

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: P838146

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-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: P838146
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-LD4-1STD-20-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

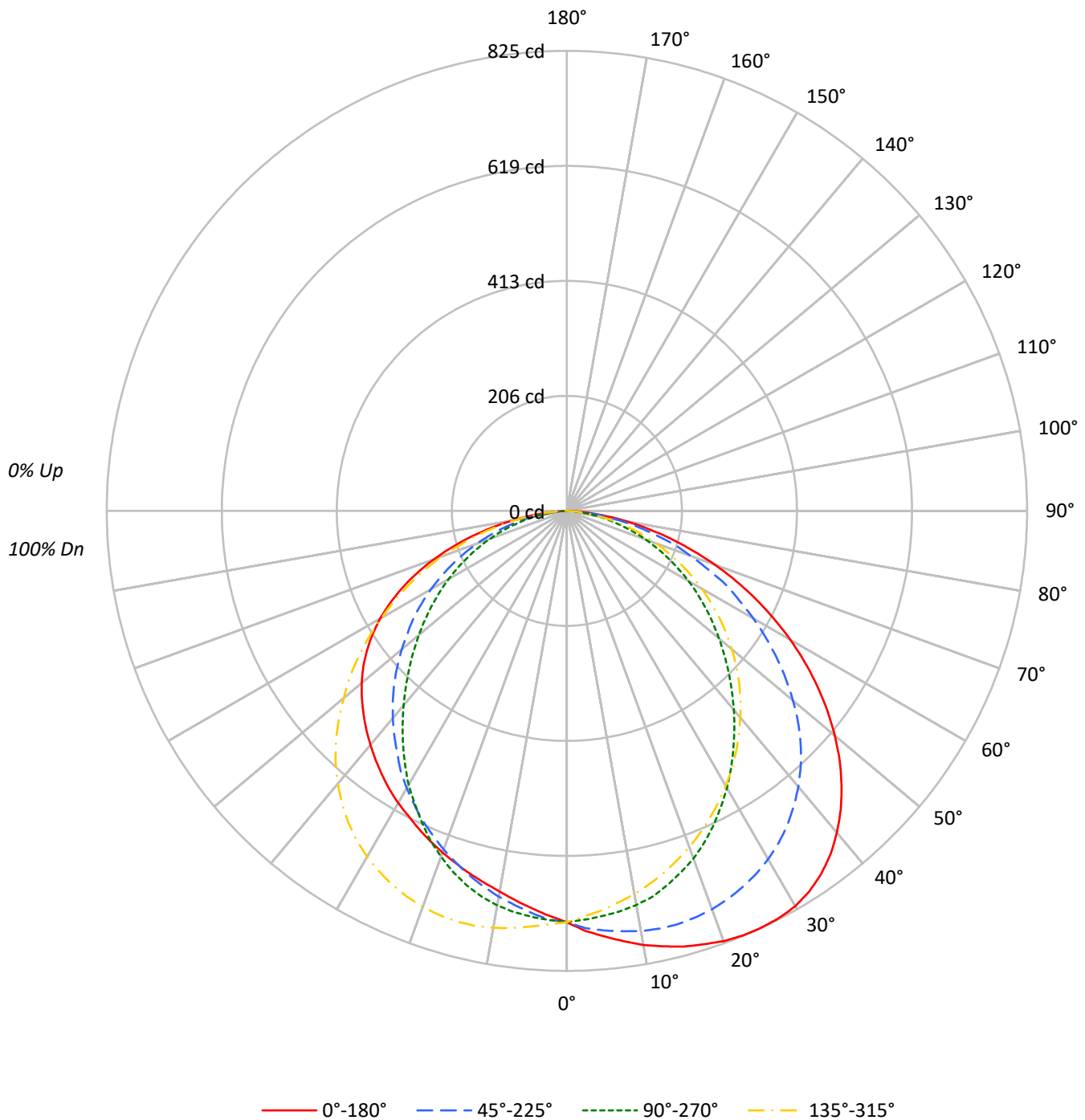
Lumens per Lamp: N/A
Luminaire Lumens: 2163.7 lumens
Efficiency: N/A
Efficacy: 65.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

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°	992	992	992	992
5°	1034	985	967	987
10°	1080	980	947	982
15°	1126	968	938	968
20°	1176	950	934	945
25°	1224	924	934	914
30°	1272	891	940	882
35°	1305	855	949	841
40°	1323	818	962	800
45°	1325	781	981	761
50°	1313	745	1005	725
55°	1286	712	1027	692
60°	1245	677	1041	660
65°	1189	637	1036	623
70°	1111	591	999	580
75°	1000	527	917	524
80°	848	441	770	448
85°	590	292	489	299

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.0	3.2
10°-20°	202.8	9.4
20°-30°	310.7	14.4
30°-40°	377.8	17.5
40°-50°	392.8	18.2
50°-60°	354.8	16.4
60°-70°	269.7	12.5
70°-80°	150.4	7.0
80°-90°	34.6	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°	583.5	27.0
0°-40°	961.4	44.4
0°-60°	1708.9	79.0
0°-90°	2163.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2163.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	738	738	738	738	738	
5°	766	729	716	731	766	74
15°	809	695	673	695	809	229
25°	825	622	629	616	825	381
35°	795	520	578	512	795	496
45°	696	410	516	400	696	536
55°	548	304	438	295	548	489
65°	374	200	325	196	374	369
75°	192	101	176	101	192	204
85°	38	19	32	19	38	48
90°	0	0	0	0	0	

TEST NUMBER: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5
2.5°	753.8	742.8	743.0	752.6	745.2	748.8	738.5	742.5	741.3	742.1	733.7
5°	765.7	753.8	753.7	761.9	753.7	755.2	742.1	744.7	740.9	738.5	729.4
7.5°	778.3	766.4	765.2	772.4	761.6	760.4	745.9	745.9	739.0	733.0	724.4
10°	790.6	778.4	776.9	782.4	769.0	765.0	747.5	744.7	735.6	726.7	717.4
12.5°	799.9	787.6	786.3	789.8	774.6	767.4	747.5	742.1	728.7	716.2	708.9
15°	808.7	796.0	792.7	794.4	777.1	767.4	745.1	736.8	719.6	703.1	694.7
17.5°	814.9	802.7	799.4	799.2	778.3	764.5	739.9	728.5	707.9	687.9	679.5
20°	821.1	808.9	804.8	801.7	777.9	760.5	732.3	717.0	692.9	670.6	663.5
22.5°	824.2	811.6	807.2	802.5	775.7	753.3	723.0	703.6	676.1	649.4	643.6
25°	824.7	811.8	807.0	800.3	771.2	744.7	711.0	687.4	656.6	627.0	622.1
27.5°	823.3	809.2	804.4	796.3	764.5	734.2	696.7	669.0	636.0	603.3	598.0
30°	818.5	804.2	799.6	789.1	755.0	721.3	681.1	648.6	613.1	578.4	573.7
32.5°	808.9	794.9	791.2	780.7	744.7	706.4	662.8	626.5	587.8	554.6	547.7
35°	794.8	780.8	778.4	767.4	730.3	688.5	642.9	602.4	561.0	527.1	520.4
37.5°	776.4	764.7	761.1	750.2	713.2	668.2	620.0	576.3	533.6	497.2	493.0
40°	753.1	742.1	739.4	729.7	693.5	645.6	595.2	549.3	505.4	471.5	465.7
42.5°	726.7	716.3	714.8	704.8	669.0	620.7	568.4	521.2	476.0	443.3	437.5
45°	696.5	686.6	686.2	676.8	642.4	593.0	540.2	492.9	447.3	413.4	410.3
47.5°	663.3	654.4	654.4	645.6	612.6	562.5	511.1	463.3	418.4	388.4	382.9
50°	627.2	618.8	616.2	611.9	579.7	529.3	480.5	434.4	389.8	361.3	355.9
52.5°	588.7	581.5	583.2	575.3	544.1	494.8	449.5	401.9	361.1	335.1	329.8
55°	548.1	537.8	539.3	536.4	507.0	459.1	414.8	375.0	332.9	308.4	303.5
57.5°	505.9	492.5	498.0	496.3	467.4	422.7	382.9	344.6	304.8	282.3	277.5
60°	462.8	449.9	455.5	454.0	426.8	386.2	350.1	314.5	277.0	256.5	251.7
62.5°	418.4	406.5	411.7	410.5	385.5	348.9	317.4	284.7	248.9	230.5	226.0
65°	373.6	362.3	366.9	366.1	343.0	315.2	283.8	253.9	220.7	204.7	200.2
67.5°	327.9	317.4	321.7	321.7	300.5	273.9	250.1	222.8	193.0	179.3	175.1
70°	282.5	272.7	276.5	276.1	258.2	236.5	216.1	191.6	165.0	153.6	150.2
72.5°	236.7	228.1	231.6	231.2	216.2	202.3	182.0	160.8	137.6	128.5	125.4
75°	192.3	184.2	187.5	187.2	175.0	161.9	148.3	130.7	110.8	104.4	101.3
77.5°	150.0	141.8	144.5	144.5	135.6	126.1	115.3	101.7	87.6	80.7	78.4
80°	109.4	105.5	104.1	104.2	98.2	92.0	86.5	73.5	63.1	58.5	56.9
82.5°	71.9	68.6	67.3	67.6	64.2	60.4	56.9	47.8	40.9	38.2	37.3
85°	38.2	35.8	34.6	35.4	34.7	32.7	31.0	24.8	20.5	19.4	18.9
87.5°	12.0	10.5	9.6	12.7	10.8	9.6	9.3	7.4	5.7	5.7	5.5
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: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5
2.5°	736.5	736.5	729.7	728.2	727.5	728.4	721.7	720.5	730.1	726.8	719.4
5°	730.6	730.3	720.8	719.1	719.1	718.1	710.5	708.8	718.4	715.6	707.6
7.5°	723.4	722.4	711.2	710.0	708.2	707.6	699.1	697.9	706.2	704.5	696.9
10°	714.6	713.6	700.3	699.5	697.6	696.2	688.3	687.4	695.9	693.1	687.1
12.5°	703.1	701.2	687.6	686.7	685.2	684.7	676.9	676.6	685.9	683.1	676.8
15°	687.9	686.4	671.3	671.6	671.8	671.8	665.6	665.2	674.4	673.2	666.3
17.5°	671.3	669.2	654.7	655.8	657.0	658.4	653.5	654.4	664.0	662.5	656.3
20°	652.3	650.3	636.2	639.1	641.7	644.4	641.3	643.7	652.7	652.0	647.3
22.5°	631.2	629.1	616.0	620.5	624.8	630.0	628.6	631.3	640.8	640.6	636.5
25°	605.4	605.9	594.4	599.9	607.1	614.3	614.8	619.3	629.8	628.8	625.0
27.5°	581.3	582.0	569.8	579.1	588.7	598.0	600.2	606.4	617.1	616.2	612.9
30°	556.0	556.9	545.0	557.7	569.4	580.8	585.6	594.0	604.9	604.9	601.4
32.5°	529.7	531.2	518.8	535.9	549.5	562.7	571.1	579.9	592.3	592.0	589.0
35°	502.7	504.4	493.0	514.7	528.3	544.5	555.0	566.7	577.7	577.8	575.6
37.5°	475.1	477.2	466.9	490.6	506.1	525.2	538.6	550.3	562.5	563.2	561.2
40°	447.8	450.0	441.1	464.0	483.6	504.9	520.4	534.2	547.6	547.9	546.5
42.5°	420.4	422.8	416.1	438.5	460.7	483.6	501.8	517.5	531.2	532.1	530.5
45°	393.8	395.8	391.0	415.5	436.8	461.7	482.7	500.4	514.4	515.6	515.1
47.5°	367.3	369.2	364.9	387.2	411.8	438.3	462.6	482.2	497.0	498.4	498.0
50°	341.3	342.9	338.2	361.6	386.0	414.2	439.5	462.2	478.8	480.1	480.0
52.5°	315.5	317.1	313.1	337.7	359.9	389.6	417.2	441.8	458.1	460.2	460.5
55°	290.6	291.2	288.1	311.7	333.2	364.4	396.0	419.9	436.3	438.0	439.0
57.5°	265.6	265.8	263.2	285.7	306.4	338.2	371.4	396.5	412.0	413.7	415.3
60°	240.8	240.7	237.7	259.6	279.4	310.9	345.4	370.4	385.3	386.9	389.0
62.5°	216.2	215.7	213.1	233.3	251.9	283.0	317.7	341.8	356.1	357.1	359.9
65°	191.8	191.3	188.9	207.5	224.3	254.1	288.1	311.0	323.9	325.3	324.8
67.5°	167.7	166.7	164.8	181.5	196.8	224.3	257.0	278.9	289.5	290.7	294.0
70°	143.6	142.4	138.1	155.9	169.3	193.9	224.3	243.8	252.7	253.9	253.4
72.5°	119.9	118.7	114.1	130.4	141.8	163.3	190.4	206.6	214.3	215.4	215.4
75°	96.9	96.2	93.2	105.6	115.1	132.6	155.7	169.1	175.1	176.3	176.0
77.5°	74.7	74.1	71.2	81.9	89.3	102.4	120.9	131.4	135.9	137.3	140.2
80°	53.5	53.3	48.7	59.2	62.4	73.5	87.0	95.1	97.5	99.4	101.5
82.5°	34.2	34.4	29.8	38.7	40.1	47.1	55.6	60.6	62.3	63.8	65.4
85°	16.7	17.4	14.8	20.5	20.6	24.3	27.9	29.8	30.4	31.7	33.0
87.5°	4.3	5.0	2.8	5.8	5.2	6.7	7.7	8.3	8.1	8.9	9.5
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: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5
2.5°	721.8	727.3	724.6	733.5	737.0	731.5	741.1	741.3	734.4	742.5	747.0
5°	710.7	716.3	714.6	723.9	728.2	723.4	735.1	737.3	730.6	739.7	747.0
7.5°	699.3	706.0	703.8	713.2	718.4	714.6	727.2	730.8	725.6	735.6	745.2
10°	689.5	695.2	692.8	702.7	707.2	704.1	716.5	723.2	718.4	730.6	742.1
12.5°	679.9	684.5	681.8	690.0	694.3	690.4	705.5	711.7	708.2	721.0	735.8
15°	667.5	672.6	668.9	676.2	679.5	676.1	688.5	699.1	694.8	708.8	725.1
17.5°	658.0	660.9	655.8	661.6	663.5	658.9	671.4	681.9	678.8	694.0	712.9
20°	647.5	649.9	642.7	646.0	645.8	639.9	651.5	661.8	659.7	676.4	697.9
22.5°	635.8	637.0	628.6	629.3	628.9	619.3	629.6	640.1	639.3	656.1	680.2
25°	623.4	623.6	612.8	612.4	608.6	597.3	606.4	618.3	615.7	633.9	659.2
27.5°	611.2	609.5	596.4	593.3	587.3	573.7	581.8	592.5	590.9	608.8	636.9
30°	598.1	595.9	579.9	574.2	565.5	549.8	556.5	566.5	567.4	583.0	612.4
32.5°	585.8	580.1	562.4	554.1	543.1	524.9	528.5	538.6	540.0	555.8	586.1
35°	569.8	566.0	544.1	530.0	519.2	499.2	503.0	510.1	512.1	527.6	558.4
37.5°	554.6	548.6	525.4	508.2	494.2	473.3	474.3	481.5	483.6	499.2	529.7
40°	539.0	530.4	505.4	485.3	469.3	447.3	446.1	453.6	455.2	470.5	498.0
42.5°	522.3	512.0	483.9	461.9	443.5	421.1	418.7	425.3	427.0	441.9	469.0
45°	505.4	493.0	461.9	437.8	417.7	394.8	392.4	397.4	400.0	414.1	440.1
47.5°	487.5	473.1	439.2	412.4	391.5	368.7	365.7	370.7	372.8	386.7	411.3
50°	468.8	451.2	415.8	386.2	365.6	343.0	338.7	344.6	346.5	359.5	383.6
52.5°	448.1	428.7	390.9	359.9	339.2	317.7	312.6	318.3	320.5	333.2	355.4
55°	426.3	405.3	365.7	335.6	313.3	292.3	288.0	290.2	295.0	307.1	327.7
57.5°	401.7	380.9	339.2	308.6	287.1	267.0	263.4	265.4	269.9	281.6	300.2
60°	375.5	353.5	312.2	281.6	260.8	241.7	238.4	240.3	245.1	255.8	273.0
62.5°	349.7	325.0	284.4	253.9	235.0	217.3	216.4	215.7	220.2	230.5	245.7
65°	318.4	294.7	255.3	226.4	209.2	193.2	189.7	191.3	195.6	205.1	220.9
67.5°	284.9	263.4	225.5	198.9	183.6	169.3	166.4	167.0	171.5	179.8	193.5
70°	249.3	230.3	195.1	171.2	158.3	144.8	143.0	143.1	147.4	154.7	166.7
72.5°	211.9	194.9	164.3	143.8	133.2	123.5	121.8	119.7	123.7	129.9	140.2
75°	173.9	159.0	133.7	117.0	108.6	100.5	98.9	96.9	100.8	106.1	114.2
77.5°	135.6	123.5	103.9	91.0	84.5	78.4	77.1	74.8	78.8	82.7	89.1
80°	98.1	89.3	77.6	64.0	61.8	57.8	56.4	54.0	57.8	60.4	65.2
82.5°	63.3	57.5	50.7	41.3	40.9	38.0	37.3	34.6	38.0	39.6	43.2
85°	32.0	29.2	27.5	21.0	21.7	19.8	19.6	16.7	19.4	20.1	22.2
87.5°	9.1	9.6	8.6	5.2	6.5	6.2	6.2	4.5	6.2	6.2	7.1
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: P838146

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-20-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	737.5	737.5	737.5	737.5	737.5	737.5	737.5	737.5
2.5°	738.2	741.1	741.8	741.6	743.5	753.8	750.4	753.8
5°	739.9	746.4	748.2	750.6	753.7	765.4	761.6	765.7
7.5°	740.9	750.7	754.5	759.2	764.2	777.2	774.1	778.3
10°	740.9	753.7	759.2	766.9	773.6	788.8	785.8	790.6
12.5°	737.8	754.2	761.9	772.8	781.4	797.7	796.5	799.9
15°	731.5	751.6	762.3	776.2	786.9	805.1	804.6	808.7
17.5°	722.9	747.1	760.0	777.6	791.0	811.5	812.7	814.9
20°	712.0	738.7	755.6	777.1	793.9	816.5	818.0	821.1
22.5°	697.8	728.5	748.8	774.8	794.3	818.5	821.3	824.2
25°	680.9	716.3	740.1	770.5	792.5	818.3	822.1	824.7
27.5°	661.6	700.5	728.9	763.6	787.7	815.6	820.2	823.3
30°	639.3	683.6	716.2	754.7	781.2	810.4	815.4	818.5
32.5°	616.2	665.1	701.0	743.2	771.7	802.2	806.5	808.9
35°	591.1	642.5	682.8	728.4	759.5	788.9	792.2	794.8
37.5°	563.7	618.1	662.0	711.7	742.3	770.5	773.4	776.4
40°	535.5	592.5	638.6	691.2	721.8	748.0	751.1	753.1
42.5°	507.1	564.1	613.6	667.1	697.6	722.7	724.6	726.7
45°	478.4	534.7	585.6	640.5	670.6	694.1	694.8	696.5
47.5°	449.2	504.2	554.8	610.0	639.8	661.3	662.0	663.3
50°	419.8	473.8	521.9	577.2	606.2	628.9	625.8	627.2
52.5°	390.9	441.8	491.0	541.7	570.4	590.6	591.4	588.7
55°	362.5	410.5	455.7	504.6	531.9	547.6	547.1	548.1
57.5°	333.7	378.8	420.3	465.0	491.7	506.5	509.6	505.9
60°	304.5	346.8	384.0	424.4	450.2	462.6	466.2	462.8
62.5°	275.4	314.3	348.0	383.3	407.2	422.5	422.2	418.4
65°	246.3	281.6	311.7	341.7	362.5	377.8	377.1	373.6
67.5°	219.5	248.6	275.6	299.8	317.9	328.4	332.0	327.9
70°	189.9	215.0	238.8	258.2	273.2	282.6	286.1	282.5
72.5°	160.3	181.7	198.3	217.1	228.6	236.5	240.2	236.7
75°	131.1	148.6	162.2	176.8	184.9	191.6	195.8	192.3
77.5°	102.7	116.3	127.1	137.8	147.1	148.6	152.2	150.0
80°	75.7	85.5	93.4	100.5	107.2	107.9	110.8	109.4
82.5°	50.4	56.9	59.0	66.4	70.7	70.0	72.9	71.9
85°	26.7	30.6	34.2	36.5	38.9	36.6	39.2	38.2
87.5°	8.9	9.5	8.3	11.7	12.9	11.0	12.6	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)