

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-28-30L930-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-28-30L930-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ Nature Pattern Lens
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

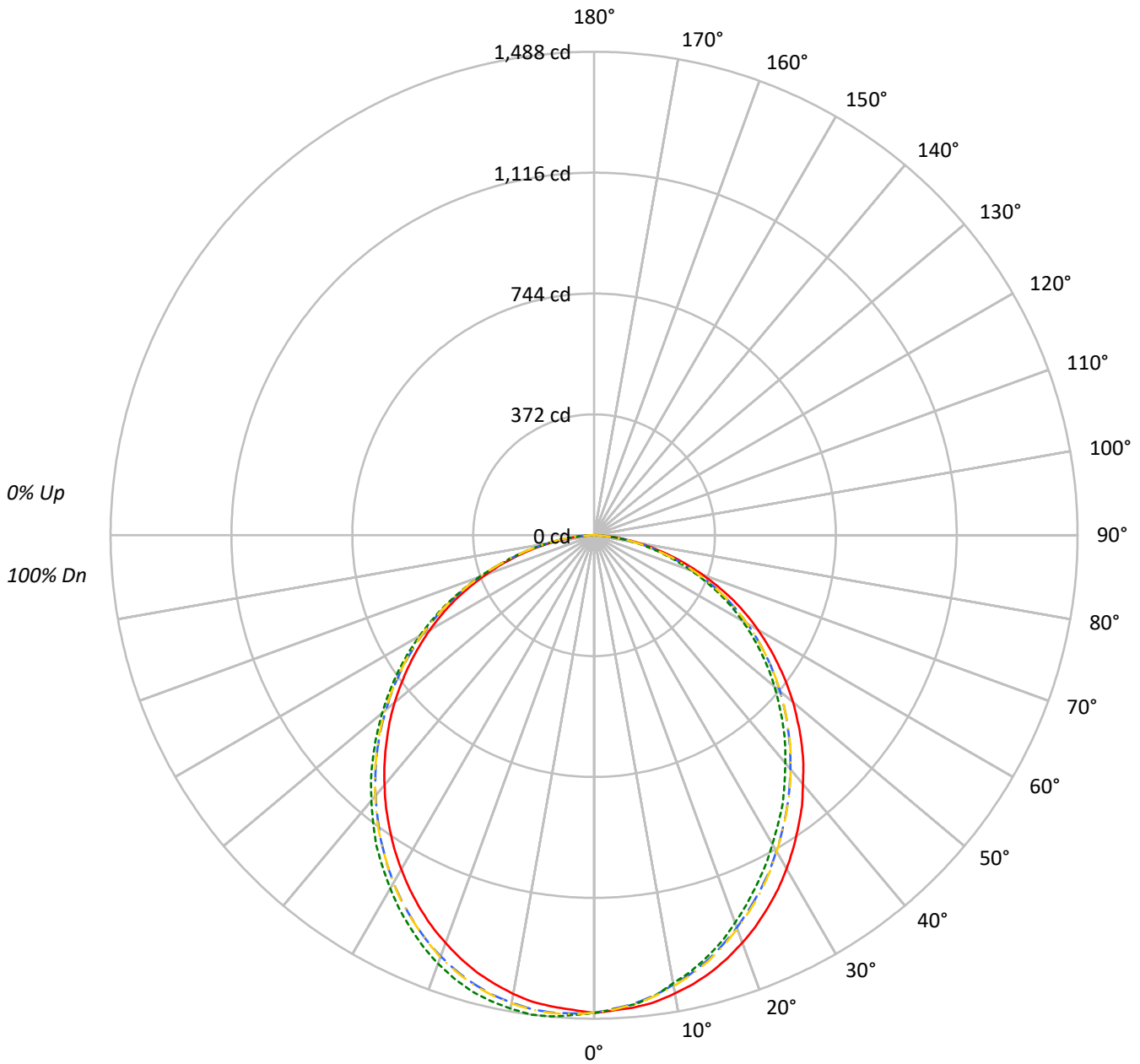
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3886.4 lumens
Efficiency: N/A
Efficacy: 59.8 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_{in}): 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: P
CATALOG NUMBER: 4APN-28-30L930-UNV-NP

Luminous Intensity Polar Plot



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



TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L930-UNV-NP

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	100	100	100	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84	84	84	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70	70	70	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59	59	59	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51	51	51	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44	44	44	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39	39	39	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34	34	34	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31	31	31	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28	28	28	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25	25	25	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13564	13564	13564	13564
5°	13504	13416	13489	13768
10°	13418	13119	13427	13855
15°	13293	12832	13302	13879
20°	13105	12460	13113	13782
25°	12876	12066	12902	13587
30°	12628	11690	12647	13364
35°	12339	11387	12369	13147
40°	12040	11021	12082	12841
45°	11782	10724	11794	12548
50°	11476	10409	11499	12219
55°	11110	10068	11152	11874
60°	10752	9717	10769	11439
65°	10309	9291	10309	10931
70°	9571	8594	9549	10156
75°	8680	7785	8616	9140
80°	7476	6695	7337	7842
85°	5759	5113	5568	6309



TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L930-UNV-NP

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.8	3.6
10°-20°	393.1	10.1
20°-30°	582.0	15.0
30°-40°	682.9	17.6
40°-50°	692.0	17.8
50°-60°	614.2	15.8
60°-70°	461.1	11.9
70°-80°	256.0	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°	1114.0	28.7
0°-40°	1796.8	46.2
0°-60°	3103.1	79.8
0°-90°	3886.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3886.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1470	1470	1470	1470	1470	
5°	1458	1449	1456	1487	1458	138
15°	1392	1343	1393	1453	1392	392
25°	1265	1185	1267	1335	1265	583
35°	1096	1011	1098	1167	1096	686
45°	903	822	904	962	903	696
55°	691	626	693	738	691	618
65°	472	426	472	501	472	466
75°	244	218	242	256	244	259
85°	54	48	53	60	54	66
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-28-30L930-UNV-NP

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2
2.5°	1463.3	1466.8	1471.1	1466.8	1459.9	1456.5	1456.5	1455.6	1458.1	1459.1	1458.1
5°	1458.1	1459.9	1460.7	1455.6	1447.8	1443.5	1441.7	1440.9	1444.3	1448.6	1444.3
7.5°	1448.6	1447.8	1447.0	1440.1	1431.4	1425.3	1422.7	1421.9	1425.3	1429.7	1426.2
10°	1432.2	1431.4	1428.8	1420.2	1409.0	1401.2	1398.6	1396.0	1398.6	1400.3	1398.6
12.5°	1414.2	1410.7	1407.2	1397.8	1385.7	1377.0	1372.7	1369.3	1372.7	1375.3	1373.6
15°	1391.7	1386.5	1380.5	1370.1	1358.0	1348.5	1343.4	1339.9	1342.5	1343.4	1343.4
17.5°	1364.9	1358.8	1352.9	1339.9	1325.2	1314.9	1308.8	1304.4	1307.9	1309.7	1309.7
20°	1334.7	1327.8	1320.0	1306.2	1290.7	1279.5	1272.5	1267.4	1268.2	1269.1	1269.1
22.5°	1301.9	1293.3	1283.8	1269.1	1252.7	1240.6	1233.7	1227.6	1227.6	1228.5	1228.5
25°	1264.8	1255.3	1245.8	1231.1	1213.8	1200.9	1192.2	1186.2	1186.2	1185.3	1187.1
27.5°	1226.8	1216.4	1206.9	1191.4	1173.2	1160.3	1151.7	1145.7	1144.8	1143.9	1145.7
30°	1185.3	1173.2	1162.9	1146.5	1129.3	1116.3	1107.7	1100.8	1099.0	1097.3	1099.0
32.5°	1141.3	1130.1	1118.8	1101.6	1084.4	1071.4	1062.8	1055.9	1055.0	1054.1	1055.9
35°	1095.5	1083.4	1073.1	1056.7	1039.5	1026.5	1017.0	1011.0	1011.0	1011.0	1011.0
37.5°	1050.7	1038.5	1027.4	1011.0	993.7	980.7	971.2	965.2	963.5	962.6	963.5
40°	999.7	989.4	979.0	963.5	946.2	933.2	925.5	918.6	916.8	915.1	917.8
42.5°	953.1	942.7	931.5	916.8	899.6	886.6	878.0	871.9	871.1	870.3	871.1
45°	903.0	890.9	879.8	865.9	850.4	838.3	829.6	823.6	822.8	821.9	822.8
47.5°	850.4	840.9	831.4	817.5	802.0	790.0	782.1	775.3	773.6	771.8	773.6
50°	799.5	789.0	779.6	766.6	752.0	740.7	733.8	727.8	726.1	725.2	726.1
52.5°	745.9	736.4	727.8	714.8	702.7	691.5	683.8	678.6	677.7	676.8	677.7
55°	690.7	682.0	674.3	663.9	651.9	641.4	634.5	628.5	627.6	625.9	627.6
57.5°	637.1	630.2	622.4	611.2	600.0	590.5	584.5	579.3	578.5	577.5	578.5
60°	582.7	575.9	569.0	559.5	548.2	538.7	533.6	529.2	527.5	526.6	527.5
62.5°	528.4	521.5	516.2	506.7	496.4	488.7	483.5	479.2	477.4	476.6	477.4
65°	472.2	466.2	460.2	451.5	443.8	437.7	432.5	428.2	426.5	425.6	425.6
67.5°	412.7	407.5	403.2	395.4	386.8	380.7	375.5	372.1	370.4	369.5	370.4
70°	354.8	350.5	346.2	340.1	333.2	328.0	324.6	321.1	319.5	318.6	318.6
72.5°	299.6	296.1	291.8	286.6	281.5	276.2	272.8	270.2	268.5	267.7	267.7
75°	243.5	240.0	238.2	234.0	228.7	225.3	221.8	220.2	218.4	218.4	218.4
77.5°	190.8	189.1	187.4	183.0	179.6	176.1	173.5	172.7	170.9	170.9	170.9
80°	140.7	139.9	139.0	136.4	133.0	129.5	127.8	126.9	126.0	126.0	126.0
82.5°	95.0	95.0	94.1	91.6	88.9	88.1	86.3	85.5	85.5	85.5	85.5
85°	54.4	54.4	54.4	53.6	51.8	51.8	50.1	49.2	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



TEST NUMBER: P

CATALOG NUMBER: 4APN-28-30L930-UNV-NP

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2
2.5°	1455.6	1457.3	1458.1	1462.5	1467.6	1471.1	1466.8	1462.5	1469.4	1477.1	1477.1
5°	1440.9	1442.7	1445.2	1450.4	1457.3	1461.6	1459.9	1456.5	1466.8	1475.5	1476.3
7.5°	1422.7	1424.5	1428.0	1433.2	1441.7	1447.8	1447.8	1448.6	1458.1	1468.6	1471.1
10°	1396.0	1400.3	1405.5	1413.2	1421.9	1429.7	1432.2	1433.2	1445.2	1456.5	1459.9
12.5°	1371.0	1375.3	1380.5	1389.1	1399.5	1408.1	1410.7	1414.2	1427.1	1440.1	1445.2
15°	1342.5	1346.8	1352.9	1361.5	1372.7	1382.2	1387.3	1392.6	1405.5	1419.3	1425.3
17.5°	1308.8	1313.1	1319.2	1329.5	1342.5	1353.7	1359.8	1365.8	1380.5	1395.2	1401.2
20°	1269.1	1275.1	1283.8	1294.1	1308.8	1321.8	1328.7	1335.6	1351.1	1365.8	1372.7
22.5°	1228.5	1235.4	1244.9	1257.0	1272.5	1286.4	1294.9	1303.6	1319.2	1333.9	1341.6
25°	1187.9	1195.7	1205.2	1218.1	1232.8	1246.6	1257.0	1267.4	1282.9	1298.5	1306.2
27.5°	1146.5	1153.4	1162.9	1175.8	1192.2	1206.9	1217.3	1228.5	1244.1	1260.5	1268.2
30°	1100.8	1108.5	1117.2	1130.1	1148.3	1164.7	1175.0	1187.1	1202.7	1219.0	1226.8
32.5°	1056.7	1063.6	1072.3	1085.2	1103.4	1120.6	1131.8	1143.9	1159.4	1175.8	1182.7
35°	1011.0	1017.9	1027.4	1040.3	1058.5	1074.9	1086.0	1098.2	1112.9	1128.3	1136.2
37.5°	966.1	973.0	982.5	995.4	1012.7	1029.0	1040.3	1052.4	1067.0	1081.8	1088.7
40°	919.4	926.3	934.1	947.1	964.3	980.7	991.1	1003.2	1017.9	1033.4	1040.3
42.5°	871.9	878.9	888.3	901.3	917.8	932.4	943.6	954.8	968.7	982.5	989.4
45°	824.5	830.5	840.0	852.1	867.6	881.4	892.7	903.9	916.8	929.8	936.8
47.5°	775.3	782.1	790.0	802.0	817.5	832.3	843.4	853.9	865.9	878.9	884.9
50°	727.8	733.8	741.6	752.8	767.5	781.3	790.8	801.1	812.4	824.5	829.6
52.5°	678.6	684.6	692.4	703.6	715.7	728.7	737.3	746.8	758.0	769.2	774.4
55°	628.5	632.9	639.7	650.1	663.0	675.1	683.8	693.3	702.7	712.2	718.3
57.5°	579.3	584.5	591.4	600.9	612.1	623.4	631.1	638.9	648.4	657.8	662.2
60°	529.2	533.6	538.7	547.4	558.5	568.0	575.9	583.6	591.4	600.0	604.4
62.5°	478.2	482.6	487.7	496.4	505.9	514.6	521.5	528.4	535.2	543.1	547.4
65°	427.3	431.7	436.8	442.9	450.7	458.4	465.3	472.2	477.4	482.6	486.9
67.5°	372.1	376.5	381.6	386.8	393.7	401.4	406.6	412.7	417.9	423.9	426.5
70°	320.3	323.7	329.0	333.2	339.3	344.5	348.8	354.0	357.5	362.6	367.0
72.5°	269.3	272.8	277.2	281.5	284.9	289.2	294.4	298.7	303.1	308.2	310.0
75°	220.2	221.8	225.3	228.7	232.3	235.7	238.2	241.7	245.2	248.7	251.2
77.5°	171.8	173.5	177.0	179.6	182.2	184.8	186.5	188.2	191.7	194.3	196.8
80°	126.0	127.8	130.4	133.0	135.5	138.1	138.1	138.1	142.4	145.9	146.8
82.5°	85.5	86.3	88.1	89.8	91.6	93.2	93.2	92.4	95.0	97.5	99.3
85°	49.2	50.1	51.8	51.8	52.6	52.6	52.6	52.6	54.4	57.0	58.7
87.5°	19.8	19.8	20.7	20.7	21.6	21.6	20.7	19.8	21.6	24.2	25.1
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: P

CATALOG NUMBER: 4APN-28-30L930-UNV-NP

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2	1470.2
2.5°	1473.7	1472.8	1475.5	1476.3	1478.1	1478.1	1478.9	1478.9	1477.1	1474.6	1475.5
5°	1474.6	1474.6	1477.1	1479.7	1483.2	1486.6	1484.1	1481.5	1479.7	1477.1	1476.3
7.5°	1470.2	1472.0	1474.6	1478.9	1483.2	1488.4	1485.0	1481.5	1477.1	1473.7	1472.0
10°	1459.9	1461.6	1466.0	1470.2	1474.6	1478.9	1475.5	1472.0	1468.6	1464.2	1462.5
12.5°	1447.0	1449.6	1454.7	1459.1	1463.3	1468.6	1464.2	1459.9	1455.6	1451.2	1448.6
15°	1428.0	1431.4	1437.5	1442.7	1448.6	1453.0	1449.6	1446.1	1440.9	1434.8	1430.6
17.5°	1403.7	1409.0	1415.0	1421.1	1426.2	1430.6	1428.0	1424.5	1418.5	1411.6	1406.3
20°	1377.0	1382.2	1387.3	1393.4	1399.5	1403.7	1400.3	1396.0	1390.0	1384.8	1379.6
22.5°	1345.9	1351.1	1357.2	1362.3	1367.5	1371.8	1367.5	1362.3	1357.2	1352.0	1346.8
25°	1310.5	1315.7	1322.6	1327.8	1331.3	1334.7	1331.3	1326.9	1321.8	1316.6	1311.4
27.5°	1273.4	1278.6	1285.5	1290.7	1294.1	1297.6	1294.1	1289.8	1284.6	1279.5	1274.3
30°	1232.0	1237.1	1244.1	1249.2	1251.8	1254.4	1251.0	1247.5	1243.2	1238.0	1232.8
32.5°	1187.9	1193.2	1198.3	1203.5	1207.8	1211.2	1207.8	1204.3	1199.2	1192.2	1187.1
35°	1141.3	1146.5	1152.5	1157.8	1162.9	1167.3	1162.0	1156.0	1151.7	1147.3	1143.0
37.5°	1092.1	1098.2	1105.0	1111.1	1112.9	1116.3	1112.9	1109.4	1105.0	1100.8	1095.5
40°	1043.8	1049.0	1055.0	1061.0	1063.6	1066.2	1062.8	1059.3	1054.1	1049.8	1044.6
42.5°	993.7	998.9	1004.1	1009.2	1012.7	1016.1	1012.7	1007.5	1004.1	1000.6	996.3
45°	941.9	947.1	951.4	956.6	959.2	961.7	958.3	954.0	950.5	947.9	943.6
47.5°	889.3	893.5	897.8	902.2	903.9	906.5	903.0	900.4	897.8	895.3	891.9
50°	833.9	838.3	843.4	847.8	848.6	851.3	847.8	845.2	842.6	840.0	837.5
52.5°	779.6	783.1	787.4	791.6	793.4	795.1	791.6	788.2	785.6	783.9	781.3
55°	722.6	726.1	730.4	733.8	736.4	738.2	734.6	731.2	728.7	727.8	725.2
57.5°	665.6	669.1	673.4	676.8	678.6	680.3	676.8	673.4	671.7	669.9	668.2
60°	607.8	611.2	614.7	617.3	619.0	619.9	616.4	613.9	612.9	612.1	610.4
62.5°	550.8	552.6	556.0	557.7	559.5	560.3	557.7	556.0	555.1	554.2	553.4
65°	491.2	495.6	498.2	499.9	499.9	500.7	498.2	497.2	496.4	495.6	493.8
67.5°	429.9	433.4	435.1	436.8	436.8	436.8	436.8	436.8	436.0	434.3	432.5
70°	371.2	373.8	375.5	376.5	376.5	376.5	374.7	373.8	374.7	374.7	373.8
72.5°	311.6	313.4	314.2	315.1	314.2	314.2	314.2	316.0	316.0	315.1	313.4
75°	253.8	255.6	256.4	257.2	256.4	256.4	256.4	258.2	257.2	257.2	256.4
77.5°	199.4	200.3	200.3	201.2	200.3	200.3	201.2	202.8	202.0	202.0	202.0
80°	147.6	147.6	147.6	148.5	147.6	147.6	148.5	150.2	149.4	149.4	149.4
82.5°	100.1	101.1	101.1	101.1	101.9	102.7	102.7	102.7	102.7	102.7	101.9
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	25.1	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-28-30L930-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1470.2	1470.2	1470.2	1470.2
2.5°	1478.9	1478.9	1471.1	1463.3
5°	1478.1	1476.3	1467.6	1458.1
7.5°	1472.8	1470.2	1459.1	1448.6
10°	1460.7	1457.3	1445.2	1432.2
12.5°	1446.1	1440.9	1427.1	1414.2
15°	1427.1	1421.1	1406.3	1391.7
17.5°	1402.1	1395.2	1380.5	1364.9
20°	1375.3	1367.5	1351.1	1334.7
22.5°	1342.5	1335.6	1318.3	1301.9
25°	1307.1	1299.3	1282.0	1264.8
27.5°	1269.1	1260.5	1243.2	1226.8
30°	1227.6	1219.0	1201.7	1185.3
32.5°	1183.7	1176.7	1159.4	1141.3
35°	1138.8	1130.1	1112.9	1095.5
37.5°	1091.3	1083.4	1067.0	1050.7
40°	1041.2	1033.4	1016.1	999.7
42.5°	992.0	985.1	968.7	953.1
45°	939.3	932.4	916.8	903.0
47.5°	886.6	879.8	865.0	850.4
50°	833.1	826.2	812.4	799.5
52.5°	777.0	771.8	758.9	745.9
55°	720.9	714.8	701.9	690.7
57.5°	664.8	660.4	648.4	637.1
60°	607.0	601.7	592.2	582.7
62.5°	550.8	546.5	537.0	528.4
65°	491.2	487.7	480.0	472.2
67.5°	429.9	427.3	419.6	412.7
70°	371.2	367.0	360.9	354.8
72.5°	311.6	310.0	304.7	299.6
75°	254.7	253.0	247.7	243.5
77.5°	201.2	199.4	195.1	190.8
80°	148.5	147.6	144.2	140.7
82.5°	101.9	101.1	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)