

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: P837845

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-3LO-27-120-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: P837845
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-LD4-3LO-27-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

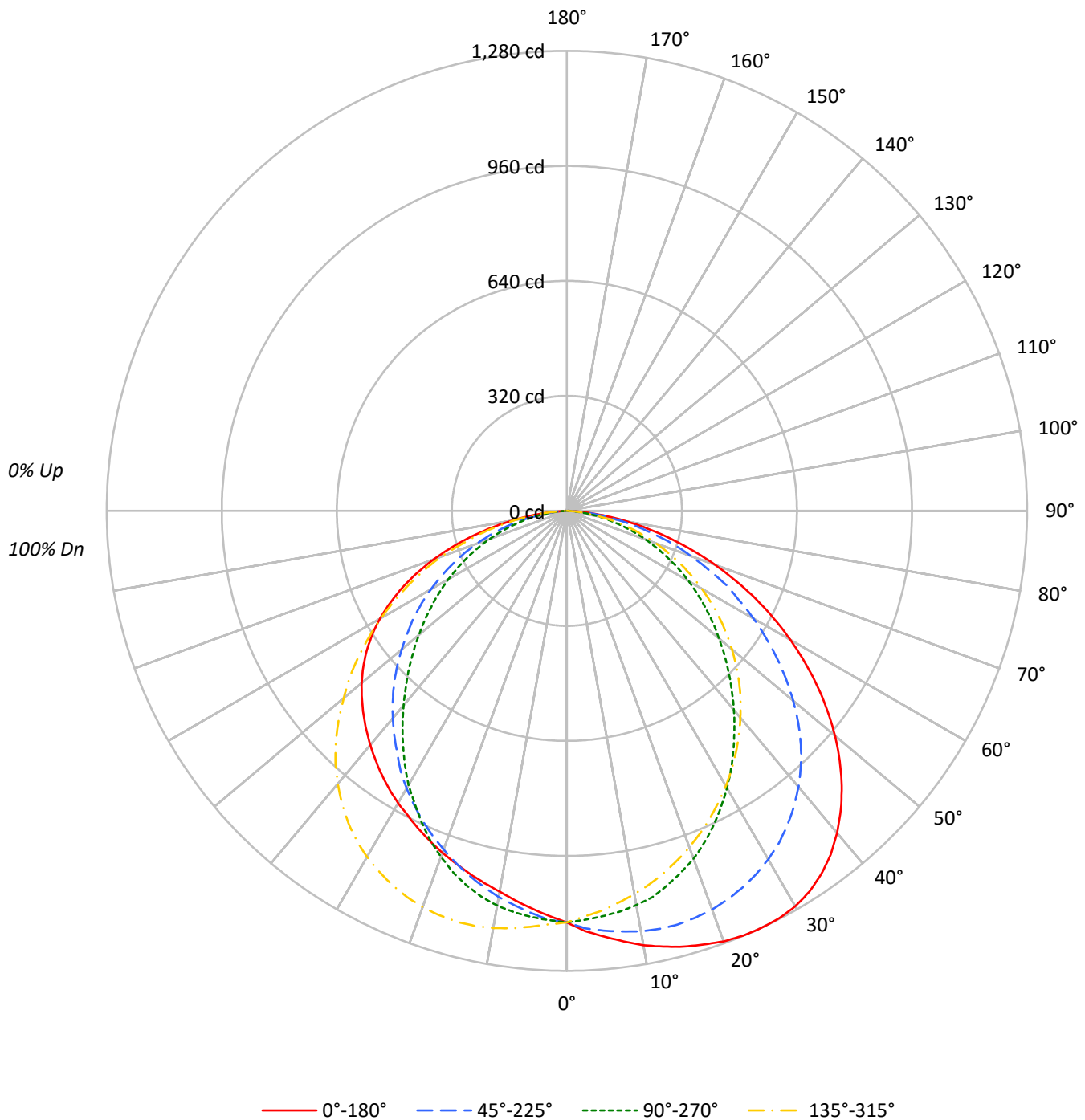
Lumens per Lamp: N/A
Luminaire Lumens: 3358.8 lumens
Efficiency: N/A
Efficacy: 95.7 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 35.1
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



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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°	3081	3081	3081	3081
5°	3211	3059	3001	3064
10°	3354	3043	2940	3047
15°	3497	3004	2911	3005
20°	3650	2950	2898	2933
25°	3801	2867	2898	2838
30°	3948	2767	2917	2737
35°	4053	2654	2947	2612
40°	4107	2539	2988	2482
45°	4115	2424	3046	2363
50°	4076	2313	3120	2251
55°	3992	2210	3190	2149
60°	3866	2103	3232	2048
65°	3693	1979	3216	1933
70°	3450	1834	3102	1801
75°	3105	1635	2846	1627
80°	2631	1370	2393	1390
85°	1831	908	1516	932



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.7	3.2
10°-20°	314.8	9.4
20°-30°	482.4	14.4
30°-40°	586.5	17.5
40°-50°	609.7	18.2
50°-60°	550.8	16.4
60°-70°	418.7	12.5
70°-80°	233.4	7.0
80°-90°	53.7	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°	905.8	27.0
0°-40°	1492.4	44.4
0°-60°	2652.9	79.0
0°-90°	3358.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3358.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1145	1145	1145	1145	1145	
5°	1189	1132	1111	1134	1189	115
15°	1255	1078	1045	1079	1255	356
25°	1280	966	976	956	1280	591
35°	1234	808	897	795	1234	771
45°	1081	637	800	621	1081	832
55°	851	471	680	458	851	760
65°	580	311	505	304	580	573
75°	299	157	274	156	299	317
85°	59	29	49	30	59	75
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8
2.5°	1170.2	1153.1	1153.4	1168.3	1156.9	1162.5	1146.4	1152.6	1150.7	1152.1	1139.0
5°	1188.6	1170.2	1169.9	1182.8	1169.9	1172.3	1152.1	1156.1	1150.2	1146.4	1132.3
7.5°	1208.1	1189.7	1187.8	1199.1	1182.2	1180.4	1157.9	1157.9	1147.2	1137.9	1124.5
10°	1227.4	1208.4	1206.0	1214.5	1193.7	1187.6	1160.3	1156.1	1141.9	1128.0	1113.6
12.5°	1241.8	1222.6	1220.7	1226.0	1202.5	1191.3	1160.3	1152.1	1131.2	1111.7	1100.5
15°	1255.4	1235.6	1230.6	1233.2	1206.3	1191.3	1156.6	1143.8	1117.1	1091.4	1078.3
17.5°	1265.0	1246.1	1241.0	1240.7	1208.1	1186.8	1148.6	1131.0	1098.9	1067.9	1054.8
20°	1274.6	1255.7	1249.3	1244.5	1207.6	1180.6	1136.8	1113.1	1075.7	1041.0	1030.0
22.5°	1279.4	1259.9	1253.0	1245.8	1204.1	1169.4	1122.4	1092.2	1049.5	1008.1	999.0
25°	1280.2	1260.2	1252.7	1242.3	1197.2	1156.1	1103.7	1067.1	1019.3	973.4	965.7
27.5°	1278.1	1256.2	1248.7	1236.2	1186.8	1139.8	1081.5	1038.6	987.3	936.5	928.3
30°	1270.6	1248.5	1241.2	1225.0	1172.1	1119.7	1057.2	1006.8	951.8	897.8	890.6
32.5°	1255.7	1234.0	1228.2	1211.9	1156.1	1096.5	1028.9	972.6	912.5	861.0	850.3
35°	1233.8	1212.1	1208.4	1191.3	1133.6	1068.7	998.0	935.2	870.8	818.2	807.8
37.5°	1205.2	1187.0	1181.4	1164.6	1107.2	1037.2	962.4	894.6	828.4	771.8	765.4
40°	1169.1	1152.1	1147.8	1132.8	1076.5	1002.2	924.0	852.7	784.6	732.0	722.9
42.5°	1128.0	1112.0	1109.6	1094.1	1038.6	963.5	882.3	809.2	738.9	688.2	679.1
45°	1081.3	1065.8	1065.3	1050.6	997.2	920.5	838.5	765.1	694.3	641.7	636.9
47.5°	1029.7	1015.9	1015.9	1002.2	951.0	873.3	793.4	719.2	649.5	603.0	594.5
50°	973.7	960.6	956.6	949.9	900.0	821.7	745.9	674.3	605.1	560.8	552.5
52.5°	913.8	902.6	905.3	893.0	844.7	768.0	697.8	623.8	560.5	520.2	511.9
55°	850.8	834.8	837.2	832.7	787.0	712.8	643.9	582.2	516.7	478.8	471.1
57.5°	785.4	764.6	773.1	770.4	725.6	656.1	594.5	534.9	473.2	438.2	430.8
60°	718.4	698.3	707.1	704.7	662.5	599.5	543.4	488.2	429.9	398.2	390.7
62.5°	649.5	631.0	639.0	637.2	598.5	541.6	492.7	442.0	386.4	357.8	350.9
65°	580.0	562.4	569.6	568.3	532.5	489.2	440.6	394.2	342.6	317.8	310.8
67.5°	509.0	492.7	499.4	499.4	466.5	425.1	388.3	345.8	299.6	278.3	271.9
70°	438.5	423.3	429.1	428.6	400.8	367.2	335.4	297.5	256.1	238.5	233.1
72.5°	367.5	354.1	359.4	358.9	335.7	314.1	282.5	249.7	213.6	199.5	194.7
75°	298.6	286.0	291.1	290.5	271.6	251.3	230.2	203.0	172.0	162.1	157.3
77.5°	232.9	220.0	224.3	224.3	210.4	195.7	178.9	157.8	135.9	125.2	121.8
80°	169.8	163.7	161.6	161.8	152.5	142.9	134.3	114.0	98.0	90.8	88.4
82.5°	111.6	106.6	104.4	105.0	99.6	93.7	88.4	74.2	63.6	59.3	57.9
85°	59.3	55.5	53.7	55.0	53.9	50.7	48.1	38.5	31.8	30.2	29.4
87.5°	18.7	16.3	15.0	19.8	16.8	15.0	14.4	11.5	8.8	8.8	8.5
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8
2.5°	1143.2	1143.2	1132.8	1130.4	1129.4	1130.7	1120.3	1118.4	1133.4	1128.3	1116.8
5°	1134.2	1133.6	1118.9	1116.3	1116.3	1114.7	1102.9	1100.2	1115.2	1110.9	1098.4
7.5°	1122.9	1121.3	1104.0	1102.1	1099.4	1098.4	1085.3	1083.4	1096.2	1093.6	1081.8
10°	1109.3	1107.7	1087.2	1085.8	1082.9	1080.7	1068.5	1067.1	1080.2	1075.9	1066.6
12.5°	1091.4	1088.5	1067.4	1066.1	1063.7	1062.9	1050.8	1050.3	1064.7	1060.5	1050.6
15°	1067.9	1065.5	1042.0	1042.6	1042.8	1042.8	1033.2	1032.7	1046.8	1045.0	1034.3
17.5°	1042.0	1038.8	1016.4	1018.0	1019.9	1022.0	1014.5	1015.9	1030.8	1028.4	1018.8
20°	1012.7	1009.4	987.5	992.1	996.1	1000.4	995.6	999.3	1013.2	1012.1	1004.9
22.5°	979.8	976.6	956.3	963.2	969.9	977.9	975.8	980.1	994.8	994.5	988.1
25°	939.7	940.5	922.7	931.2	942.4	953.6	954.4	961.4	977.7	976.1	970.2
27.5°	902.4	903.4	884.5	898.9	913.8	928.3	931.7	941.3	957.9	956.6	951.5
30°	863.1	864.4	846.0	865.8	883.9	901.6	909.0	922.1	938.9	938.9	933.6
32.5°	822.2	824.6	805.4	831.9	853.0	873.5	886.6	900.2	919.5	918.9	914.4
35°	780.3	783.0	765.4	799.0	820.1	845.2	861.5	879.7	896.8	897.0	893.5
37.5°	737.6	740.8	724.8	761.6	785.7	815.3	836.1	854.3	873.3	874.3	871.1
40°	695.1	698.6	684.7	720.2	750.7	783.8	807.8	829.2	850.0	850.6	848.4
42.5°	652.7	656.4	646.0	680.7	715.2	750.7	779.0	803.3	824.6	826.0	823.6
45°	611.3	614.5	607.0	644.9	678.0	716.8	749.3	776.8	798.5	800.3	799.5
47.5°	570.2	573.1	566.4	601.1	639.3	680.4	718.1	748.5	771.5	773.6	773.1
50°	529.8	532.2	525.0	561.3	599.3	643.1	682.3	717.6	743.2	745.3	745.1
52.5°	489.8	492.2	486.0	524.2	558.7	604.9	647.6	685.8	711.2	714.4	714.9
55°	451.0	452.1	447.3	483.9	517.3	565.6	614.7	651.9	677.2	679.9	681.5
57.5°	412.3	412.6	408.6	443.6	475.6	525.0	576.6	615.5	639.6	642.3	644.7
60°	373.9	373.6	369.1	403.0	433.7	482.6	536.2	575.0	598.2	600.6	603.8
62.5°	335.7	334.9	330.9	362.1	391.0	439.3	493.2	530.6	552.8	554.4	558.7
65°	297.8	297.0	293.2	322.1	348.2	394.4	447.3	482.8	502.9	505.0	504.2
67.5°	260.4	258.8	255.8	281.7	305.5	348.2	399.0	432.9	449.4	451.3	456.4
70°	223.0	221.1	214.4	241.9	262.8	301.0	348.2	378.4	392.3	394.2	393.4
72.5°	186.1	184.3	177.1	202.4	220.0	253.4	295.6	320.7	332.7	334.3	334.3
75°	150.3	149.3	144.7	164.0	178.7	205.9	241.7	262.5	271.9	273.7	273.2
77.5°	115.9	115.1	110.6	127.1	138.6	158.9	187.7	204.0	211.0	213.1	217.6
80°	83.1	82.8	75.6	91.9	96.9	114.0	135.1	147.7	151.4	154.4	157.6
82.5°	53.1	53.4	46.2	60.1	62.2	73.2	86.3	94.0	96.7	99.1	101.5
85°	25.9	27.0	23.0	31.8	32.0	37.7	43.3	46.2	47.3	49.1	51.3
87.5°	6.7	7.7	4.3	9.1	8.0	10.4	12.0	12.8	12.6	13.9	14.7
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8
2.5°	1120.5	1129.1	1124.8	1138.7	1144.0	1135.5	1150.4	1150.7	1140.0	1152.6	1159.5
5°	1103.2	1112.0	1109.3	1123.7	1130.4	1122.9	1141.1	1144.6	1134.2	1148.3	1159.5
7.5°	1085.6	1096.0	1092.5	1107.2	1115.2	1109.3	1128.8	1134.4	1126.4	1141.9	1156.9
10°	1070.3	1079.1	1075.4	1090.9	1097.8	1093.0	1112.3	1122.7	1115.2	1134.2	1152.1
12.5°	1055.4	1062.6	1058.3	1071.1	1077.8	1071.7	1095.2	1104.8	1099.4	1119.2	1142.2
15°	1036.2	1044.2	1038.3	1049.8	1054.8	1049.5	1068.7	1085.3	1078.6	1100.2	1125.6
17.5°	1021.5	1026.0	1018.0	1027.1	1030.0	1022.8	1042.3	1058.6	1053.8	1077.3	1106.7
20°	1005.2	1008.9	997.7	1002.8	1002.5	993.4	1011.3	1027.3	1024.1	1050.0	1083.4
22.5°	987.0	988.9	975.8	976.9	976.3	961.4	977.4	993.7	992.4	1018.5	1055.9
25°	967.8	968.1	951.2	950.7	944.8	927.2	941.3	959.8	955.8	984.1	1023.3
27.5°	948.8	946.2	925.9	921.1	911.7	890.6	903.2	919.7	917.3	945.1	988.6
30°	928.5	925.1	900.2	891.4	877.8	853.5	863.9	879.4	880.7	905.0	950.7
32.5°	909.3	900.5	873.0	860.2	843.1	814.8	820.4	836.1	838.3	862.8	909.8
35°	884.5	878.6	844.7	822.8	806.0	775.0	780.9	791.8	795.0	819.0	866.8
37.5°	861.0	851.6	815.6	788.9	767.2	734.7	736.3	747.5	750.7	775.0	822.2
40°	836.7	823.3	784.6	753.3	728.5	694.3	692.5	704.2	706.6	730.4	773.1
42.5°	810.8	794.7	751.2	717.0	688.5	653.7	650.0	660.1	662.8	686.0	728.0
45°	784.6	765.4	717.0	679.6	648.4	612.9	609.1	616.9	620.9	642.8	683.1
47.5°	756.8	734.4	681.8	640.1	607.8	572.3	567.7	575.5	578.7	600.3	638.5
50°	727.7	700.5	645.5	599.5	567.5	532.5	525.8	534.9	537.8	558.1	595.5
52.5°	695.7	665.5	606.7	558.7	526.6	493.2	485.2	494.0	497.5	517.3	551.7
55°	661.7	629.2	567.7	521.0	486.3	453.7	447.0	450.5	458.0	476.7	508.7
57.5°	623.6	591.2	526.6	479.1	445.7	414.5	408.9	412.1	419.0	437.2	466.0
60°	583.0	548.8	484.7	437.2	404.8	375.2	370.1	373.1	380.5	397.1	423.8
62.5°	542.9	504.5	441.4	394.2	364.8	337.3	335.9	334.9	341.8	357.8	381.3
65°	494.3	457.5	396.3	351.4	324.7	299.9	294.6	297.0	303.6	318.3	342.9
67.5°	442.2	408.9	350.1	308.7	284.9	262.8	258.2	259.3	266.2	279.1	300.4
70°	387.0	357.6	302.8	265.7	245.7	224.9	221.9	222.2	228.9	240.1	258.8
72.5°	329.0	302.6	255.0	223.3	206.7	191.7	189.1	185.9	192.0	201.6	217.6
75°	270.0	246.8	207.5	181.6	168.5	156.0	153.6	150.3	156.5	164.8	177.3
77.5°	210.4	191.7	161.3	141.3	131.1	121.8	119.6	116.2	122.3	128.5	138.3
80°	152.2	138.6	120.4	99.3	95.9	89.7	87.6	83.9	89.7	93.7	101.2
82.5°	98.3	89.2	78.8	64.1	63.6	59.0	57.9	53.7	59.0	61.4	67.0
85°	49.7	45.4	42.7	32.6	33.6	30.7	30.4	25.9	30.2	31.2	34.4
87.5°	14.2	15.0	13.4	8.0	10.1	9.6	9.6	6.9	9.6	9.6	10.9
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: P837845

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-3LO-27-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8	1144.8
2.5°	1145.9	1150.4	1151.5	1151.2	1154.2	1170.2	1164.9	1170.2
5°	1148.6	1158.7	1161.4	1165.1	1169.9	1188.1	1182.2	1188.6
7.5°	1150.2	1165.4	1171.3	1178.5	1186.2	1206.5	1201.7	1208.1
10°	1150.2	1169.9	1178.5	1190.5	1200.9	1224.4	1219.9	1227.4
12.5°	1145.4	1170.7	1182.8	1199.6	1212.9	1238.3	1236.4	1241.8
15°	1135.5	1166.7	1183.3	1204.9	1221.5	1249.8	1249.0	1255.4
17.5°	1122.1	1159.8	1179.8	1207.1	1227.9	1259.7	1261.5	1265.0
20°	1105.3	1146.7	1172.9	1206.3	1232.4	1267.4	1269.8	1274.6
22.5°	1083.2	1131.0	1162.5	1202.8	1233.0	1270.6	1274.9	1279.4
25°	1057.0	1112.0	1148.8	1196.1	1230.3	1270.4	1276.2	1280.2
27.5°	1027.1	1087.4	1131.5	1185.4	1222.8	1266.1	1273.3	1278.1
30°	992.4	1061.3	1111.7	1171.5	1212.7	1258.1	1265.8	1270.6
32.5°	956.6	1032.4	1088.2	1153.7	1198.0	1245.3	1251.9	1255.7
35°	917.6	997.4	1059.9	1130.7	1179.0	1224.7	1229.8	1233.8
37.5°	875.1	959.5	1027.6	1104.8	1152.3	1196.1	1200.7	1205.2
40°	831.3	919.7	991.3	1073.0	1120.5	1161.1	1165.9	1169.1
42.5°	787.3	875.7	952.6	1035.6	1082.9	1121.9	1124.8	1128.0
45°	742.7	830.0	909.0	994.2	1041.0	1077.5	1078.6	1081.3
47.5°	697.3	782.7	861.2	947.0	993.2	1026.5	1027.6	1029.7
50°	651.6	735.5	810.2	896.0	941.1	976.3	971.5	973.7
52.5°	606.7	685.8	762.2	840.9	885.5	916.8	918.1	913.8
55°	562.7	637.2	707.4	783.3	825.7	850.0	849.2	850.8
57.5°	518.1	588.0	652.4	721.8	763.2	786.2	791.0	785.4
60°	472.7	538.4	596.1	658.8	698.9	718.1	723.7	718.4
62.5°	427.5	487.9	540.2	595.0	632.1	655.9	655.3	649.5
65°	382.4	437.2	483.9	530.4	562.7	586.4	585.4	580.0
67.5°	340.8	385.9	427.8	465.5	493.5	509.8	515.4	509.0
70°	294.8	333.8	370.7	400.8	424.1	438.8	444.1	438.5
72.5°	248.9	282.0	307.9	337.0	354.9	367.2	372.8	367.5
75°	203.5	230.7	251.8	274.5	287.1	297.5	303.9	298.6
77.5°	159.4	180.5	197.3	213.9	228.3	230.7	236.3	232.9
80°	117.5	132.7	145.0	156.0	166.4	167.4	172.0	169.8
82.5°	78.2	88.4	91.6	103.1	109.8	108.7	113.2	111.6
85°	41.4	47.5	53.1	56.6	60.4	56.9	60.9	59.3
87.5°	13.9	14.7	12.8	18.2	20.0	17.1	19.5	18.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)