

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: P709203

Luminaire Tested: **4APN-20-22L950-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709203
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20-22L950-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

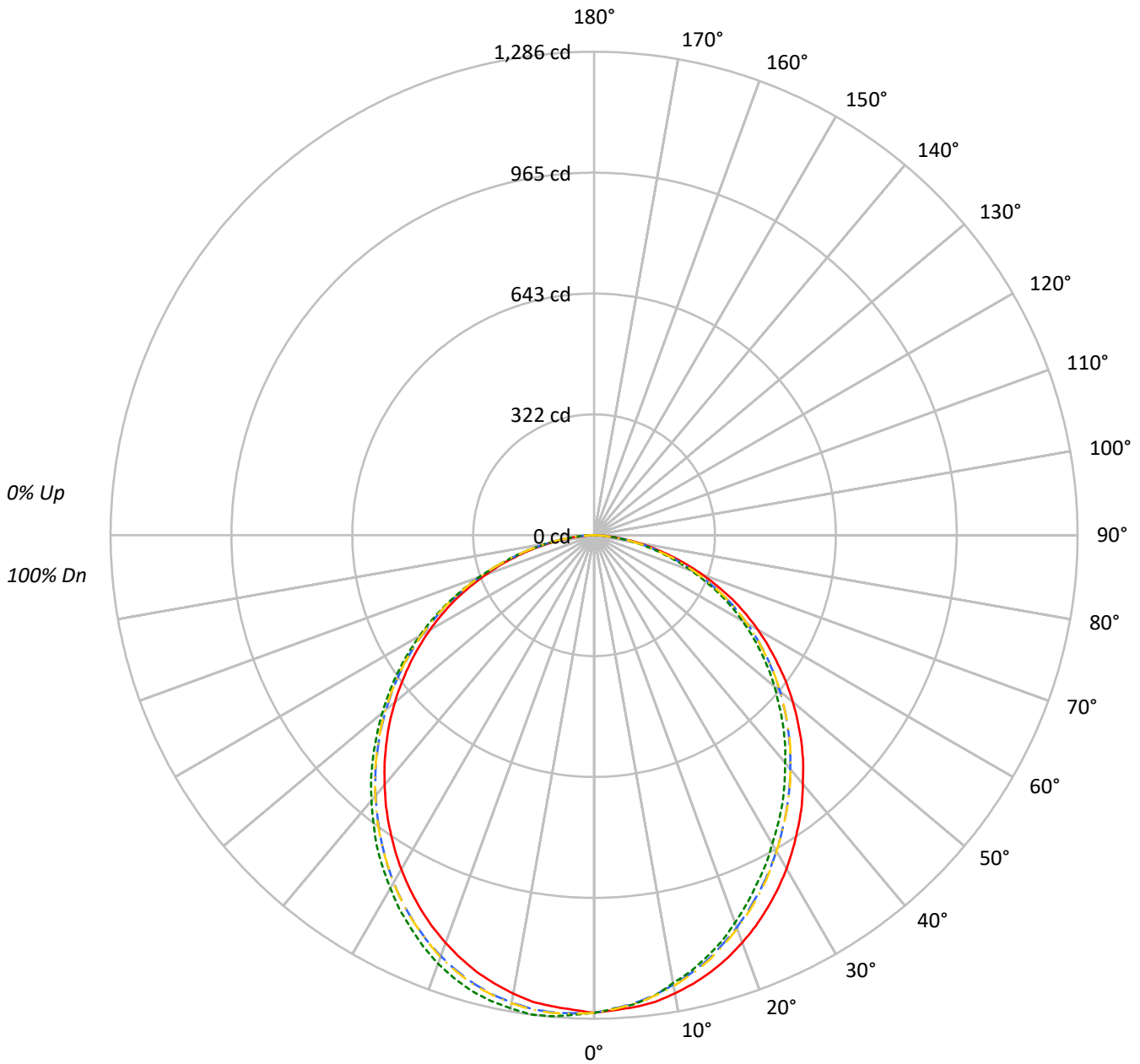
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3357.4 lumens
Efficiency: N/A
Efficacy: 69.9 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

TEST NUMBER: P709203
CATALOG NUMBER: 4APN-20-22L950-UNV

Luminous Intensity Polar Plot



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



TEST NUMBER: P709203
 CATALOG NUMBER: 4APN-20-22L950-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	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°	11718	11718	11718	11718
5°	11667	11591	11653	11894
10°	11592	11333	11598	11969
15°	11483	11085	11491	11989
20°	11321	10764	11328	11907
25°	11123	10424	11145	11738
30°	10909	10098	10925	11545
35°	10659	9836	10685	11357
40°	10401	9522	10437	11094
45°	10179	9264	10189	10840
50°	9912	8992	9934	10556
55°	9597	8697	9634	10258
60°	9289	8394	9304	9881
65°	8907	8027	8907	9444
70°	8268	7424	8249	8772
75°	7497	6727	7443	7896
80°	6461	5786	6339	6774
85°	4975	4425	4817	5452



TEST NUMBER: P709203
 CATALOG NUMBER: 4APN-20-22L950-UNV

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.9	3.6
10°-20°	339.6	10.1
20°-30°	502.8	15.0
30°-40°	589.9	17.6
40°-50°	597.8	17.8
50°-60°	530.6	15.8
60°-70°	398.4	11.9
70°-80°	221.2	6.6
80°-90°	57.1	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°	962.3	28.7
0°-40°	1552.2	46.2
0°-60°	2680.7	79.8
0°-90°	3357.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3357.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1270	1270	1270	1270	1270	
5°	1260	1252	1258	1284	1260	120
15°	1202	1160	1203	1255	1202	339
25°	1093	1024	1095	1153	1093	503
35°	946	873	949	1008	946	592
45°	780	710	781	831	780	601
55°	597	541	599	638	597	534
65°	408	368	408	433	408	402
75°	210	189	209	222	210	224
85°	47	42	46	52	47	57
90°	0	0	0	0	0	



TEST NUMBER: P709203

CATALOG NUMBER: 4APN-20-22L950-UNV

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1
2.5°	1264.1	1267.1	1270.9	1267.1	1261.2	1258.2	1258.2	1257.4	1259.7	1260.4	1259.7
5°	1259.7	1261.2	1261.9	1257.4	1250.7	1247.0	1245.5	1244.8	1247.7	1251.5	1247.7
7.5°	1251.5	1250.7	1250.0	1244.0	1236.6	1231.3	1229.1	1228.4	1231.3	1235.1	1232.1
10°	1237.3	1236.6	1234.3	1226.9	1217.2	1210.5	1208.2	1206.0	1208.2	1209.7	1208.2
12.5°	1221.6	1218.7	1215.7	1207.5	1197.0	1189.6	1185.8	1182.9	1185.8	1188.1	1186.6
15°	1202.2	1197.8	1192.6	1183.6	1173.2	1165.0	1160.5	1157.5	1159.7	1160.5	1160.5
17.5°	1179.1	1173.9	1168.7	1157.5	1144.8	1135.9	1130.6	1126.9	1129.9	1131.4	1131.4
20°	1153.0	1147.1	1140.3	1128.4	1115.0	1105.3	1099.3	1094.8	1095.6	1096.3	1096.3
22.5°	1124.7	1117.2	1109.0	1096.3	1082.2	1071.7	1065.8	1060.5	1060.5	1061.3	1061.3
25°	1092.6	1084.4	1076.2	1063.5	1048.6	1037.4	1030.0	1024.7	1024.7	1024.0	1025.5
27.5°	1059.8	1050.8	1042.6	1029.2	1013.6	1002.4	994.9	989.7	988.9	988.2	989.7
30°	1024.0	1013.6	1004.6	990.4	975.5	964.3	956.9	950.9	949.4	947.9	949.4
32.5°	986.0	976.3	966.6	951.7	936.7	925.6	918.1	912.1	911.4	910.6	912.1
35°	946.4	936.0	927.0	912.9	898.0	886.8	878.6	873.3	873.3	873.3	873.3
37.5°	907.7	897.2	887.5	873.3	858.4	847.2	839.0	833.8	832.3	831.6	832.3
40°	863.6	854.7	845.7	832.3	817.4	806.2	799.5	793.5	792.1	790.6	792.8
42.5°	823.4	814.4	804.7	792.1	777.1	765.9	758.5	753.3	752.5	751.8	752.5
45°	780.1	769.7	760.0	748.0	734.6	724.2	716.7	711.5	710.8	710.0	710.8
47.5°	734.6	726.4	718.2	706.3	692.9	682.4	675.7	669.7	668.2	666.8	668.2
50°	690.6	681.7	673.5	662.3	649.6	639.9	633.9	628.7	627.2	626.5	627.2
52.5°	644.4	636.2	628.7	617.5	607.1	597.4	590.7	586.2	585.5	584.7	585.5
55°	596.6	589.2	582.5	573.5	563.1	554.1	548.2	543.0	542.2	540.7	542.2
57.5°	550.4	544.4	537.7	528.0	518.3	510.1	504.9	500.4	499.7	498.9	499.7
60°	503.4	497.5	491.5	483.3	473.6	465.4	460.9	457.2	455.7	454.9	455.7
62.5°	456.4	450.5	446.0	437.8	428.8	422.1	417.7	413.9	412.4	411.7	412.4
65°	408.0	402.7	397.5	390.1	383.3	378.1	373.7	369.9	368.4	367.7	367.7
67.5°	356.5	352.0	348.3	341.6	334.1	328.9	324.4	321.4	320.0	319.2	320.0
70°	306.5	302.8	299.1	293.8	287.9	283.4	280.4	277.4	275.9	275.2	275.2
72.5°	258.8	255.8	252.1	247.6	243.1	238.7	235.7	233.4	231.9	231.2	231.2
75°	210.3	207.3	205.8	202.1	197.6	194.7	191.7	190.2	188.7	188.7	188.7
77.5°	164.8	163.3	161.8	158.1	155.1	152.1	149.9	149.2	147.7	147.7	147.7
80°	121.6	120.8	120.1	117.8	114.9	111.9	110.4	109.6	108.9	108.9	108.9
82.5°	82.0	82.0	81.3	79.1	76.8	76.1	74.6	73.8	73.8	73.8	73.8
85°	47.0	47.0	47.0	46.2	44.7	44.7	43.3	42.5	41.8	41.8	41.8
87.5°	18.6	19.4	20.1	19.4	17.9	17.9	17.9	17.9	17.9	17.9	17.9
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: P709203

CATALOG NUMBER: 4APN-20-22L950-UNV

CANDELA DISTRIBUTION (continued):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1
2.5°	1257.4	1258.9	1259.7	1263.4	1267.9	1270.9	1267.1	1263.4	1269.4	1276.1	1276.1
5°	1244.8	1246.2	1248.5	1253.0	1258.9	1262.7	1261.2	1258.2	1267.1	1274.6	1275.3
7.5°	1229.1	1230.6	1233.6	1238.0	1245.5	1250.7	1250.7	1251.5	1259.7	1268.6	1270.9
10°	1206.0	1209.7	1214.2	1220.9	1228.4	1235.1	1237.3	1238.0	1248.5	1258.2	1261.2
12.5°	1184.3	1188.1	1192.6	1200.0	1209.0	1216.4	1218.7	1221.6	1232.8	1244.0	1248.5
15°	1159.7	1163.5	1168.7	1176.1	1185.8	1194.0	1198.5	1203.0	1214.2	1226.1	1231.3
17.5°	1130.6	1134.4	1139.6	1148.5	1159.7	1169.4	1174.7	1179.9	1192.6	1205.2	1210.5
20°	1096.3	1101.6	1109.0	1118.0	1130.6	1141.8	1147.8	1153.8	1167.2	1179.9	1185.8
22.5°	1061.3	1067.3	1075.5	1085.9	1099.3	1111.3	1118.7	1126.2	1139.6	1152.3	1159.0
25°	1026.2	1032.9	1041.2	1052.3	1065.0	1077.0	1085.9	1094.8	1108.3	1121.7	1128.4
27.5°	990.4	996.4	1004.6	1015.8	1030.0	1042.6	1051.6	1061.3	1074.7	1088.9	1095.6
30°	950.9	957.6	965.1	976.3	991.9	1006.1	1015.0	1025.5	1038.9	1053.1	1059.8
32.5°	912.9	918.8	926.3	937.5	953.1	968.1	977.8	988.2	1001.6	1015.8	1021.8
35°	873.3	879.3	887.5	898.7	914.4	928.5	938.2	948.7	961.3	974.8	981.5
37.5°	834.6	840.5	848.7	859.9	874.8	889.0	898.7	909.1	921.8	934.5	940.5
40°	794.3	800.3	807.0	818.2	833.1	847.2	856.2	866.6	879.3	892.7	898.7
42.5°	753.3	759.2	767.4	778.6	792.8	805.5	815.2	824.9	836.8	848.7	854.7
45°	712.2	717.5	725.7	736.1	749.5	761.5	771.2	780.9	792.1	803.2	809.2
47.5°	669.7	675.7	682.4	692.9	706.3	719.0	728.7	737.6	748.0	759.2	764.5
50°	628.7	633.9	640.7	650.3	663.0	675.0	683.2	692.1	701.8	712.2	716.7
52.5°	586.2	591.4	598.1	607.8	618.3	629.5	636.9	645.1	654.8	664.5	669.0
55°	543.0	546.7	552.6	561.6	572.8	583.2	590.7	598.9	607.1	615.3	620.5
57.5°	500.4	504.9	510.9	519.1	528.8	538.5	545.2	551.9	560.1	568.3	572.0
60°	457.2	460.9	465.4	472.8	482.5	490.7	497.5	504.2	510.9	518.3	522.1
62.5°	413.2	416.9	421.4	428.8	437.0	444.5	450.5	456.4	462.4	469.1	472.8
65°	369.2	372.9	377.4	382.6	389.3	396.0	402.0	408.0	412.4	416.9	420.6
67.5°	321.4	325.2	329.6	334.1	340.1	346.8	351.3	356.5	361.0	366.2	368.4
70°	276.7	279.7	284.2	287.9	293.1	297.6	301.3	305.8	308.8	313.2	317.0
72.5°	232.7	235.7	239.4	243.1	246.1	249.8	254.3	258.1	261.8	266.3	267.7
75°	190.2	191.7	194.7	197.6	200.6	203.6	205.8	208.8	211.8	214.8	217.0
77.5°	148.4	149.9	152.9	155.1	157.4	159.6	161.1	162.6	165.6	167.8	170.0
80°	108.9	110.4	112.6	114.9	117.1	119.3	119.3	119.3	123.1	126.0	126.8
82.5°	73.8	74.6	76.1	77.6	79.1	80.5	80.5	79.8	82.0	84.3	85.8
85°	42.5	43.3	44.7	44.7	45.5	45.5	45.5	45.5	47.0	49.2	50.7
87.5°	17.2	17.2	17.9	17.9	18.6	18.6	17.9	17.2	18.6	20.9	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: P709203

CATALOG NUMBER: 4APN-20-22L950-UNV

CANDELA DISTRIBUTION (continued):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1	1270.1
2.5°	1273.1	1272.4	1274.6	1275.3	1276.8	1276.8	1277.6	1277.6	1276.1	1273.8	1274.6
5°	1273.8	1273.8	1276.1	1278.3	1281.3	1284.3	1282.0	1279.8	1278.3	1276.1	1275.3
7.5°	1270.1	1271.6	1273.8	1277.6	1281.3	1285.8	1282.8	1279.8	1276.1	1273.1	1271.6
10°	1261.2	1262.7	1266.4	1270.1	1273.8	1277.6	1274.6	1271.6	1268.6	1264.9	1263.4
12.5°	1250.0	1252.2	1256.7	1260.4	1264.1	1268.6	1264.9	1261.2	1257.4	1253.7	1251.5
15°	1233.6	1236.6	1241.8	1246.2	1251.5	1255.2	1252.2	1249.2	1244.8	1239.5	1235.8
17.5°	1212.7	1217.2	1222.4	1227.6	1232.1	1235.8	1233.6	1230.6	1225.4	1219.4	1214.9
20°	1189.6	1194.0	1198.5	1203.7	1209.0	1212.7	1209.7	1206.0	1200.8	1196.3	1191.8
22.5°	1162.7	1167.2	1172.4	1176.9	1181.4	1185.1	1181.4	1176.9	1172.4	1167.9	1163.5
25°	1132.1	1136.6	1142.6	1147.1	1150.0	1153.0	1150.0	1146.3	1141.8	1137.4	1132.9
27.5°	1100.1	1104.5	1110.5	1115.0	1118.0	1121.0	1118.0	1114.2	1109.8	1105.3	1100.8
30°	1064.3	1068.7	1074.7	1079.2	1081.4	1083.7	1080.7	1077.7	1074.0	1069.5	1065.0
32.5°	1026.2	1030.7	1035.2	1039.7	1043.4	1046.4	1043.4	1040.4	1035.9	1030.0	1025.5
35°	986.0	990.4	995.7	1000.1	1004.6	1008.3	1003.9	998.6	994.9	991.2	987.5
37.5°	943.5	948.7	954.6	959.9	961.3	964.3	961.3	958.4	954.6	950.9	946.4
40°	901.7	906.2	911.4	916.6	918.8	921.1	918.1	915.1	910.6	906.9	902.4
42.5°	858.4	862.9	867.4	871.9	874.8	877.8	874.8	870.4	867.4	864.4	860.7
45°	813.7	818.2	821.9	826.4	828.6	830.8	827.8	824.1	821.1	818.9	815.2
47.5°	768.2	771.9	775.6	779.4	780.9	783.1	780.1	777.9	775.6	773.4	770.4
50°	720.5	724.2	728.7	732.4	733.1	735.4	732.4	730.1	727.9	725.7	723.4
52.5°	673.5	676.5	680.2	683.9	685.4	686.9	683.9	680.9	678.7	677.2	675.0
55°	624.2	627.2	631.0	633.9	636.2	637.7	634.7	631.7	629.5	628.7	626.5
57.5°	575.0	578.0	581.7	584.7	586.2	587.7	584.7	581.7	580.2	578.7	577.3
60°	525.1	528.0	531.0	533.3	534.7	535.5	532.5	530.3	529.5	528.8	527.3
62.5°	475.8	477.3	480.3	481.8	483.3	484.0	481.8	480.3	479.6	478.8	478.1
65°	424.4	428.1	430.3	431.8	431.8	432.6	430.3	429.6	428.8	428.1	426.6
67.5°	371.4	374.4	375.9	377.4	377.4	377.4	377.4	377.4	376.6	375.1	373.7
70°	320.7	322.9	324.4	325.2	325.2	325.2	323.7	322.9	323.7	323.7	322.9
72.5°	269.2	270.7	271.5	272.2	271.5	271.5	271.5	273.0	273.0	272.2	270.7
75°	219.3	220.8	221.5	222.3	221.5	221.5	221.5	223.0	222.3	222.3	221.5
77.5°	172.3	173.0	173.0	173.8	173.0	173.0	173.8	175.3	174.5	174.5	174.5
80°	127.5	127.5	127.5	128.3	127.5	127.5	128.3	129.8	129.0	129.0	129.0
82.5°	86.5	87.3	87.3	87.3	88.0	88.8	88.8	88.8	88.8	88.8	88.0
85°	51.5	52.2	51.5	51.5	51.5	51.5	52.2	53.0	53.0	53.0	53.0
87.5°	22.4	23.1	22.4	21.6	20.9	20.9	22.4	23.9	23.9	23.1	23.1
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: P709203
 CATALOG NUMBER: 4APN-20-22L950-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1270.1	1270.1	1270.1	1270.1
2.5°	1277.6	1277.6	1270.9	1264.1
5°	1276.8	1275.3	1267.9	1259.7
7.5°	1272.4	1270.1	1260.4	1251.5
10°	1261.9	1258.9	1248.5	1237.3
12.5°	1249.2	1244.8	1232.8	1221.6
15°	1232.8	1227.6	1214.9	1202.2
17.5°	1211.2	1205.2	1192.6	1179.1
20°	1188.1	1181.4	1167.2	1153.0
22.5°	1159.7	1153.8	1138.9	1124.7
25°	1129.2	1122.4	1107.5	1092.6
27.5°	1096.3	1088.9	1074.0	1059.8
30°	1060.5	1053.1	1038.2	1024.0
32.5°	1022.5	1016.5	1001.6	986.0
35°	983.7	976.3	961.3	946.4
37.5°	942.7	936.0	921.8	907.7
40°	899.4	892.7	877.8	863.6
42.5°	856.9	851.0	836.8	823.4
45°	811.4	805.5	792.1	780.1
47.5°	765.9	760.0	747.3	734.6
50°	719.7	713.7	701.8	690.6
52.5°	671.2	666.8	655.6	644.4
55°	622.8	617.5	606.3	596.6
57.5°	574.3	570.5	560.1	550.4
60°	524.3	519.8	511.6	503.4
62.5°	475.8	472.1	463.9	456.4
65°	424.4	421.4	414.7	408.0
67.5°	371.4	369.2	362.5	356.5
70°	320.7	317.0	311.7	306.5
72.5°	269.2	267.7	263.3	258.8
75°	220.0	218.5	214.0	210.3
77.5°	173.8	172.3	168.6	164.8
80°	128.3	127.5	124.6	121.6
82.5°	88.0	87.3	85.0	82.0
85°	53.0	51.5	49.2	47.0
87.5°	23.1	22.4	20.1	18.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)