

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: P838109

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1LO-40-120-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: P838109
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2R-LD4-1LO-40-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and RFI grid
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

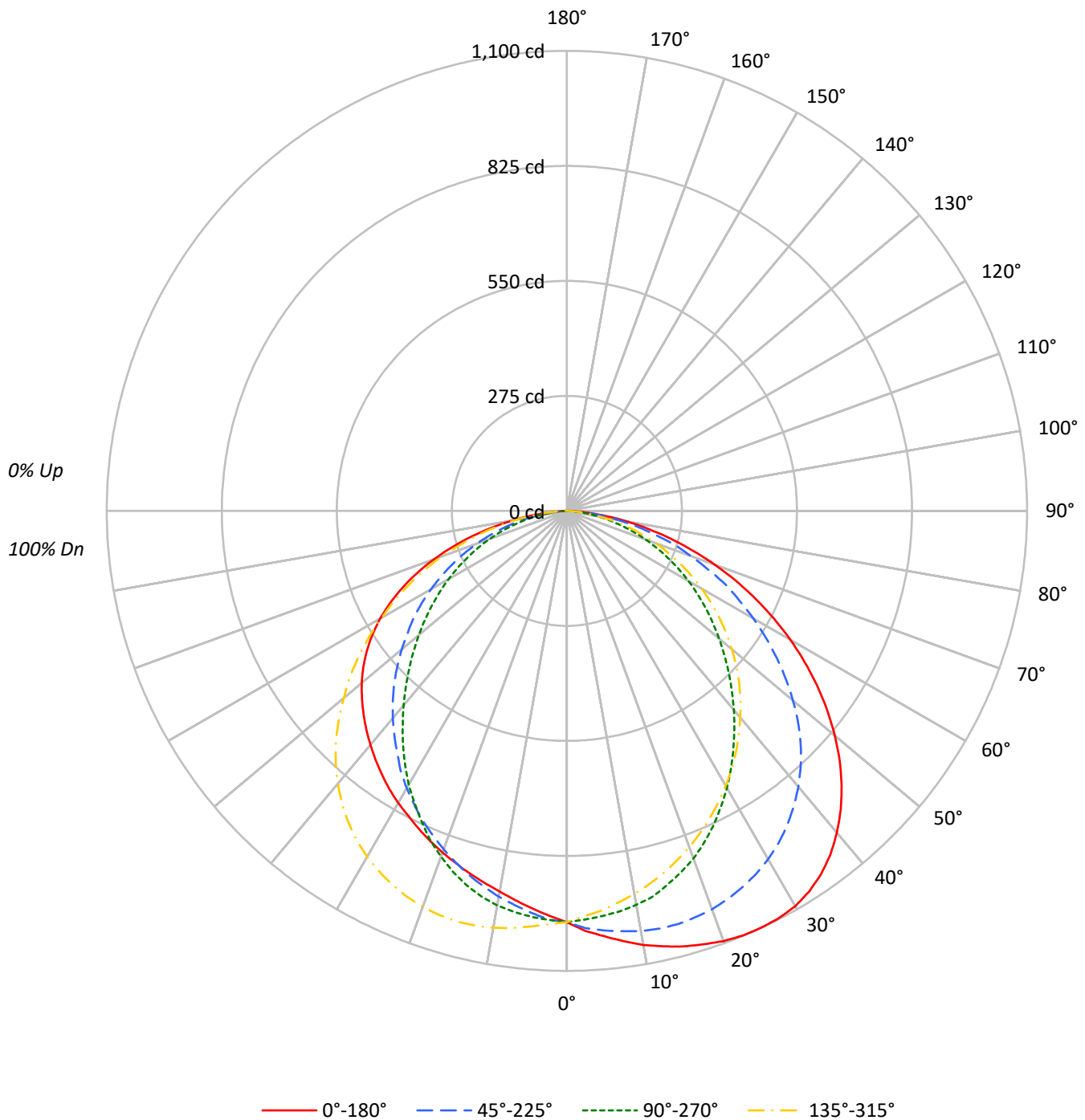
Lumens per Lamp: N/A
Luminaire Lumens: 2884.7 lumens
Efficiency: N/A
Efficacy: 123.3 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	1323	1323	1323	1323
5°	1379	1313	1289	1316
10°	1440	1307	1263	1309
15°	1502	1290	1250	1290
20°	1567	1267	1245	1259
25°	1632	1231	1245	1219
30°	1695	1188	1253	1175
35°	1740	1140	1265	1122
40°	1764	1091	1283	1066
45°	1767	1041	1308	1015
50°	1750	993	1340	967
55°	1714	949	1370	923
60°	1660	903	1388	879
65°	1586	850	1381	830
70°	1482	788	1332	773
75°	1333	702	1222	699
80°	1130	588	1027	597
85°	786	389	651	400

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.4	3.2
10°-20°	270.3	9.4
20°-30°	414.3	14.4
30°-40°	503.7	17.5
40°-50°	523.7	18.2
50°-60°	473.0	16.4
60°-70°	359.6	12.5
70°-80°	200.5	7.0
80°-90°	46.2	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°	778.0	27.0
0°-40°	1281.7	44.4
0°-60°	2278.4	79.0
0°-90°	2884.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2884.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	983	983	983	983	983	
5°	1021	972	954	974	1021	98
15°	1078	926	898	926	1078	306
25°	1100	829	838	821	1100	508
35°	1060	694	770	683	1060	662
45°	929	547	687	533	929	715
55°	731	405	584	393	731	652
65°	498	267	434	261	498	492
75°	256	135	235	134	256	272
85°	51	25	42	26	51	64
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°	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2
2.5°	1005.0	990.3	990.6	1003.4	993.6	998.4	984.6	989.9	988.3	989.4	978.2
5°	1020.8	1005.0	1004.8	1015.8	1004.8	1006.9	989.4	992.9	987.8	984.6	972.5
7.5°	1037.6	1021.8	1020.2	1029.8	1015.3	1013.7	994.5	994.5	985.3	977.3	965.8
10°	1054.1	1037.8	1035.8	1043.1	1025.2	1019.9	996.5	992.9	980.7	968.8	956.4
12.5°	1066.5	1050.0	1048.4	1053.0	1032.8	1023.1	996.5	989.4	971.5	954.8	945.2
15°	1078.2	1061.2	1056.9	1059.2	1036.0	1023.1	993.3	982.3	959.4	937.4	926.1
17.5°	1086.4	1070.2	1065.8	1065.6	1037.6	1019.2	986.4	971.3	943.8	917.2	905.9
20°	1094.7	1078.4	1072.9	1068.8	1037.1	1014.0	976.4	955.9	923.8	894.0	884.6
22.5°	1098.8	1082.1	1076.1	1069.9	1034.2	1004.3	964.0	938.1	901.4	865.8	858.0
25°	1099.5	1082.3	1075.9	1066.9	1028.2	992.9	947.9	916.5	875.4	836.0	829.3
27.5°	1097.7	1078.9	1072.5	1061.7	1019.2	978.9	928.9	892.0	847.9	804.3	797.2
30°	1091.3	1072.2	1066.0	1052.0	1006.6	961.7	908.0	864.7	817.4	771.1	764.9
32.5°	1078.4	1059.8	1054.8	1040.8	992.9	941.7	883.7	835.3	783.7	739.4	730.3
35°	1059.6	1041.0	1037.8	1023.1	973.6	917.9	857.1	803.2	747.9	702.7	693.8
37.5°	1035.1	1019.5	1014.7	1000.2	950.9	890.8	826.6	768.3	711.5	662.8	657.3
40°	1004.1	989.4	985.8	972.9	924.5	860.8	793.6	732.3	673.8	628.7	620.9
42.5°	968.8	955.0	953.0	939.7	892.0	827.5	757.8	694.9	634.6	591.0	583.2
45°	928.7	915.3	914.9	902.3	856.4	790.6	720.2	657.1	596.3	551.1	547.0
47.5°	884.4	872.5	872.5	860.8	816.7	750.0	681.4	617.6	557.8	517.9	510.5
50°	836.2	825.0	821.5	815.8	772.9	705.7	640.6	579.1	519.7	481.6	474.5
52.5°	784.8	775.2	777.5	767.0	725.4	659.6	599.3	535.8	481.4	446.8	439.7
55°	730.7	717.0	719.0	715.1	675.9	612.1	553.0	500.0	443.8	411.2	404.6
57.5°	674.5	656.6	664.0	661.7	623.2	563.5	510.5	459.4	406.4	376.4	369.9
60°	617.0	599.8	607.3	605.3	569.0	514.9	466.7	419.3	369.3	342.0	335.5
62.5°	557.8	542.0	548.8	547.2	514.0	465.1	423.2	379.6	331.9	307.3	301.4
65°	498.2	483.0	489.2	488.1	457.3	420.2	378.4	338.5	294.3	272.9	267.0
67.5°	437.1	423.2	428.9	428.9	400.7	365.1	333.5	297.0	257.3	239.0	233.5
70°	376.6	363.5	368.6	368.1	344.3	315.4	288.1	255.5	219.9	204.8	200.2
72.5°	315.6	304.1	308.7	308.3	288.3	269.7	242.7	214.4	183.5	171.3	167.2
75°	256.4	245.6	250.0	249.5	233.3	215.8	197.7	174.3	147.7	139.2	135.1
77.5°	200.0	189.0	192.7	192.7	180.7	168.1	153.7	135.5	116.7	107.6	104.6
80°	145.9	140.6	138.8	139.0	131.0	122.7	115.4	97.9	84.2	78.0	75.9
82.5°	95.9	91.5	89.7	90.1	85.5	80.5	75.9	63.8	54.6	50.9	49.8
85°	50.9	47.7	46.1	47.2	46.3	43.6	41.3	33.0	27.3	25.9	25.2
87.5°	16.1	14.0	12.8	17.0	14.4	12.8	12.4	9.9	7.6	7.6	7.3
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°	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2
2.5°	981.9	981.9	972.9	970.9	969.9	971.1	962.1	960.5	973.4	969.0	959.2
5°	974.1	973.6	961.0	958.7	958.7	957.3	947.2	944.9	957.8	954.1	943.3
7.5°	964.4	963.1	948.1	946.5	944.2	943.3	932.1	930.5	941.5	939.2	929.1
10°	952.7	951.4	933.7	932.5	930.0	928.2	917.6	916.5	927.7	924.1	916.0
12.5°	937.4	934.8	916.7	915.6	913.5	912.8	902.5	902.0	914.4	910.8	902.3
15°	917.2	915.1	894.9	895.4	895.6	895.6	887.4	886.9	899.1	897.5	888.3
17.5°	894.9	892.2	872.9	874.3	875.9	877.7	871.3	872.5	885.3	883.2	875.0
20°	869.7	867.0	848.1	852.0	855.5	859.2	855.0	858.2	870.2	869.2	863.1
22.5°	841.5	838.7	821.3	827.3	833.0	839.9	838.1	841.7	854.3	854.1	848.6
25°	807.1	807.8	792.4	799.8	809.4	819.0	819.7	825.7	839.7	838.3	833.2
27.5°	775.0	775.9	759.6	772.0	784.8	797.2	800.2	808.5	822.7	821.5	817.2
30°	741.3	742.4	726.6	743.6	759.2	774.3	780.7	792.0	806.4	806.4	801.8
32.5°	706.2	708.2	691.7	714.4	732.6	750.2	761.5	773.1	789.7	789.2	785.3
35°	670.2	672.5	657.3	686.2	704.3	725.9	739.9	755.5	770.2	770.4	767.4
37.5°	633.5	636.2	622.5	654.1	674.8	700.2	718.1	733.7	750.0	750.9	748.1
40°	597.0	600.0	588.1	618.6	644.7	673.2	693.8	712.1	730.0	730.5	728.7
42.5°	560.5	563.7	554.8	584.6	614.2	644.7	669.0	689.9	708.2	709.4	707.3
45°	525.0	527.7	521.3	553.9	582.3	615.6	643.6	667.2	685.8	687.4	686.7
47.5°	489.7	492.2	486.5	516.3	549.1	584.4	616.7	642.9	662.6	664.4	664.0
50°	455.0	457.1	450.9	482.1	514.7	552.3	586.0	616.3	638.3	640.1	639.9
52.5°	420.6	422.7	417.4	450.2	479.8	519.5	556.2	589.0	610.8	613.5	614.0
55°	387.4	388.3	384.2	415.6	444.3	485.8	528.0	559.9	581.6	583.9	585.3
57.5°	354.1	354.4	350.9	381.0	408.5	450.9	495.2	528.7	549.3	551.6	553.7
60°	321.1	320.9	317.0	346.1	372.5	414.4	460.5	493.8	513.8	515.8	518.6
62.5°	288.3	287.6	284.2	311.0	335.8	377.3	423.6	455.7	474.8	476.1	479.8
65°	255.7	255.0	251.8	276.6	299.1	338.8	384.2	414.7	431.9	433.7	433.0
67.5°	223.6	222.2	219.7	242.0	262.4	299.1	342.7	371.8	386.0	387.6	392.0
70°	191.5	189.9	184.2	207.8	225.7	258.5	299.1	325.0	336.9	338.5	337.8
72.5°	159.9	158.3	152.1	173.8	189.0	217.7	253.9	275.5	285.8	287.1	287.1
75°	129.1	128.2	124.3	140.8	153.4	176.8	207.6	225.5	233.5	235.1	234.6
77.5°	99.5	98.9	95.0	109.2	119.0	136.5	161.2	175.2	181.2	183.0	186.9
80°	71.3	71.1	64.9	78.9	83.3	97.9	116.1	126.8	130.0	132.6	135.3
82.5°	45.6	45.9	39.7	51.6	53.4	62.8	74.1	80.7	83.0	85.1	87.2
85°	22.2	23.2	19.7	27.3	27.5	32.3	37.2	39.7	40.6	42.2	44.0
87.5°	5.7	6.7	3.7	7.8	6.9	8.9	10.3	11.0	10.8	11.9	12.6
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2
2.5°	962.4	969.7	966.0	978.0	982.5	975.2	988.1	988.3	979.1	989.9	995.9
5°	947.5	955.0	952.7	965.1	970.9	964.4	980.0	983.0	974.1	986.2	995.9
7.5°	932.3	941.3	938.3	950.9	957.8	952.7	969.5	974.3	967.4	980.7	993.6
10°	919.2	926.8	923.6	936.9	942.9	938.7	955.3	964.2	957.8	974.1	989.4
12.5°	906.4	912.6	908.9	919.9	925.7	920.4	940.6	948.8	944.2	961.2	980.9
15°	889.9	896.8	891.7	901.6	905.9	901.4	917.9	932.1	926.4	944.9	966.7
17.5°	877.3	881.2	874.3	882.1	884.6	878.4	895.2	909.2	905.0	925.2	950.4
20°	863.3	866.5	856.9	861.2	861.0	853.2	868.6	882.3	879.6	901.8	930.5
22.5°	847.7	849.3	838.1	839.0	838.5	825.7	839.4	853.4	852.3	874.8	906.9
25°	831.2	831.4	817.0	816.5	811.5	796.3	808.5	824.3	820.9	845.2	878.9
27.5°	814.9	812.6	795.2	791.0	783.0	764.9	775.7	789.9	787.8	811.7	849.1
30°	797.5	794.5	773.1	765.6	753.9	733.0	742.0	755.3	756.4	777.3	816.5
32.5°	780.9	773.4	749.8	738.7	724.1	699.8	704.6	718.1	719.9	741.0	781.4
35°	759.6	754.6	725.4	706.6	692.2	665.6	670.6	680.0	682.8	703.4	744.5
37.5°	739.4	731.4	700.4	677.5	658.9	630.9	632.3	642.0	644.7	665.6	706.2
40°	718.6	707.1	673.8	647.0	625.7	596.3	594.7	604.8	606.9	627.3	664.0
42.5°	696.3	682.6	645.2	615.8	591.3	561.5	558.2	567.0	569.3	589.2	625.2
45°	673.8	657.3	615.8	583.7	556.9	526.4	523.2	529.8	533.2	552.1	586.7
47.5°	650.0	630.7	585.5	549.8	522.0	491.5	487.6	494.3	497.0	515.6	548.4
50°	625.0	601.6	554.3	514.9	487.4	457.3	451.6	459.4	461.9	479.3	511.5
52.5°	597.5	571.5	521.1	479.8	452.3	423.6	416.7	424.3	427.3	444.3	473.8
55°	568.3	540.4	487.6	447.5	417.7	389.7	383.9	386.9	393.3	409.4	436.9
57.5°	535.5	507.8	452.3	411.5	382.8	356.0	351.1	353.9	359.9	375.5	400.2
60°	500.7	471.3	416.3	375.5	347.7	322.2	317.9	320.4	326.8	341.0	364.0
62.5°	466.3	433.2	379.1	338.5	313.3	289.7	288.5	287.6	293.6	307.3	327.5
65°	424.5	392.9	340.4	301.8	278.9	257.6	253.0	255.0	260.8	273.4	294.5
67.5°	379.8	351.1	300.7	265.1	244.7	225.7	221.8	222.7	228.7	239.7	258.0
70°	332.3	307.1	260.1	228.2	211.0	193.1	190.6	190.8	196.6	206.2	222.2
72.5°	282.6	259.9	219.0	191.7	177.5	164.7	162.4	159.6	164.9	173.2	186.9
75°	231.9	211.9	178.2	156.0	144.7	133.9	131.9	129.1	134.4	141.5	152.3
77.5°	180.7	164.7	138.5	121.3	112.6	104.6	102.8	99.8	105.0	110.3	118.8
80°	130.7	119.0	103.4	85.3	82.3	77.1	75.2	72.0	77.1	80.5	86.9
82.5°	84.4	76.6	67.7	55.0	54.6	50.7	49.8	46.1	50.7	52.8	57.6
85°	42.7	39.0	36.7	28.0	28.9	26.4	26.1	22.2	25.9	26.8	29.6
87.5°	12.2	12.8	11.5	6.9	8.7	8.3	8.3	6.0	8.3	8.3	9.4
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: P838109

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1LO-40-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	983.2	983.2	983.2	983.2	983.2	983.2	983.2	983.2
2.5°	984.2	988.1	989.0	988.7	991.3	1005.0	1000.4	1005.0
5°	986.4	995.2	997.5	1000.7	1004.8	1020.4	1015.3	1020.8
7.5°	987.8	1000.9	1005.9	1012.1	1018.8	1036.2	1032.1	1037.6
10°	987.8	1004.8	1012.1	1022.5	1031.4	1051.6	1047.7	1054.1
12.5°	983.7	1005.5	1015.8	1030.3	1041.7	1063.5	1061.9	1066.5
15°	975.2	1002.0	1016.3	1034.8	1049.1	1073.4	1072.7	1078.2
17.5°	963.7	996.1	1013.3	1036.7	1054.6	1081.9	1083.5	1086.4
20°	949.3	984.8	1007.3	1036.0	1058.5	1088.5	1090.6	1094.7
22.5°	930.3	971.3	998.4	1033.0	1058.9	1091.3	1094.9	1098.8
25°	907.8	955.0	986.7	1027.3	1056.6	1091.0	1096.1	1099.5
27.5°	882.1	933.9	971.8	1018.1	1050.2	1087.4	1093.6	1097.7
30°	852.3	911.4	954.8	1006.2	1041.5	1080.5	1087.1	1091.3
32.5°	821.5	886.7	934.6	990.8	1028.9	1069.5	1075.2	1078.4
35°	788.1	856.6	910.3	971.1	1012.6	1051.8	1056.2	1059.6
37.5°	751.6	824.1	882.6	948.8	989.7	1027.3	1031.2	1035.1
40°	714.0	789.9	851.4	921.5	962.4	997.2	1001.4	1004.1
42.5°	676.1	752.0	818.1	889.4	930.0	963.5	966.0	968.8
45°	637.8	712.8	780.7	853.9	894.0	925.4	926.4	928.7
47.5°	598.8	672.2	739.7	813.3	853.0	881.6	882.6	884.4
50°	559.6	631.6	695.9	769.5	808.2	838.5	834.4	836.2
52.5°	521.1	589.0	654.6	722.2	760.5	787.4	788.5	784.8
55°	483.2	547.2	607.6	672.7	709.2	730.0	729.3	730.7
57.5°	444.9	505.0	560.3	619.9	655.5	675.2	679.3	674.5
60°	406.0	462.4	511.9	565.8	600.2	616.7	621.5	617.0
62.5°	367.2	419.0	464.0	511.0	542.9	563.3	562.8	557.8
65°	328.4	375.5	415.6	455.5	483.2	503.7	502.7	498.2
67.5°	292.7	331.4	367.4	399.8	423.8	437.8	442.7	437.1
70°	253.2	286.7	318.3	344.3	364.2	376.8	381.4	376.6
72.5°	213.8	242.2	264.4	289.4	304.8	315.4	320.2	315.6
75°	174.8	198.2	216.3	235.8	246.6	255.5	261.0	256.4
77.5°	136.9	155.0	169.5	183.7	196.1	198.2	203.0	200.0
80°	100.9	114.0	124.5	133.9	142.9	143.8	147.7	145.9
82.5°	67.2	75.9	78.7	88.5	94.3	93.3	97.2	95.9
85°	35.5	40.8	45.6	48.6	51.8	48.9	52.3	50.9
87.5°	11.9	12.6	11.0	15.6	17.2	14.7	16.7	16.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)