

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: P837830

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4LO-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: P837830
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-LD4-4LO-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

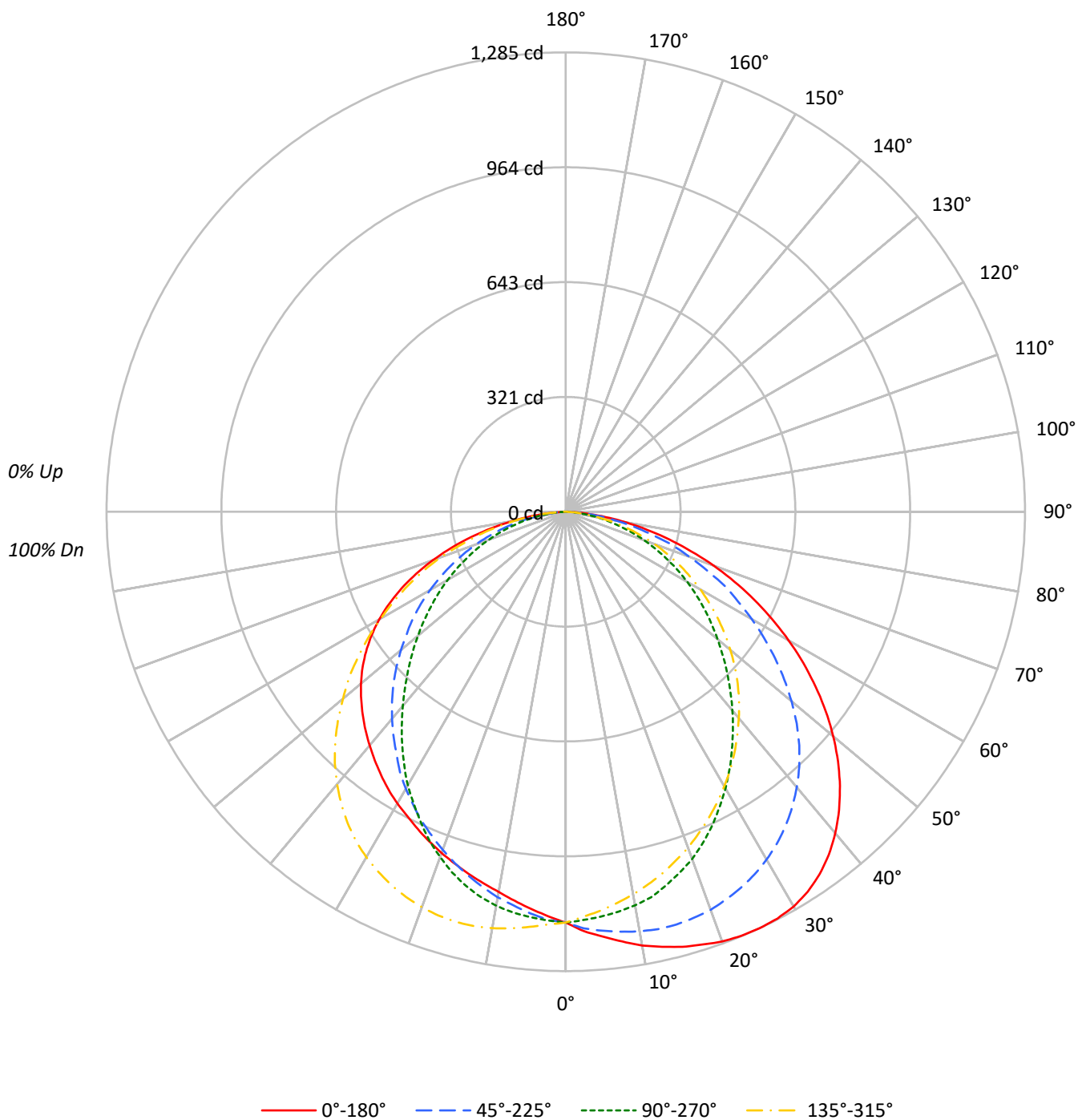
Lumens per Lamp: N/A
Luminaire Lumens: 3371.0 lumens
Efficiency: N/A
Efficacy: 72.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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°	3092	3092	3092	3092
5°	3223	3070	3012	3075
10°	3366	3054	2951	3058
15°	3510	3015	2922	3016
20°	3664	2960	2909	2944
25°	3815	2878	2909	2848
30°	3962	2777	2928	2747
35°	4068	2664	2958	2621
40°	4122	2549	2999	2491
45°	4130	2433	3057	2371
50°	4091	2321	3131	2260
55°	4006	2218	3202	2157
60°	3880	2110	3244	2055
65°	3706	1987	3227	1940
70°	3463	1841	3113	1807
75°	3115	1642	2856	1633
80°	2642	1375	2400	1396
85°	1837	911	1522	936

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.1	3.2
10°-20°	315.9	9.4
20°-30°	484.1	14.4
30°-40°	588.7	17.5
40°-50°	612.0	18.2
50°-60°	552.8	16.4
60°-70°	420.3	12.5
70°-80°	234.3	7.0
80°-90°	53.9	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°	909.1	27.0
0°-40°	1497.8	44.4
0°-60°	2662.5	79.0
0°-90°	3371.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3371.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1149	1149	1149	1149	1149	
5°	1193	1136	1115	1138	1193	115
15°	1260	1082	1049	1082	1260	357
25°	1285	969	980	959	1285	593
35°	1238	811	900	798	1238	773
45°	1085	639	803	623	1085	836
55°	854	473	682	460	854	762
65°	582	312	507	305	582	575
75°	300	158	275	157	300	318
85°	60	30	49	30	60	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°	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0
2.5°	1174.5	1157.3	1157.6	1172.6	1161.1	1166.7	1150.6	1156.8	1154.9	1156.2	1143.1
5°	1193.0	1174.5	1174.2	1187.1	1174.2	1176.6	1156.2	1160.3	1154.4	1150.6	1136.4
7.5°	1212.5	1194.0	1192.1	1203.4	1186.5	1184.6	1162.1	1162.1	1151.4	1142.0	1128.6
10°	1231.8	1212.8	1210.4	1218.9	1198.0	1191.9	1164.5	1160.3	1146.0	1132.1	1117.6
12.5°	1246.3	1227.0	1225.1	1230.5	1206.9	1195.6	1164.5	1156.2	1135.3	1115.8	1104.5
15°	1260.0	1240.1	1235.0	1237.7	1210.6	1195.6	1160.8	1147.9	1121.1	1095.4	1082.3
17.5°	1269.6	1250.6	1245.5	1245.2	1212.5	1191.1	1152.7	1135.1	1102.9	1071.8	1058.7
20°	1279.3	1260.2	1253.8	1249.0	1212.0	1184.9	1141.0	1117.1	1079.6	1044.7	1033.7
22.5°	1284.1	1264.5	1257.5	1250.3	1208.5	1173.7	1126.5	1096.2	1053.3	1011.8	1002.7
25°	1284.9	1264.8	1257.3	1246.8	1201.5	1160.3	1107.7	1071.0	1023.0	976.9	969.2
27.5°	1282.7	1260.8	1253.3	1240.7	1191.1	1143.9	1085.5	1042.3	990.9	939.9	931.6
30°	1275.2	1253.0	1245.7	1229.4	1176.3	1123.8	1061.1	1010.4	955.2	901.1	893.8
32.5°	1260.2	1238.5	1232.6	1216.3	1160.3	1100.5	1032.7	976.1	915.8	864.1	853.4
35°	1238.2	1216.5	1212.8	1195.6	1137.7	1072.6	1001.6	938.6	874.0	821.2	810.8
37.5°	1209.6	1191.3	1185.7	1168.8	1111.2	1041.0	965.9	897.9	831.4	774.6	768.1
40°	1173.4	1156.2	1151.9	1136.9	1080.4	1005.9	927.3	855.8	787.4	734.6	725.5
42.5°	1132.1	1116.0	1113.6	1098.1	1042.3	967.0	885.5	812.1	741.6	690.7	681.6
45°	1085.2	1069.7	1069.1	1054.4	1000.8	923.9	841.6	767.9	696.8	644.0	639.2
47.5°	1033.5	1019.5	1019.5	1005.9	954.4	876.4	796.3	721.8	651.8	605.2	596.6
50°	977.2	964.1	960.0	953.3	903.2	824.7	748.6	676.7	607.3	562.8	554.5
52.5°	917.2	905.9	908.6	896.3	847.7	770.8	700.3	626.1	562.6	522.1	513.8
55°	853.9	837.8	840.2	835.7	789.9	715.3	646.2	584.3	518.6	480.6	472.8
57.5°	788.2	767.3	775.9	773.2	728.2	658.5	596.6	536.8	474.9	439.8	432.3
60°	721.0	700.9	709.7	707.3	665.0	601.7	545.4	489.9	431.5	399.6	392.1
62.5°	651.8	633.3	641.4	639.5	600.6	543.5	494.5	443.6	387.8	359.1	352.2
65°	582.1	564.4	571.7	570.3	534.4	491.0	442.2	395.6	343.9	318.9	312.0
67.5°	510.8	494.5	501.2	501.2	468.2	426.7	389.7	347.1	300.7	279.3	272.8
70°	440.1	424.8	430.7	430.2	402.3	368.5	336.6	298.6	257.0	239.3	234.0
72.5°	368.8	355.4	360.8	360.2	336.9	315.2	283.6	250.6	214.4	200.2	195.4
75°	299.6	287.0	292.1	291.6	272.6	252.2	231.0	203.7	172.6	162.7	157.9
77.5°	233.7	220.8	225.1	225.1	211.2	196.5	179.6	158.4	136.4	125.7	122.2
80°	170.5	164.3	162.2	162.4	153.0	143.4	134.8	114.4	98.4	91.1	88.7
82.5°	112.0	106.9	104.8	105.3	100.0	94.1	88.7	74.5	63.8	59.5	58.2
85°	59.5	55.7	53.9	55.2	54.1	50.9	48.2	38.6	31.9	30.3	29.5
87.5°	18.8	16.3	15.0	19.8	16.9	15.0	14.5	11.5	8.8	8.8	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

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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0
2.5°	1147.4	1147.4	1136.9	1134.5	1133.5	1134.8	1124.3	1122.5	1137.5	1132.4	1120.9
5°	1138.3	1137.7	1123.0	1120.3	1120.3	1118.7	1106.9	1104.2	1119.2	1115.0	1102.4
7.5°	1127.0	1125.4	1108.0	1106.1	1103.4	1102.4	1089.2	1087.4	1100.2	1097.5	1085.7
10°	1113.3	1111.7	1091.1	1089.8	1086.8	1084.7	1072.3	1071.0	1084.1	1079.8	1070.5
12.5°	1095.4	1092.4	1071.3	1069.9	1067.5	1066.7	1054.7	1054.1	1068.6	1064.3	1054.4
15°	1071.8	1069.4	1045.8	1046.3	1046.6	1046.6	1037.0	1036.4	1050.6	1048.8	1038.0
17.5°	1045.8	1042.6	1020.1	1021.7	1023.6	1025.7	1018.2	1019.5	1034.6	1032.1	1022.5
20°	1016.3	1013.1	991.1	995.7	999.7	1004.0	999.2	1002.9	1016.9	1015.8	1008.6
22.5°	983.4	980.1	959.8	966.7	973.4	981.5	979.3	983.6	998.4	998.1	991.7
25°	943.2	944.0	926.0	934.6	945.8	957.1	957.9	964.9	981.2	979.6	973.7
27.5°	905.6	906.7	887.7	902.2	917.2	931.6	935.1	944.8	961.4	960.0	954.9
30°	866.2	867.6	849.1	868.9	887.1	904.8	912.3	925.5	942.4	942.4	937.0
32.5°	825.2	827.6	808.3	834.9	856.1	876.7	889.8	903.5	922.8	922.3	917.7
35°	783.1	785.8	768.1	801.9	823.1	848.3	864.6	882.9	900.0	900.3	896.8
37.5°	740.3	743.5	727.4	764.4	788.5	818.3	839.2	857.4	876.4	877.5	874.3
40°	697.7	701.1	687.2	722.8	753.4	786.6	810.8	832.2	853.1	853.6	851.5
42.5°	655.0	658.8	648.3	683.2	717.8	753.4	781.8	806.2	827.6	829.0	826.6
45°	613.5	616.7	609.2	647.3	680.5	719.4	752.1	779.7	801.4	803.3	802.4
47.5°	572.2	575.2	568.5	603.3	641.6	682.9	720.7	751.3	774.3	776.4	775.9
50°	531.7	534.2	526.9	563.4	601.4	645.4	684.8	720.2	745.9	748.0	747.8
52.5°	491.5	494.0	487.8	526.1	560.7	607.1	649.9	688.3	713.7	716.9	717.5
55°	452.7	453.8	448.9	485.6	519.2	567.7	617.0	654.2	679.7	682.4	684.0
57.5°	413.8	414.1	410.1	445.2	477.3	526.9	578.7	617.8	641.9	644.6	647.0
60°	375.2	375.0	370.4	404.4	435.3	484.3	538.2	577.0	600.4	602.8	606.0
62.5°	336.9	336.1	332.1	363.4	392.4	440.9	495.0	532.6	554.8	556.4	560.7
65°	298.8	298.0	294.3	323.2	349.5	395.9	448.9	484.6	504.7	506.8	506.0
67.5°	261.3	259.7	256.8	282.8	306.6	349.5	400.4	434.5	451.1	453.0	458.0
70°	223.8	221.9	215.2	242.8	263.7	302.1	349.5	379.8	393.7	395.6	394.8
72.5°	186.8	184.9	177.7	203.2	220.8	254.3	296.7	321.9	334.0	335.6	335.6
75°	150.9	149.8	145.3	164.6	179.3	206.6	242.6	263.5	272.8	274.7	274.2
77.5°	116.3	115.5	111.0	127.6	139.1	159.5	188.4	204.8	211.7	213.9	218.4
80°	83.4	83.1	75.8	92.2	97.3	114.4	135.6	148.2	152.0	154.9	158.1
82.5°	53.3	53.6	46.4	60.3	62.4	73.4	86.6	94.3	97.0	99.4	101.8
85°	26.0	27.1	23.0	31.9	32.2	37.8	43.4	46.4	47.4	49.3	51.5
87.5°	6.7	7.8	4.3	9.1	8.0	10.5	12.1	12.9	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°	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0
2.5°	1124.6	1133.2	1128.9	1142.8	1148.2	1139.6	1154.6	1154.9	1144.2	1156.8	1163.7
5°	1107.2	1116.0	1113.3	1127.8	1134.5	1127.0	1145.2	1148.7	1138.3	1152.5	1163.7
7.5°	1089.5	1099.9	1096.5	1111.2	1119.2	1113.3	1132.9	1138.5	1130.5	1146.0	1161.1
10°	1074.2	1083.1	1079.3	1094.9	1101.8	1097.0	1116.3	1126.7	1119.2	1138.3	1156.2
12.5°	1059.2	1066.4	1062.2	1075.0	1081.7	1075.6	1099.1	1108.8	1103.4	1123.3	1146.3
15°	1039.9	1048.0	1042.1	1053.6	1058.7	1053.3	1072.6	1089.2	1082.5	1104.2	1129.7
17.5°	1025.2	1029.7	1021.7	1030.8	1033.7	1026.5	1046.1	1062.4	1057.6	1081.2	1110.7
20°	1008.8	1012.6	1001.3	1006.4	1006.1	997.0	1015.0	1031.1	1027.9	1053.8	1087.4
22.5°	990.6	992.5	979.3	980.4	979.9	964.9	980.9	997.3	996.0	1022.2	1059.7
25°	971.3	971.6	954.7	954.1	948.2	930.6	944.8	963.3	959.2	987.6	1027.0
27.5°	952.3	949.6	929.2	924.4	915.0	893.8	906.4	923.1	920.6	948.5	992.2
30°	931.9	928.4	903.5	894.6	881.0	856.6	867.0	882.6	883.9	908.3	954.1
32.5°	912.6	903.8	876.2	863.3	846.1	817.7	823.4	839.2	841.3	866.0	913.1
35°	887.7	881.8	847.7	825.8	808.9	777.8	783.7	794.7	797.9	822.0	870.0
37.5°	864.1	854.7	818.5	791.7	770.0	737.3	738.9	750.2	753.4	777.8	825.2
40°	839.7	826.3	787.4	756.1	731.2	696.8	695.0	706.8	709.2	733.0	775.9
42.5°	813.7	797.6	753.9	719.6	691.0	656.1	652.4	662.5	665.2	688.5	730.6
45°	787.4	768.1	719.6	682.1	650.7	615.1	611.4	619.1	623.1	645.1	685.6
47.5°	759.6	737.1	684.3	642.4	610.0	574.4	569.8	577.6	580.8	602.5	640.8
50°	730.4	703.0	647.8	601.7	569.5	534.4	527.7	536.8	539.8	560.2	597.7
52.5°	698.2	667.9	608.9	560.7	528.5	495.0	487.0	495.8	499.3	519.2	553.7
55°	664.1	631.5	569.8	522.9	488.1	455.4	448.7	452.1	459.7	478.4	510.6
57.5°	625.8	593.4	528.5	480.8	447.3	416.0	410.3	413.6	420.5	438.7	467.7
60°	585.1	550.8	486.5	438.7	406.3	376.6	371.5	374.4	381.9	398.5	425.3
62.5°	544.9	506.3	443.0	395.6	366.1	338.5	337.2	336.1	343.1	359.1	382.7
65°	496.1	459.1	397.7	352.7	325.9	301.0	295.6	298.0	304.7	319.5	344.1
67.5°	443.8	410.3	351.4	309.8	286.0	263.7	259.2	260.2	267.2	280.1	301.5
70°	388.4	358.9	303.9	266.7	246.6	225.7	222.7	223.0	229.7	240.9	259.7
72.5°	330.2	303.7	256.0	224.1	207.4	192.4	189.8	186.5	192.7	202.4	218.4
75°	271.0	247.6	208.3	182.3	169.1	156.5	154.1	150.9	157.1	165.4	178.0
77.5°	211.2	192.4	161.9	141.8	131.6	122.2	120.1	116.6	122.8	128.9	138.8
80°	152.8	139.1	120.9	99.7	96.2	90.1	87.9	84.2	90.1	94.1	101.6
82.5°	98.6	89.5	79.1	64.3	63.8	59.2	58.2	53.9	59.2	61.6	67.3
85°	49.9	45.6	42.9	32.7	33.8	30.8	30.6	26.0	30.3	31.4	34.6
87.5°	14.2	15.0	13.4	8.0	10.2	9.6	9.6	7.0	9.6	9.6	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: P837830

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4LO-20-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0	1149.0
2.5°	1150.1	1154.6	1155.7	1155.4	1158.4	1174.5	1169.1	1174.5
5°	1152.7	1162.9	1165.6	1169.4	1174.2	1192.4	1186.5	1193.0
7.5°	1154.4	1169.6	1175.5	1182.8	1190.5	1210.9	1206.1	1212.5
10°	1154.4	1174.2	1182.8	1194.8	1205.3	1228.9	1224.3	1231.8
12.5°	1149.5	1175.0	1187.1	1203.9	1217.3	1242.8	1240.9	1246.3
15°	1139.6	1171.0	1187.6	1209.3	1225.9	1254.3	1253.5	1260.0
17.5°	1126.2	1164.0	1184.1	1211.4	1232.3	1264.2	1266.1	1269.6
20°	1109.3	1150.9	1177.1	1210.6	1236.9	1272.0	1274.4	1279.3
22.5°	1087.1	1135.1	1166.7	1207.2	1237.4	1275.2	1279.5	1284.1
25°	1060.8	1116.0	1153.0	1200.5	1234.8	1275.0	1280.9	1284.9
27.5°	1030.8	1091.4	1135.6	1189.7	1227.3	1270.7	1277.9	1282.7
30°	996.0	1065.1	1115.8	1175.8	1217.1	1262.6	1270.4	1275.2
32.5°	960.0	1036.2	1092.2	1157.8	1202.3	1249.8	1256.5	1260.2
35°	920.9	1001.0	1063.8	1134.8	1183.3	1229.1	1234.2	1238.2
37.5°	878.3	963.0	1031.3	1108.8	1156.5	1200.5	1205.0	1209.6
40°	834.3	923.1	994.9	1076.9	1124.6	1165.3	1170.2	1173.4
42.5°	790.1	878.8	956.0	1039.4	1086.8	1125.9	1128.9	1132.1
45°	745.4	833.0	912.3	997.8	1044.7	1081.5	1082.5	1085.2
47.5°	699.8	785.6	864.4	950.4	996.8	1030.3	1031.3	1033.5
50°	654.0	738.1	813.2	899.2	944.5	979.9	975.1	977.2
52.5°	608.9	688.3	764.9	844.0	888.7	920.1	921.4	917.2
55°	564.7	639.5	710.0	786.1	828.7	853.1	852.3	853.9
57.5°	520.0	590.2	654.8	724.5	766.0	789.0	793.9	788.2
60°	474.4	540.3	598.2	661.2	701.4	720.7	726.3	721.0
62.5°	429.1	489.7	542.2	597.1	634.4	658.3	657.7	651.8
65°	383.8	438.7	485.6	532.3	564.7	588.6	587.5	582.1
67.5°	342.0	387.3	429.4	467.2	495.3	511.6	517.3	510.8
70°	295.9	335.0	372.0	402.3	425.6	440.4	445.7	440.1
72.5°	249.8	283.0	309.0	338.2	356.2	368.5	374.2	368.8
75°	204.2	231.6	252.7	275.5	288.1	298.6	305.0	299.6
77.5°	160.0	181.2	198.1	214.7	229.2	231.6	237.2	233.7
80°	117.9	133.2	145.5	156.5	167.0	168.0	172.6	170.5
82.5°	78.5	88.7	91.9	103.5	110.2	109.1	113.6	112.0
85°	41.5	47.7	53.3	56.8	60.6	57.1	61.1	59.5
87.5°	13.9	14.7	12.9	18.2	20.1	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)