

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: P709191

Luminaire Tested: **4APN-20-22L935-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709191  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-20-22L935-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

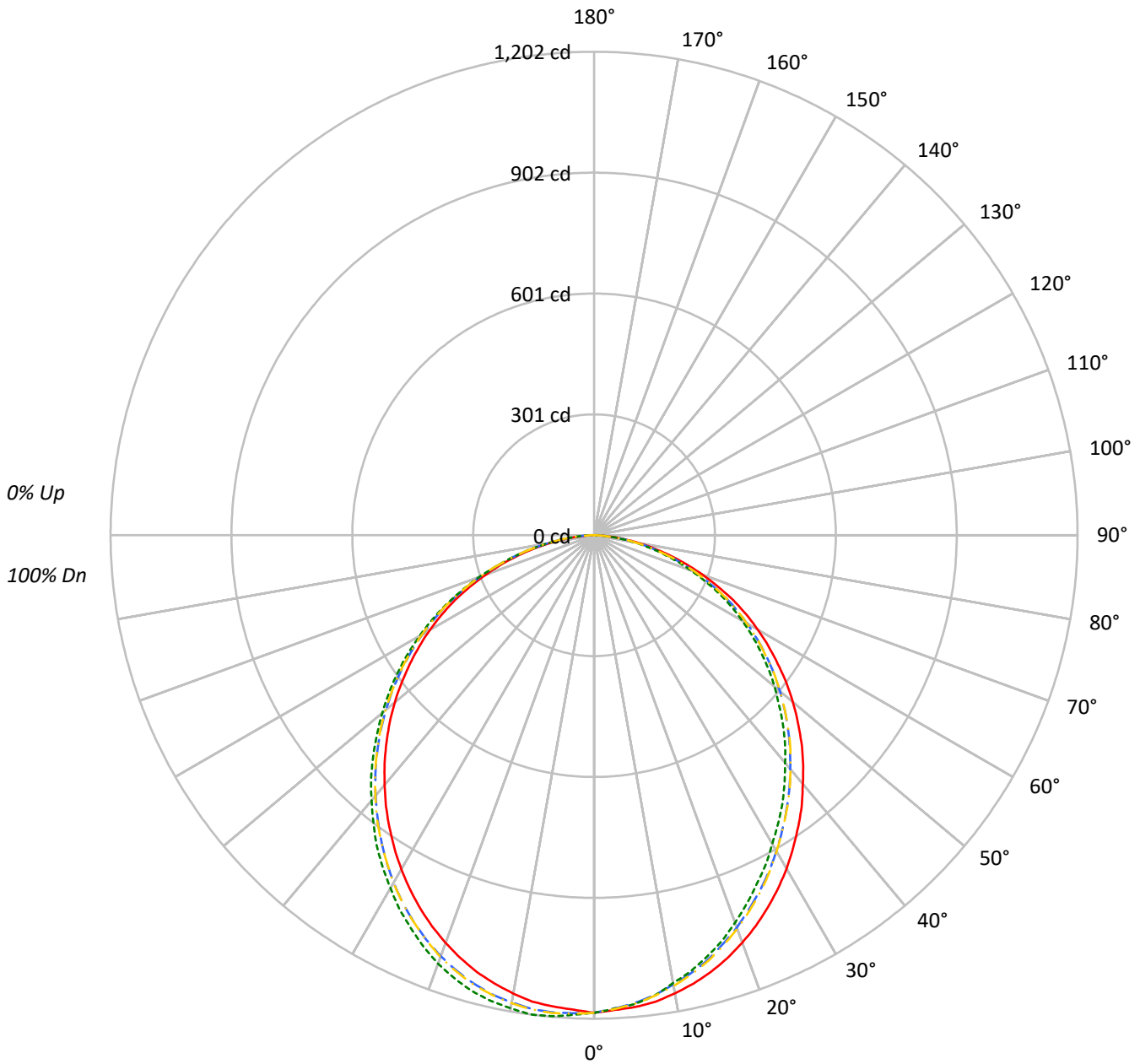
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3137.9 lumens  
Efficiency: N/A  
Efficacy: 65.4 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): 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

TEST NUMBER: P709191  
CATALOG NUMBER: 4APN-20-22L935-UNV

### Luminous Intensity Polar Plot



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



TEST NUMBER: P709191  
 CATALOG NUMBER: 4APN-20-22L935-UNV

**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	33	33	33	33	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°	10952	10952	10952	10952
5°	10903	10833	10891	11117
10°	10834	10592	10840	11187
15°	10733	10360	10740	11206
20°	10581	10061	10588	11128
25°	10396	9743	10417	10971
30°	10196	9439	10211	10790
35°	9963	9194	9987	10614
40°	9722	8899	9756	10369
45°	9513	8659	9522	10132
50°	9265	8404	9285	9865
55°	8971	8130	9003	9587
60°	8682	7846	8695	9235
65°	8324	7503	8324	8826
70°	7729	6938	7710	8198
75°	7008	6288	6958	7379
80°	6036	5409	5924	6333
85°	4647	4128	4499	5092



TEST NUMBER: P709191  
 CATALOG NUMBER: 4APN-20-22L935-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.1	3.6
10°-20°	317.4	10.1
20°-30°	469.9	15.0
30°-40°	551.4	17.6
40°-50°	558.8	17.8
50°-60°	495.9	15.8
60°-70°	372.3	11.9
70°-80°	206.7	6.6
80°-90°	53.4	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°	899.4	28.7
0°-40°	1450.8	46.2
0°-60°	2505.5	79.8
0°-90°	3137.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3137.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1187	1187	1187	1187	1187	
5°	1177	1170	1176	1200	1177	112
15°	1124	1085	1124	1173	1124	317
25°	1021	957	1023	1078	1021	471
35°	885	816	887	942	885	554
45°	729	664	730	776	729	562
55°	558	505	560	596	558	499
65°	381	344	381	404	381	376
75°	197	176	195	207	197	209
85°	44	39	42	48	44	53
90°	0	0	0	0	0	



TEST NUMBER: P709191

CATALOG NUMBER: 4APN-20-22L935-UNV

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1
2.5°	1181.5	1184.3	1187.8	1184.3	1178.7	1175.9	1175.9	1175.3	1177.3	1178.0	1177.3
5°	1177.3	1178.7	1179.4	1175.3	1169.0	1165.5	1164.1	1163.4	1166.2	1169.7	1166.2
7.5°	1169.7	1169.0	1168.3	1162.7	1155.7	1150.9	1148.8	1148.1	1150.9	1154.3	1151.6
10°	1156.4	1155.7	1153.6	1146.7	1137.6	1131.3	1129.2	1127.2	1129.2	1130.6	1129.2
12.5°	1141.8	1139.0	1136.2	1128.5	1118.8	1111.8	1108.3	1105.5	1108.3	1110.4	1109.0
15°	1123.7	1119.5	1114.6	1106.2	1096.5	1088.8	1084.6	1081.8	1083.9	1084.6	1084.6
17.5°	1102.1	1097.2	1092.3	1081.8	1070.0	1061.6	1056.8	1053.3	1056.1	1057.4	1057.4
20°	1077.7	1072.1	1065.8	1054.7	1042.1	1033.1	1027.5	1023.3	1024.0	1024.7	1024.7
22.5°	1051.2	1044.2	1036.5	1024.7	1011.4	1001.7	996.1	991.2	991.2	991.9	991.9
25°	1021.2	1013.5	1005.9	994.0	980.1	969.6	962.6	957.8	957.8	957.1	958.5
27.5°	990.5	982.2	974.5	962.0	947.3	936.9	929.9	925.0	924.3	923.6	925.0
30°	957.1	947.3	938.9	925.7	911.8	901.3	894.3	888.8	887.4	886.0	887.4
32.5°	921.5	912.5	903.4	889.5	875.5	865.1	858.1	852.5	851.8	851.1	852.5
35°	884.6	874.8	866.5	853.2	839.3	828.8	821.1	816.3	816.3	816.3	816.3
37.5°	848.3	838.6	829.5	816.3	802.3	791.9	784.2	779.3	777.9	777.2	777.9
40°	807.2	798.8	790.5	777.9	764.0	753.5	747.3	741.7	740.3	738.9	741.0
42.5°	769.6	761.2	752.1	740.3	726.3	715.9	708.9	704.0	703.3	702.6	703.3
45°	729.1	719.4	710.3	699.2	686.6	676.9	669.9	665.0	664.3	663.6	664.3
47.5°	686.6	678.9	671.3	660.1	647.6	637.8	631.5	626.0	624.6	623.2	624.6
50°	645.5	637.1	629.5	619.0	607.1	598.1	592.5	587.6	586.2	585.5	586.2
52.5°	602.3	594.6	587.6	577.2	567.4	558.3	552.1	547.9	547.2	546.5	547.2
55°	557.7	550.7	544.4	536.0	526.3	517.9	512.3	507.5	506.8	505.4	506.8
57.5°	514.4	508.9	502.6	493.5	484.5	476.8	471.9	467.7	467.0	466.3	467.0
60°	470.5	464.9	459.4	451.7	442.6	435.0	430.8	427.3	425.9	425.2	425.9
62.5°	426.6	421.0	416.8	409.2	400.8	394.5	390.4	386.9	385.5	384.8	385.5
65°	381.3	376.4	371.5	364.6	358.3	353.4	349.2	345.7	344.4	343.7	343.7
67.5°	333.2	329.0	325.5	319.3	312.3	307.4	303.2	300.4	299.0	298.3	299.0
70°	286.5	283.0	279.5	274.6	269.1	264.9	262.1	259.3	257.9	257.2	257.2
72.5°	241.9	239.1	235.6	231.4	227.2	223.1	220.3	218.2	216.8	216.1	216.1
75°	196.6	193.8	192.4	188.9	184.7	181.9	179.1	177.8	176.4	176.4	176.4
77.5°	154.1	152.7	151.3	147.8	145.0	142.2	140.1	139.4	138.0	138.0	138.0
80°	113.6	112.9	112.2	110.1	107.3	104.6	103.2	102.5	101.8	101.8	101.8
82.5°	76.7	76.7	76.0	73.9	71.8	71.1	69.7	69.0	69.0	69.0	69.0
85°	43.9	43.9	43.9	43.2	41.8	41.8	40.4	39.7	39.0	39.0	39.0
87.5°	17.4	18.1	18.8	18.1	16.7	16.7	16.7	16.7	16.7	16.7	16.7
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: P709191

CATALOG NUMBER: 4APN-20-22L935-UNV

**CANDELA DISTRIBUTION (continued):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1
2.5°	1175.3	1176.6	1177.3	1180.8	1185.0	1187.8	1184.3	1180.8	1186.4	1192.7	1192.7
5°	1163.4	1164.8	1166.9	1171.1	1176.6	1180.1	1178.7	1175.9	1184.3	1191.3	1192.0
7.5°	1148.8	1150.2	1152.9	1157.1	1164.1	1169.0	1169.0	1169.7	1177.3	1185.7	1187.8
10°	1127.2	1130.6	1134.8	1141.1	1148.1	1154.3	1156.4	1157.1	1166.9	1175.9	1178.7
12.5°	1106.9	1110.4	1114.6	1121.6	1129.9	1136.9	1139.0	1141.8	1152.2	1162.7	1166.9
15°	1083.9	1087.4	1092.3	1099.3	1108.3	1116.0	1120.2	1124.4	1134.8	1146.0	1150.9
17.5°	1056.8	1060.2	1065.1	1073.5	1083.9	1093.0	1097.9	1102.8	1114.6	1126.5	1131.3
20°	1024.7	1029.6	1036.5	1044.9	1056.8	1067.2	1072.8	1078.4	1090.9	1102.8	1108.3
22.5°	991.9	997.5	1005.2	1014.9	1027.5	1038.6	1045.6	1052.6	1065.1	1077.0	1083.2
25°	959.2	965.4	973.1	983.6	995.4	1006.6	1014.9	1023.3	1035.8	1048.4	1054.7
27.5°	925.7	931.3	938.9	949.4	962.6	974.5	982.9	991.9	1004.5	1017.7	1024.0
30°	888.8	895.0	902.0	912.5	927.1	940.3	948.7	958.5	971.0	984.3	990.5
32.5°	853.2	858.8	865.8	876.2	890.8	904.8	913.9	923.6	936.2	949.4	955.0
35°	816.3	821.8	829.5	840.0	854.6	867.8	876.9	886.7	898.5	911.1	917.3
37.5°	780.0	785.6	793.3	803.7	817.7	830.9	840.0	849.7	861.6	873.4	879.0
40°	742.4	748.0	754.2	764.7	778.6	791.9	800.2	810.0	821.8	834.4	840.0
42.5°	704.0	709.6	717.3	727.7	741.0	752.8	761.9	771.0	782.1	793.3	798.8
45°	665.7	670.6	678.2	688.0	700.6	711.7	720.8	729.8	740.3	750.7	756.3
47.5°	626.0	631.5	637.8	647.6	660.1	672.0	681.0	689.4	699.2	709.6	714.5
50°	587.6	592.5	598.8	607.8	619.7	630.8	638.5	646.9	655.9	665.7	669.9
52.5°	547.9	552.8	559.0	568.1	577.9	588.3	595.3	603.0	612.0	621.1	625.3
55°	507.5	510.9	516.5	524.9	535.3	545.1	552.1	559.7	567.4	575.1	580.0
57.5°	467.7	471.9	477.5	485.2	494.2	503.3	509.6	515.8	523.5	531.2	534.6
60°	427.3	430.8	435.0	441.9	451.0	458.7	464.9	471.2	477.5	484.5	487.9
62.5°	386.2	389.7	393.8	400.8	408.5	415.5	421.0	426.6	432.2	438.5	441.9
65°	345.0	348.5	352.7	357.6	363.9	370.1	375.7	381.3	385.5	389.7	393.1
67.5°	300.4	303.9	308.1	312.3	317.9	324.1	328.3	333.2	337.4	342.3	344.4
70°	258.6	261.4	265.6	269.1	273.9	278.1	281.6	285.8	288.6	292.8	296.3
72.5°	217.5	220.3	223.8	227.2	230.0	233.5	237.7	241.2	244.7	248.9	250.2
75°	177.8	179.1	181.9	184.7	187.5	190.3	192.4	195.2	198.0	200.8	202.8
77.5°	138.7	140.1	142.9	145.0	147.1	149.2	150.6	152.0	154.7	156.8	158.9
80°	101.8	103.2	105.3	107.3	109.4	111.5	111.5	111.5	115.0	117.8	118.5
82.5°	69.0	69.7	71.1	72.5	73.9	75.3	75.3	74.6	76.7	78.8	80.2
85°	39.7	40.4	41.8	41.8	42.5	42.5	42.5	42.5	43.9	46.0	47.4
87.5°	16.0	16.0	16.7	16.7	17.4	17.4	16.7	16.0	17.4	19.5	20.2
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: P709191

CATALOG NUMBER: 4APN-20-22L935-UNV

**CANDELA DISTRIBUTION (continued):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1	1187.1
2.5°	1189.9	1189.2	1191.3	1192.0	1193.4	1193.4	1194.1	1194.1	1192.7	1190.6	1191.3
5°	1190.6	1190.6	1192.7	1194.8	1197.6	1200.3	1198.3	1196.2	1194.8	1192.7	1192.0
7.5°	1187.1	1188.5	1190.6	1194.1	1197.6	1201.7	1199.0	1196.2	1192.7	1189.9	1188.5
10°	1178.7	1180.1	1183.6	1187.1	1190.6	1194.1	1191.3	1188.5	1185.7	1182.2	1180.8
12.5°	1168.3	1170.4	1174.6	1178.0	1181.5	1185.7	1182.2	1178.7	1175.3	1171.8	1169.7
15°	1152.9	1155.7	1160.6	1164.8	1169.7	1173.2	1170.4	1167.6	1163.4	1158.5	1155.0
17.5°	1133.4	1137.6	1142.5	1147.4	1151.6	1155.0	1152.9	1150.2	1145.3	1139.7	1135.5
20°	1111.8	1116.0	1120.2	1125.1	1129.9	1133.4	1130.6	1127.2	1122.3	1118.1	1113.9
22.5°	1086.7	1090.9	1095.8	1100.0	1104.2	1107.6	1104.2	1100.0	1095.8	1091.6	1087.4
25°	1058.1	1062.3	1067.9	1072.1	1074.9	1077.7	1074.9	1071.4	1067.2	1063.0	1058.8
27.5°	1028.2	1032.4	1037.9	1042.1	1044.9	1047.7	1044.9	1041.4	1037.2	1033.1	1028.9
30°	994.7	998.9	1004.5	1008.7	1010.7	1012.8	1010.0	1007.3	1003.8	999.6	995.4
32.5°	959.2	963.3	967.5	971.7	975.2	978.0	975.2	972.4	968.2	962.6	958.5
35°	921.5	925.7	930.6	934.8	938.9	942.4	938.3	933.4	929.9	926.4	922.9
37.5°	881.8	886.7	892.2	897.1	898.5	901.3	898.5	895.7	892.2	888.8	884.6
40°	842.8	846.9	851.8	856.7	858.8	860.9	858.1	855.3	851.1	847.6	843.4
42.5°	802.3	806.5	810.7	814.9	817.7	820.4	817.7	813.5	810.7	807.9	804.4
45°	760.5	764.7	768.2	772.3	774.4	776.5	773.7	770.3	767.5	765.4	761.9
47.5°	718.0	721.5	724.9	728.4	729.8	731.9	729.1	727.0	724.9	722.9	720.1
50°	673.4	676.9	681.0	684.5	685.2	687.3	684.5	682.4	680.3	678.2	676.2
52.5°	629.5	632.2	635.7	639.2	640.6	642.0	639.2	636.4	634.3	632.9	630.8
55°	583.4	586.2	589.7	592.5	594.6	596.0	593.2	590.4	588.3	587.6	585.5
57.5°	537.4	540.2	543.7	546.5	547.9	549.3	546.5	543.7	542.3	540.9	539.5
60°	490.7	493.5	496.3	498.4	499.8	500.5	497.7	495.6	494.9	494.2	492.8
62.5°	444.7	446.1	448.9	450.3	451.7	452.4	450.3	448.9	448.2	447.5	446.8
65°	396.6	400.1	402.2	403.6	403.6	404.3	402.2	401.5	400.8	400.1	398.7
67.5°	347.1	349.9	351.3	352.7	352.7	352.7	352.7	352.7	352.0	350.6	349.2
70°	299.7	301.8	303.2	303.9	303.9	303.9	302.5	301.8	302.5	302.5	301.8
72.5°	251.6	253.0	253.7	254.4	253.7	253.7	253.7	255.1	255.1	254.4	253.0
75°	204.9	206.3	207.0	207.7	207.0	207.0	207.0	208.4	207.7	207.7	207.0
77.5°	161.0	161.7	161.7	162.4	161.7	161.7	162.4	163.8	163.1	163.1	163.1
80°	119.2	119.2	119.2	119.9	119.2	119.2	119.9	121.3	120.6	120.6	120.6
82.5°	80.9	81.6	81.6	81.6	82.3	83.0	83.0	83.0	83.0	83.0	82.3
85°	48.1	48.8	48.1	48.1	48.1	48.1	48.8	49.5	49.5	49.5	49.5
87.5°	20.9	21.6	20.9	20.2	19.5	19.5	20.9	22.3	22.3	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





TEST NUMBER: P709191  
 CATALOG NUMBER: 4APN-20-22L935-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1187.1	1187.1	1187.1	1187.1
2.5°	1194.1	1194.1	1187.8	1181.5
5°	1193.4	1192.0	1185.0	1177.3
7.5°	1189.2	1187.1	1178.0	1169.7
10°	1179.4	1176.6	1166.9	1156.4
12.5°	1167.6	1163.4	1152.2	1141.8
15°	1152.2	1147.4	1135.5	1123.7
17.5°	1132.0	1126.5	1114.6	1102.1
20°	1110.4	1104.2	1090.9	1077.7
22.5°	1083.9	1078.4	1064.4	1051.2
25°	1055.4	1049.1	1035.1	1021.2
27.5°	1024.7	1017.7	1003.8	990.5
30°	991.2	984.3	970.3	957.1
32.5°	955.7	950.1	936.2	921.5
35°	919.4	912.5	898.5	884.6
37.5°	881.1	874.8	861.6	848.3
40°	840.7	834.4	820.4	807.2
42.5°	800.9	795.4	782.1	769.6
45°	758.4	752.8	740.3	729.1
47.5°	715.9	710.3	698.5	686.6
50°	672.7	667.1	655.9	645.5
52.5°	627.4	623.2	612.7	602.3
55°	582.0	577.2	566.7	557.7
57.5°	536.7	533.3	523.5	514.4
60°	490.0	485.9	478.2	470.5
62.5°	444.7	441.2	433.6	426.6
65°	396.6	393.8	387.6	381.3
67.5°	347.1	345.0	338.8	333.2
70°	299.7	296.3	291.4	286.5
72.5°	251.6	250.2	246.1	241.9
75°	205.6	204.2	200.1	196.6
77.5°	162.4	161.0	157.5	154.1
80°	119.9	119.2	116.4	113.6
82.5°	82.3	81.6	79.5	76.7
85°	49.5	48.1	46.0	43.9
87.5°	21.6	20.9	18.8	17.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)