

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: P709185

Luminaire Tested: **4APN-20-22L930-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709185  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-20-22L930-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

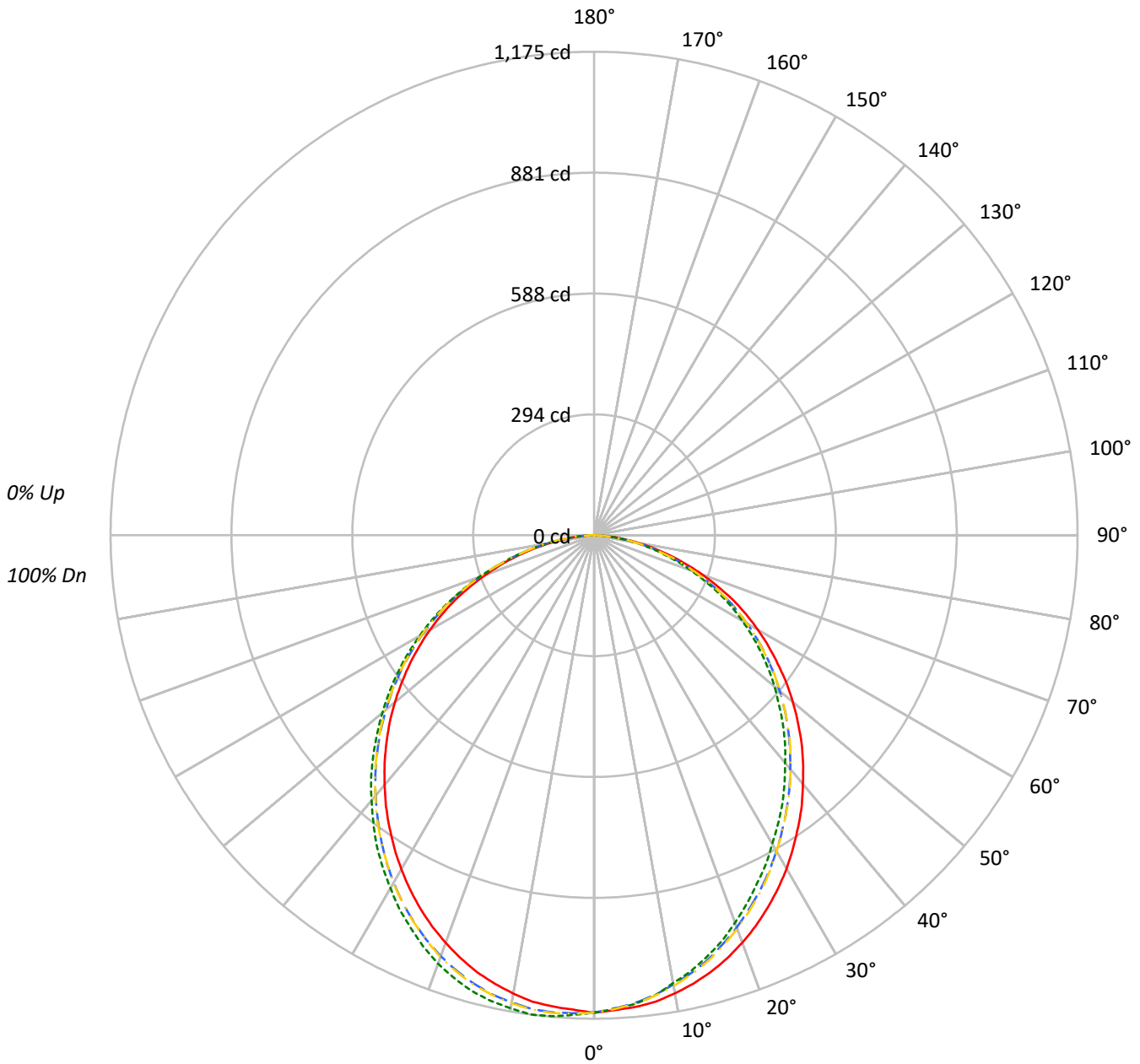
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3067.4 lumens  
Efficiency: N/A  
Efficacy: 63.9 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

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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°	10706	10706	10706	10706
5°	10659	10590	10646	10867
10°	10591	10354	10597	10936
15°	10492	10128	10498	10954
20°	10344	9835	10349	10879
25°	10163	9524	10183	10725
30°	9967	9227	9981	10548
35°	9739	8987	9763	10377
40°	9504	8699	9536	10135
45°	9300	8464	9308	9905
50°	9057	8216	9076	9644
55°	8768	7946	8802	9371
60°	8486	7671	8499	9029
65°	8136	7333	8136	8628
70°	7556	6782	7537	8014
75°	6851	6146	6802	7215
80°	5903	5287	5791	6190
85°	4541	4044	4404	4975



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.6	3.6
10°-20°	310.3	10.1
20°-30°	459.4	15.0
30°-40°	539.0	17.6
40°-50°	546.2	17.8
50°-60°	484.8	15.8
60°-70°	364.0	11.9
70°-80°	202.1	6.6
80°-90°	52.2	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°	879.2	28.7
0°-40°	1418.2	46.2
0°-60°	2449.2	79.8
0°-90°	3067.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3067.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1160	1160	1160	1160	1160	
5°	1151	1143	1150	1173	1151	109
15°	1098	1060	1099	1147	1098	310
25°	998	936	1000	1054	998	460
35°	865	798	867	921	865	541
45°	713	649	713	759	713	549
55°	545	494	547	583	545	488
65°	373	336	373	395	373	367
75°	192	172	191	202	192	204
85°	43	38	42	47	43	52
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°	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4
2.5°	1155.0	1157.7	1161.1	1157.7	1152.3	1149.5	1149.5	1148.9	1150.9	1151.6	1150.9
5°	1150.9	1152.3	1152.9	1148.9	1142.7	1139.3	1138.0	1137.3	1140.0	1143.4	1140.0
7.5°	1143.4	1142.7	1142.0	1136.6	1129.8	1125.0	1123.0	1122.3	1125.0	1128.4	1125.7
10°	1130.5	1129.8	1127.7	1120.9	1112.1	1105.9	1103.9	1101.8	1103.9	1105.2	1103.9
12.5°	1116.1	1113.4	1110.7	1103.2	1093.7	1086.8	1083.4	1080.7	1083.4	1085.5	1084.1
15°	1098.4	1094.3	1089.6	1081.4	1071.9	1064.4	1060.3	1057.5	1059.6	1060.3	1060.3
17.5°	1077.3	1072.5	1067.8	1057.5	1046.0	1037.8	1033.0	1029.6	1032.3	1033.7	1033.7
20°	1053.5	1048.0	1041.9	1031.0	1018.7	1009.8	1004.4	1000.3	1001.0	1001.7	1001.7
22.5°	1027.6	1020.7	1013.3	1001.7	988.7	979.2	973.7	969.0	969.0	969.6	969.6
25°	998.3	990.8	983.3	971.7	958.1	947.8	941.0	936.3	936.3	935.6	936.9
27.5°	968.3	960.1	952.6	940.3	926.0	915.8	909.0	904.2	903.5	902.9	904.2
30°	935.6	926.0	917.9	904.9	891.3	881.1	874.2	868.8	867.4	866.1	867.4
32.5°	900.8	892.0	883.1	869.5	855.8	845.6	838.8	833.4	832.7	832.0	833.4
35°	864.7	855.2	847.0	834.0	820.4	810.2	802.7	797.9	797.9	797.9	797.9
37.5°	829.3	819.7	810.9	797.9	784.3	774.1	766.6	761.8	760.5	759.8	760.5
40°	789.1	780.9	772.7	760.5	746.8	736.6	730.5	725.0	723.7	722.3	724.3
42.5°	752.3	744.1	735.2	723.7	710.0	699.8	693.0	688.2	687.5	686.9	687.5
45°	712.8	703.2	694.4	683.5	671.2	661.6	654.8	650.1	649.4	648.7	649.4
47.5°	671.2	663.7	656.2	645.3	633.0	623.5	617.4	611.9	610.5	609.2	610.5
50°	631.0	622.8	615.3	605.1	593.5	584.6	579.2	574.4	573.1	572.4	573.1
52.5°	588.7	581.2	574.4	564.2	554.7	545.8	539.7	535.6	534.9	534.2	534.9
55°	545.1	538.3	532.2	524.0	514.5	506.3	500.8	496.1	495.4	494.0	495.4
57.5°	502.9	497.4	491.3	482.4	473.6	466.1	461.3	457.2	456.5	455.9	456.5
60°	459.9	454.5	449.0	441.6	432.7	425.2	421.1	417.7	416.3	415.7	416.3
62.5°	417.0	411.6	407.5	400.0	391.8	385.7	381.6	378.2	376.8	376.1	376.8
65°	372.7	368.0	363.2	356.4	350.2	345.5	341.4	338.0	336.6	335.9	335.9
67.5°	325.7	321.6	318.2	312.1	305.3	300.5	296.4	293.7	292.3	291.6	292.3
70°	280.1	276.7	273.2	268.5	263.0	258.9	256.2	253.5	252.1	251.4	251.4
72.5°	236.4	233.7	230.3	226.2	222.1	218.1	215.3	213.3	211.9	211.2	211.2
75°	192.2	189.4	188.1	184.7	180.6	177.8	175.1	173.8	172.4	172.4	172.4
77.5°	150.6	149.2	147.9	144.5	141.7	139.0	137.0	136.3	134.9	134.9	134.9
80°	111.1	110.4	109.7	107.7	104.9	102.2	100.8	100.2	99.5	99.5	99.5
82.5°	75.0	75.0	74.3	72.2	70.2	69.5	68.1	67.5	67.5	67.5	67.5
85°	42.9	42.9	42.9	42.2	40.9	40.9	39.5	38.8	38.2	38.2	38.2
87.5°	17.0	17.7	18.4	17.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4
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°	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4
2.5°	1148.9	1150.2	1150.9	1154.3	1158.4	1161.1	1157.7	1154.3	1159.8	1165.9	1165.9
5°	1137.3	1138.6	1140.7	1144.8	1150.2	1153.6	1152.3	1149.5	1157.7	1164.5	1165.2
7.5°	1123.0	1124.3	1127.0	1131.1	1138.0	1142.7	1142.7	1143.4	1150.9	1159.1	1161.1
10°	1101.8	1105.2	1109.3	1115.5	1122.3	1128.4	1130.5	1131.1	1140.7	1149.5	1152.3
12.5°	1082.1	1085.5	1089.6	1096.4	1104.6	1111.4	1113.4	1116.1	1126.4	1136.6	1140.7
15°	1059.6	1063.0	1067.8	1074.6	1083.4	1090.9	1095.0	1099.1	1109.3	1120.2	1125.0
17.5°	1033.0	1036.4	1041.2	1049.4	1059.6	1068.4	1073.2	1078.0	1089.6	1101.2	1105.9
20°	1001.7	1006.4	1013.3	1021.4	1033.0	1043.2	1048.7	1054.1	1066.4	1078.0	1083.4
22.5°	969.6	975.1	982.6	992.1	1004.4	1015.3	1022.1	1028.9	1041.2	1052.8	1058.9
25°	937.6	943.7	951.2	961.5	973.0	984.0	992.1	1000.3	1012.6	1024.8	1031.0
27.5°	904.9	910.4	917.9	928.1	941.0	952.6	960.8	969.6	981.9	994.9	1001.0
30°	868.8	874.9	881.7	892.0	906.3	919.2	927.4	936.9	949.2	962.1	968.3
32.5°	834.0	839.5	846.3	856.5	870.8	884.5	893.3	902.9	915.1	928.1	933.5
35°	797.9	803.4	810.9	821.1	835.4	848.4	857.2	866.8	878.3	890.6	896.7
37.5°	762.5	767.9	775.4	785.7	799.3	812.2	821.1	830.6	842.2	853.8	859.3
40°	725.7	731.2	737.3	747.5	761.1	774.1	782.3	791.8	803.4	815.6	821.1
42.5°	688.2	693.7	701.2	711.4	724.3	735.9	744.8	753.6	764.5	775.4	780.9
45°	650.7	655.5	663.0	672.5	684.8	695.7	704.6	713.4	723.7	733.9	739.3
47.5°	611.9	617.4	623.5	633.0	645.3	656.9	665.7	673.9	683.5	693.7	698.4
50°	574.4	579.2	585.3	594.2	605.8	616.7	624.2	632.3	641.2	650.7	654.8
52.5°	535.6	540.4	546.5	555.3	564.9	575.1	581.9	589.4	598.3	607.1	611.2
55°	496.1	499.5	504.9	513.1	523.3	532.9	539.7	547.2	554.7	562.2	566.9
57.5°	457.2	461.3	466.8	474.3	483.1	492.0	498.1	504.2	511.7	519.2	522.6
60°	417.7	421.1	425.2	432.0	440.9	448.4	454.5	460.6	466.8	473.6	477.0
62.5°	377.5	380.9	385.0	391.8	399.3	406.1	411.6	417.0	422.5	428.6	432.0
65°	337.3	340.7	344.8	349.6	355.7	361.8	367.3	372.7	376.8	380.9	384.3
67.5°	293.7	297.1	301.2	305.3	310.7	316.9	320.9	325.7	329.8	334.6	336.6
70°	252.8	255.5	259.6	263.0	267.8	271.9	275.3	279.4	282.1	286.2	289.6
72.5°	212.6	215.3	218.7	222.1	224.9	228.3	232.4	235.8	239.2	243.3	244.6
75°	173.8	175.1	177.8	180.6	183.3	186.0	188.1	190.8	193.5	196.2	198.3
77.5°	135.6	137.0	139.7	141.7	143.8	145.8	147.2	148.5	151.3	153.3	155.4
80°	99.5	100.8	102.9	104.9	107.0	109.0	109.0	109.0	112.4	115.2	115.8
82.5°	67.5	68.1	69.5	70.9	72.2	73.6	73.6	72.9	75.0	77.0	78.4
85°	38.8	39.5	40.9	40.9	41.6	41.6	41.6	41.6	42.9	45.0	46.3
87.5°	15.7	15.7	16.4	16.4	17.0	17.0	16.4	15.7	17.0	19.1	19.8
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°	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4	1160.4
2.5°	1163.2	1162.5	1164.5	1165.2	1166.6	1166.6	1167.3	1167.3	1165.9	1163.8	1164.5
5°	1163.8	1163.8	1165.9	1167.9	1170.7	1173.4	1171.3	1169.3	1167.9	1165.9	1165.2
7.5°	1160.4	1161.8	1163.8	1167.3	1170.7	1174.7	1172.0	1169.3	1165.9	1163.2	1161.8
10°	1152.3	1153.6	1157.0	1160.4	1163.8	1167.3	1164.5	1161.8	1159.1	1155.7	1154.3
12.5°	1142.0	1144.1	1148.2	1151.6	1155.0	1159.1	1155.7	1152.3	1148.9	1145.4	1143.4
15°	1127.0	1129.8	1134.5	1138.6	1143.4	1146.8	1144.1	1141.4	1137.3	1132.5	1129.1
17.5°	1108.0	1112.1	1116.8	1121.6	1125.7	1129.1	1127.0	1124.3	1119.6	1114.1	1110.0
20°	1086.8	1090.9	1095.0	1099.8	1104.6	1108.0	1105.2	1101.8	1097.1	1093.0	1088.9
22.5°	1062.3	1066.4	1071.2	1075.3	1079.3	1082.8	1079.3	1075.3	1071.2	1067.1	1063.0
25°	1034.4	1038.5	1043.9	1048.0	1050.7	1053.5	1050.7	1047.3	1043.2	1039.1	1035.1
27.5°	1005.1	1009.2	1014.6	1018.7	1021.4	1024.2	1021.4	1018.0	1013.9	1009.8	1005.8
30°	972.4	976.5	981.9	986.0	988.0	990.1	987.4	984.6	981.2	977.1	973.0
32.5°	937.6	941.7	945.8	949.9	953.3	956.0	953.3	950.6	946.5	941.0	936.9
35°	900.8	904.9	909.7	913.8	917.9	921.3	917.2	912.4	909.0	905.6	902.2
37.5°	862.0	866.8	872.2	877.0	878.3	881.1	878.3	875.6	872.2	868.8	864.7
40°	823.8	827.9	832.7	837.4	839.5	841.5	838.8	836.1	832.0	828.6	824.5
42.5°	784.3	788.4	792.5	796.6	799.3	802.0	799.3	795.2	792.5	789.8	786.3
45°	743.4	747.5	750.9	755.0	757.0	759.1	756.4	753.0	750.2	748.2	744.8
47.5°	701.8	705.3	708.7	712.1	713.4	715.5	712.8	710.7	708.7	706.6	703.9
50°	658.2	661.6	665.7	669.1	669.8	671.9	669.1	667.1	665.1	663.0	661.0
52.5°	615.3	618.0	621.4	624.9	626.2	627.6	624.9	622.1	620.1	618.7	616.7
55°	570.3	573.1	576.5	579.2	581.2	582.6	579.9	577.2	575.1	574.4	572.4
57.5°	525.4	528.1	531.5	534.2	535.6	536.9	534.2	531.5	530.1	528.8	527.4
60°	479.7	482.4	485.2	487.2	488.6	489.3	486.5	484.5	483.8	483.1	481.8
62.5°	434.7	436.1	438.8	440.2	441.6	442.2	440.2	438.8	438.1	437.5	436.8
65°	387.7	391.1	393.2	394.5	394.5	395.2	393.2	392.5	391.8	391.1	389.8
67.5°	339.3	342.1	343.4	344.8	344.8	344.8	344.8	344.8	344.1	342.7	341.4
70°	293.0	295.0	296.4	297.1	297.1	297.1	295.7	295.0	295.7	295.7	295.0
72.5°	246.0	247.4	248.0	248.7	248.0	248.0	248.0	249.4	249.4	248.7	247.4
75°	200.3	201.7	202.4	203.1	202.4	202.4	202.4	203.7	203.1	203.1	202.4
77.5°	157.4	158.1	158.1	158.8	158.1	158.1	158.8	160.1	159.4	159.4	159.4
80°	116.5	116.5	116.5	117.2	116.5	116.5	117.2	118.6	117.9	117.9	117.9
82.5°	79.0	79.7	79.7	79.7	80.4	81.1	81.1	81.1	81.1	81.1	80.4
85°	47.0	47.7	47.0	47.0	47.0	47.0	47.7	48.4	48.4	48.4	48.4
87.5°	20.4	21.1	20.4	19.8	19.1	19.1	20.4	21.8	21.8	21.1	21.1
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: P709185  
 CATALOG NUMBER: 4APN-20-22L930-UNV

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1160.4	1160.4	1160.4	1160.4
2.5°	1167.3	1167.3	1161.1	1155.0
5°	1166.6	1165.2	1158.4	1150.9
7.5°	1162.5	1160.4	1151.6	1143.4
10°	1152.9	1150.2	1140.7	1130.5
12.5°	1141.4	1137.3	1126.4	1116.1
15°	1126.4	1121.6	1110.0	1098.4
17.5°	1106.6	1101.2	1089.6	1077.3
20°	1085.5	1079.3	1066.4	1053.5
22.5°	1059.6	1054.1	1040.5	1027.6
25°	1031.7	1025.5	1011.9	998.3
27.5°	1001.7	994.9	981.2	968.3
30°	969.0	962.1	948.5	935.6
32.5°	934.2	928.8	915.1	900.8
35°	898.8	892.0	878.3	864.7
37.5°	861.3	855.2	842.2	829.3
40°	821.8	815.6	802.0	789.1
42.5°	782.9	777.5	764.5	752.3
45°	741.4	735.9	723.7	712.8
47.5°	699.8	694.4	682.8	671.2
50°	657.6	652.1	641.2	631.0
52.5°	613.3	609.2	599.0	588.7
55°	569.0	564.2	554.0	545.1
57.5°	524.7	521.3	511.7	502.9
60°	479.0	474.9	467.4	459.9
62.5°	434.7	431.3	423.8	417.0
65°	387.7	385.0	378.9	372.7
67.5°	339.3	337.3	331.2	325.7
70°	293.0	289.6	284.8	280.1
72.5°	246.0	244.6	240.5	236.4
75°	201.0	199.7	195.6	192.2
77.5°	158.8	157.4	154.0	150.6
80°	117.2	116.5	113.8	111.1
82.5°	80.4	79.7	77.7	75.0
85°	48.4	47.0	45.0	42.9
87.5°	21.1	20.4	18.4	17.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)