

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-39L830-X-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-39L830-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

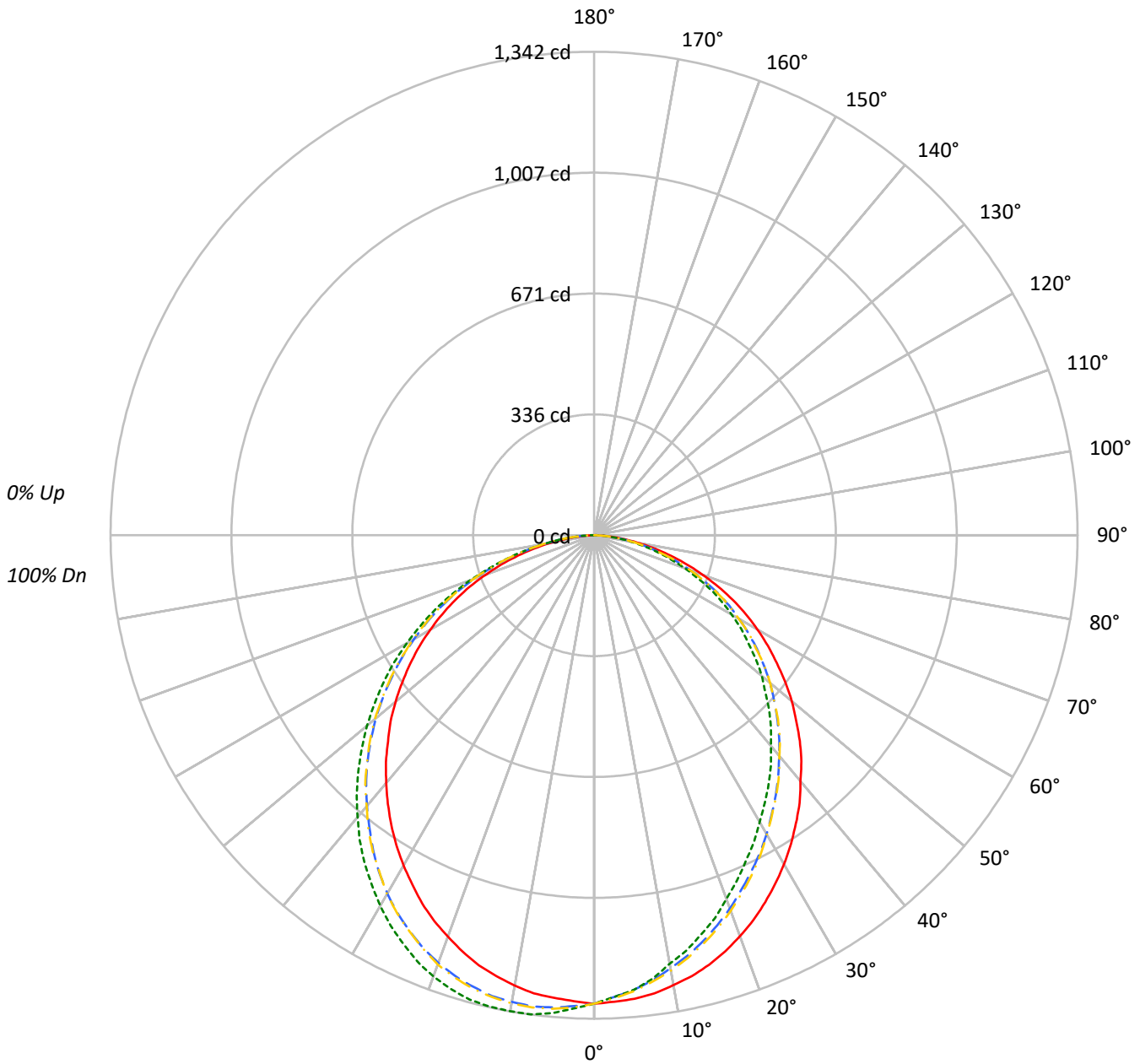
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3487.5 lumens
Efficiency: N/A
Efficacy: 76.1 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 (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-39L830-X-UNV-NP

Luminous Intensity Polar Plot



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



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 CATALOG NUMBER: 4APN-39L830-X-UNV-NP

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	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°	11998	11998	11998	11998
5°	11961	11731	11934	12330
10°	11879	11314	11893	12568
15°	11789	10959	11803	12744
20°	11626	10544	11641	12796
25°	11440	10153	11486	12743
30°	11236	9795	11267	12647
35°	11002	9511	11051	12509
40°	10736	9194	10807	12294
45°	10537	8964	10557	12072
50°	10283	8720	10324	11803
55°	9962	8400	10032	11475
60°	9664	8143	9691	11073
65°	9280	7805	9280	10597
70°	8651	7221	8611	9881
75°	7864	6552	7760	8862
80°	6801	5627	6562	7582
85°	5293	4203	4986	6224



TEST NUMBER: P
 CATALOG NUMBER: 4APN-39L830-X-UNV-NP

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.9	3.5
10°-20°	348.7	10.0
20°-30°	518.4	14.9
30°-40°	611.0	17.5
40°-50°	622.1	17.8
50°-60°	554.2	15.9
60°-70°	417.6	12.0
70°-80°	232.2	6.7
80°-90°	60.3	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°	990.0	28.4
0°-40°	1601.0	45.9
0°-60°	2777.4	79.6
0°-90°	3487.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3487.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1300	1300	1300	1300	1300	
5°	1292	1267	1289	1331	1292	123
15°	1234	1147	1236	1334	1234	348
25°	1124	997	1128	1252	1124	518
35°	977	844	981	1111	977	611
45°	808	687	809	925	808	622
55°	619	522	624	713	619	555
65°	425	358	425	485	425	420
75°	221	184	218	249	221	234
85°	50	40	47	59	50	60
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-39L830-X-UNV-NP

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
2.5°	1296.0	1296.0	1297.4	1291.5	1284.2	1281.2	1279.7	1278.3	1281.2	1282.7	1281.2
5°	1291.5	1288.6	1285.6	1278.3	1269.5	1263.6	1260.7	1259.2	1262.1	1266.6	1262.1
7.5°	1282.7	1276.8	1271.0	1260.7	1250.3	1241.6	1237.1	1234.2	1237.1	1241.6	1238.6
10°	1268.0	1260.7	1251.8	1240.1	1225.3	1215.0	1210.7	1206.3	1207.7	1207.7	1207.7
12.5°	1253.3	1243.0	1232.7	1218.0	1201.8	1190.0	1182.6	1176.8	1179.7	1181.2	1181.2
15°	1234.2	1220.9	1206.3	1190.0	1173.9	1160.6	1151.8	1146.0	1147.3	1147.3	1148.8
17.5°	1210.7	1195.9	1181.2	1162.1	1143.0	1128.3	1117.9	1110.6	1113.6	1115.0	1116.4
20°	1184.1	1168.0	1151.8	1131.2	1110.6	1094.4	1084.1	1075.3	1073.9	1073.9	1075.3
22.5°	1156.2	1138.6	1119.4	1097.4	1075.3	1057.6	1047.4	1038.5	1037.1	1037.1	1038.5
25°	1123.8	1104.7	1085.6	1063.5	1040.0	1022.3	1009.1	1000.3	998.8	997.3	1000.3
27.5°	1090.0	1070.9	1051.7	1029.7	1004.7	987.0	973.8	965.0	962.0	960.5	963.5
30°	1054.7	1032.6	1012.1	988.5	966.4	948.8	935.6	925.2	922.3	919.4	922.3
32.5°	1016.5	994.4	972.3	948.8	926.7	909.1	895.8	885.6	882.6	881.2	884.1
35°	976.8	954.6	934.1	910.6	888.4	870.8	857.6	848.8	845.8	844.4	845.8
37.5°	937.0	915.0	894.3	870.8	848.8	831.1	817.9	809.1	807.6	806.1	807.6
40°	891.4	872.3	851.7	829.6	807.6	790.0	779.6	769.3	766.4	763.4	767.8
42.5°	851.7	832.6	812.0	791.4	769.3	751.7	739.9	731.1	728.1	726.6	728.1
45°	807.6	787.0	766.4	747.3	726.6	710.5	698.7	689.9	688.5	687.0	688.5
47.5°	760.5	742.9	725.2	706.1	685.5	669.3	659.0	650.2	647.2	644.3	647.2
50°	716.4	698.7	681.1	663.4	644.3	629.6	619.3	610.5	609.0	607.5	609.0
52.5°	669.3	651.7	635.4	617.8	601.6	586.9	576.6	569.2	567.8	566.3	567.8
55°	619.3	604.6	589.9	575.1	559.0	545.7	536.9	528.1	525.2	522.2	525.2
57.5°	572.2	559.0	544.3	529.6	514.8	503.0	494.3	486.9	485.4	484.0	485.4
60°	523.7	511.9	498.7	485.4	470.7	459.0	451.6	445.7	442.7	441.3	442.7
62.5°	475.1	463.4	453.1	439.8	426.6	417.8	410.4	404.5	401.6	400.1	401.6
65°	425.1	414.8	404.5	392.8	382.4	373.6	366.3	360.4	358.9	357.5	357.5
67.5°	373.6	364.8	356.0	345.7	333.9	325.1	317.7	313.3	311.8	310.3	311.8
70°	320.7	313.3	304.5	295.7	286.8	279.5	275.0	270.7	269.2	267.7	267.7
72.5°	270.7	264.8	257.4	250.0	242.7	235.4	231.0	228.0	226.5	225.1	225.1
75°	220.6	214.7	210.3	204.5	197.1	192.7	188.3	185.3	183.8	183.8	183.8
77.5°	173.6	169.2	164.8	158.9	154.4	150.0	147.1	145.6	144.2	144.2	144.2
80°	128.0	125.0	122.1	119.1	114.7	110.4	108.9	107.4	105.9	105.9	105.9
82.5°	86.8	85.3	82.3	79.5	76.5	75.1	73.6	72.1	72.1	72.1	72.1
85°	50.0	48.5	47.1	45.6	44.2	44.2	42.7	41.2	39.7	39.7	39.7
87.5°	20.6	20.6	20.6	19.1	17.6	17.6	17.6	17.6	17.6	17.6	17.6
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-39L830-X-UNV-NP

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
2.5°	1278.3	1281.2	1284.2	1288.6	1293.0	1297.4	1296.0	1294.5	1300.4	1307.8	1309.1
5°	1259.2	1262.1	1266.6	1273.9	1281.2	1287.1	1288.6	1288.6	1300.4	1310.6	1313.6
7.5°	1235.7	1240.1	1245.9	1253.3	1263.6	1272.5	1276.8	1282.7	1294.5	1307.8	1313.6
10°	1206.3	1213.5	1222.4	1232.7	1243.0	1253.3	1262.1	1269.5	1284.2	1298.9	1307.8
12.5°	1179.7	1187.1	1195.9	1207.7	1220.9	1234.2	1243.0	1253.3	1271.0	1288.6	1298.9
15°	1150.3	1157.7	1168.0	1179.7	1194.5	1209.2	1222.4	1235.7	1253.3	1272.5	1284.2
17.5°	1117.9	1125.3	1135.6	1150.3	1166.5	1182.6	1197.4	1212.1	1232.7	1253.3	1266.6
20°	1078.3	1088.5	1101.8	1116.4	1135.6	1154.7	1169.5	1185.6	1207.7	1229.8	1244.4
22.5°	1040.0	1050.3	1065.0	1082.6	1103.3	1123.8	1141.5	1159.1	1182.6	1204.8	1220.9
25°	1003.2	1015.0	1029.7	1047.4	1066.5	1087.0	1107.7	1128.3	1151.8	1175.4	1191.5
27.5°	966.4	976.8	991.4	1009.1	1031.2	1051.7	1072.4	1092.9	1117.9	1143.0	1160.6
30°	925.2	937.0	950.3	967.9	991.4	1015.0	1035.6	1057.6	1082.6	1107.7	1125.3
32.5°	887.1	897.3	910.6	928.2	951.8	975.3	997.3	1020.8	1044.4	1069.4	1087.0
35°	848.8	859.0	872.3	889.9	913.5	937.0	959.1	981.2	1004.7	1028.2	1045.9
37.5°	810.5	820.9	834.0	851.7	873.8	897.3	917.9	940.0	963.5	987.0	1003.2
40°	770.8	781.1	791.4	809.1	831.1	854.7	875.3	897.3	920.8	944.4	960.5
42.5°	731.1	741.4	754.7	772.3	792.8	813.5	834.0	854.7	876.7	898.8	915.0
45°	691.4	700.2	713.4	729.6	750.2	769.3	790.0	809.1	831.1	851.7	867.9
47.5°	650.2	659.0	669.3	685.5	706.1	726.6	747.3	766.4	785.5	806.1	820.9
50°	610.5	619.3	631.0	645.8	664.9	684.0	701.6	719.3	738.4	757.6	770.8
52.5°	569.2	578.1	588.4	603.1	619.3	636.9	653.1	670.8	688.5	706.1	719.3
55°	528.1	533.9	542.8	556.1	573.7	591.4	607.5	623.7	639.9	654.6	667.8
57.5°	486.9	494.3	504.5	516.3	531.1	545.7	560.5	575.1	589.9	604.6	616.4
60°	445.7	451.6	459.0	469.2	484.0	497.2	511.9	525.2	538.4	551.6	562.0
62.5°	403.1	408.9	416.3	426.6	438.3	450.1	463.4	475.1	486.9	498.7	508.9
65°	358.9	364.8	372.1	381.0	391.3	401.6	413.3	425.1	434.0	442.7	453.1
67.5°	313.3	319.2	326.6	333.9	342.7	353.0	363.4	373.6	382.4	391.3	398.7
70°	269.2	273.6	280.9	286.8	294.2	301.6	310.3	319.2	325.1	332.5	341.2
72.5°	226.5	231.0	236.9	242.7	247.1	253.0	261.8	269.2	276.5	285.4	289.8
75°	185.3	188.3	192.7	197.1	201.5	206.0	211.8	217.7	223.6	228.0	233.9
77.5°	144.2	147.1	151.5	154.4	157.4	160.3	164.8	169.2	173.6	176.6	182.4
80°	105.9	108.9	111.8	114.7	117.6	120.6	122.1	123.5	129.4	133.9	136.8
82.5°	72.1	73.6	75.1	78.0	79.5	80.9	82.3	82.3	85.3	88.2	92.7
85°	41.2	42.7	44.2	44.2	44.2	44.2	45.6	47.1	48.5	51.4	54.4
87.5°	16.1	16.1	17.6	17.6	17.6	17.6	17.6	17.6	19.1	22.0	23.5
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: P

CATALOG NUMBER: 4APN-39L830-X-UNV-NP

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
2.5°	1307.8	1309.1	1312.1	1313.6	1315.0	1315.0	1316.5	1318.0	1315.0	1312.1	1310.6
5°	1315.0	1316.5	1320.9	1325.4	1328.3	1331.3	1329.8	1328.3	1325.4	1320.9	1318.0
7.5°	1316.5	1320.9	1325.4	1331.3	1335.7	1341.5	1338.7	1335.7	1329.8	1323.9	1319.5
10°	1312.1	1318.0	1325.4	1332.8	1337.2	1341.5	1338.7	1335.7	1329.8	1322.4	1316.5
12.5°	1306.3	1313.6	1322.4	1329.8	1334.2	1340.1	1335.7	1331.3	1323.9	1316.5	1309.1
15°	1293.0	1301.9	1312.1	1320.9	1328.3	1334.2	1329.8	1326.9	1318.0	1307.8	1297.4
17.5°	1276.8	1288.6	1298.9	1309.1	1315.0	1320.9	1318.0	1315.0	1304.8	1293.0	1281.2
20°	1257.7	1269.5	1279.7	1290.1	1297.4	1303.3	1298.9	1294.5	1284.2	1273.9	1262.1
22.5°	1234.2	1245.9	1257.7	1268.0	1275.4	1281.2	1275.4	1268.0	1257.7	1247.4	1235.7
25°	1204.8	1218.0	1231.2	1241.6	1245.9	1251.8	1245.9	1240.1	1229.8	1219.4	1206.3
27.5°	1175.4	1188.6	1201.8	1212.1	1216.5	1222.4	1216.5	1210.7	1200.4	1190.0	1176.8
30°	1141.5	1154.7	1168.0	1178.3	1182.6	1187.1	1181.2	1175.4	1166.5	1156.2	1143.0
32.5°	1103.3	1116.4	1126.8	1137.1	1143.0	1148.8	1143.0	1138.6	1128.3	1115.0	1101.8
35°	1062.1	1075.3	1088.5	1098.8	1104.7	1110.6	1103.3	1095.9	1087.0	1076.8	1065.0
37.5°	1016.5	1031.2	1045.9	1057.6	1062.1	1068.0	1062.1	1054.7	1045.9	1035.6	1022.3
40°	973.8	987.0	1000.3	1012.1	1016.5	1020.8	1015.0	1009.1	998.8	988.5	975.3
42.5°	929.7	942.9	954.6	965.0	969.4	975.3	969.4	962.0	954.6	945.9	934.1
45°	882.6	895.8	906.1	916.5	920.8	925.2	919.4	912.0	904.7	897.3	885.6
47.5°	834.0	845.8	856.1	866.4	869.4	873.8	867.9	863.5	856.1	848.8	838.5
50°	784.1	795.8	806.1	815.0	817.9	822.3	816.4	810.5	804.6	798.7	790.0
52.5°	732.5	742.9	753.2	761.9	764.9	767.8	761.9	756.1	750.2	744.3	735.5
55°	679.6	689.9	700.2	707.5	710.5	713.4	707.5	703.1	697.2	692.9	684.0
57.5°	626.7	636.9	645.8	653.1	656.1	659.0	653.1	647.2	642.8	638.4	631.0
60°	572.2	582.5	589.9	595.8	598.7	600.1	594.3	589.9	586.9	584.0	576.6
62.5°	519.3	526.6	533.9	538.4	541.3	542.8	538.4	535.4	532.5	529.6	523.7
65°	463.4	472.2	478.1	482.5	484.0	485.4	481.0	478.1	475.1	472.2	467.8
67.5°	407.4	414.8	419.2	423.7	425.1	425.1	425.1	423.7	420.7	416.3	411.9
70°	351.6	357.5	361.9	364.8	366.3	366.3	363.4	360.4	360.4	358.9	356.0
72.5°	294.2	298.6	301.6	304.5	304.5	304.5	304.5	306.0	304.5	301.6	297.2
75°	239.8	244.1	247.1	248.6	248.6	248.6	248.6	250.0	248.6	247.1	244.1
77.5°	188.3	191.2	192.7	194.2	194.2	194.2	195.6	197.1	195.6	194.2	192.7
80°	139.8	141.3	142.7	144.2	142.7	142.7	144.2	147.1	145.6	144.2	142.7
82.5°	95.6	97.1	98.6	98.6	100.0	101.5	101.5	101.5	101.5	100.0	98.6
85°	57.3	58.8	58.8	58.8	58.8	58.8	60.3	61.8	61.8	60.3	60.3
87.5°	26.5	27.9	26.5	25.0	23.5	23.5	26.5	29.4	29.4	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-39L830-X-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1300.4	1300.4	1300.4	1300.4
2.5°	1312.1	1310.6	1303.3	1296.0
5°	1316.5	1312.1	1301.9	1291.5
7.5°	1316.5	1310.6	1296.0	1282.7
10°	1309.1	1300.4	1284.2	1268.0
12.5°	1300.4	1290.1	1271.0	1253.3
15°	1287.1	1275.4	1254.7	1234.2
17.5°	1268.0	1253.3	1232.7	1210.7
20°	1248.8	1232.7	1207.7	1184.1
22.5°	1222.4	1207.7	1181.2	1156.2
25°	1193.0	1176.8	1150.3	1123.8
27.5°	1162.1	1143.0	1116.4	1090.0
30°	1126.8	1107.7	1081.2	1054.7
32.5°	1088.5	1070.9	1044.4	1016.5
35°	1050.3	1031.2	1004.7	976.8
37.5°	1007.7	990.0	963.5	937.0
40°	962.0	944.4	917.9	891.4
42.5°	919.4	903.2	876.7	851.7
45°	872.3	856.1	831.1	807.6
47.5°	823.7	807.6	784.1	760.5
50°	776.7	760.5	738.4	716.4
52.5°	723.8	710.5	689.9	669.3
55°	672.2	659.0	638.4	619.3
57.5°	620.8	609.0	589.9	572.2
60°	566.3	554.6	539.8	523.7
62.5°	514.8	504.5	489.9	475.1
65°	460.4	451.6	438.3	425.1
67.5°	404.5	397.2	385.4	373.6
70°	348.6	339.8	331.0	320.7
72.5°	292.7	288.3	279.5	270.7
75°	239.8	235.4	228.0	220.6
77.5°	189.7	185.3	179.4	173.6
80°	139.8	136.8	132.4	128.0
82.5°	97.1	94.1	91.2	86.8
85°	58.8	55.9	52.9	50.0
87.5°	26.5	25.0	22.0	20.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)