

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-28-30L940-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-28-30L940-UNV-NP  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ Nature Pattern Lens  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

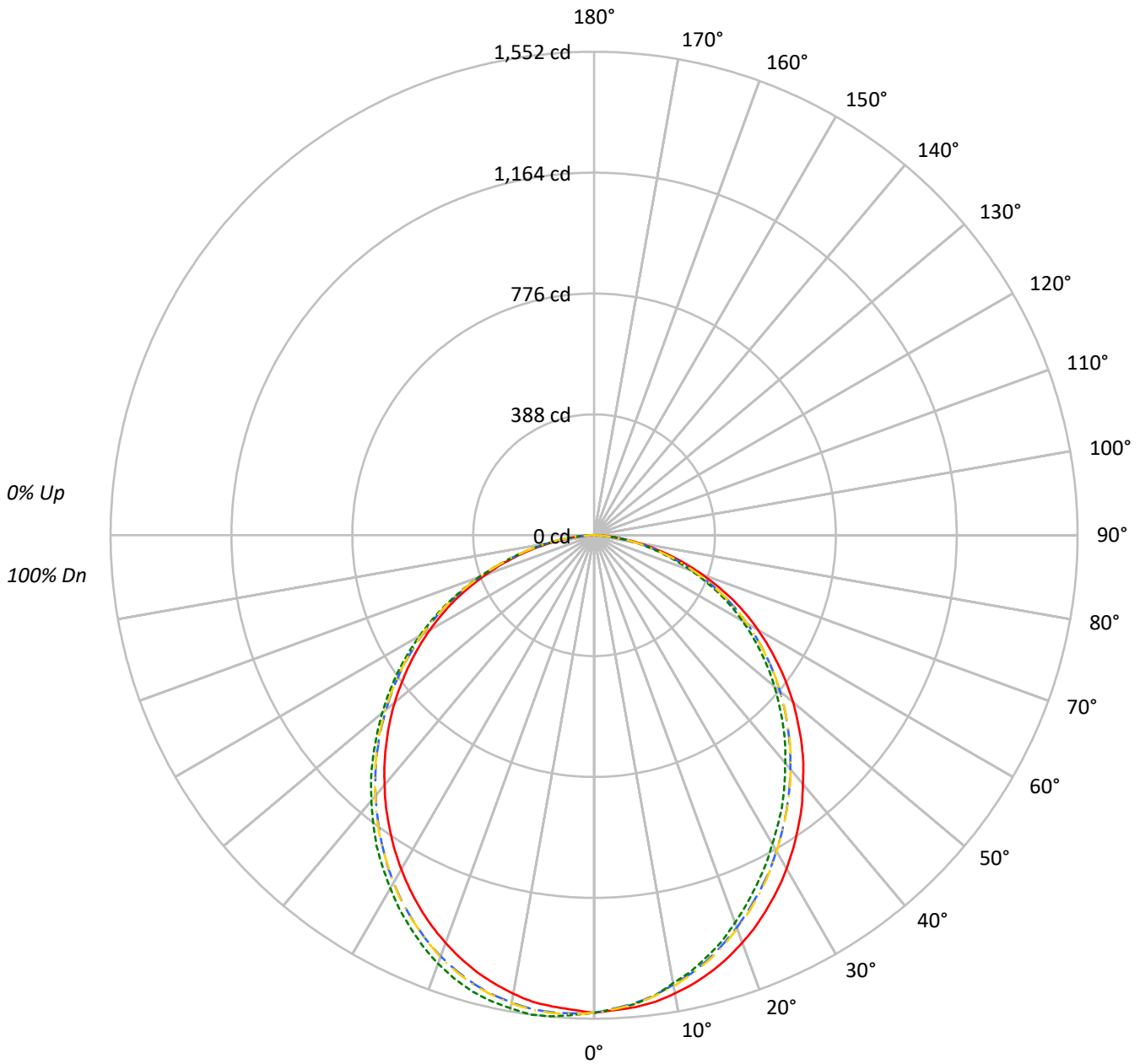
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4052.8 lumens  
Efficiency: N/A  
Efficacy: 62.4 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): 65  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	14146	14146	14146	14146
5°	14083	13991	14066	14358
10°	13992	13681	14001	14448
15°	13861	13381	13871	14473
20°	13666	12994	13675	14373
25°	13426	12583	13454	14170
30°	13169	12191	13188	13936
35°	12868	11874	12899	13709
40°	12556	11494	12599	13390
45°	12287	11183	12299	13087
50°	11966	10854	11991	12742
55°	11586	10499	11628	12383
60°	11214	10132	11230	11928
65°	10750	9691	10750	11398
70°	9981	8961	9957	10588
75°	9051	8117	8987	9532
80°	7800	6987	7651	8182
85°	6002	5335	5822	6574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.8	3.6
10°-20°	409.9	10.1
20°-30°	606.9	15.0
30°-40°	712.1	17.6
40°-50°	721.7	17.8
50°-60°	640.5	15.8
60°-70°	480.9	11.9
70°-80°	267.0	6.6
80°-90°	68.9	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°	1161.7	28.7
0°-40°	1873.8	46.2
0°-60°	3236.0	79.8
0°-90°	4052.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4052.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1533	1533	1533	1533	1533	
5°	1521	1511	1519	1550	1521	144
15°	1451	1401	1452	1515	1451	409
25°	1319	1236	1322	1392	1319	608
35°	1142	1054	1145	1217	1142	715
45°	942	857	943	1003	942	726
55°	720	653	723	770	720	645
65°	492	444	492	522	492	486
75°	254	228	252	267	254	270
85°	57	50	55	62	57	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°	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2
2.5°	1526.0	1529.6	1534.1	1529.6	1522.4	1518.8	1518.8	1517.9	1520.6	1521.5	1520.6
5°	1520.6	1522.4	1523.3	1517.9	1509.8	1505.3	1503.5	1502.6	1506.2	1510.7	1506.2
7.5°	1510.7	1509.8	1508.9	1501.7	1492.7	1486.4	1483.7	1482.8	1486.4	1490.9	1487.3
10°	1493.5	1492.7	1490.0	1481.0	1469.3	1461.2	1458.5	1455.7	1458.5	1460.3	1458.5
12.5°	1474.6	1471.1	1467.5	1457.6	1445.0	1435.9	1431.5	1427.9	1431.5	1434.2	1432.3
15°	1451.2	1445.9	1439.6	1428.7	1416.2	1406.2	1400.9	1397.3	1400.0	1400.9	1400.9
17.5°	1423.4	1417.0	1410.8	1397.3	1382.0	1371.1	1364.8	1360.3	1363.9	1365.8	1365.8
20°	1391.9	1384.7	1376.5	1362.2	1345.9	1334.2	1327.0	1321.6	1322.5	1323.4	1323.4
22.5°	1357.6	1348.6	1338.7	1323.4	1306.3	1293.8	1286.6	1280.2	1280.2	1281.1	1281.1
25°	1318.9	1309.1	1299.1	1283.8	1265.8	1252.3	1243.3	1237.0	1237.0	1236.1	1237.9
27.5°	1279.3	1268.5	1258.6	1242.4	1223.5	1210.0	1201.0	1194.7	1193.8	1192.9	1194.7
30°	1236.1	1223.5	1212.7	1195.6	1177.6	1164.1	1155.1	1147.9	1146.0	1144.3	1146.0
32.5°	1190.2	1178.5	1166.8	1148.8	1130.7	1117.3	1108.2	1101.1	1100.1	1099.3	1101.1
35°	1142.5	1129.9	1119.0	1102.0	1084.0	1070.4	1060.6	1054.2	1054.2	1054.2	1054.2
37.5°	1095.6	1083.1	1071.4	1054.2	1036.2	1022.8	1012.8	1006.5	1004.7	1003.8	1004.7
40°	1042.5	1031.7	1020.9	1004.7	986.7	973.2	965.1	957.9	956.1	954.3	957.0
42.5°	993.9	983.1	971.4	956.1	938.1	924.6	915.6	909.3	908.4	907.5	908.4
45°	941.7	929.1	917.4	903.0	886.8	874.1	865.2	858.8	858.0	857.1	858.0
47.5°	886.8	876.9	867.0	852.6	836.3	823.8	815.7	808.5	806.7	804.9	806.7
50°	833.7	822.9	812.9	799.5	784.2	772.5	765.3	759.0	757.1	756.2	757.1
52.5°	777.9	767.9	759.0	745.4	732.8	721.1	713.1	707.6	706.7	705.8	706.7
55°	720.3	711.2	703.1	692.3	679.7	668.9	661.7	655.4	654.5	652.7	654.5
57.5°	664.4	657.2	649.1	637.4	625.7	615.8	609.5	604.1	603.2	602.3	603.2
60°	607.7	600.5	593.3	583.3	571.6	561.8	556.3	551.9	550.1	549.1	550.1
62.5°	551.0	543.8	538.4	528.5	517.7	509.6	504.1	499.6	497.9	497.0	497.9
65°	492.4	486.2	479.9	470.9	462.8	456.5	451.0	446.5	444.8	443.9	443.9
67.5°	430.3	424.9	420.4	412.3	403.4	397.0	391.7	388.1	386.2	385.3	386.2
70°	370.0	365.5	361.1	354.7	347.5	342.2	338.5	334.9	333.1	332.2	332.2
72.5°	312.4	308.8	304.3	298.9	293.5	288.1	284.5	281.8	280.0	279.1	279.1
75°	253.9	250.3	248.5	244.0	238.6	235.0	231.3	229.6	227.7	227.7	227.7
77.5°	199.0	197.1	195.4	190.9	187.3	183.7	181.0	180.1	178.2	178.2	178.2
80°	146.8	145.9	144.9	142.3	138.7	135.1	133.2	132.3	131.5	131.5	131.5
82.5°	99.0	99.0	98.1	95.4	92.8	91.8	90.0	89.2	89.2	89.2	89.2
85°	56.7	56.7	56.7	55.8	54.0	54.0	52.2	51.4	50.4	50.4	50.4
87.5°	22.5	23.4	24.3	23.4	21.6	21.6	21.6	21.6	21.6	21.6	21.6
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):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2
2.5°	1517.9	1519.7	1520.6	1525.1	1530.5	1534.1	1529.6	1525.1	1532.3	1540.4	1540.4
5°	1502.6	1504.4	1507.1	1512.4	1519.7	1524.2	1522.4	1518.8	1529.6	1538.6	1539.5
7.5°	1483.7	1485.5	1489.1	1494.5	1503.5	1509.8	1509.8	1510.7	1520.6	1531.3	1534.1
10°	1455.7	1460.3	1465.7	1473.8	1482.8	1490.9	1493.5	1494.5	1507.1	1518.8	1522.4
12.5°	1429.7	1434.2	1439.6	1448.6	1459.3	1468.4	1471.1	1474.6	1488.2	1501.7	1507.1
15°	1400.0	1404.5	1410.8	1419.8	1431.5	1441.4	1446.8	1452.2	1465.7	1480.1	1486.4
17.5°	1364.8	1369.4	1375.6	1386.4	1400.0	1411.7	1417.9	1424.3	1439.6	1454.9	1461.2
20°	1323.4	1329.7	1338.7	1349.5	1364.8	1378.4	1385.6	1392.8	1409.0	1424.3	1431.5
22.5°	1281.1	1288.3	1298.2	1310.8	1327.0	1341.4	1350.5	1359.4	1375.6	1390.9	1399.0
25°	1238.8	1246.9	1256.8	1270.3	1285.6	1300.0	1310.8	1321.6	1337.8	1354.0	1362.2
27.5°	1195.6	1202.7	1212.7	1226.2	1243.3	1258.6	1269.4	1281.1	1297.3	1314.4	1322.5
30°	1147.9	1156.0	1164.9	1178.5	1197.4	1214.5	1225.3	1237.9	1254.1	1271.3	1279.3
32.5°	1102.0	1109.2	1118.2	1131.7	1150.6	1168.5	1180.3	1192.9	1209.1	1226.2	1233.4
35°	1054.2	1061.4	1071.4	1084.8	1103.7	1120.9	1132.6	1145.2	1160.4	1176.7	1184.8
37.5°	1007.5	1014.7	1024.5	1038.1	1056.1	1073.1	1084.8	1097.5	1112.8	1128.1	1135.3
40°	958.8	966.0	974.1	987.6	1005.6	1022.8	1033.6	1046.1	1061.4	1077.6	1084.8
42.5°	909.3	916.5	926.4	939.9	957.0	972.3	984.1	995.8	1010.1	1024.5	1031.7
45°	859.8	866.0	876.0	888.6	904.8	919.2	930.9	942.6	956.1	969.6	976.9
47.5°	808.5	815.7	823.8	836.3	852.6	867.9	879.6	890.4	903.0	916.5	922.8
50°	759.0	765.3	773.4	785.1	800.4	814.8	824.6	835.4	847.1	859.8	865.2
52.5°	707.6	713.9	722.0	733.7	746.4	759.8	768.9	778.7	790.4	802.1	807.6
55°	655.4	659.9	667.2	677.9	691.4	704.0	713.1	722.9	732.8	742.8	749.0
57.5°	604.1	609.5	616.7	626.6	638.3	650.0	658.1	666.2	676.1	686.1	690.5
60°	551.9	556.3	561.8	570.8	582.5	592.4	600.5	608.6	616.7	625.7	630.2
62.5°	498.8	503.2	508.7	517.7	527.6	536.6	543.8	551.0	558.2	566.3	570.8
65°	445.6	450.1	455.6	461.8	469.9	478.1	485.2	492.4	497.9	503.2	507.7
67.5°	388.1	392.5	397.9	403.4	410.6	418.7	424.0	430.3	435.7	442.0	444.8
70°	334.0	337.6	343.0	347.5	353.8	359.2	363.7	369.1	372.8	378.1	382.6
72.5°	280.9	284.5	289.0	293.5	297.1	301.6	307.0	311.5	316.0	321.4	323.2
75°	229.6	231.3	235.0	238.6	242.2	245.8	248.5	252.1	255.7	259.3	261.9
77.5°	179.1	181.0	184.6	187.3	189.9	192.7	194.4	196.3	199.9	202.6	205.2
80°	131.5	133.2	135.9	138.7	141.3	144.0	144.0	144.0	148.5	152.1	153.1
82.5°	89.2	90.0	91.8	93.7	95.4	97.3	97.3	96.3	99.0	101.7	103.5
85°	51.4	52.2	54.0	54.0	55.0	55.0	55.0	55.0	56.7	59.4	61.2
87.5°	20.7	20.7	21.6	21.6	22.5	22.5	21.6	20.7	22.5	25.2	26.1
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2	1533.2
2.5°	1536.8	1535.9	1538.6	1539.5	1541.3	1541.3	1542.2	1542.2	1540.4	1537.7	1538.6
5°	1537.7	1537.7	1540.4	1543.1	1546.7	1550.3	1547.6	1544.9	1543.1	1540.4	1539.5
7.5°	1533.2	1535.0	1537.7	1542.2	1546.7	1552.1	1548.5	1544.9	1540.4	1536.8	1535.0
10°	1522.4	1524.2	1528.7	1533.2	1537.7	1542.2	1538.6	1535.0	1531.3	1526.9	1525.1
12.5°	1508.9	1511.6	1517.0	1521.5	1526.0	1531.3	1526.9	1522.4	1517.9	1513.4	1510.7
15°	1489.1	1492.7	1499.0	1504.4	1510.7	1515.2	1511.6	1508.0	1502.6	1496.3	1491.8
17.5°	1463.9	1469.3	1475.6	1481.8	1487.3	1491.8	1489.1	1485.5	1479.2	1472.0	1466.5
20°	1435.9	1441.4	1446.8	1453.1	1459.3	1463.9	1460.3	1455.7	1449.5	1444.0	1438.7
22.5°	1403.6	1409.0	1415.3	1420.6	1426.1	1430.6	1426.1	1420.6	1415.3	1409.8	1404.5
25°	1366.7	1372.0	1379.2	1384.7	1388.3	1391.9	1388.3	1383.7	1378.4	1373.0	1367.5
27.5°	1328.0	1333.3	1340.5	1345.9	1349.5	1353.1	1349.5	1345.0	1339.7	1334.2	1328.8
30°	1284.7	1290.2	1297.3	1302.7	1305.5	1308.1	1304.5	1300.9	1296.4	1291.0	1285.6
32.5°	1238.8	1244.2	1249.6	1255.0	1259.5	1263.1	1259.5	1255.9	1250.5	1243.3	1237.9
35°	1190.2	1195.6	1201.9	1207.3	1212.7	1217.2	1211.8	1205.5	1201.0	1196.5	1192.0
37.5°	1138.9	1145.2	1152.4	1158.7	1160.4	1164.1	1160.4	1156.8	1152.4	1147.9	1142.5
40°	1088.4	1093.9	1100.1	1106.5	1109.2	1111.8	1108.2	1104.6	1099.3	1094.8	1089.3
42.5°	1036.2	1041.7	1047.0	1052.5	1056.1	1059.7	1056.1	1050.6	1047.0	1043.4	1038.9
45°	982.2	987.6	992.2	997.5	1000.2	1003.0	999.4	994.8	991.2	988.5	984.1
47.5°	927.3	931.8	936.3	940.8	942.6	945.3	941.7	939.0	936.3	933.6	930.0
50°	869.7	874.1	879.6	884.1	885.0	887.7	884.1	881.3	878.7	876.0	873.3
52.5°	812.9	816.5	821.0	825.6	827.4	829.2	825.6	822.0	819.3	817.4	814.8
55°	753.6	757.1	761.7	765.3	767.9	769.8	766.2	762.6	759.8	759.0	756.2
57.5°	694.1	697.8	702.2	705.8	707.6	709.4	705.8	702.2	700.4	698.6	696.8
60°	633.8	637.4	641.0	643.7	645.5	646.4	642.8	640.1	639.2	638.3	636.5
62.5°	574.4	576.2	579.8	581.6	583.3	584.3	581.6	579.8	578.9	578.0	577.1
65°	512.3	516.8	519.5	521.3	521.3	522.1	519.5	518.5	517.7	516.8	514.9
67.5°	448.4	452.0	453.7	455.6	455.6	455.6	455.6	455.6	454.6	452.9	451.0
70°	387.1	389.8	391.7	392.5	392.5	392.5	390.7	389.8	390.7	390.7	389.8
72.5°	325.0	326.8	327.7	328.6	327.7	327.7	327.7	329.5	329.5	328.6	326.8
75°	264.7	266.5	267.4	268.3	267.4	267.4	267.4	269.2	268.3	268.3	267.4
77.5°	208.0	208.8	208.8	209.8	208.8	208.8	209.8	211.6	210.7	210.7	210.7
80°	154.0	154.0	154.0	154.9	154.0	154.0	154.9	156.6	155.7	155.7	155.7
82.5°	104.5	105.3	105.3	105.3	106.2	107.1	107.1	107.1	107.1	107.1	106.2
85°	62.1	63.1	62.1	62.1	62.1	62.1	63.1	63.9	63.9	63.9	63.9
87.5°	27.0	27.9	27.0	26.1	25.2	25.2	27.0	28.8	28.8	27.9	27.9
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-28-30L940-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1533.2	1533.2	1533.2	1533.2
2.5°	1542.2	1542.2	1534.1	1526.0
5°	1541.3	1539.5	1530.5	1520.6
7.5°	1535.9	1533.2	1521.5	1510.7
10°	1523.3	1519.7	1507.1	1493.5
12.5°	1508.0	1502.6	1488.2	1474.6
15°	1488.2	1481.8	1466.5	1451.2
17.5°	1462.1	1454.9	1439.6	1423.4
20°	1434.2	1426.1	1409.0	1391.9
22.5°	1400.0	1392.8	1374.7	1357.6
25°	1363.1	1355.0	1336.9	1318.9
27.5°	1323.4	1314.4	1296.4	1279.3
30°	1280.2	1271.3	1253.2	1236.1
32.5°	1234.3	1227.1	1209.1	1190.2
35°	1187.4	1178.5	1160.4	1142.5
37.5°	1137.9	1129.9	1112.8	1095.6
40°	1085.7	1077.6	1059.7	1042.5
42.5°	1034.4	1027.2	1010.1	993.9
45°	979.5	972.3	956.1	941.7
47.5°	924.6	917.4	902.1	886.8
50°	868.8	861.6	847.1	833.7
52.5°	810.3	804.9	791.4	777.9
55°	751.7	745.4	732.0	720.3
57.5°	693.3	688.7	676.1	664.4
60°	632.9	627.5	617.6	607.7
62.5°	574.4	569.9	560.0	551.0
65°	512.3	508.7	500.6	492.4
67.5°	448.4	445.6	437.6	430.3
70°	387.1	382.6	376.4	370.0
72.5°	325.0	323.2	317.8	312.4
75°	265.6	263.8	258.3	253.9
77.5°	209.8	208.0	203.5	199.0
80°	154.9	154.0	150.4	146.8
82.5°	106.2	105.3	102.6	99.0
85°	63.9	62.1	59.4	56.7
87.5°	27.9	27.0	24.3	22.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)