

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: P709126

Luminaire Tested: **4APN-39L850-X-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709126  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-39L850-X-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

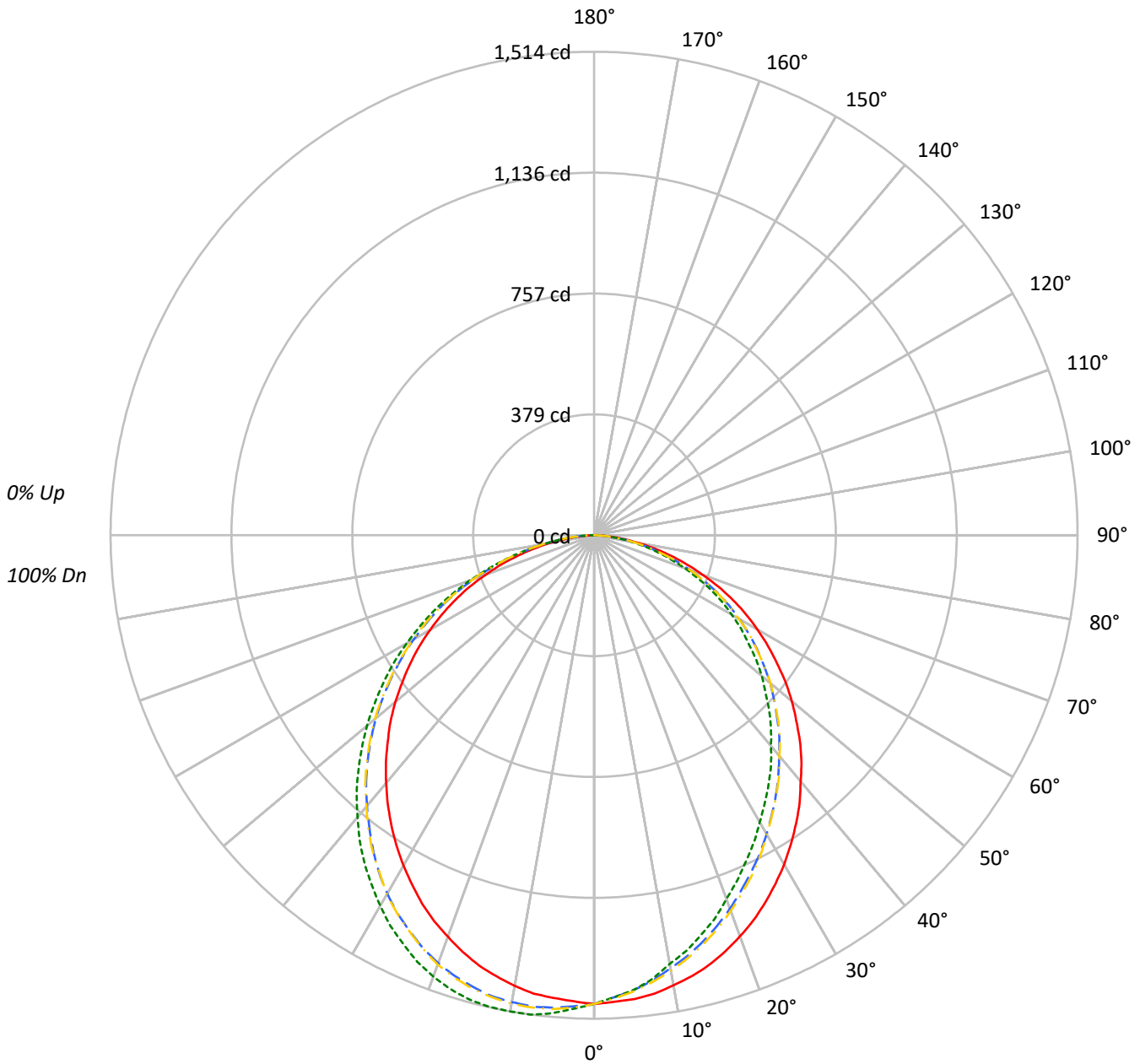
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3936.2 lumens  
Efficiency: N/A  
Efficacy: 85.9 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°	13541	13541	13541	13541
5°	13500	13239	13470	13915
10°	13407	12770	13423	14186
15°	13305	12369	13321	14384
20°	13122	11900	13139	14443
25°	12912	11460	12963	14383
30°	12682	11055	12717	14274
35°	12416	10734	12473	14118
40°	12117	10378	12198	13877
45°	11893	10116	11914	13626
50°	11605	9842	11654	13321
55°	11244	9481	11323	12952
60°	10907	9191	10937	12500
65°	10475	8807	10475	11961
70°	9762	8152	9719	11152
75°	8876	7397	8759	10003
80°	7672	6349	7412	8554
85°	5970	4742	5621	7029



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.7	3.5
10°-20°	393.6	10.0
20°-30°	585.1	14.9
30°-40°	689.6	17.5
40°-50°	702.2	17.8
50°-60°	625.6	15.9
60°-70°	471.3	12.0
70°-80°	262.1	6.7
80°-90°	68.1	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°	1117.4	28.4
0°-40°	1807.0	45.9
0°-60°	3134.7	79.6
0°-90°	3936.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3936.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1468	1468	1468	1468	1468	
5°	1458	1430	1454	1502	1458	138
15°	1393	1295	1395	1506	1393	392
25°	1268	1126	1273	1413	1268	584
35°	1102	953	1107	1254	1102	690
45°	912	775	913	1044	912	702
55°	699	589	704	805	699	626
65°	480	403	480	548	480	474
75°	249	208	246	281	249	265
85°	56	45	53	66	56	68
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°	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7
2.5°	1462.7	1462.7	1464.3	1457.7	1449.4	1446.1	1444.4	1442.8	1446.1	1447.7	1446.1
5°	1457.7	1454.4	1451.1	1442.8	1432.8	1426.2	1422.8	1421.2	1424.5	1429.5	1424.5
7.5°	1447.7	1441.1	1434.5	1422.8	1411.2	1401.3	1396.3	1393.0	1396.3	1401.3	1397.9
10°	1431.1	1422.8	1412.9	1399.6	1383.0	1371.4	1366.4	1361.4	1363.1	1363.1	1363.1
12.5°	1414.5	1402.9	1391.3	1374.7	1356.4	1343.1	1334.8	1328.2	1331.5	1333.2	1333.2
15°	1393.0	1378.0	1361.4	1343.1	1324.9	1309.9	1300.0	1293.3	1295.0	1295.0	1296.7
17.5°	1366.4	1349.8	1333.2	1311.6	1290.0	1273.4	1261.8	1253.5	1256.8	1258.5	1260.1
20°	1336.5	1318.2	1300.0	1276.7	1253.5	1235.2	1223.6	1213.6	1212.0	1212.0	1213.6
22.5°	1305.0	1285.0	1263.5	1238.6	1213.6	1193.7	1182.1	1172.1	1170.5	1170.5	1172.1
25°	1268.4	1246.9	1225.3	1200.4	1173.8	1153.9	1138.9	1129.0	1127.3	1125.7	1129.0
27.5°	1230.2	1208.7	1187.1	1162.2	1134.0	1114.0	1099.1	1089.1	1085.8	1084.1	1087.5
30°	1190.4	1165.5	1142.3	1115.7	1090.8	1070.9	1055.9	1044.3	1041.0	1037.7	1041.0
32.5°	1147.2	1122.3	1097.4	1070.9	1046.0	1026.0	1011.1	999.5	996.2	994.5	997.8
35°	1102.4	1077.5	1054.3	1027.7	1002.8	982.9	967.9	958.0	954.6	953.0	954.6
37.5°	1057.6	1032.7	1009.4	982.9	958.0	938.0	923.1	913.1	911.5	909.8	911.5
40°	1006.1	984.5	961.3	936.4	911.5	891.6	879.9	868.3	865.0	861.7	866.7
42.5°	961.3	939.7	916.5	893.2	868.3	848.4	835.1	825.1	821.8	820.2	821.8
45°	911.5	888.2	865.0	843.4	820.2	801.9	788.6	778.7	777.0	775.3	777.0
47.5°	858.4	838.4	818.5	796.9	773.7	755.4	743.8	733.8	730.5	727.2	730.5
50°	808.5	788.6	768.7	748.8	727.2	710.6	699.0	689.0	687.3	685.7	687.3
52.5°	755.4	735.5	717.2	697.3	679.0	662.4	650.8	642.5	640.9	639.2	640.9
55°	699.0	682.4	665.8	649.2	630.9	616.0	606.0	596.0	592.7	589.4	592.7
57.5°	645.8	630.9	614.3	597.7	581.1	567.8	557.8	549.5	547.9	546.2	547.9
60°	591.1	577.8	562.8	547.9	531.3	518.0	509.7	503.1	499.7	498.1	499.7
62.5°	536.3	523.0	511.4	496.4	481.5	471.5	463.2	456.6	453.2	451.6	453.2
65°	479.8	468.2	456.6	443.3	431.7	421.7	413.4	406.8	405.1	403.4	403.4
67.5°	421.7	411.7	401.8	390.2	376.9	366.9	358.6	353.6	352.0	350.3	352.0
70°	361.9	353.6	343.7	333.7	323.7	315.4	310.5	305.5	303.8	302.2	302.2
72.5°	305.5	298.8	290.5	282.2	273.9	265.6	260.7	257.3	255.7	254.0	254.0
75°	249.0	242.4	237.4	230.8	222.5	217.5	212.5	209.2	207.5	207.5	207.5
77.5°	195.9	190.9	185.9	179.3	174.3	169.3	166.0	164.4	162.7	162.7	162.7
80°	144.4	141.1	137.8	134.5	129.5	124.5	122.9	121.2	119.5	119.5	119.5
82.5°	98.0	96.3	93.0	89.7	86.3	84.7	83.0	81.4	81.4	81.4	81.4
85°	56.4	54.8	53.1	51.5	49.8	49.8	48.1	46.5	44.8	44.8	44.8
87.5°	23.2	23.2	23.2	21.6	19.9	19.9	19.9	19.9	19.9	19.9	19.9
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°	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7
2.5°	1442.8	1446.1	1449.4	1454.4	1459.4	1464.3	1462.7	1461.0	1467.7	1476.0	1477.6
5°	1421.2	1424.5	1429.5	1437.8	1446.1	1452.7	1454.4	1454.4	1467.7	1479.3	1482.6
7.5°	1394.6	1399.6	1406.2	1414.5	1426.2	1436.1	1441.1	1447.7	1461.0	1476.0	1482.6
10°	1361.4	1369.7	1379.7	1391.3	1402.9	1414.5	1424.5	1432.8	1449.4	1466.0	1476.0
12.5°	1331.5	1339.8	1349.8	1363.1	1378.0	1393.0	1402.9	1414.5	1434.5	1454.4	1466.0
15°	1298.3	1306.6	1318.2	1331.5	1348.1	1364.7	1379.7	1394.6	1414.5	1436.1	1449.4
17.5°	1261.8	1270.1	1281.7	1298.3	1316.6	1334.8	1351.4	1368.0	1391.3	1414.5	1429.5
20°	1217.0	1228.6	1243.5	1260.1	1281.7	1303.3	1319.9	1338.2	1363.1	1388.0	1404.6
22.5°	1173.8	1185.4	1202.0	1221.9	1245.2	1268.4	1288.4	1308.3	1334.8	1359.7	1378.0
25°	1132.3	1145.6	1162.2	1182.1	1203.7	1226.9	1250.2	1273.4	1300.0	1326.5	1344.8
27.5°	1090.8	1102.4	1119.0	1138.9	1163.8	1187.1	1210.3	1233.6	1261.8	1290.0	1309.9
30°	1044.3	1057.6	1072.5	1092.4	1119.0	1145.6	1168.8	1193.7	1221.9	1250.2	1270.1
32.5°	1001.1	1012.8	1027.7	1047.6	1074.2	1100.7	1125.7	1152.2	1178.8	1207.0	1226.9
35°	958.0	969.6	984.5	1004.5	1031.0	1057.6	1082.5	1107.4	1134.0	1160.5	1180.4
37.5°	914.8	926.4	941.4	961.3	986.2	1012.8	1036.0	1060.9	1087.5	1114.0	1132.3
40°	870.0	881.6	893.2	913.1	938.0	964.6	987.9	1012.8	1039.3	1065.9	1084.1
42.5°	825.1	836.8	851.7	871.6	894.9	918.1	941.4	964.6	989.5	1014.4	1032.7
45°	780.3	790.3	805.2	823.5	846.7	868.3	891.6	913.1	938.0	961.3	979.6
47.5°	733.8	743.8	755.4	773.7	796.9	820.2	843.4	865.0	886.6	909.8	926.4
50°	689.0	699.0	712.2	728.9	750.4	772.0	791.9	811.9	833.4	855.0	870.0
52.5°	642.5	652.5	664.1	680.7	699.0	718.9	737.2	757.1	777.0	796.9	811.9
55°	596.0	602.7	612.6	627.6	647.5	667.4	685.7	703.9	722.2	738.8	753.8
57.5°	549.5	557.8	569.5	582.7	599.4	616.0	632.6	649.2	665.8	682.4	695.6
60°	503.1	509.7	518.0	529.6	546.2	561.2	577.8	592.7	607.7	622.6	634.2
62.5°	454.9	461.6	469.9	481.5	494.8	508.0	523.0	536.3	549.5	562.8	574.4
65°	405.1	411.7	420.0	430.0	441.6	453.2	466.5	479.8	489.8	499.7	511.4
67.5°	353.6	360.3	368.6	376.9	386.8	398.5	410.1	421.7	431.7	441.6	449.9
70°	303.8	308.8	317.1	323.7	332.1	340.4	350.3	360.3	366.9	375.2	385.2
72.5°	255.7	260.7	267.3	273.9	278.9	285.6	295.5	303.8	312.1	322.1	327.1
75°	209.2	212.5	217.5	222.5	227.5	232.4	239.1	245.7	252.4	257.3	264.0
77.5°	162.7	166.0	171.0	174.3	177.6	181.0	185.9	190.9	195.9	199.2	205.9
80°	119.5	122.9	126.2	129.5	132.8	136.1	137.8	139.5	146.1	151.1	154.4
82.5°	81.4	83.0	84.7	88.0	89.7	91.3	93.0	93.0	96.3	99.6	104.6
85°	46.5	48.1	49.8	49.8	49.8	49.8	51.5	53.1	54.8	58.1	61.4
87.5°	18.3	18.3	19.9	19.9	19.9	19.9	19.9	19.9	21.6	24.9	26.6
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°	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7	1467.7
2.5°	1476.0	1477.6	1480.9	1482.6	1484.3	1484.3	1485.9	1487.6	1484.3	1480.9	1479.3
5°	1484.3	1485.9	1490.9	1495.9	1499.2	1502.5	1500.9	1499.2	1495.9	1490.9	1487.6
7.5°	1485.9	1490.9	1495.9	1502.5	1507.5	1514.2	1510.8	1507.5	1500.9	1494.2	1489.2
10°	1480.9	1487.6	1495.9	1504.2	1509.2	1514.2	1510.8	1507.5	1500.9	1492.6	1485.9
12.5°	1474.3	1482.6	1492.6	1500.9	1505.9	1512.5	1507.5	1502.5	1494.2	1485.9	1477.6
15°	1459.4	1469.3	1480.9	1490.9	1499.2	1505.9	1500.9	1497.5	1487.6	1476.0	1464.3
17.5°	1441.1	1454.4	1466.0	1477.6	1484.3	1490.9	1487.6	1484.3	1472.6	1459.4	1446.1
20°	1419.5	1432.8	1444.4	1456.0	1464.3	1471.0	1466.0	1461.0	1449.4	1437.8	1424.5
22.5°	1393.0	1406.2	1419.5	1431.1	1439.4	1446.1	1439.4	1431.1	1419.5	1407.9	1394.6
25°	1359.7	1374.7	1389.6	1401.3	1406.2	1412.9	1406.2	1399.6	1388.0	1376.4	1361.4
27.5°	1326.5	1341.5	1356.4	1368.0	1373.0	1379.7	1373.0	1366.4	1354.8	1343.1	1328.2
30°	1288.4	1303.3	1318.2	1329.9	1334.8	1339.8	1333.2	1326.5	1316.6	1305.0	1290.0
32.5°	1245.2	1260.1	1271.8	1283.4	1290.0	1296.7	1290.0	1285.0	1273.4	1258.5	1243.5
35°	1198.7	1213.6	1228.6	1240.2	1246.9	1253.5	1245.2	1236.9	1226.9	1215.3	1202.0
37.5°	1147.2	1163.8	1180.4	1193.7	1198.7	1205.3	1198.7	1190.4	1180.4	1168.8	1153.9
40°	1099.1	1114.0	1129.0	1142.3	1147.2	1152.2	1145.6	1138.9	1127.3	1115.7	1100.7
42.5°	1049.3	1064.2	1077.5	1089.1	1094.1	1100.7	1094.1	1085.8	1077.5	1067.5	1054.3
45°	996.2	1011.1	1022.7	1034.3	1039.3	1044.3	1037.7	1029.4	1021.1	1012.8	999.5
47.5°	941.4	954.6	966.3	977.9	981.2	986.2	979.6	974.6	966.3	958.0	946.3
50°	884.9	898.2	909.8	919.8	923.1	928.1	921.4	914.8	908.2	901.5	891.6
52.5°	826.8	838.4	850.1	860.0	863.3	866.7	860.0	853.4	846.7	840.1	830.1
55°	767.0	778.7	790.3	798.6	801.9	805.2	798.6	793.6	787.0	782.0	772.0
57.5°	707.3	718.9	728.9	737.2	740.5	743.8	737.2	730.5	725.5	720.6	712.2
60°	645.8	657.5	665.8	672.4	675.7	677.4	670.7	665.8	662.4	659.1	650.8
62.5°	586.1	594.4	602.7	607.7	611.0	612.6	607.7	604.3	601.0	597.7	591.1
65°	523.0	532.9	539.6	544.6	546.2	547.9	542.9	539.6	536.3	532.9	528.0
67.5°	459.9	468.2	473.2	478.2	479.8	479.8	479.8	478.2	474.8	469.9	464.9
70°	396.8	403.4	408.4	411.7	413.4	413.4	410.1	406.8	406.8	405.1	401.8
72.5°	332.1	337.0	340.4	343.7	343.7	343.7	343.7	345.3	343.7	340.4	335.4
75°	270.6	275.6	278.9	280.6	280.6	280.6	280.6	282.2	280.6	278.9	275.6
77.5°	212.5	215.8	217.5	219.2	219.2	219.2	220.8	222.5	220.8	219.2	217.5
80°	157.7	159.4	161.0	162.7	161.0	161.0	162.7	166.0	164.4	162.7	161.0
82.5°	107.9	109.6	111.2	111.2	112.9	114.6	114.6	114.6	114.6	112.9	111.2
85°	64.7	66.4	66.4	66.4	66.4	66.4	68.1	69.7	69.7	68.1	68.1
87.5°	29.9	31.5	29.9	28.2	26.6	26.6	29.9	33.2	33.2	31.5	31.5
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: P709126  
 CATALOG NUMBER: 4APN-39L850-X-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1467.7	1467.7	1467.7	1467.7
2.5°	1480.9	1479.3	1471.0	1462.7
5°	1485.9	1480.9	1469.3	1457.7
7.5°	1485.9	1479.3	1462.7	1447.7
10°	1477.6	1467.7	1449.4	1431.1
12.5°	1467.7	1456.0	1434.5	1414.5
15°	1452.7	1439.4	1416.2	1393.0
17.5°	1431.1	1414.5	1391.3	1366.4
20°	1409.6	1391.3	1363.1	1336.5
22.5°	1379.7	1363.1	1333.2	1305.0
25°	1346.5	1328.2	1298.3	1268.4
27.5°	1311.6	1290.0	1260.1	1230.2
30°	1271.8	1250.2	1220.3	1190.4
32.5°	1228.6	1208.7	1178.8	1147.2
35°	1185.4	1163.8	1134.0	1102.4
37.5°	1137.3	1117.4	1087.5	1057.6
40°	1085.8	1065.9	1036.0	1006.1
42.5°	1037.7	1019.4	989.5	961.3
45°	984.5	966.3	938.0	911.5
47.5°	929.7	911.5	884.9	858.4
50°	876.6	858.4	833.4	808.5
52.5°	816.8	801.9	778.7	755.4
55°	758.7	743.8	720.6	699.0
57.5°	700.6	687.3	665.8	645.8
60°	639.2	625.9	609.3	591.1
62.5°	581.1	569.5	552.9	536.3
65°	519.7	509.7	494.8	479.8
67.5°	456.6	448.3	435.0	421.7
70°	393.5	383.5	373.6	361.9
72.5°	330.4	325.4	315.4	305.5
75°	270.6	265.6	257.3	249.0
77.5°	214.2	209.2	202.6	195.9
80°	157.7	154.4	149.4	144.4
82.5°	109.6	106.3	102.9	98.0
85°	66.4	63.1	59.8	56.4
87.5°	29.9	28.2	24.9	23.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)