

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: P838235

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1LO-50-120-EDD-90**

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: P838235
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-50-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

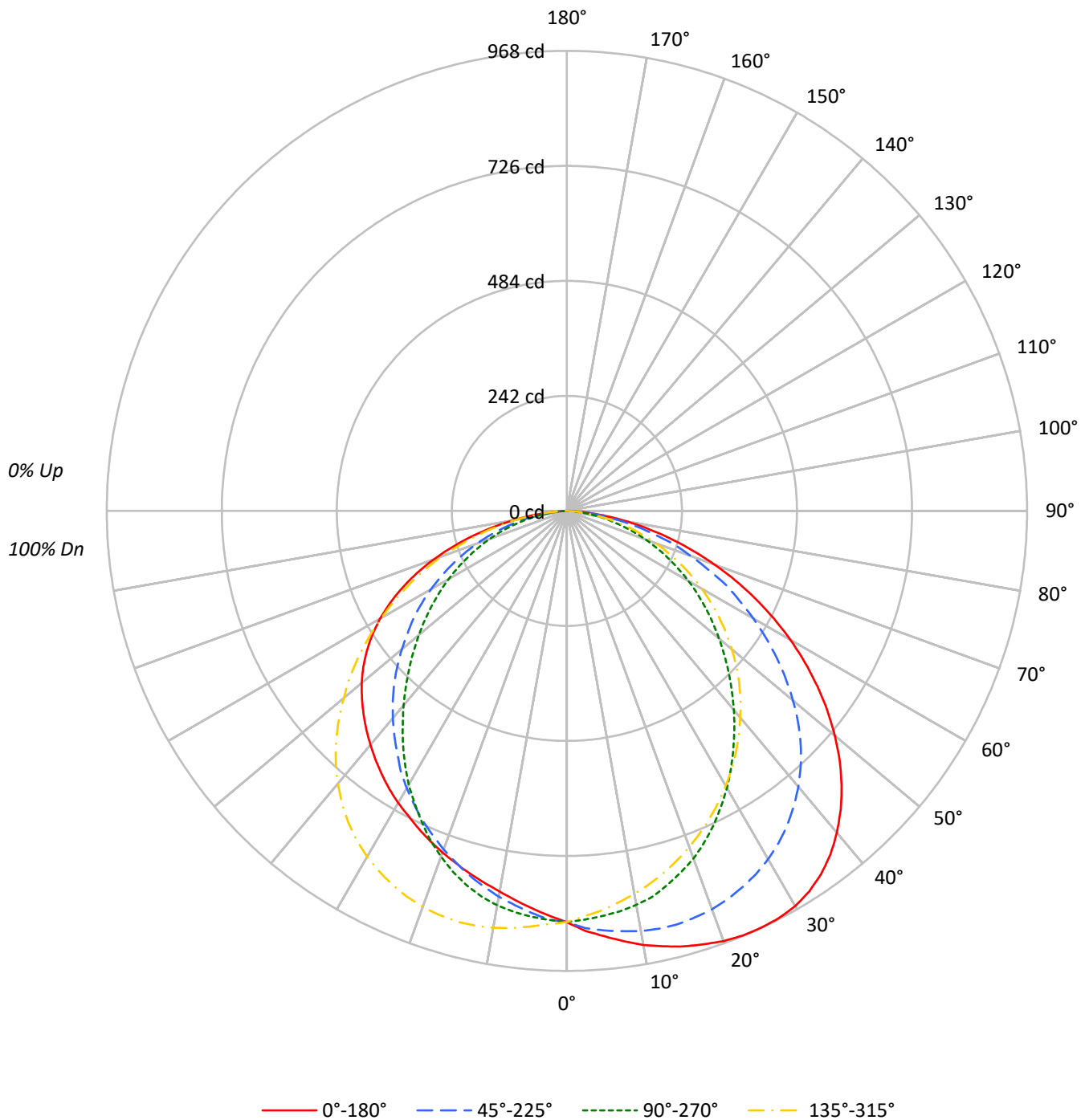
Lumens per Lamp: N/A
Luminaire Lumens: 2538.5 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	1164	1164	1164	1164
5°	1213	1156	1134	1158
10°	1267	1150	1111	1151
15°	1322	1135	1100	1136
20°	1379	1115	1095	1108
25°	1436	1083	1095	1072
30°	1492	1046	1102	1034
35°	1532	1003	1113	987
40°	1552	960	1129	938
45°	1555	916	1151	893
50°	1540	874	1179	851
55°	1508	835	1206	812
60°	1461	795	1221	774
65°	1396	748	1215	731
70°	1304	693	1172	681
75°	1173	618	1076	615
80°	995	518	904	525
85°	692	343	573	352



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.1	3.2
10°-20°	237.9	9.4
20°-30°	364.6	14.4
30°-40°	443.3	17.5
40°-50°	460.8	18.2
50°-60°	416.3	16.4
60°-70°	316.5	12.5
70°-80°	176.4	7.0
80°-90°	40.6	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°	684.6	27.0
0°-40°	1127.9	44.4
0°-60°	2005.0	79.0
0°-90°	2538.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2538.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	865	865	865	865	865	
5°	898	856	840	857	898	87
15°	949	815	790	815	949	269
25°	968	730	738	722	968	447
35°	932	610	678	601	932	582
45°	817	481	605	469	817	629
55°	643	356	514	346	643	574
65°	438	235	382	230	438	433
75°	226	119	207	118	226	240
85°	45	22	37	23	45	56
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°	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2
2.5°	884.4	871.5	871.7	883.0	874.3	878.6	866.5	871.1	869.7	870.7	860.8
5°	898.3	884.4	884.2	893.9	884.2	886.0	870.7	873.7	869.3	866.5	855.8
7.5°	913.1	899.2	897.7	906.2	893.5	892.1	875.1	875.1	867.1	860.0	849.9
10°	927.6	913.3	911.5	917.9	902.2	897.5	877.0	873.7	863.0	852.5	841.6
12.5°	938.5	924.0	922.6	926.6	908.8	900.4	877.0	870.7	855.0	840.2	831.7
15°	948.8	933.9	930.0	932.1	911.7	900.4	874.1	864.4	844.3	824.9	815.0
17.5°	956.1	941.7	937.9	937.7	913.1	896.9	868.1	854.8	830.5	807.1	797.2
20°	963.3	949.0	944.2	940.5	912.7	892.3	859.2	841.2	813.0	786.7	778.5
22.5°	967.0	952.2	947.0	941.5	910.1	883.8	848.3	825.5	793.2	761.9	755.0
25°	967.6	952.4	946.8	938.9	904.8	873.7	834.2	806.5	770.4	735.7	729.8
27.5°	966.0	949.4	943.8	934.3	896.9	861.4	817.4	784.9	746.2	707.8	701.6
30°	960.3	943.6	938.1	925.8	885.8	846.3	799.0	760.9	719.3	678.6	673.1
32.5°	949.0	932.7	928.2	915.9	873.7	828.7	777.7	735.1	689.7	650.7	642.6
35°	932.5	916.1	913.3	900.4	856.8	807.7	754.2	706.8	658.2	618.4	610.5
37.5°	910.9	897.1	892.9	880.2	836.8	783.9	727.4	676.1	626.1	583.3	578.4
40°	883.6	870.7	867.5	856.2	813.6	757.5	698.3	644.4	593.0	553.2	546.4
42.5°	852.5	840.4	838.6	826.9	784.9	728.2	666.8	611.5	558.5	520.1	513.3
45°	817.2	805.5	805.1	794.0	753.6	695.7	633.7	578.2	524.8	485.0	481.4
47.5°	778.3	767.8	767.8	757.5	718.7	660.0	599.6	543.5	490.9	455.7	449.3
50°	735.9	726.0	723.0	717.9	680.2	621.0	563.7	509.6	457.3	423.8	417.6
52.5°	690.7	682.2	684.2	674.9	638.4	580.5	527.4	471.5	423.6	393.2	386.9
55°	643.0	630.9	632.7	629.3	594.8	538.7	486.6	440.0	390.5	361.9	356.0
57.5°	593.6	577.8	584.3	582.3	548.4	495.9	449.3	404.3	357.6	331.2	325.6
60°	542.9	527.8	534.4	532.6	500.7	453.1	410.7	368.9	324.9	300.9	295.3
62.5°	490.9	476.9	483.0	481.6	452.3	409.3	372.4	334.0	292.0	270.5	265.2
65°	438.4	425.1	430.5	429.5	402.5	369.8	333.0	297.9	258.9	240.2	234.9
67.5°	384.7	372.4	377.4	377.4	352.6	321.3	293.5	261.4	226.5	210.3	205.5
70°	331.4	319.9	324.3	323.9	302.9	277.5	253.5	224.8	193.6	180.2	176.2
72.5°	277.7	267.6	271.7	271.3	253.7	237.4	213.5	188.7	161.5	150.8	147.1
75°	225.6	216.2	220.0	219.6	205.3	189.9	174.0	153.4	130.0	122.5	118.9
77.5°	176.0	166.3	169.5	169.5	159.0	147.9	135.2	119.3	102.7	94.7	92.0
80°	128.4	123.7	122.1	122.3	115.2	108.0	101.5	86.2	74.1	68.6	66.8
82.5°	84.4	80.5	78.9	79.3	75.3	70.8	66.8	56.1	48.0	44.8	43.8
85°	44.8	42.0	40.6	41.6	40.8	38.3	36.3	29.1	24.0	22.8	22.2
87.5°	14.1	12.3	11.3	14.9	12.7	11.3	10.9	8.7	6.7	6.7	6.5
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°	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2
2.5°	864.0	864.0	856.2	854.3	853.5	854.6	846.7	845.3	856.6	852.7	844.1
5°	857.2	856.8	845.7	843.7	843.7	842.4	833.6	831.5	842.8	839.6	830.1
7.5°	848.7	847.5	834.4	833.0	830.9	830.1	820.2	818.8	828.5	826.5	817.6
10°	838.4	837.2	821.7	820.6	818.4	816.8	807.5	806.5	816.4	813.2	806.1
12.5°	824.9	822.7	806.7	805.7	803.9	803.3	794.2	793.8	804.7	801.5	794.0
15°	807.1	805.3	787.5	787.9	788.1	788.1	780.9	780.5	791.2	789.8	781.7
17.5°	787.5	785.1	768.2	769.4	770.8	772.4	766.8	767.8	779.1	777.2	770.0
20°	765.3	762.9	746.4	749.8	752.8	756.1	752.4	755.3	765.7	764.9	759.5
22.5°	740.5	738.1	722.8	728.0	733.0	739.1	737.5	740.7	751.8	751.6	746.8
25°	710.2	710.8	697.3	703.8	712.3	720.7	721.3	726.6	738.9	737.7	733.3
27.5°	682.0	682.8	668.5	679.4	690.7	701.6	704.2	711.5	724.0	723.0	719.1
30°	652.3	653.3	639.4	654.3	668.1	681.4	687.0	696.9	709.6	709.6	705.6
32.5°	621.4	623.3	608.7	628.7	644.6	660.2	670.1	680.4	694.9	694.5	691.1
35°	589.7	591.8	578.4	603.9	619.8	638.8	651.1	664.8	677.7	677.9	675.3
37.5°	557.5	559.9	547.8	575.6	593.8	616.2	631.9	645.7	660.0	660.8	658.4
40°	525.4	528.0	517.5	544.3	567.3	592.4	610.5	626.7	642.4	642.8	641.2
42.5°	493.3	496.1	488.2	514.5	540.5	567.3	588.7	607.1	623.3	624.3	622.4
45°	462.0	464.4	458.8	487.4	512.4	541.7	566.3	587.1	603.5	604.9	604.3
47.5°	430.9	433.1	428.1	454.3	483.2	514.3	542.7	565.7	583.1	584.7	584.3
50°	400.4	402.2	396.8	424.2	452.9	486.0	515.7	542.3	561.7	563.3	563.1
52.5°	370.2	372.0	367.3	396.2	422.2	457.1	489.4	518.3	537.5	539.9	540.3
55°	340.9	341.7	338.1	365.7	390.9	427.5	464.6	492.7	511.8	513.9	515.1
57.5°	311.6	311.8	308.8	335.2	359.5	396.8	435.8	465.2	483.4	485.4	487.2
60°	282.6	282.4	278.9	304.6	327.8	364.7	405.3	434.5	452.1	453.9	456.3
62.5°	253.7	253.1	250.1	273.7	295.5	332.0	372.8	401.0	417.8	419.0	422.2
65°	225.0	224.4	221.6	243.4	263.2	298.1	338.1	364.9	380.0	381.7	381.1
67.5°	196.8	195.6	193.4	212.9	230.9	263.2	301.5	327.2	339.7	341.1	344.9
70°	168.5	167.1	162.1	182.9	198.6	227.5	263.2	286.0	296.5	297.9	297.3
72.5°	140.7	139.3	133.8	153.0	166.3	191.5	223.4	242.4	251.5	252.7	252.7
75°	113.6	112.8	109.4	123.9	135.0	155.6	182.7	198.4	205.5	206.9	206.5
77.5°	87.6	87.0	83.6	96.1	104.8	120.1	141.9	154.2	159.4	161.1	164.5
80°	62.8	62.6	57.1	69.4	73.3	86.2	102.1	111.6	114.4	116.7	119.1
82.5°	40.2	40.4	34.9	45.4	47.0	55.3	65.2	71.0	73.1	74.9	76.7
85°	19.6	20.4	17.4	24.0	24.2	28.5	32.7	34.9	35.7	37.1	38.8
87.5°	5.0	5.9	3.2	6.9	6.1	7.9	9.1	9.7	9.5	10.5	11.1
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°	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2
2.5°	846.9	853.3	850.1	860.6	864.6	858.2	869.5	869.7	861.6	871.1	876.3
5°	833.8	840.4	838.4	849.3	854.3	848.7	862.4	865.0	857.2	867.9	876.3
7.5°	820.4	828.3	825.7	836.8	842.8	838.4	853.1	857.4	851.3	863.0	874.3
10°	808.9	815.6	812.8	824.5	829.7	826.1	840.6	848.5	842.8	857.2	870.7
12.5°	797.6	803.1	799.9	809.5	814.6	809.9	827.7	835.0	830.9	845.9	863.2
15°	783.1	789.2	784.7	793.4	797.2	793.2	807.7	820.2	815.2	831.5	850.7
17.5°	772.0	775.4	769.4	776.2	778.5	773.0	787.7	800.1	796.4	814.2	836.4
20°	759.7	762.5	754.0	757.9	757.7	750.8	764.3	776.4	774.0	793.6	818.8
22.5°	746.0	747.4	737.5	738.3	737.9	726.6	738.7	751.0	750.0	769.8	798.0
25°	731.4	731.6	718.9	718.5	714.1	700.8	711.5	725.4	722.4	743.7	773.4
27.5°	717.1	715.1	699.7	696.1	689.0	673.1	682.6	695.1	693.3	714.3	747.2
30°	701.8	699.1	680.4	673.7	663.4	645.1	652.9	664.6	665.6	684.0	718.5
32.5°	687.2	680.6	659.8	650.1	637.2	615.8	620.0	631.9	633.5	652.1	687.6
35°	668.5	664.0	638.4	621.8	609.1	585.7	590.2	598.4	600.8	619.0	655.1
37.5°	650.7	643.6	616.4	596.2	579.9	555.2	556.4	564.9	567.3	585.7	621.4
40°	632.3	622.2	593.0	569.4	550.6	524.8	523.3	532.2	534.0	552.0	584.3
42.5°	612.8	600.6	567.7	541.9	520.3	494.1	491.3	498.9	500.9	518.5	550.2
45°	593.0	578.4	541.9	513.7	490.0	463.2	460.4	466.2	469.3	485.8	516.3
47.5°	572.0	555.0	515.3	483.8	459.4	432.5	429.1	434.9	437.4	453.7	482.6
50°	550.0	529.4	487.8	453.1	428.9	402.5	397.4	404.3	406.5	421.8	450.1
52.5°	525.8	503.0	458.6	422.2	398.0	372.8	366.7	373.4	376.0	390.9	417.0
55°	500.1	475.5	429.1	393.8	367.5	342.9	337.9	340.5	346.1	360.3	384.5
57.5°	471.3	446.9	398.0	362.1	336.9	313.2	309.0	311.4	316.7	330.4	352.2
60°	440.6	414.8	366.3	330.4	306.0	283.6	279.7	282.0	287.6	300.1	320.3
62.5°	410.3	381.3	333.6	297.9	275.7	254.9	253.9	253.1	258.3	270.5	288.2
65°	373.6	345.7	299.5	265.6	245.4	226.7	222.6	224.4	229.5	240.6	259.2
67.5°	334.2	309.0	264.6	233.3	215.4	198.6	195.2	196.0	201.2	210.9	227.1
70°	292.5	270.3	228.9	200.8	185.7	169.9	167.7	167.9	173.0	181.4	195.6
72.5°	248.7	228.7	192.7	168.7	156.2	144.9	142.9	140.5	145.1	152.4	164.5
75°	204.1	186.5	156.8	137.2	127.4	117.9	116.1	113.6	118.3	124.5	134.0
77.5°	159.0	144.9	121.9	106.8	99.1	92.0	90.4	87.8	92.4	97.1	104.5
80°	115.0	104.8	91.0	75.1	72.5	67.8	66.2	63.4	67.8	70.8	76.5
82.5°	74.3	67.4	59.5	48.4	48.0	44.6	43.8	40.6	44.6	46.4	50.7
85°	37.5	34.3	32.3	24.6	25.4	23.2	23.0	19.6	22.8	23.6	26.0
87.5°	10.7	11.3	10.1	6.1	7.7	7.3	7.3	5.2	7.3	7.3	8.3
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: P838235

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1LO-50-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2
2.5°	866.1	869.5	870.3	870.1	872.3	884.4	880.4	884.4
5°	868.1	875.7	877.8	880.6	884.2	897.9	893.5	898.3
7.5°	869.3	880.8	885.2	890.7	896.5	911.9	908.2	913.1
10°	869.3	884.2	890.7	899.8	907.6	925.4	922.0	927.6
12.5°	865.7	884.8	893.9	906.6	916.7	935.9	934.5	938.5
15°	858.2	881.8	894.3	910.7	923.2	944.6	944.0	948.8
17.5°	848.1	876.6	891.7	912.3	928.0	952.0	953.4	956.1
20°	835.4	866.7	886.4	911.7	931.4	957.9	959.7	963.3
22.5°	818.6	854.8	878.6	909.0	931.9	960.3	963.5	967.0
25°	798.8	840.4	868.3	904.0	929.8	960.1	964.5	967.6
27.5°	776.2	821.9	855.2	895.9	924.2	956.9	962.3	966.0
30°	750.0	802.1	840.2	885.4	916.5	950.8	956.7	960.3
32.5°	723.0	780.3	822.5	871.9	905.4	941.1	946.2	949.0
35°	693.5	753.8	801.1	854.6	891.1	925.6	929.4	932.5
37.5°	661.4	725.2	776.6	835.0	870.9	904.0	907.4	910.9
40°	628.3	695.1	749.2	811.0	846.9	877.6	881.2	883.6
42.5°	595.0	661.8	719.9	782.7	818.4	847.9	850.1	852.5
45°	561.3	627.3	687.0	751.4	786.7	814.4	815.2	817.2
47.5°	527.0	591.6	650.9	715.7	750.6	775.8	776.6	778.3
50°	492.5	555.8	612.4	677.1	711.3	737.9	734.3	735.9
52.5°	458.6	518.3	576.0	635.6	669.3	692.9	693.9	690.7
55°	425.3	481.6	534.6	592.0	624.1	642.4	641.8	643.0
57.5°	391.6	444.4	493.1	545.5	576.8	594.2	597.8	593.6
60°	357.2	406.9	450.5	497.9	528.2	542.7	547.0	542.9
62.5°	323.1	368.7	408.3	449.7	477.7	495.7	495.3	490.9
65°	289.0	330.4	365.7	400.8	425.3	443.2	442.4	438.4
67.5°	257.5	291.6	323.3	351.8	373.0	385.3	389.5	384.7
70°	222.8	252.3	280.1	302.9	320.5	331.6	335.6	331.4
72.5°	188.1	213.1	232.7	254.7	268.2	277.5	281.8	277.7
75°	153.8	174.4	190.3	207.5	217.0	224.8	229.7	225.6
77.5°	120.5	136.4	149.2	161.7	172.6	174.4	178.6	176.0
80°	88.8	100.3	109.6	117.9	125.7	126.5	130.0	128.4
82.5°	59.1	66.8	69.2	77.9	83.0	82.1	85.6	84.4
85°	31.3	35.9	40.2	42.8	45.6	43.0	46.0	44.8
87.5°	10.5	11.1	9.7	13.7	15.1	12.9	14.7	14.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)