

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: P709120

Luminaire Tested: **4APN-39L840-X-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709120  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-39L840-X-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

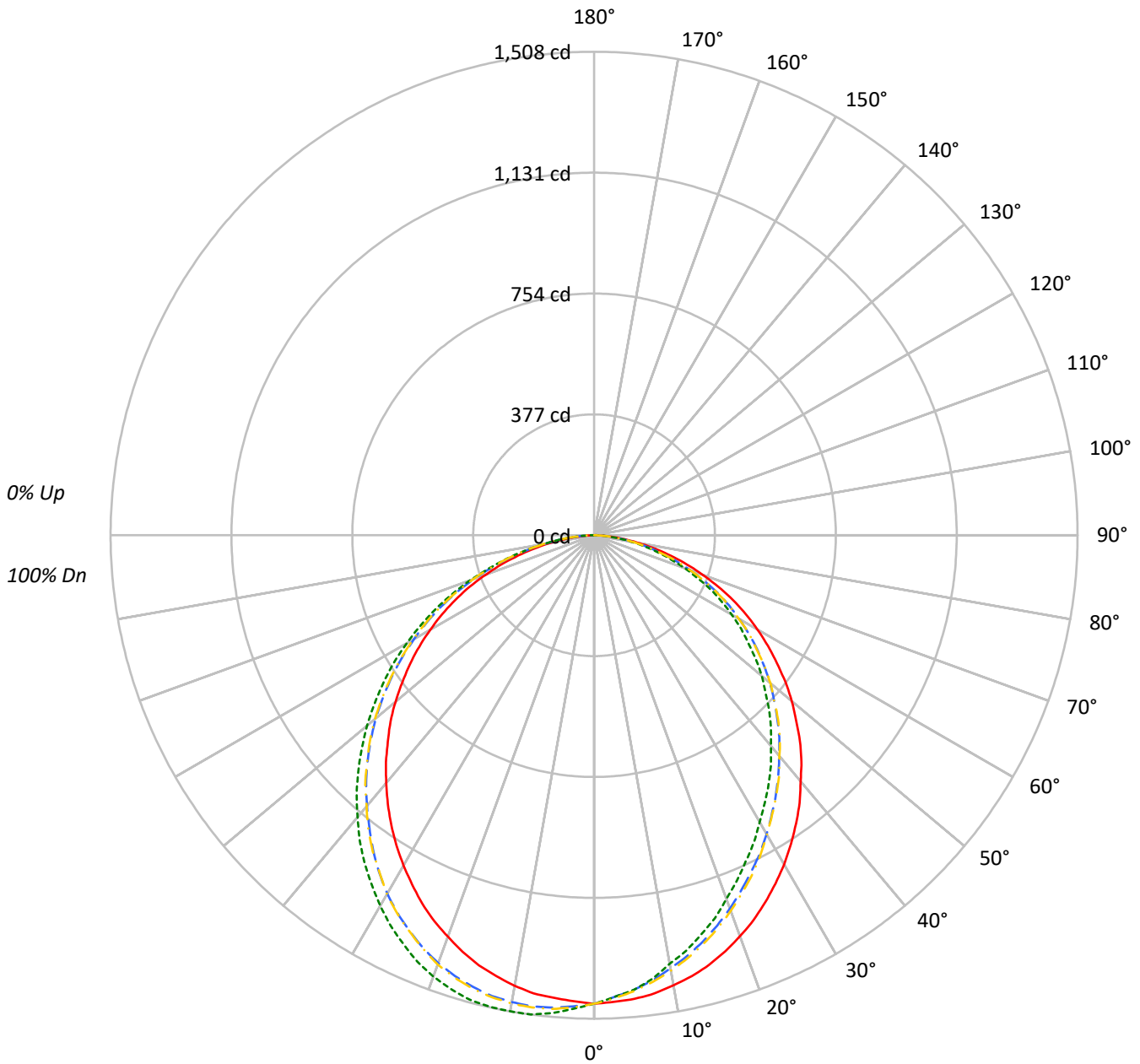
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3919.7 lumens  
Efficiency: N/A  
Efficacy: 85.6 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

TEST NUMBER: P709120  
CATALOG NUMBER: 4APN-39L840-X-UNV

### Luminous Intensity Polar Plot



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



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 CATALOG NUMBER: 4APN-39L840-X-UNV

**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°	13484	13484	13484	13484
5°	13444	13184	13413	13857
10°	13352	12717	13367	14126
15°	13249	12318	13265	14324
20°	13067	11850	13084	14382
25°	12858	11411	12909	14323
30°	12629	11008	12664	14214
35°	12365	10689	12421	14059
40°	12067	10335	12146	13819
45°	11844	10074	11864	13568
50°	11557	9801	11605	13265
55°	11195	9441	11276	12899
60°	10861	9152	10891	12448
65°	10431	8772	10431	11911
70°	9722	8117	9679	11106
75°	8841	7368	8723	9960
80°	7640	6323	7380	8522
85°	5949	4721	5600	6997



TEST NUMBER: P709120  
 CATALOG NUMBER: 4APN-39L840-X-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.1	3.5
10°-20°	391.9	10.0
20°-30°	582.7	14.9
30°-40°	686.7	17.5
40°-50°	699.2	17.8
50°-60°	622.9	15.9
60°-70°	469.3	12.0
70°-80°	261.0	6.7
80°-90°	67.8	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°	1112.7	28.4
0°-40°	1799.4	45.9
0°-60°	3121.6	79.6
0°-90°	3919.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3919.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1462	1462	1462	1462	1462	
5°	1452	1424	1448	1496	1452	138
15°	1387	1290	1389	1500	1387	391
25°	1263	1121	1268	1407	1263	582
35°	1098	949	1103	1248	1098	687
45°	908	772	909	1040	908	699
55°	696	587	701	802	696	624
65°	478	402	478	546	478	472
75°	248	207	245	279	248	263
85°	56	45	53	66	56	68
90°	0	0	0	0	0	



TEST NUMBER: P709120

CATALOG NUMBER: 4APN-39L840-X-UNV

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5
2.5°	1456.6	1456.6	1458.2	1451.6	1443.3	1440.0	1438.4	1436.7	1440.0	1441.7	1440.0
5°	1451.6	1448.3	1445.0	1436.7	1426.8	1420.2	1416.9	1415.2	1418.5	1423.5	1418.5
7.5°	1441.7	1435.1	1428.5	1416.9	1405.3	1395.4	1390.4	1387.1	1390.4	1395.4	1392.1
10°	1425.2	1416.9	1407.0	1393.7	1377.2	1365.6	1360.7	1355.7	1357.4	1357.4	1357.4
12.5°	1408.6	1397.0	1385.5	1368.9	1350.8	1337.5	1329.3	1322.6	1326.0	1327.6	1327.6
15°	1387.1	1372.2	1355.7	1337.5	1319.3	1304.5	1294.5	1287.9	1289.6	1289.6	1291.2
17.5°	1360.7	1344.1	1327.6	1306.1	1284.6	1268.1	1256.5	1248.2	1251.6	1253.2	1254.9
20°	1330.9	1312.7	1294.5	1271.4	1248.2	1230.1	1218.5	1208.6	1206.9	1206.9	1208.6
22.5°	1299.5	1279.7	1258.2	1233.4	1208.6	1188.7	1177.2	1167.2	1165.6	1165.6	1167.2
25°	1263.1	1241.6	1220.1	1195.3	1168.9	1149.1	1134.2	1124.3	1122.6	1120.9	1124.3
27.5°	1225.1	1203.6	1182.1	1157.3	1129.2	1109.4	1094.5	1084.6	1081.3	1079.6	1082.9
30°	1185.4	1160.6	1137.5	1111.0	1086.2	1066.4	1051.5	1039.9	1036.6	1033.3	1036.6
32.5°	1142.4	1117.6	1092.8	1066.4	1041.6	1021.7	1006.9	995.3	992.0	990.3	993.6
35°	1097.8	1073.0	1049.9	1023.4	998.6	978.8	963.9	954.0	950.7	949.0	950.7
37.5°	1053.2	1028.4	1005.2	978.8	954.0	934.1	919.2	909.3	907.7	906.0	907.7
40°	1001.9	980.4	957.3	932.5	907.7	887.8	876.3	864.7	861.4	858.1	863.0
42.5°	957.3	935.8	912.6	889.5	864.7	844.8	831.6	821.7	818.4	816.7	818.4
45°	907.7	884.5	861.4	839.9	816.7	798.5	785.3	775.4	773.7	772.1	773.7
47.5°	854.8	834.9	815.1	793.6	770.4	752.3	740.7	730.8	727.5	724.2	727.5
50°	805.2	785.3	765.5	745.6	724.2	707.6	696.0	686.1	684.5	682.8	684.5
52.5°	752.3	732.4	714.2	694.4	676.2	659.7	648.1	639.8	638.2	636.5	638.2
55°	696.0	679.5	663.0	646.4	628.3	613.4	603.5	593.5	590.2	586.9	590.2
57.5°	643.1	628.3	611.7	595.2	578.7	565.4	555.5	547.2	545.6	543.9	545.6
60°	588.6	575.4	560.5	545.6	529.1	515.8	507.6	501.0	497.6	496.0	497.6
62.5°	534.0	520.8	509.2	494.3	479.5	469.5	461.3	454.7	451.4	449.7	451.4
65°	477.8	466.2	454.7	441.4	429.9	419.9	411.7	405.1	403.4	401.8	401.8
67.5°	419.9	410.0	400.1	388.5	375.3	365.4	357.1	352.2	350.5	348.8	350.5
70°	360.4	352.2	342.2	332.3	322.4	314.1	309.2	304.2	302.6	300.9	300.9
72.5°	304.2	297.6	289.3	281.1	272.8	264.5	259.6	256.3	254.6	253.0	253.0
75°	248.0	241.4	236.4	229.8	221.5	216.6	211.6	208.3	206.7	206.7	206.7
77.5°	195.1	190.1	185.2	178.6	173.6	168.6	165.3	163.7	162.0	162.0	162.0
80°	143.8	140.5	137.2	133.9	129.0	124.0	122.3	120.7	119.0	119.0	119.0
82.5°	97.5	95.9	92.6	89.3	86.0	84.3	82.7	81.0	81.0	81.0	81.0
85°	56.2	54.6	52.9	51.3	49.6	49.6	47.9	46.3	44.6	44.6	44.6
87.5°	23.1	23.1	23.1	21.5	19.8	19.8	19.8	19.8	19.8	19.8	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



TEST NUMBER: P709120

CATALOG NUMBER: 4APN-39L840-X-UNV

**CANDELA DISTRIBUTION (continued):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5
2.5°	1436.7	1440.0	1443.3	1448.3	1453.3	1458.2	1456.6	1454.9	1461.5	1469.8	1471.4
5°	1415.2	1418.5	1423.5	1431.8	1440.0	1446.6	1448.3	1448.3	1461.5	1473.1	1476.4
7.5°	1388.8	1393.7	1400.4	1408.6	1420.2	1430.1	1435.1	1441.7	1454.9	1469.8	1476.4
10°	1355.7	1364.0	1373.9	1385.5	1397.0	1408.6	1418.5	1426.8	1443.3	1459.9	1469.8
12.5°	1326.0	1334.2	1344.1	1357.4	1372.2	1387.1	1397.0	1408.6	1428.5	1448.3	1459.9
15°	1292.9	1301.2	1312.7	1326.0	1342.5	1359.0	1373.9	1388.8	1408.6	1430.1	1443.3
17.5°	1256.5	1264.8	1276.4	1292.9	1311.1	1329.3	1345.8	1362.3	1385.5	1408.6	1423.5
20°	1211.9	1223.5	1238.3	1254.9	1276.4	1297.8	1314.4	1332.6	1357.4	1382.2	1398.7
22.5°	1168.9	1180.5	1197.0	1216.8	1240.0	1263.1	1283.0	1302.8	1329.3	1354.1	1372.2
25°	1127.6	1140.8	1157.3	1177.2	1198.7	1221.8	1244.9	1268.1	1294.5	1321.0	1339.2
27.5°	1086.2	1097.8	1114.3	1134.2	1159.0	1182.1	1205.3	1228.4	1256.5	1284.6	1304.5
30°	1039.9	1053.2	1068.0	1087.9	1114.3	1140.8	1163.9	1188.7	1216.8	1244.9	1264.8
32.5°	996.9	1008.5	1023.4	1043.2	1069.7	1096.1	1120.9	1147.4	1173.9	1202.0	1221.8
35°	954.0	965.5	980.4	1000.3	1026.7	1053.2	1078.0	1102.8	1129.2	1155.7	1175.5
37.5°	911.0	922.5	937.4	957.3	982.1	1008.5	1031.7	1056.5	1082.9	1109.4	1127.6
40°	866.3	877.9	889.5	909.3	934.1	960.6	983.7	1008.5	1035.0	1061.4	1079.6
42.5°	821.7	833.3	848.1	868.0	891.1	914.3	937.4	960.6	985.4	1010.2	1028.4
45°	777.1	787.0	801.9	820.0	843.2	864.7	887.8	909.3	934.1	957.3	975.5
47.5°	730.8	740.7	752.3	770.4	793.6	816.7	839.9	861.4	882.9	906.0	922.5
50°	686.1	696.0	709.3	725.8	747.3	768.8	788.6	808.5	830.0	851.5	866.3
52.5°	639.8	649.8	661.3	677.9	696.0	715.9	734.1	753.9	773.7	793.6	808.5
55°	593.5	600.2	610.1	625.0	644.8	664.6	682.8	701.0	719.2	735.7	750.6
57.5°	547.2	555.5	567.1	580.3	596.8	613.4	629.9	646.4	663.0	679.5	692.7
60°	501.0	507.6	515.8	527.4	543.9	558.8	575.4	590.2	605.1	620.0	631.6
62.5°	453.0	459.6	467.9	479.5	492.7	505.9	520.8	534.0	547.2	560.5	572.0
65°	403.4	410.0	418.3	428.2	439.8	451.4	464.6	477.8	487.7	497.6	509.2
67.5°	352.2	358.8	367.0	375.3	385.2	396.8	408.4	419.9	429.9	439.8	448.0
70°	302.6	307.5	315.8	322.4	330.7	338.9	348.8	358.8	365.4	373.6	383.6
72.5°	254.6	259.6	266.2	272.8	277.8	284.4	294.3	302.6	310.8	320.7	325.7
75°	208.3	211.6	216.6	221.5	226.5	231.5	238.1	244.7	251.3	256.3	262.9
77.5°	162.0	165.3	170.3	173.6	176.9	180.2	185.2	190.1	195.1	198.4	205.0
80°	119.0	122.3	125.7	129.0	132.3	135.6	137.2	138.9	145.5	150.5	153.8
82.5°	81.0	82.7	84.3	87.6	89.3	90.9	92.6	92.6	95.9	99.2	104.2
85°	46.3	47.9	49.6	49.6	49.6	49.6	51.3	52.9	54.6	57.9	61.2
87.5°	18.2	18.2	19.8	19.8	19.8	19.8	19.8	19.8	21.5	24.8	26.5
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: P709120

CATALOG NUMBER: 4APN-39L840-X-UNV

**CANDELA DISTRIBUTION (continued):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5	1461.5
2.5°	1469.8	1471.4	1474.8	1476.4	1478.1	1478.1	1479.7	1481.4	1478.1	1474.8	1473.1
5°	1478.1	1479.7	1484.7	1489.6	1492.9	1496.2	1494.6	1492.9	1489.6	1484.7	1481.4
7.5°	1479.7	1484.7	1489.6	1496.2	1501.2	1507.8	1504.5	1501.2	1494.6	1488.0	1483.0
10°	1474.8	1481.4	1489.6	1497.9	1502.9	1507.8	1504.5	1501.2	1494.6	1486.3	1479.7
12.5°	1468.1	1476.4	1486.3	1494.6	1499.6	1506.2	1501.2	1496.2	1488.0	1479.7	1471.4
15°	1453.3	1463.2	1474.8	1484.7	1492.9	1499.6	1494.6	1491.3	1481.4	1469.8	1458.2
17.5°	1435.1	1448.3	1459.9	1471.4	1478.1	1484.7	1481.4	1478.1	1466.5	1453.3	1440.0
20°	1413.6	1426.8	1438.4	1450.0	1458.2	1464.8	1459.9	1454.9	1443.3	1431.8	1418.5
22.5°	1387.1	1400.4	1413.6	1425.2	1433.4	1440.0	1433.4	1425.2	1413.6	1402.0	1388.8
25°	1354.1	1368.9	1383.8	1395.4	1400.4	1407.0	1400.4	1393.7	1382.2	1370.6	1355.7
27.5°	1321.0	1335.9	1350.8	1362.3	1367.3	1373.9	1367.3	1360.7	1349.1	1337.5	1322.6
30°	1283.0	1297.8	1312.7	1324.3	1329.3	1334.2	1327.6	1321.0	1311.1	1299.5	1284.6
32.5°	1240.0	1254.9	1266.4	1278.0	1284.6	1291.2	1284.6	1279.7	1268.1	1253.2	1238.3
35°	1193.7	1208.6	1223.5	1235.0	1241.6	1248.2	1240.0	1231.7	1221.8	1210.2	1197.0
37.5°	1142.4	1159.0	1175.5	1188.7	1193.7	1200.3	1193.7	1185.4	1175.5	1163.9	1149.1
40°	1094.5	1109.4	1124.3	1137.5	1142.4	1147.4	1140.8	1134.2	1122.6	1111.0	1096.1
42.5°	1044.9	1059.8	1073.0	1084.6	1089.5	1096.1	1089.5	1081.3	1073.0	1063.1	1049.9
45°	992.0	1006.9	1018.4	1030.0	1035.0	1039.9	1033.3	1025.1	1016.8	1008.5	995.3
47.5°	937.4	950.7	962.2	973.8	977.1	982.1	975.5	970.5	962.2	954.0	942.4
50°	881.2	894.4	906.0	915.9	919.2	924.2	917.6	911.0	904.4	897.7	887.8
52.5°	823.3	834.9	846.5	856.4	859.7	863.0	856.4	849.8	843.2	836.6	826.7
55°	763.8	775.4	787.0	795.2	798.5	801.9	795.2	790.3	783.7	778.7	768.8
57.5°	704.3	715.9	725.8	734.1	737.4	740.7	734.1	727.5	722.5	717.5	709.3
60°	643.1	654.7	663.0	669.6	672.9	674.6	667.9	663.0	659.7	656.4	648.1
62.5°	583.6	591.9	600.2	605.1	608.4	610.1	605.1	601.8	598.5	595.2	588.6
65°	520.8	530.7	537.3	542.3	543.9	545.6	540.6	537.3	534.0	530.7	525.8
67.5°	458.0	466.2	471.2	476.2	477.8	477.8	477.8	476.2	472.8	467.9	462.9
70°	395.1	401.8	406.7	410.0	411.7	411.7	408.4	405.1	405.1	403.4	400.1
72.5°	330.7	335.6	338.9	342.2	342.2	342.2	342.2	343.9	342.2	338.9	334.0
75°	269.5	274.4	277.8	279.4	279.4	279.4	279.4	281.1	279.4	277.8	274.4
77.5°	211.6	214.9	216.6	218.2	218.2	218.2	219.9	221.5	219.9	218.2	216.6
80°	157.1	158.7	160.4	162.0	160.4	160.4	162.0	165.3	163.7	162.0	160.4
82.5°	107.5	109.1	110.8	110.8	112.4	114.1	114.1	114.1	114.1	112.4	110.8
85°	64.5	66.1	66.1	66.1	66.1	66.1	67.8	69.4	69.4	67.8	67.8
87.5°	29.8	31.4	29.8	28.1	26.5	26.5	29.8	33.1	33.1	31.4	31.4
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: P709120  
 CATALOG NUMBER: 4APN-39L840-X-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1461.5	1461.5	1461.5	1461.5
2.5°	1474.8	1473.1	1464.8	1456.6
5°	1479.7	1474.8	1463.2	1451.6
7.5°	1479.7	1473.1	1456.6	1441.7
10°	1471.4	1461.5	1443.3	1425.2
12.5°	1461.5	1450.0	1428.5	1408.6
15°	1446.6	1433.4	1410.3	1387.1
17.5°	1425.2	1408.6	1385.5	1360.7
20°	1403.7	1385.5	1357.4	1330.9
22.5°	1373.9	1357.4	1327.6	1299.5
25°	1340.8	1322.6	1292.9	1263.1
27.5°	1306.1	1284.6	1254.9	1225.1
30°	1266.4	1244.9	1215.2	1185.4
32.5°	1223.5	1203.6	1173.9	1142.4
35°	1180.5	1159.0	1129.2	1097.8
37.5°	1132.5	1112.7	1082.9	1053.2
40°	1081.3	1061.4	1031.7	1001.9
42.5°	1033.3	1015.1	985.4	957.3
45°	980.4	962.2	934.1	907.7
47.5°	925.9	907.7	881.2	854.8
50°	872.9	854.8	830.0	805.2
52.5°	813.4	798.5	775.4	752.3
55°	755.6	740.7	717.5	696.0
57.5°	697.7	684.5	663.0	643.1
60°	636.5	623.3	606.8	588.6
62.5°	578.7	567.1	550.6	534.0
65°	517.5	507.6	492.7	477.8
67.5°	454.7	446.4	433.2	419.9
70°	391.8	381.9	372.0	360.4
72.5°	329.0	324.0	314.1	304.2
75°	269.5	264.5	256.3	248.0
77.5°	213.3	208.3	201.7	195.1
80°	157.1	153.8	148.8	143.8
82.5°	109.1	105.8	102.5	97.5
85°	66.1	62.8	59.5	56.2
87.5°	29.8	28.1	24.8	23.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)