

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: P709116

Luminaire Tested: **4APN-32L835-X-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709116
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32L835-X-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

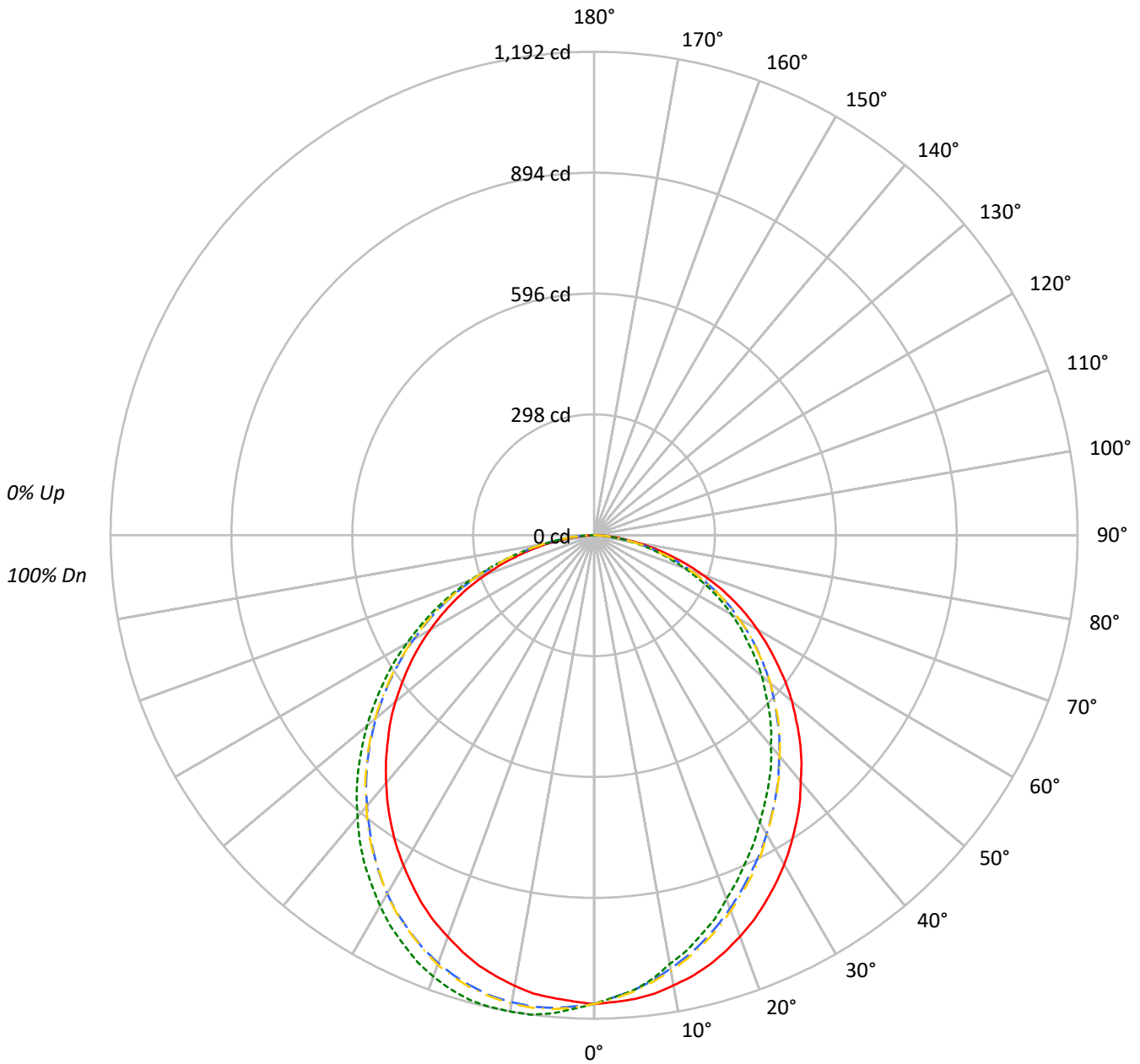
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3099.6 lumens
Efficiency: N/A
Efficacy: 85.2 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): 36.4
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

TEST NUMBER: P709116
CATALOG NUMBER: 4APN-32L835-X-UNV

Luminous Intensity Polar Plot



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



TEST NUMBER: P709116
 CATALOG NUMBER: 4APN-32L835-X-UNV

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°	10663	10663	10663	10663
5°	10631	10426	10607	10958
10°	10558	10056	10571	11170
15°	10477	9741	10490	11326
20°	10333	9371	10346	11373
25°	10168	9024	10208	11326
30°	9987	8705	10014	11241
35°	9778	8452	9821	11118
40°	9542	8172	9605	10927
45°	9364	7966	9383	10729
50°	9139	7749	9176	10489
55°	8853	7465	8916	10200
60°	8588	7237	8612	9843
65°	8248	6936	8248	9418
70°	7688	6417	7653	8781
75°	6990	5825	6898	7874
80°	6041	5000	5834	6737
85°	4711	3737	4425	5536



TEST NUMBER: P709116
 CATALOG NUMBER: 4APN-32L835-X-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.2	3.5
10°-20°	309.9	10.0
20°-30°	460.8	14.9
30°-40°	543.1	17.5
40°-50°	552.9	17.8
50°-60°	492.6	15.9
60°-70°	371.1	12.0
70°-80°	206.4	6.7
80°-90°	53.6	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°	879.9	28.4
0°-40°	1422.9	45.9
0°-60°	2468.5	79.6
0°-90°	3099.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3099.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1156	1156	1156	1156	1156	
5°	1148	1126	1145	1183	1148	109
15°	1097	1020	1098	1186	1097	309
25°	999	886	1003	1113	999	460
35°	868	750	872	987	868	543
45°	718	610	719	822	718	553
55°	550	464	554	634	550	493
65°	378	318	378	431	378	373
75°	196	163	194	221	196	208
85°	44	35	42	52	44	54
90°	0	0	0	0	0	



TEST NUMBER: P709116

CATALOG NUMBER: 4APN-32L835-X-UNV

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7
2.5°	1151.8	1151.8	1153.1	1147.9	1141.3	1138.7	1137.4	1136.1	1138.7	1140.0	1138.7
5°	1147.9	1145.3	1142.6	1136.1	1128.3	1123.0	1120.4	1119.1	1121.7	1125.7	1121.7
7.5°	1140.0	1134.8	1129.6	1120.4	1111.3	1103.4	1099.5	1096.9	1099.5	1103.4	1100.8
10°	1127.0	1120.4	1112.6	1102.1	1089.0	1079.9	1076.0	1072.0	1073.4	1073.4	1073.4
12.5°	1113.9	1104.7	1095.6	1082.5	1068.1	1057.7	1051.1	1045.9	1048.5	1049.8	1049.8
15°	1096.9	1085.1	1072.0	1057.7	1043.3	1031.5	1023.7	1018.4	1019.8	1019.8	1021.1
17.5°	1076.0	1062.9	1049.8	1032.8	1015.8	1002.8	993.6	987.1	989.7	991.0	992.3
20°	1052.4	1038.1	1023.7	1005.4	987.1	972.7	963.5	955.7	954.4	954.4	955.7
22.5°	1027.6	1011.9	994.9	975.3	955.7	940.0	930.9	923.0	921.7	921.7	923.0
25°	998.8	981.8	964.8	945.2	924.3	908.6	896.9	889.0	887.7	886.4	889.0
27.5°	968.8	951.8	934.8	915.2	892.9	877.2	865.5	857.6	855.0	853.7	856.3
30°	937.4	917.8	899.5	878.6	858.9	843.3	831.5	822.3	819.7	817.1	819.7
32.5°	903.4	883.8	864.2	843.3	823.6	808.0	796.2	787.0	784.4	783.1	785.7
35°	868.1	848.5	830.2	809.3	789.7	774.0	762.2	754.4	751.7	750.4	751.7
37.5°	832.8	813.2	794.9	774.0	754.4	738.7	726.9	719.1	717.7	716.4	717.7
40°	792.3	775.3	757.0	737.4	717.7	702.1	692.9	683.8	681.1	678.5	682.5
42.5°	757.0	740.0	721.7	703.4	683.8	668.1	657.6	649.8	647.2	645.8	647.2
45°	717.7	699.4	681.1	664.1	645.8	631.5	621.0	613.2	611.9	610.5	611.9
47.5°	675.9	660.2	644.5	627.5	609.2	594.9	585.7	577.9	575.2	572.6	575.2
50°	636.7	621.0	605.3	589.6	572.6	559.6	550.4	542.6	541.3	539.9	541.3
52.5°	594.9	579.2	564.8	549.1	534.7	521.6	512.5	506.0	504.6	503.3	504.6
55°	550.4	537.3	524.3	511.2	496.8	485.0	477.2	469.3	466.7	464.1	466.7
57.5°	508.6	496.8	483.7	470.7	457.6	447.1	439.3	432.7	431.4	430.1	431.4
60°	465.4	455.0	443.2	431.4	418.4	407.9	401.4	396.1	393.5	392.2	393.5
62.5°	422.3	411.8	402.7	390.9	379.1	371.3	364.8	359.5	356.9	355.6	356.9
65°	377.8	368.7	359.5	349.1	339.9	332.1	325.5	320.3	319.0	317.7	317.7
67.5°	332.1	324.2	316.4	307.2	296.8	288.9	282.4	278.5	277.2	275.9	277.2
70°	285.0	278.5	270.6	262.8	254.9	248.4	244.5	240.6	239.2	237.9	237.9
72.5°	240.6	235.3	228.8	222.3	215.7	209.2	205.3	202.6	201.3	200.0	200.0
75°	196.1	190.9	187.0	181.7	175.2	171.3	167.3	164.7	163.4	163.4	163.4
77.5°	154.3	150.3	146.4	141.2	137.3	133.4	130.7	129.4	128.1	128.1	128.1
80°	113.7	111.1	108.5	105.9	102.0	98.1	96.7	95.4	94.1	94.1	94.1
82.5°	77.1	75.8	73.2	70.6	68.0	66.7	65.4	64.1	64.1	64.1	64.1
85°	44.5	43.1	41.8	40.5	39.2	39.2	37.9	36.6	35.3	35.3	35.3
87.5°	18.3	18.3	18.3	17.0	15.7	15.7	15.7	15.7	15.7	15.7	15.7
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: P709116

CATALOG NUMBER: 4APN-32L835-X-UNV

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7
2.5°	1136.1	1138.7	1141.3	1145.3	1149.2	1153.1	1151.8	1150.5	1155.7	1162.3	1163.6
5°	1119.1	1121.7	1125.7	1132.2	1138.7	1144.0	1145.3	1145.3	1155.7	1164.9	1167.5
7.5°	1098.2	1102.1	1107.3	1113.9	1123.0	1130.9	1134.8	1140.0	1150.5	1162.3	1167.5
10°	1072.0	1078.6	1086.4	1095.6	1104.7	1113.9	1121.7	1128.3	1141.3	1154.4	1162.3
12.5°	1048.5	1055.1	1062.9	1073.4	1085.1	1096.9	1104.7	1113.9	1129.6	1145.3	1154.4
15°	1022.4	1028.9	1038.1	1048.5	1061.6	1074.7	1086.4	1098.2	1113.9	1130.9	1141.3
17.5°	993.6	1000.1	1009.3	1022.4	1036.7	1051.1	1064.2	1077.3	1095.6	1113.9	1125.7
20°	958.3	967.5	979.2	992.3	1009.3	1026.3	1039.4	1053.7	1073.4	1093.0	1106.0
22.5°	924.3	933.5	946.5	962.2	980.5	998.8	1014.5	1030.2	1051.1	1070.7	1085.1
25°	891.6	902.1	915.2	930.9	947.8	966.2	984.5	1002.8	1023.7	1044.6	1059.0
27.5°	858.9	868.1	881.2	896.9	916.5	934.8	953.1	971.4	993.6	1015.8	1031.5
30°	822.3	832.8	844.6	860.3	881.2	902.1	920.4	940.0	962.2	984.5	1000.1
32.5°	788.3	797.5	809.3	825.0	845.9	866.8	886.4	907.3	928.2	950.5	966.2
35°	754.4	763.5	775.3	791.0	811.9	832.8	852.4	872.0	892.9	913.9	929.5
37.5°	720.4	729.5	741.3	757.0	776.6	797.5	815.8	835.4	856.3	877.2	891.6
40°	685.1	694.2	703.4	719.1	738.7	759.6	777.9	797.5	818.4	839.3	853.7
42.5°	649.8	658.9	670.7	686.4	704.7	723.0	741.3	759.6	779.2	798.8	813.2
45°	614.5	622.3	634.1	648.5	666.8	683.8	702.1	719.1	738.7	757.0	771.4
47.5°	577.9	585.7	594.9	609.2	627.5	645.8	664.1	681.1	698.1	716.4	729.5
50°	542.6	550.4	560.9	573.9	590.9	607.9	623.6	639.3	656.3	673.3	685.1
52.5°	506.0	513.8	523.0	536.0	550.4	566.1	580.5	596.2	611.9	627.5	639.3
55°	469.3	474.6	482.4	494.2	509.9	525.6	539.9	554.3	568.7	581.8	593.5
57.5°	432.7	439.3	448.4	458.9	472.0	485.0	498.1	511.2	524.3	537.3	547.8
60°	396.1	401.4	407.9	417.1	430.1	441.9	455.0	466.7	478.5	490.3	499.4
62.5°	358.2	363.5	370.0	379.1	389.6	400.1	411.8	422.3	432.7	443.2	452.4
65°	319.0	324.2	330.8	338.6	347.8	356.9	367.4	377.8	385.7	393.5	402.7
67.5°	278.5	283.7	290.2	296.8	304.6	313.8	322.9	332.1	339.9	347.8	354.3
70°	239.2	243.2	249.7	254.9	261.5	268.0	275.9	283.7	288.9	295.5	303.3
72.5°	201.3	205.3	210.5	215.7	219.6	224.9	232.7	239.2	245.8	253.6	257.6
75°	164.7	167.3	171.3	175.2	179.1	183.0	188.3	193.5	198.7	202.6	207.9
77.5°	128.1	130.7	134.7	137.3	139.9	142.5	146.4	150.3	154.3	156.9	162.1
80°	94.1	96.7	99.4	102.0	104.6	107.2	108.5	109.8	115.0	119.0	121.6
82.5°	64.1	65.4	66.7	69.3	70.6	71.9	73.2	73.2	75.8	78.4	82.4
85°	36.6	37.9	39.2	39.2	39.2	39.2	40.5	41.8	43.1	45.8	48.4
87.5°	14.4	14.4	15.7	15.7	15.7	15.7	15.7	15.7	17.0	19.6	20.9
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: P709116

CATALOG NUMBER: 4APN-32L835-X-UNV

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7	1155.7
2.5°	1162.3	1163.6	1166.2	1167.5	1168.8	1168.8	1170.1	1171.4	1168.8	1166.2	1164.9
5°	1168.8	1170.1	1174.0	1177.9	1180.6	1183.2	1181.9	1180.6	1177.9	1174.0	1171.4
7.5°	1170.1	1174.0	1177.9	1183.2	1187.1	1192.3	1189.7	1187.1	1181.9	1176.6	1172.7
10°	1166.2	1171.4	1177.9	1184.5	1188.4	1192.3	1189.7	1187.1	1181.9	1175.3	1170.1
12.5°	1160.9	1167.5	1175.3	1181.9	1185.8	1191.0	1187.1	1183.2	1176.6	1170.1	1163.6
15°	1149.2	1157.0	1166.2	1174.0	1180.6	1185.8	1181.9	1179.3	1171.4	1162.3	1153.1
17.5°	1134.8	1145.3	1154.4	1163.6	1168.8	1174.0	1171.4	1168.8	1159.6	1149.2	1138.7
20°	1117.8	1128.3	1137.4	1146.6	1153.1	1158.3	1154.4	1150.5	1141.3	1132.2	1121.7
22.5°	1096.9	1107.3	1117.8	1127.0	1133.5	1138.7	1133.5	1127.0	1117.8	1108.7	1098.2
25°	1070.7	1082.5	1094.3	1103.4	1107.3	1112.6	1107.3	1102.1	1093.0	1083.8	1072.0
27.5°	1044.6	1056.4	1068.1	1077.3	1081.2	1086.4	1081.2	1076.0	1066.8	1057.7	1045.9
30°	1014.5	1026.3	1038.1	1047.2	1051.1	1055.1	1049.8	1044.6	1036.7	1027.6	1015.8
32.5°	980.5	992.3	1001.4	1010.6	1015.8	1021.1	1015.8	1011.9	1002.8	991.0	979.2
35°	943.9	955.7	967.5	976.6	981.8	987.1	980.5	974.0	966.2	957.0	946.5
37.5°	903.4	916.5	929.5	940.0	943.9	949.2	943.9	937.4	929.5	920.4	908.6
40°	865.5	877.2	889.0	899.5	903.4	907.3	902.1	896.9	887.7	878.6	866.8
42.5°	826.3	838.0	848.5	857.6	861.6	866.8	861.6	855.0	848.5	840.6	830.2
45°	784.4	796.2	805.3	814.5	818.4	822.3	817.1	810.6	804.0	797.5	787.0
47.5°	741.3	751.7	760.9	770.0	772.7	776.6	771.4	767.4	760.9	754.4	745.2
50°	696.8	707.3	716.4	724.3	726.9	730.8	725.6	720.4	715.1	709.9	702.1
52.5°	651.1	660.2	669.4	677.2	679.8	682.5	677.2	672.0	666.8	661.5	653.7
55°	604.0	613.2	622.3	628.8	631.5	634.1	628.8	624.9	619.7	615.8	607.9
57.5°	556.9	566.1	573.9	580.5	583.1	585.7	580.5	575.2	571.3	567.4	560.9
60°	508.6	517.7	524.3	529.5	532.1	533.4	528.2	524.3	521.6	519.0	512.5
62.5°	461.5	468.0	474.6	478.5	481.1	482.4	478.5	475.9	473.3	470.7	465.4
65°	411.8	419.7	424.9	428.8	430.1	431.4	427.5	424.9	422.3	419.7	415.7
67.5°	362.1	368.7	372.6	376.5	377.8	377.8	377.8	376.5	373.9	370.0	366.1
70°	312.5	317.7	321.6	324.2	325.5	325.5	322.9	320.3	320.3	319.0	316.4
72.5°	261.5	265.4	268.0	270.6	270.6	270.6	270.6	271.9	270.6	268.0	264.1
75°	213.1	217.0	219.6	220.9	220.9	220.9	220.9	222.3	220.9	219.6	217.0
77.5°	167.3	170.0	171.3	172.6	172.6	172.6	173.9	175.2	173.9	172.6	171.3
80°	124.2	125.5	126.8	128.1	126.8	126.8	128.1	130.7	129.4	128.1	126.8
82.5°	85.0	86.3	87.6	87.6	88.9	90.2	90.2	90.2	90.2	88.9	87.6
85°	51.0	52.3	52.3	52.3	52.3	52.3	53.6	54.9	54.9	53.6	53.6
87.5°	23.5	24.8	23.5	22.2	20.9	20.9	23.5	26.1	26.1	24.8	24.8
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: P709116
 CATALOG NUMBER: 4APN-32L835-X-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1155.7	1155.7	1155.7	1155.7
2.5°	1166.2	1164.9	1158.3	1151.8
5°	1170.1	1166.2	1157.0	1147.9
7.5°	1170.1	1164.9	1151.8	1140.0
10°	1163.6	1155.7	1141.3	1127.0
12.5°	1155.7	1146.6	1129.6	1113.9
15°	1144.0	1133.5	1115.2	1096.9
17.5°	1127.0	1113.9	1095.6	1076.0
20°	1110.0	1095.6	1073.4	1052.4
22.5°	1086.4	1073.4	1049.8	1027.6
25°	1060.3	1045.9	1022.4	998.8
27.5°	1032.8	1015.8	992.3	968.8
30°	1001.4	984.5	960.9	937.4
32.5°	967.5	951.8	928.2	903.4
35°	933.5	916.5	892.9	868.1
37.5°	895.6	879.9	856.3	832.8
40°	855.0	839.3	815.8	792.3
42.5°	817.1	802.7	779.2	757.0
45°	775.3	760.9	738.7	717.7
47.5°	732.1	717.7	696.8	675.9
50°	690.3	675.9	656.3	636.7
52.5°	643.2	631.5	613.2	594.9
55°	597.5	585.7	567.4	550.4
57.5°	551.7	541.3	524.3	508.6
60°	503.3	492.9	479.8	465.4
62.5°	457.6	448.4	435.4	422.3
65°	409.2	401.4	389.6	377.8
67.5°	359.5	353.0	342.5	332.1
70°	309.8	302.0	294.2	285.0
72.5°	260.2	256.2	248.4	240.6
75°	213.1	209.2	202.6	196.1
77.5°	168.7	164.7	159.5	154.3
80°	124.2	121.6	117.7	113.7
82.5°	86.3	83.7	81.1	77.1
85°	52.3	49.7	47.1	44.5
87.5°	23.5	22.2	19.6	18.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)