152.5	1157.8	1154.3	1152.5	1154.3	1157.8	1152.5
32.5°	1091.0	1092.8	1094.6	1099.8	1108.6	1115.6	1112.1	1108.6	1112.1	1115.6	1108.6
35°	1043.6	1045.4	1048.9	1054.2	1062.9	1068.2	1064.7	1062.9	1064.7	1068.2	1062.9
37.5°	997.9	999.7	1003.2	1008.5	1017.3	1022.5	1020.8	1019.0	1020.8	1022.5	1017.3
40°	950.5	952.3	955.8	961.0	969.8	975.1	971.6	969.8	971.6	975.1	969.8
42.5°	901.3	903.1	906.6	911.8	920.6	925.9	924.1	922.4	924.1	925.9	920.6
45°	852.1	853.9	857.4	862.6	869.7	874.9	873.2	873.2	873.2	874.9	869.7
47.5°	801.2	804.7	808.2	813.5	820.5	825.8	824.0	822.2	824.0	825.8	820.5
50°	752.0	753.7	755.5	760.7	767.8	773.0	771.3	771.3	771.3	773.0	767.8
52.5°	701.0	702.8	706.3	711.6	716.8	722.1	720.3	718.6	720.3	722.1	716.8
55°	648.3	650.1	653.6	658.8	664.1	667.6	665.9	665.9	665.9	667.6	664.1
57.5°	597.4	599.1	600.9	606.1	611.4	616.7	614.9	613.2	614.9	616.7	611.4
60°	544.6	546.4	548.2	553.4	558.7	562.2	560.5	560.5	560.5	562.2	558.7
62.5°	491.9	493.7	495.5	500.7	506.0	509.5	507.8	507.8	507.8	509.5	506.0
65°	441.0	442.7	444.5	446.3	449.8	453.3	453.3	453.3	453.3	453.3	449.8
67.5°	383.0	384.8	386.5	388.3	391.8	395.3	393.6	393.6	393.6	395.3	391.8
70°	330.3	332.1	333.8	335.6	339.1	340.8	339.1	339.1	339.1	340.8	339.1
72.5°	277.6	279.4	281.1	282.9	284.6	286.4	286.4	286.4	286.4	286.4	284.6
75°	226.6	226.6	228.4	230.2	231.9	233.7	231.9	231.9	231.9	233.7	231.9
77.5°	177.4	177.4	179.2	181.0	182.7	184.5	182.7	181.0	182.7	184.5	182.7
80°	130.0	130.0	131.8	133.5	135.3	137.0	135.3	133.5	135.3	137.0	135.3
82.5°	87.8	87.8	89.6	89.6	91.4	93.1	91.4	89.6	91.4	93.1	91.4
85°	51.0	51.0	52.7	52.7	54.5	54.5	52.7	51.0	52.7	54.5	54.5
87.5°	21.1	21.1	21.1	21.1	22.8	22.8	21.1	19.3	21.1	22.8	22.8
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°	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9
2.5°	1437.2	1433.6	1435.4	1435.4	1437.2	1437.2	1437.2	1435.4	1435.4	1433.6	1437.2
5°	1430.1	1428.4	1428.4	1428.4	1431.9	1435.4	1431.9	1428.4	1428.4	1428.4	1430.1
7.5°	1419.6	1417.8	1417.8	1419.6	1423.1	1426.6	1423.1	1419.6	1417.8	1417.8	1419.6
10°	1403.8	1400.3	1400.3	1400.3	1403.8	1407.3	1403.8	1400.3	1400.3	1400.3	1403.8
12.5°	1384.5	1380.9	1380.9	1380.9	1384.5	1388.0	1384.5	1380.9	1380.9	1380.9	1384.5
15°	1361.6	1358.1	1358.1	1358.1	1361.6	1363.4	1361.6	1358.1	1358.1	1358.1	1361.6
17.5°	1331.7	1328.2	1328.2	1328.2	1331.7	1333.5	1331.7	1328.2	1328.2	1328.2	1331.7
20°	1300.1	1296.6	1294.9	1294.9	1298.4	1300.1	1298.4	1294.9	1294.9	1296.6	1300.1
22.5°	1265.0	1261.5	1259.7	1258.0	1259.7	1261.5	1259.7	1258.0	1259.7	1261.5	1265.0
25°	1228.1	1222.8	1221.1	1219.3	1221.1	1221.1	1221.1	1219.3	1221.1	1222.8	1228.1
27.5°	1187.7	1182.4	1180.7	1178.9	1180.7	1180.7	1180.7	1178.9	1180.7	1182.4	1187.7
30°	1143.8	1138.5	1136.7	1135.0	1135.0	1135.0	1135.0	1135.0	1136.7	1138.5	1143.8
32.5°	1099.8	1094.6	1092.8	1091.0	1092.8	1092.8	1092.8	1091.0	1092.8	1094.6	1099.8
35°	1054.2	1048.9	1045.4	1043.6	1047.1	1048.9	1047.1	1043.6	1045.4	1048.9	1054.2
37.5°	1008.5	1003.2	999.7	997.9	996.2	996.2	996.2	997.9	999.7	1003.2	1008.5
40°	961.0	955.8	952.3	950.5	950.5	950.5	950.5	950.5	952.3	955.8	961.0
42.5°	911.8	906.6	903.1	901.3	903.1	903.1	903.1	901.3	903.1	906.6	911.8
45°	862.6	857.4	853.9	852.1	852.1	852.1	852.1	852.1	853.9	857.4	862.6
47.5°	813.5	808.2	804.7	801.2	801.2	801.2	801.2	801.2	804.7	808.2	813.5
50°	760.7	755.5	753.7	752.0	750.2	750.2	750.2	752.0	753.7	755.5	760.7
52.5°	711.6	706.3	702.8	701.0	701.0	701.0	701.0	701.0	702.8	706.3	711.6
55°	658.8	653.6	650.1	648.3	650.1	650.1	650.1	648.3	650.1	653.6	658.8
57.5°	606.1	600.9	599.1	597.4	597.4	597.4	597.4	597.4	599.1	600.9	606.1
60°	553.4	548.2	546.4	544.6	544.6	544.6	544.6	544.6	546.4	548.2	553.4
62.5°	500.7	495.5	493.7	491.9	491.9	491.9	491.9	491.9	493.7	495.5	500.7
65°	446.3	444.5	442.7	441.0	439.2	439.2	439.2	441.0	442.7	444.5	446.3
67.5°	388.3	386.5	384.8	383.0	381.3	381.3	381.3	383.0	384.8	386.5	388.3
70°	335.6	333.8	332.1	330.3	328.5	328.5	328.5	330.3	332.1	333.8	335.6
72.5°	282.9	281.1	279.4	277.6	275.8	275.8	275.8	277.6	279.4	281.1	282.9
75°	230.2	228.4	226.6	226.6	224.9	224.9	224.9	226.6	226.6	228.4	230.2
77.5°	181.0	179.2	177.4	177.4	175.7	175.7	175.7	177.4	177.4	179.2	181.0
80°	133.5	131.8	130.0	130.0	130.0	130.0	130.0	130.0	130.0	131.8	133.5
82.5°	89.6	89.6	87.8	87.8	87.8	87.8	87.8	87.8	87.8	89.6	89.6
85°	52.7	52.7	51.0	51.0	51.0	51.0	51.0	51.0	51.0	52.7	52.7
87.5°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
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: P709073

CATALOG NUMBER: 4APN-X-37L840-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1438.9	1438.9	1438.9	1438.9
2.5°	1442.4	1444.2	1437.2	1430.1
5°	1435.4	1437.2	1431.9	1424.9
7.5°	1424.9	1426.6	1421.3	1416.1
10°	1409.1	1412.6	1407.3	1400.3
12.5°	1389.7	1391.5	1386.2	1380.9
15°	1366.9	1368.6	1363.4	1358.1
17.5°	1338.8	1342.3	1337.0	1331.7
20°	1307.1	1310.7	1307.1	1301.9
22.5°	1272.0	1275.5	1272.0	1268.5
25°	1235.1	1238.6	1235.1	1231.6
27.5°	1194.7	1200.0	1196.5	1194.7
30°	1152.5	1157.8	1154.3	1152.5
32.5°	1108.6	1115.6	1112.1	1108.6
35°	1062.9	1068.2	1064.7	1062.9
37.5°	1017.3	1022.5	1020.8	1019.0
40°	969.8	975.1	971.6	969.8
42.5°	920.6	925.9	924.1	922.4
45°	869.7	874.9	873.2	873.2
47.5°	820.5	825.8	824.0	822.2
50°	767.8	773.0	771.3	771.3
52.5°	716.8	722.1	720.3	718.6
55°	664.1	667.6	665.9	665.9
57.5°	611.4	616.7	614.9	613.2
60°	558.7	562.2	560.5	560.5
62.5°	506.0	509.5	507.8	507.8
65°	449.8	453.3	453.3	453.3
67.5°	391.8	395.3	393.6	393.6
70°	339.1	340.8	339.1	339.1
72.5°	284.6	286.4	286.4	286.4
75°	231.9	233.7	231.9	231.9
77.5°	182.7	184.5	182.7	181.0
80°	135.3	137.0	135.3	133.5
82.5°	91.4	93.1	91.4	89.6
85°	54.5	54.5	52.7	51.0
87.5°	22.8	22.8	21.1	19.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)