

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: P837828

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P837828
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

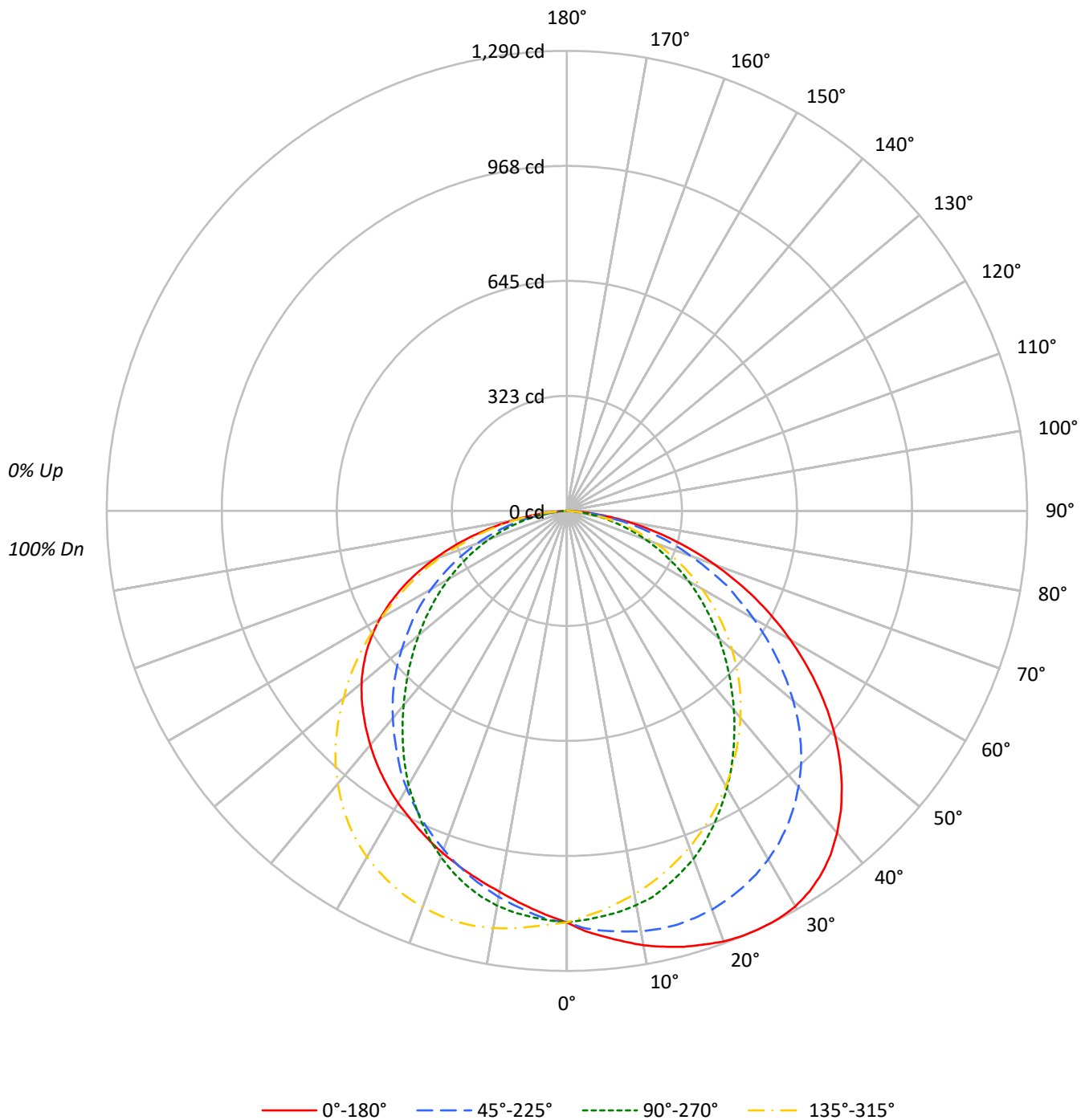
Lumens per Lamp: N/A
Luminaire Lumens: 3385.5 lumens
Efficiency: N/A
Efficacy: 67.7 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 50
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: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	109	104	100	96	106	102	98	94	97	94	91		94	91	89		90
2	99	91	84	78	96	89	82	77	85	80	75		82	77	73		79
3	90	79	71	65	88	78	70	64	75	68	63		72	66	62		69
4	82	70	61	55	80	69	61	54	66	59	53		64	58	53		62
5	76	63	54	47	74	62	53	47	59	52	46		57	51	46		56
6	70	56	47	41	68	55	47	41	54	46	40		52	45	40		50
7	65	51	42	36	63	50	42	36	49	41	36		47	40	35		46
8	60	47	38	32	59	46	38	32	45	37	32		43	37	32		42
9	56	43	34	29	55	42	34	29	41	34	29		40	33	28		39
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	3105	3105	3105	3105
5°	3236	3083	3025	3088
10°	3380	3067	2963	3072
15°	3525	3028	2934	3029
20°	3679	2973	2922	2956
25°	3831	2890	2921	2860
30°	3979	2789	2941	2758
35°	4085	2675	2970	2632
40°	4140	2559	3012	2502
45°	4148	2443	3070	2382
50°	4109	2331	3145	2269
55°	4023	2228	3215	2166
60°	3897	2119	3258	2065
65°	3722	1995	3241	1948
70°	3478	1849	3126	1815
75°	3129	1648	2869	1640
80°	2653	1381	2411	1401
85°	1846	914	1528	939



TEST NUMBER: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.6	3.2
10°-20°	317.3	9.4
20°-30°	486.2	14.4
30°-40°	591.2	17.5
40°-50°	614.6	18.2
50°-60°	555.2	16.4
60°-70°	422.1	12.5
70°-80°	235.3	7.0
80°-90°	54.2	1.6
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°	913.0	27.0
0°-40°	1504.2	44.4
0°-60°	2674.0	79.0
0°-90°	3385.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3385.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1154	1154	1154	1154	1154	
5°	1198	1141	1120	1143	1198	116
15°	1265	1087	1053	1087	1265	359
25°	1290	973	984	963	1290	596
35°	1244	814	904	801	1244	777
45°	1090	642	807	626	1090	839
55°	858	475	685	462	858	766
65°	585	313	509	306	585	578
75°	301	158	276	158	301	320
85°	60	30	50	30	60	75
90°	0	0	0	0	0	

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9
2.5°	1179.5	1162.3	1162.6	1177.6	1166.1	1171.7	1155.6	1161.7	1159.9	1161.2	1148.0
5°	1198.1	1179.5	1179.2	1192.2	1179.2	1181.7	1161.2	1165.2	1159.3	1155.6	1141.3
7.5°	1217.7	1199.2	1197.3	1208.6	1191.6	1189.7	1167.1	1167.1	1156.4	1146.9	1133.5
10°	1237.1	1218.0	1215.6	1224.2	1203.2	1197.0	1169.5	1165.2	1151.0	1137.0	1122.4
12.5°	1251.6	1232.3	1230.4	1235.8	1212.1	1200.8	1169.5	1161.2	1140.2	1120.6	1109.3
15°	1265.4	1245.5	1240.3	1243.0	1215.8	1200.8	1165.8	1152.9	1125.9	1100.1	1086.9
17.5°	1275.1	1256.0	1250.8	1250.6	1217.7	1196.2	1157.7	1139.9	1107.6	1076.4	1063.2
20°	1284.8	1265.6	1259.2	1254.3	1217.2	1190.0	1145.9	1121.9	1084.2	1049.2	1038.2
22.5°	1289.6	1270.0	1263.0	1255.7	1213.7	1178.7	1131.3	1100.9	1057.8	1016.1	1007.0
25°	1290.4	1270.2	1262.7	1252.2	1206.7	1165.2	1112.5	1075.6	1027.4	981.1	973.3
27.5°	1288.3	1266.2	1258.6	1246.0	1196.2	1148.8	1090.1	1046.8	995.1	944.0	935.6
30°	1280.7	1258.4	1251.1	1234.7	1181.4	1128.6	1065.6	1014.8	959.3	905.0	897.7
32.5°	1265.6	1243.8	1237.9	1221.5	1165.2	1105.2	1037.1	980.3	919.8	867.8	857.0
35°	1243.6	1221.8	1218.0	1200.8	1142.6	1077.2	1005.9	942.6	877.8	824.7	814.2
37.5°	1214.8	1196.5	1190.8	1173.9	1116.0	1045.5	970.1	901.7	835.0	777.9	771.4
40°	1178.4	1161.2	1156.9	1141.8	1085.0	1010.2	931.3	859.5	790.8	737.8	728.6
42.5°	1137.0	1120.8	1118.4	1102.8	1046.8	971.2	889.3	815.6	744.8	693.7	684.5
45°	1089.9	1074.3	1073.7	1058.9	1005.1	927.8	845.2	771.2	699.8	646.8	642.0
47.5°	1037.9	1023.9	1023.9	1010.2	958.5	880.2	799.7	724.9	654.6	607.8	599.2
50°	981.4	968.2	964.2	957.4	907.1	828.2	751.8	679.7	609.9	565.3	556.9
52.5°	921.1	909.8	912.5	900.1	851.4	774.1	703.3	628.8	565.0	524.3	516.0
55°	857.6	841.4	843.9	839.3	793.2	718.4	649.0	586.8	520.8	482.6	474.8
57.5°	791.6	770.6	779.3	776.6	731.3	661.4	599.2	539.2	477.0	441.7	434.2
60°	724.1	703.9	712.8	710.3	667.8	604.3	547.8	492.0	433.4	401.3	393.8
62.5°	654.6	636.1	644.1	642.2	603.2	545.9	496.6	445.5	389.5	360.7	353.7
65°	584.6	566.9	574.1	572.8	536.7	493.1	444.1	397.3	345.3	320.3	313.3
67.5°	513.0	496.6	503.4	503.4	470.2	428.5	391.4	348.6	302.0	280.5	274.0
70°	442.0	426.6	432.6	432.0	404.0	370.1	338.1	299.9	258.1	240.4	235.0
72.5°	370.4	356.9	362.3	361.8	338.3	316.5	284.8	251.7	215.3	201.1	196.2
75°	300.9	288.3	293.4	292.9	273.7	253.3	232.0	204.6	173.3	163.4	158.5
77.5°	234.7	221.8	226.1	226.1	212.1	197.3	180.3	159.1	137.0	126.2	122.7
80°	171.2	165.0	162.8	163.1	153.7	144.0	135.4	114.9	98.8	91.5	89.1
82.5°	112.5	107.4	105.2	105.8	100.4	94.5	89.1	74.8	64.1	59.8	58.4
85°	59.8	56.0	54.1	55.4	54.4	51.1	48.5	38.8	32.0	30.4	29.6
87.5°	18.8	16.4	15.1	19.9	17.0	15.1	14.5	11.6	8.9	8.9	8.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9
2.5°	1152.3	1152.3	1141.8	1139.4	1138.3	1139.7	1129.2	1127.3	1142.4	1137.2	1125.7
5°	1143.2	1142.6	1127.8	1125.1	1125.1	1123.5	1111.7	1109.0	1124.1	1119.8	1107.1
7.5°	1131.9	1130.3	1112.8	1110.9	1108.2	1107.1	1093.9	1092.0	1104.9	1102.3	1090.4
10°	1118.1	1116.5	1095.8	1094.5	1091.5	1089.3	1077.0	1075.6	1088.8	1084.5	1075.1
12.5°	1100.1	1097.1	1075.9	1074.5	1072.1	1071.3	1059.2	1058.7	1073.2	1068.9	1058.9
15°	1076.4	1074.0	1050.3	1050.8	1051.1	1051.1	1041.4	1040.9	1055.2	1053.3	1042.5
17.5°	1050.3	1047.1	1024.5	1026.1	1028.0	1030.1	1022.6	1023.9	1039.0	1036.6	1026.9
20°	1020.7	1017.5	995.4	1000.0	1004.0	1008.3	1003.5	1007.2	1021.2	1020.2	1012.9
22.5°	987.6	984.4	963.9	970.9	977.6	985.7	983.6	987.9	1002.7	1002.4	995.9
25°	947.2	948.0	930.0	938.6	949.9	961.2	962.0	969.0	985.4	983.8	977.9
27.5°	909.5	910.6	891.5	906.0	921.1	935.6	939.1	948.8	965.5	964.2	959.1
30°	870.0	871.3	852.7	872.7	891.0	908.7	916.3	929.4	946.4	946.4	941.0
32.5°	828.8	831.2	811.8	838.5	859.7	880.5	893.6	907.4	926.8	926.2	921.6
35°	786.5	789.2	771.4	805.4	826.6	851.9	868.3	886.7	903.9	904.1	900.6
37.5°	743.5	746.7	730.5	767.7	791.9	821.8	842.8	861.1	880.2	881.3	878.0
40°	700.7	704.2	690.2	726.0	756.6	790.0	814.2	835.8	856.8	857.3	855.2
42.5°	657.9	661.6	651.1	686.1	720.8	756.6	785.2	809.7	831.2	832.5	830.1
45°	616.1	619.4	611.8	650.0	683.4	722.5	755.3	783.0	804.8	806.7	805.9
47.5°	574.7	577.6	570.9	605.9	644.4	685.8	723.8	754.5	777.6	779.8	779.3
50°	534.0	536.5	529.2	565.8	604.0	648.2	687.7	723.3	749.1	751.3	751.0
52.5°	493.7	496.1	489.9	528.4	563.1	609.7	652.7	691.2	716.8	720.0	720.6
55°	454.6	455.7	450.9	487.7	521.4	570.1	619.6	657.0	682.6	685.3	686.9
57.5°	415.6	415.9	411.8	447.1	479.4	529.2	581.1	620.4	644.7	647.4	649.8
60°	376.8	376.6	372.0	406.2	437.1	486.4	540.5	579.5	602.9	605.4	608.6
62.5°	338.3	337.5	333.5	365.0	394.1	442.8	497.2	534.8	557.2	558.8	563.1
65°	300.1	299.3	295.6	324.6	351.0	397.6	450.9	486.7	506.8	509.0	508.2
67.5°	262.4	260.8	257.9	284.0	307.9	351.0	402.1	436.3	453.0	454.9	460.0
70°	224.8	222.9	216.1	243.9	264.9	303.4	351.0	381.4	395.4	397.3	396.5
72.5°	187.6	185.7	178.5	204.0	221.8	255.4	298.0	323.3	335.4	337.0	337.0
75°	151.5	150.5	145.9	165.3	180.1	207.5	243.6	264.6	274.0	275.9	275.4
77.5°	116.8	116.0	111.4	128.1	139.7	160.2	189.2	205.6	212.6	214.8	219.4
80°	83.7	83.4	76.2	92.6	97.7	114.9	136.2	148.9	152.6	155.6	158.8
82.5°	53.6	53.8	46.6	60.6	62.7	73.8	86.9	94.7	97.4	99.9	102.3
85°	26.1	27.2	23.1	32.0	32.3	38.0	43.6	46.6	47.6	49.5	51.7
87.5°	6.7	7.8	4.3	9.2	8.1	10.5	12.1	12.9	12.7	14.0	14.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9
2.5°	1129.4	1138.1	1133.8	1147.7	1153.1	1144.5	1159.6	1159.9	1149.1	1161.7	1168.7
5°	1111.9	1120.8	1118.1	1132.7	1139.4	1131.9	1150.2	1153.7	1143.2	1157.4	1168.7
7.5°	1094.2	1104.7	1101.2	1116.0	1124.1	1118.1	1137.8	1143.4	1135.4	1151.0	1166.1
10°	1078.8	1087.7	1084.0	1099.6	1106.6	1101.7	1121.1	1131.6	1124.1	1143.2	1161.2
12.5°	1063.8	1071.0	1066.7	1079.6	1086.4	1080.2	1103.9	1113.6	1108.2	1128.1	1151.2
15°	1044.4	1052.5	1046.5	1058.1	1063.2	1057.8	1077.2	1093.9	1087.2	1109.0	1134.6
17.5°	1029.6	1034.2	1026.1	1035.2	1038.2	1030.9	1050.6	1067.0	1062.2	1085.8	1115.4
20°	1013.2	1016.9	1005.6	1010.7	1010.5	1001.3	1019.4	1035.5	1032.3	1058.4	1092.0
22.5°	994.9	996.7	983.6	984.6	984.1	969.0	985.2	1001.6	1000.2	1026.6	1064.3
25°	975.5	975.7	958.8	958.3	952.3	934.6	948.8	967.4	963.4	991.9	1031.5
27.5°	956.4	953.7	933.2	928.4	919.0	897.7	910.3	927.0	924.6	952.6	996.5
30°	935.9	932.4	907.4	898.5	884.8	860.3	870.8	886.4	887.7	912.2	958.3
32.5°	916.5	907.6	879.9	867.0	849.8	821.2	826.9	842.8	844.9	869.7	917.1
35°	891.5	885.6	851.4	829.3	812.4	781.1	787.1	798.1	801.3	825.5	873.7
37.5°	867.8	858.4	822.0	795.1	773.3	740.5	742.1	753.4	756.6	781.1	828.8
40°	843.3	829.9	790.8	759.3	734.3	699.8	698.0	709.8	712.2	736.2	779.3
42.5°	817.2	801.1	757.2	722.7	693.9	658.9	655.2	665.4	668.1	691.5	733.8
45°	790.8	771.4	722.7	685.0	653.5	617.7	614.0	621.8	625.8	647.9	688.5
47.5°	762.8	740.2	687.2	645.2	612.6	576.8	572.3	580.1	583.3	605.1	643.6
50°	733.5	706.0	650.6	604.3	572.0	536.7	530.0	539.2	542.1	562.6	600.3
52.5°	701.2	670.8	611.6	563.1	530.8	497.2	489.1	498.0	501.5	521.4	556.1
55°	667.0	634.2	572.3	525.2	490.2	457.3	450.6	454.1	461.6	480.5	512.8
57.5°	628.5	595.9	530.8	482.9	449.2	417.8	412.1	415.3	422.3	440.6	469.7
60°	587.6	553.1	488.5	440.6	408.1	378.2	373.1	376.0	383.6	400.3	427.2
62.5°	547.2	508.5	444.9	397.3	367.7	340.0	338.6	337.5	344.5	360.7	384.4
65°	498.2	461.1	399.5	354.2	327.3	302.3	296.9	299.3	306.0	320.9	345.6
67.5°	445.7	412.1	352.9	311.2	287.2	264.9	260.3	261.4	268.4	281.3	302.8
70°	390.0	360.4	305.2	267.8	247.6	226.6	223.7	224.0	230.7	242.0	260.8
72.5°	331.6	305.0	257.1	225.0	208.3	193.3	190.6	187.3	193.5	203.2	219.4
75°	272.1	248.7	209.1	183.0	169.8	157.2	154.8	151.5	157.7	166.1	178.7
77.5°	212.1	193.3	162.6	142.4	132.2	122.7	120.6	117.1	123.3	129.5	139.4
80°	153.4	139.7	121.4	100.1	96.6	90.4	88.3	84.5	90.4	94.5	102.0
82.5°	99.1	89.9	79.4	64.6	64.1	59.5	58.4	54.1	59.5	61.9	67.6
85°	50.1	45.8	43.1	32.8	33.9	31.0	30.7	26.1	30.4	31.5	34.7
87.5°	14.3	15.1	13.5	8.1	10.2	9.7	9.7	7.0	9.7	9.7	11.0
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: P837828

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3STD-20-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9	1153.9
2.5°	1155.0	1159.6	1160.7	1160.4	1163.4	1179.5	1174.1	1179.5
5°	1157.7	1167.9	1170.6	1174.4	1179.2	1197.5	1191.6	1198.1
7.5°	1159.3	1174.7	1180.6	1187.9	1195.7	1216.1	1211.3	1217.7
10°	1159.3	1179.2	1187.9	1200.0	1210.5	1234.2	1229.6	1237.1
12.5°	1154.5	1180.0	1192.2	1209.1	1222.6	1248.1	1246.3	1251.6
15°	1144.5	1176.0	1192.7	1214.5	1231.2	1259.7	1258.9	1265.4
17.5°	1131.1	1169.0	1189.2	1216.7	1237.7	1269.7	1271.6	1275.1
20°	1114.1	1155.8	1182.2	1215.8	1242.2	1277.5	1279.9	1284.8
22.5°	1091.8	1139.9	1171.7	1212.3	1242.8	1280.7	1285.0	1289.6
25°	1065.4	1120.8	1158.0	1205.6	1240.1	1280.4	1286.4	1290.4
27.5°	1035.2	1096.1	1140.5	1194.9	1232.5	1276.1	1283.4	1288.3
30°	1000.2	1069.7	1120.6	1180.9	1222.3	1268.1	1275.9	1280.7
32.5°	964.2	1040.6	1096.9	1162.8	1207.5	1255.1	1261.9	1265.6
35°	924.9	1005.4	1068.3	1139.7	1188.4	1234.4	1239.5	1243.6
37.5°	882.1	967.1	1035.8	1113.6	1161.5	1205.6	1210.2	1214.8
40°	837.9	927.0	999.2	1081.5	1129.4	1170.4	1175.2	1178.4
42.5°	793.5	882.6	960.1	1043.8	1091.5	1130.8	1133.8	1137.0
45°	748.6	836.6	916.3	1002.1	1049.2	1086.1	1087.2	1089.9
47.5°	702.8	788.9	868.1	954.5	1001.0	1034.7	1035.8	1037.9
50°	656.8	741.3	816.7	903.1	948.6	984.1	979.2	981.4
52.5°	611.6	691.2	768.2	847.6	892.6	924.1	925.4	921.1
55°	567.1	642.2	713.0	789.5	832.3	856.8	856.0	857.6
57.5°	522.2	592.7	657.6	727.6	769.3	792.4	797.3	791.6
60°	476.4	542.6	600.8	664.0	704.4	723.8	729.5	724.1
62.5°	430.9	491.8	544.5	599.7	637.1	661.1	660.5	654.6
65°	385.5	440.6	487.7	534.6	567.1	591.1	590.0	584.6
67.5°	343.5	389.0	431.2	469.2	497.4	513.8	519.5	513.0
70°	297.2	336.5	373.6	404.0	427.4	442.2	447.6	442.0
72.5°	250.9	284.2	310.4	339.7	357.7	370.1	375.8	370.4
75°	205.1	232.6	253.8	276.7	289.4	299.9	306.3	300.9
77.5°	160.7	182.0	198.9	215.6	230.1	232.6	238.2	234.7
80°	118.4	133.8	146.2	157.2	167.7	168.8	173.3	171.2
82.5°	78.9	89.1	92.3	103.9	110.6	109.6	114.1	112.5
85°	41.7	47.9	53.6	57.1	60.8	57.3	61.4	59.8
87.5°	14.0	14.8	12.9	18.3	20.2	17.2	19.6	18.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)