

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: P

Luminaire Tested: **4APN-20-22L850-UNV-NP**

Issue Date: 06/06/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 06/06/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-20-22L850-UNV-NP  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ Nature Pattern Lens  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

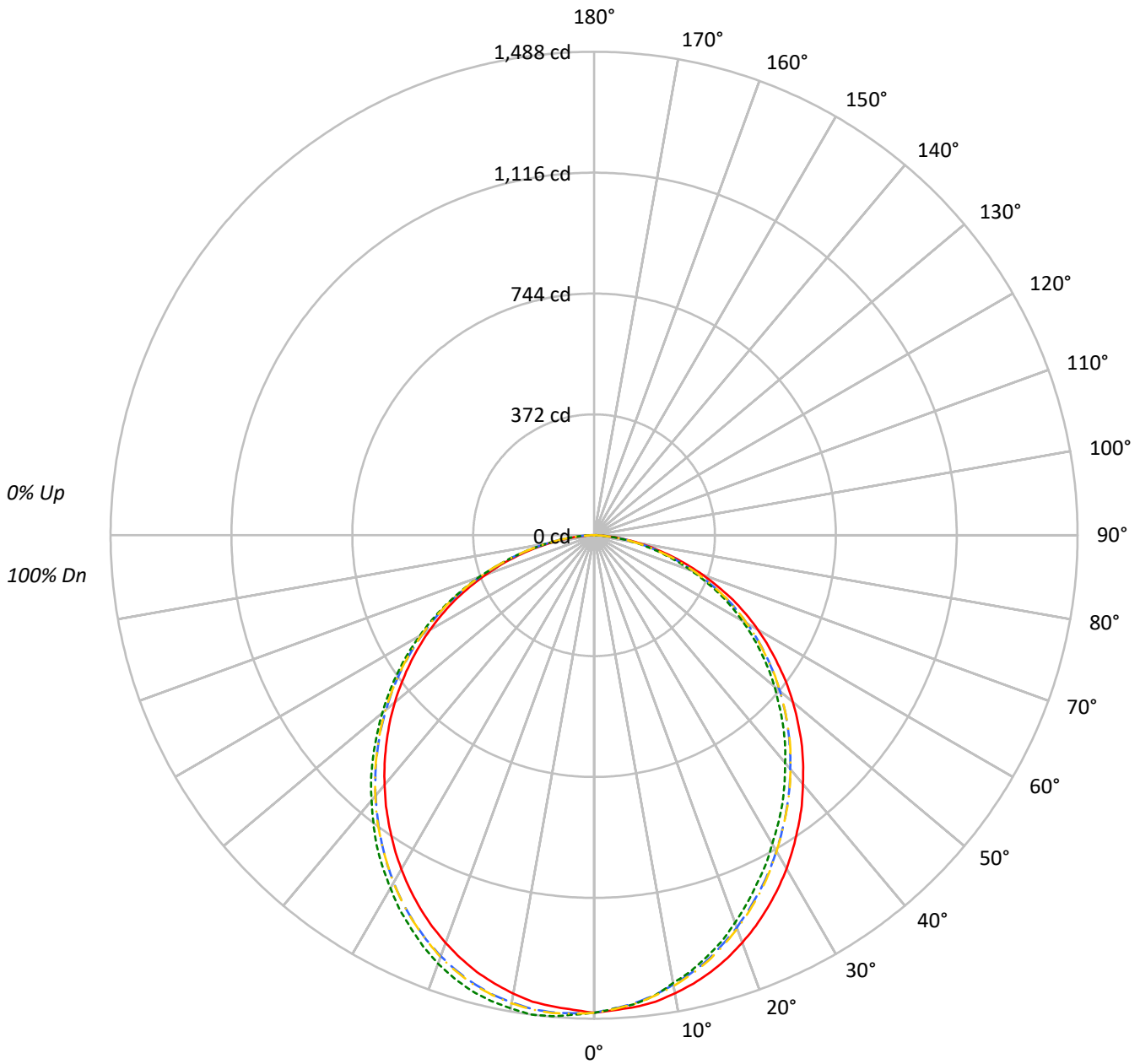
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3884.7 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 48  
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	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
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°	13559	13559	13559	13559
5°	13499	13411	13482	13763
10°	13412	13113	13420	13849
15°	13286	12825	13295	13872
20°	13099	12455	13107	13776
25°	12870	12062	12896	13581
30°	12623	11685	12640	13357
35°	12334	11381	12362	13141
40°	12036	11017	12078	12835
45°	11777	10719	11789	12543
50°	11470	10405	11494	12212
55°	11105	10065	11147	11868
60°	10749	9713	10763	11433
65°	10306	9287	10306	10926
70°	9568	8592	9544	10151
75°	8673	7782	8616	9136
80°	7476	6689	7337	7837
85°	5759	5113	5568	6309



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.8	3.6
10°-20°	392.9	10.1
20°-30°	581.8	15.0
30°-40°	682.6	17.6
40°-50°	691.7	17.8
50°-60°	613.9	15.8
60°-70°	460.9	11.9
70°-80°	255.9	6.6
80°-90°	66.1	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°	1113.5	28.7
0°-40°	1796.0	46.2
0°-60°	3101.7	79.8
0°-90°	3884.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3884.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1470	1470	1470	1470	1470	
5°	1458	1448	1456	1486	1458	138
15°	1391	1343	1392	1452	1391	392
25°	1264	1185	1267	1334	1264	582
35°	1095	1010	1098	1167	1095	685
45°	903	822	904	961	903	696
55°	690	626	693	738	690	618
65°	472	425	472	500	472	465
75°	243	218	242	256	243	259
85°	54	48	53	60	54	66
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°	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6
2.5°	1462.7	1466.2	1470.4	1466.2	1459.2	1455.7	1455.7	1454.9	1457.5	1458.3	1457.5
5°	1457.5	1459.2	1460.1	1454.9	1447.2	1442.8	1441.1	1440.3	1443.7	1448.0	1443.7
7.5°	1448.0	1447.2	1446.2	1439.4	1430.8	1424.7	1422.1	1421.3	1424.7	1429.0	1425.6
10°	1431.6	1430.8	1428.2	1419.5	1408.4	1400.5	1397.9	1395.4	1397.9	1399.7	1397.9
12.5°	1413.5	1410.0	1406.6	1397.1	1385.0	1376.4	1372.1	1368.6	1372.1	1374.7	1373.0
15°	1391.0	1385.9	1379.9	1369.4	1357.4	1347.9	1342.7	1339.3	1341.9	1342.7	1342.7
17.5°	1364.3	1358.3	1352.2	1339.3	1324.6	1314.2	1308.2	1303.9	1307.4	1309.1	1309.1
20°	1334.1	1327.2	1319.5	1305.6	1290.1	1278.9	1272.0	1266.8	1267.7	1268.5	1268.5
22.5°	1301.3	1292.6	1283.1	1268.5	1252.2	1240.1	1233.2	1227.1	1227.1	1227.9	1227.9
25°	1264.2	1254.7	1245.3	1230.6	1213.3	1200.4	1191.7	1185.7	1185.7	1184.9	1186.5
27.5°	1226.3	1215.8	1206.4	1190.9	1172.7	1159.8	1151.2	1145.1	1144.3	1143.4	1145.1
30°	1184.9	1172.7	1162.4	1146.0	1128.7	1115.8	1107.1	1100.2	1098.6	1096.8	1098.6
32.5°	1140.8	1129.6	1118.4	1101.1	1083.8	1070.9	1062.2	1055.4	1054.5	1053.7	1055.4
35°	1095.1	1083.0	1072.7	1056.2	1039.0	1026.0	1016.5	1010.5	1010.5	1010.5	1010.5
37.5°	1050.2	1038.1	1026.9	1010.5	993.3	980.3	970.8	964.8	963.0	962.2	963.0
40°	999.3	988.9	978.6	963.0	945.8	932.9	925.0	918.1	916.5	914.7	917.3
42.5°	952.7	942.4	931.1	916.5	899.2	886.2	877.7	871.6	870.7	869.8	870.7
45°	902.6	890.6	879.3	865.6	850.0	837.9	829.2	823.3	822.4	821.5	822.4
47.5°	850.0	840.5	831.0	817.2	801.7	789.6	781.9	774.9	773.2	771.4	773.2
50°	799.1	788.8	779.3	766.3	751.6	740.4	733.5	727.5	725.7	724.9	725.7
52.5°	745.6	736.1	727.5	714.6	702.5	691.2	683.5	678.3	677.4	676.6	677.4
55°	690.4	681.7	674.0	663.6	651.5	641.2	634.2	628.3	627.3	625.7	627.3
57.5°	636.8	629.9	622.2	610.9	599.8	590.3	584.2	579.0	578.2	577.3	578.2
60°	582.5	575.6	568.7	559.2	547.9	538.4	533.3	529.0	527.3	526.4	527.3
62.5°	528.1	521.2	516.0	506.5	496.2	488.4	483.2	478.9	477.2	476.3	477.2
65°	472.1	466.0	460.0	451.3	443.6	437.5	432.3	428.0	426.3	425.4	425.4
67.5°	412.5	407.3	403.0	395.3	386.6	380.6	375.3	371.9	370.2	369.4	370.2
70°	354.7	350.4	346.0	340.0	333.1	328.0	324.5	321.0	319.3	318.5	318.5
72.5°	299.5	296.0	291.6	286.5	281.3	276.1	272.7	270.1	268.4	267.5	267.5
75°	243.3	239.9	238.2	233.8	228.7	225.2	221.7	220.1	218.3	218.3	218.3
77.5°	190.7	189.0	187.3	182.9	179.5	176.0	173.4	172.6	170.8	170.8	170.8
80°	140.7	139.8	138.9	136.4	132.9	129.4	127.7	126.9	125.9	125.9	125.9
82.5°	95.0	95.0	94.0	91.5	88.9	88.1	86.3	85.5	85.5	85.5	85.5
85°	54.4	54.4	54.4	53.5	51.8	51.8	50.1	49.1	48.3	48.3	48.3
87.5°	21.6	22.4	23.3	22.4	20.7	20.7	20.7	20.7	20.7	20.7	20.7
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°	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6
2.5°	1454.9	1456.7	1457.5	1461.8	1467.0	1470.4	1466.2	1461.8	1468.7	1476.5	1476.5
5°	1440.3	1442.0	1444.6	1449.8	1456.7	1461.0	1459.2	1455.7	1466.2	1474.7	1475.7
7.5°	1422.1	1423.8	1427.3	1432.5	1441.1	1447.2	1447.2	1448.0	1457.5	1467.8	1470.4
10°	1395.4	1399.7	1404.9	1412.6	1421.3	1429.0	1431.6	1432.5	1444.6	1455.7	1459.2
12.5°	1370.4	1374.7	1379.9	1388.4	1398.9	1407.4	1410.0	1413.5	1426.4	1439.4	1444.6
15°	1341.9	1346.2	1352.2	1360.9	1372.1	1381.5	1386.8	1391.9	1404.9	1418.7	1424.7
17.5°	1308.2	1312.6	1318.6	1329.0	1341.9	1353.1	1359.1	1365.2	1379.9	1394.5	1400.5
20°	1268.5	1274.6	1283.1	1293.6	1308.2	1321.1	1328.0	1335.0	1350.5	1365.2	1372.1
22.5°	1227.9	1234.8	1244.3	1256.4	1272.0	1285.8	1294.4	1303.1	1318.6	1333.2	1341.0
25°	1187.4	1195.2	1204.7	1217.6	1232.3	1246.1	1256.4	1266.8	1282.3	1297.9	1305.6
27.5°	1146.0	1152.9	1162.4	1175.4	1191.7	1206.4	1216.8	1227.9	1243.5	1259.9	1267.7
30°	1100.2	1108.1	1116.6	1129.6	1147.7	1164.1	1174.4	1186.5	1202.1	1218.5	1226.3
32.5°	1056.2	1063.2	1071.7	1084.7	1102.8	1120.1	1131.3	1143.4	1159.0	1175.4	1182.2
35°	1010.5	1017.4	1026.9	1039.8	1058.0	1074.4	1085.6	1097.6	1112.3	1127.9	1135.6
37.5°	965.6	972.5	982.0	994.9	1012.3	1028.6	1039.8	1051.9	1066.6	1081.2	1088.1
40°	919.0	926.0	933.7	946.6	964.0	980.3	990.7	1002.8	1017.4	1032.9	1039.8
42.5°	871.6	878.5	888.0	900.9	917.3	932.0	943.2	954.5	968.2	982.0	988.9
45°	824.1	830.2	839.7	851.7	867.2	881.1	892.3	903.5	916.5	929.4	936.3
47.5°	774.9	781.9	789.6	801.7	817.2	831.9	843.1	853.4	865.6	878.5	884.5
50°	727.5	733.5	741.3	752.4	767.2	780.9	790.4	800.8	812.0	824.1	829.2
52.5°	678.3	684.3	692.1	703.3	715.4	728.3	737.0	746.5	757.7	768.9	774.0
55°	628.3	632.5	639.4	649.8	662.7	674.8	683.5	693.0	702.5	712.0	718.0
57.5°	579.0	584.2	591.1	600.6	611.8	623.1	630.8	638.6	648.1	657.6	661.9
60°	529.0	533.3	538.4	547.1	558.4	567.9	575.6	583.3	591.1	599.8	604.1
62.5°	478.1	482.4	487.6	496.2	505.7	514.3	521.2	528.1	535.0	542.8	547.1
65°	427.2	431.5	436.7	442.7	450.5	458.2	465.1	472.1	477.2	482.4	486.7
67.5°	371.9	376.3	381.4	386.6	393.5	401.3	406.4	412.5	417.7	423.7	426.3
70°	320.1	323.6	328.8	333.1	339.1	344.3	348.6	353.8	357.3	362.4	366.8
72.5°	269.2	272.7	277.0	281.3	284.8	289.0	294.3	298.5	302.9	308.0	309.8
75°	220.1	221.7	225.2	228.7	232.2	235.6	238.2	241.7	245.1	248.6	251.2
77.5°	171.8	173.4	176.9	179.5	182.1	184.7	186.4	188.1	191.6	194.2	196.8
80°	125.9	127.7	130.3	132.9	135.4	138.1	138.1	138.1	142.4	145.9	146.7
82.5°	85.5	86.3	88.1	89.7	91.5	93.2	93.2	92.3	95.0	97.5	99.2
85°	49.1	50.1	51.8	51.8	52.6	52.6	52.6	52.6	54.4	57.0	58.6
87.5°	19.8	19.8	20.7	20.7	21.6	21.6	20.7	19.8	21.6	24.2	25.0
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°	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6	1469.6
2.5°	1473.1	1472.2	1474.7	1475.7	1477.3	1477.3	1478.2	1478.2	1476.5	1473.9	1474.7
5°	1473.9	1473.9	1476.5	1479.1	1482.6	1486.0	1483.4	1480.8	1479.1	1476.5	1475.7
7.5°	1469.6	1471.3	1473.9	1478.2	1482.6	1487.7	1484.2	1480.8	1476.5	1473.1	1471.3
10°	1459.2	1461.0	1465.2	1469.6	1473.9	1478.2	1474.7	1471.3	1467.8	1463.6	1461.8
12.5°	1446.2	1448.9	1454.1	1458.3	1462.7	1467.8	1463.6	1459.2	1454.9	1450.6	1448.0
15°	1427.3	1430.8	1436.8	1442.0	1448.0	1452.3	1448.9	1445.4	1440.3	1434.2	1429.9
17.5°	1403.1	1408.4	1414.3	1420.4	1425.6	1429.9	1427.3	1423.8	1417.9	1410.9	1405.8
20°	1376.4	1381.5	1386.8	1392.8	1398.9	1403.1	1399.7	1395.4	1389.4	1384.2	1378.9
22.5°	1345.3	1350.5	1356.5	1361.7	1366.9	1371.2	1366.9	1361.7	1356.5	1351.4	1346.2
25°	1310.0	1315.1	1322.1	1327.2	1330.6	1334.1	1330.6	1326.3	1321.1	1316.0	1310.8
27.5°	1272.8	1278.0	1284.9	1290.1	1293.6	1297.0	1293.6	1289.2	1284.1	1278.9	1273.7
30°	1231.4	1236.6	1243.5	1248.7	1251.2	1253.8	1250.4	1246.9	1242.7	1237.4	1232.3
32.5°	1187.4	1192.6	1197.8	1202.9	1207.3	1210.7	1207.3	1203.8	1198.6	1191.7	1186.5
35°	1140.8	1146.0	1152.0	1157.2	1162.4	1166.7	1161.5	1155.5	1151.2	1146.9	1142.5
37.5°	1091.6	1097.6	1104.6	1110.6	1112.3	1115.8	1112.3	1108.9	1104.6	1100.2	1095.1
40°	1043.3	1048.5	1054.5	1060.6	1063.2	1065.7	1062.2	1058.8	1053.7	1049.3	1044.2
42.5°	993.3	998.4	1003.6	1008.8	1012.3	1015.7	1012.3	1007.0	1003.6	1000.2	995.9
45°	941.5	946.6	951.0	956.1	958.7	961.3	957.9	953.5	950.1	947.5	943.2
47.5°	888.8	893.1	897.5	901.8	903.5	906.0	902.6	900.1	897.5	894.9	891.4
50°	833.6	837.9	843.1	847.4	848.2	850.8	847.4	844.8	842.2	839.7	837.1
52.5°	779.3	782.7	787.0	791.4	793.0	794.8	791.4	787.8	785.3	783.5	780.9
55°	722.3	725.7	730.0	733.5	736.1	737.8	734.4	730.9	728.3	727.5	724.9
57.5°	665.3	668.8	673.1	676.6	678.3	680.0	676.6	673.1	671.4	669.6	667.9
60°	607.5	610.9	614.4	617.0	618.8	619.6	616.2	613.6	612.7	611.8	610.1
62.5°	550.5	552.3	555.7	557.4	559.2	560.0	557.4	555.7	554.9	554.0	553.1
65°	491.1	495.3	497.9	499.6	499.6	500.5	497.9	497.1	496.2	495.3	493.6
67.5°	429.7	433.2	434.9	436.7	436.7	436.7	436.7	436.7	435.8	434.1	432.3
70°	371.1	373.7	375.3	376.3	376.3	376.3	374.5	373.7	374.5	374.5	373.7
72.5°	311.5	313.2	314.1	315.0	314.1	314.1	314.1	315.9	315.9	315.0	313.2
75°	253.7	255.4	256.3	257.1	256.3	256.3	256.3	258.0	257.1	257.1	256.3
77.5°	199.3	200.2	200.2	201.1	200.2	200.2	201.1	202.7	201.9	201.9	201.9
80°	147.5	147.5	147.5	148.4	147.5	147.5	148.4	150.2	149.3	149.3	149.3
82.5°	100.1	101.0	101.0	101.0	101.8	102.7	102.7	102.7	102.7	102.7	101.8
85°	59.6	60.4	59.6	59.6	59.6	59.6	60.4	61.3	61.3	61.3	61.3
87.5°	25.9	26.7	25.9	25.0	24.2	24.2	25.9	27.7	27.7	26.7	26.7
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: P  
 CATALOG NUMBER: 4APN-20-22L850-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1469.6	1469.6	1469.6	1469.6
2.5°	1478.2	1478.2	1470.4	1462.7
5°	1477.3	1475.7	1467.0	1457.5
7.5°	1472.2	1469.6	1458.3	1448.0
10°	1460.1	1456.7	1444.6	1431.6
12.5°	1445.4	1440.3	1426.4	1413.5
15°	1426.4	1420.4	1405.8	1391.0
17.5°	1401.4	1394.5	1379.9	1364.3
20°	1374.7	1366.9	1350.5	1334.1
22.5°	1341.9	1335.0	1317.7	1301.3
25°	1306.5	1298.7	1281.5	1264.2
27.5°	1268.5	1259.9	1242.7	1226.3
30°	1227.1	1218.5	1201.2	1184.9
32.5°	1183.1	1176.2	1159.0	1140.8
35°	1138.2	1129.6	1112.3	1095.1
37.5°	1090.7	1083.0	1066.6	1050.2
40°	1040.7	1032.9	1015.7	999.3
42.5°	991.5	984.6	968.2	952.7
45°	938.9	932.0	916.5	902.6
47.5°	886.2	879.3	864.7	850.0
50°	832.8	825.8	812.0	799.1
52.5°	776.7	771.4	758.5	745.6
55°	720.5	714.6	701.5	690.4
57.5°	664.5	660.2	648.1	636.8
60°	606.7	601.5	592.0	582.5
62.5°	550.5	546.3	536.8	528.1
65°	491.1	487.6	479.8	472.1
67.5°	429.7	427.2	419.4	412.5
70°	371.1	366.8	360.7	354.7
72.5°	311.5	309.8	304.6	299.5
75°	254.6	252.8	247.6	243.3
77.5°	201.1	199.3	195.0	190.7
80°	148.4	147.5	144.1	140.7
82.5°	101.8	101.0	98.4	95.0
85°	61.3	59.6	57.0	54.4
87.5°	26.7	25.9	23.3	21.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)