

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: P838217

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1LO-40-120-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: P838217
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-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and RFI grid
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

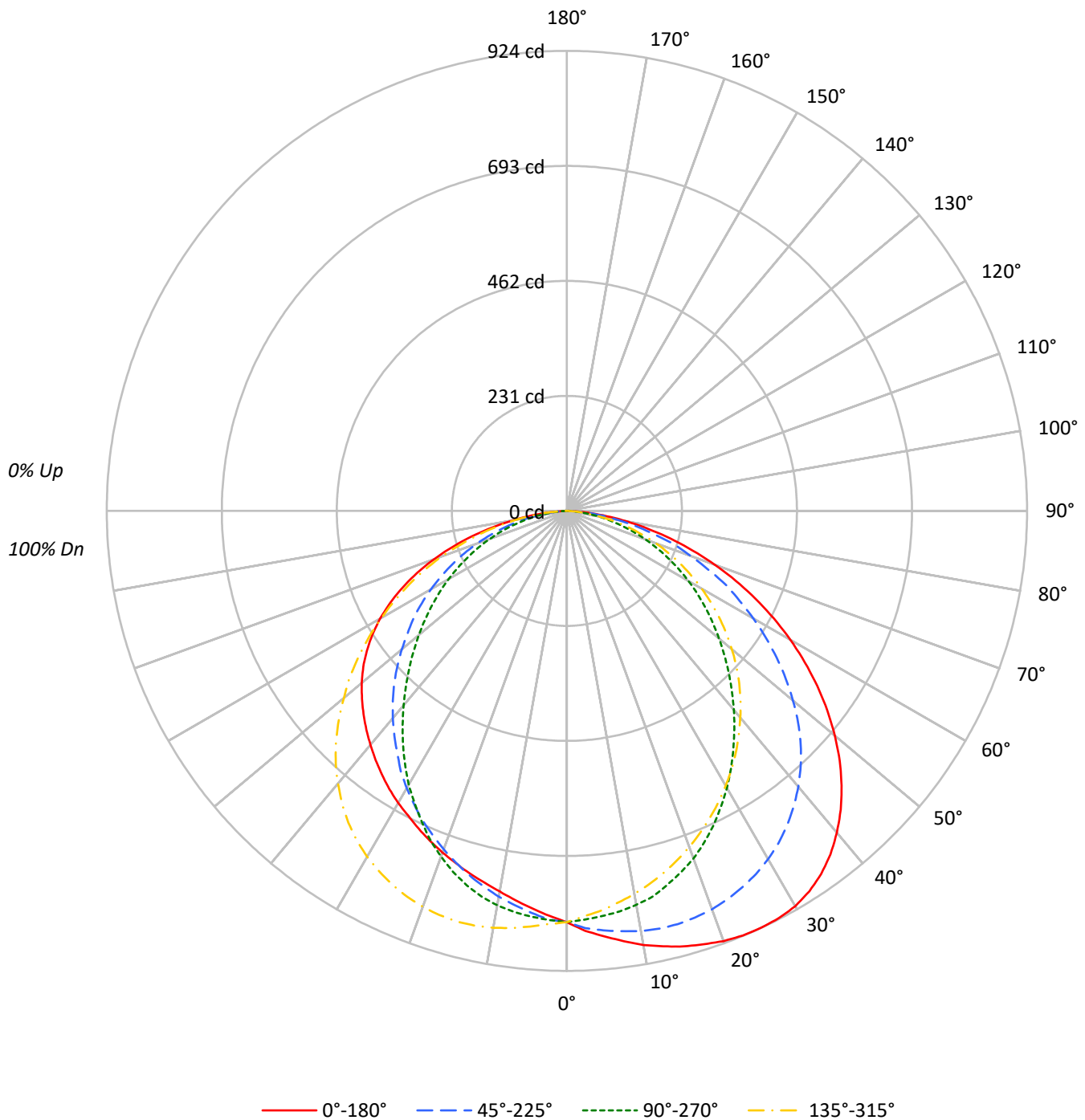
Lumens per Lamp: N/A
Luminaire Lumens: 2423.1 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	1111	1111	1111	1111
5°	1158	1103	1083	1105
10°	1210	1098	1060	1099
15°	1262	1084	1050	1084
20°	1317	1064	1046	1058
25°	1371	1034	1045	1024
30°	1424	998	1052	987
35°	1462	957	1063	942
40°	1482	916	1078	895
45°	1484	874	1099	852
50°	1470	834	1126	812
55°	1440	797	1151	775
60°	1394	759	1166	739
65°	1332	714	1160	698
70°	1244	662	1119	649
75°	1120	590	1027	587
80°	949	494	863	501
85°	661	327	546	337



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.4	3.2
10°-20°	227.1	9.4
20°-30°	348.0	14.4
30°-40°	423.1	17.5
40°-50°	439.9	18.2
50°-60°	397.3	16.4
60°-70°	302.1	12.5
70°-80°	168.4	7.0
80°-90°	38.8	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°	653.5	27.0
0°-40°	1076.6	44.4
0°-60°	1913.9	79.0
0°-90°	2423.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2423.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	826	826	826	826	826	
5°	858	817	802	818	858	83
15°	906	778	754	778	906	257
25°	924	697	704	690	924	427
35°	890	583	647	574	890	556
45°	780	460	577	448	780	601
55°	614	340	490	330	614	548
65°	418	224	364	219	418	413
75°	215	114	198	113	215	229
85°	43	21	35	22	43	54
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°	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9
2.5°	844.2	831.9	832.1	842.9	834.6	838.6	827.1	831.5	830.2	831.1	821.7
5°	857.5	844.2	844.0	853.3	844.0	845.8	831.1	834.0	829.8	827.1	816.9
7.5°	871.6	858.3	856.9	865.0	852.9	851.5	835.4	835.4	827.7	820.9	811.3
10°	885.4	871.8	870.0	876.2	861.2	856.7	837.1	834.0	823.8	813.8	803.4
12.5°	895.9	882.0	880.6	884.5	867.5	859.4	837.1	831.1	816.1	802.0	793.9
15°	905.7	891.4	887.8	889.7	870.2	859.4	834.4	825.1	805.9	787.4	777.9
17.5°	912.6	898.9	895.3	895.1	871.6	856.2	828.6	815.9	792.8	770.4	761.0
20°	919.5	905.9	901.2	897.8	871.2	851.7	820.1	803.0	776.0	751.0	743.1
22.5°	923.0	909.0	903.9	898.7	868.7	843.6	809.7	788.0	757.1	727.3	720.7
25°	923.6	909.1	903.8	896.2	863.7	834.0	796.2	769.9	735.4	702.2	696.6
27.5°	922.1	906.3	900.9	891.8	856.2	822.3	780.3	749.2	712.3	675.6	669.7
30°	916.7	900.7	895.5	883.7	845.6	807.8	762.7	726.3	686.6	647.7	642.5
32.5°	905.9	890.3	886.0	874.3	834.0	791.0	742.3	701.7	658.3	621.1	613.4
35°	890.1	874.5	871.8	859.4	817.8	771.0	720.0	674.7	628.3	590.3	582.8
37.5°	869.5	856.4	852.3	840.2	798.8	748.3	694.3	645.4	597.6	556.8	552.2
40°	843.5	831.1	828.0	817.2	776.6	723.0	666.6	615.2	566.0	528.1	521.5
42.5°	813.8	802.2	800.5	789.3	749.2	695.1	636.5	583.7	533.1	496.5	489.9
45°	780.1	768.9	768.5	757.9	719.4	664.1	604.9	552.0	500.9	463.0	459.5
47.5°	742.9	732.9	732.9	723.0	686.0	630.0	572.4	518.8	468.5	435.0	428.9
50°	702.4	693.0	690.1	685.3	649.3	592.8	538.1	486.5	436.6	404.6	398.6
52.5°	659.3	651.2	653.1	644.2	609.4	554.1	503.4	450.0	404.4	375.3	369.3
55°	613.8	602.2	604.0	600.7	567.8	514.2	464.5	420.0	372.8	345.4	339.8
57.5°	566.6	551.6	557.7	555.8	523.4	473.4	428.9	385.9	341.4	316.1	310.8
60°	518.2	503.8	510.2	508.4	478.0	432.5	392.1	352.2	310.2	287.3	281.9
62.5°	468.5	455.2	461.0	459.7	431.7	390.7	355.5	318.8	278.8	258.2	253.2
65°	418.4	405.7	410.9	410.0	384.2	352.9	317.9	284.4	247.2	229.3	224.3
67.5°	367.2	355.5	360.3	360.3	336.6	306.7	280.1	249.5	216.2	200.7	196.1
70°	316.3	305.4	309.6	309.2	289.2	264.9	242.0	214.6	184.8	172.0	168.2
72.5°	265.1	255.5	259.3	258.9	242.2	226.6	203.8	180.1	154.1	143.9	140.4
75°	215.4	206.3	210.0	209.6	195.9	181.3	166.1	146.4	124.1	116.9	113.5
77.5°	168.0	158.7	161.8	161.8	151.8	141.2	129.1	113.9	98.1	90.4	87.9
80°	122.5	118.1	116.6	116.7	110.0	103.1	96.9	82.3	70.7	65.5	63.8
82.5°	80.5	76.9	75.3	75.7	71.9	67.6	63.8	53.6	45.9	42.8	41.8
85°	42.8	40.1	38.7	39.7	38.9	36.6	34.7	27.7	22.9	21.8	21.2
87.5°	13.5	11.8	10.8	14.3	12.1	10.8	10.4	8.3	6.4	6.4	6.2
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°	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9
2.5°	824.8	824.8	817.2	815.5	814.7	815.7	808.2	806.8	817.6	814.0	805.7
5°	818.2	817.8	807.2	805.3	805.3	804.1	795.7	793.7	804.5	801.5	792.4
7.5°	810.1	809.0	796.4	795.1	793.2	792.4	783.0	781.6	790.9	788.9	780.5
10°	800.3	799.1	784.3	783.3	781.2	779.7	770.8	769.9	779.3	776.2	769.5
12.5°	787.4	785.3	770.0	769.1	767.4	766.8	758.1	757.7	768.1	765.0	757.9
15°	770.4	768.7	751.7	752.1	752.3	752.3	745.4	745.0	755.2	753.9	746.2
17.5°	751.7	749.4	733.3	734.4	735.8	737.3	731.9	732.9	743.7	741.9	735.0
20°	730.6	728.2	712.4	715.7	718.6	721.7	718.2	720.9	730.9	730.2	725.0
22.5°	706.9	704.5	689.9	694.9	699.7	705.5	704.0	707.0	717.6	717.5	712.8
25°	678.0	678.5	665.6	671.8	679.9	688.0	688.6	693.6	705.3	704.2	699.9
27.5°	651.0	651.8	638.1	648.5	659.3	669.7	672.2	679.1	691.1	690.1	686.4
30°	622.7	623.6	610.3	624.6	637.7	650.4	655.8	665.2	677.4	677.4	673.5
32.5°	593.2	594.9	581.1	600.1	615.3	630.2	639.6	649.4	663.3	662.9	659.7
35°	562.9	564.9	552.2	576.4	591.6	609.8	621.5	634.6	646.9	647.1	644.6
37.5°	532.1	534.4	522.9	549.5	566.8	588.2	603.2	616.3	630.0	630.8	628.4
40°	501.5	504.0	494.0	519.6	541.6	565.4	582.8	598.2	613.2	613.6	612.1
42.5°	470.9	473.5	466.0	491.1	515.9	541.6	562.0	579.5	594.9	595.9	594.2
45°	441.0	443.3	437.9	465.3	489.2	517.1	540.6	560.4	576.0	577.4	576.8
47.5°	411.3	413.4	408.6	433.7	461.2	490.9	518.1	540.0	556.6	558.1	557.7
50°	382.2	384.0	378.8	405.0	432.3	463.9	492.2	517.7	536.2	537.7	537.5
52.5°	353.3	355.1	350.6	378.2	403.0	436.4	467.2	494.7	513.0	515.4	515.7
55°	325.4	326.2	322.7	349.1	373.2	408.0	443.5	470.3	488.6	490.5	491.7
57.5°	297.5	297.7	294.8	320.0	343.1	378.8	415.9	444.1	461.4	463.3	465.1
60°	269.7	269.5	266.3	290.7	312.9	348.1	386.9	414.8	431.6	433.3	435.6
62.5°	242.2	241.6	238.7	261.2	282.0	316.9	355.8	382.8	398.8	400.0	403.0
65°	214.8	214.2	211.5	232.3	251.2	284.6	322.7	348.3	362.8	364.3	363.7
67.5°	187.8	186.7	184.6	203.3	220.4	251.2	287.8	312.3	324.2	325.6	329.2
70°	160.9	159.5	154.7	174.5	189.6	217.1	251.2	273.0	283.0	284.4	283.8
72.5°	134.3	132.9	127.7	146.0	158.7	182.8	213.3	231.4	240.0	241.2	241.2
75°	108.5	107.7	104.4	118.3	128.9	148.5	174.4	189.4	196.1	197.5	197.1
77.5°	83.6	83.0	79.8	91.7	100.0	114.6	135.4	147.2	152.2	153.7	157.0
80°	59.9	59.7	54.5	66.3	69.9	82.3	97.5	106.5	109.2	111.4	113.7
82.5°	38.3	38.5	33.3	43.3	44.9	52.8	62.2	67.8	69.7	71.5	73.2
85°	18.7	19.5	16.6	22.9	23.1	27.2	31.2	33.3	34.1	35.4	37.0
87.5°	4.8	5.6	3.1	6.6	5.8	7.5	8.7	9.2	9.1	10.0	10.6
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°	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9
2.5°	808.4	814.6	811.5	821.5	825.3	819.2	830.0	830.2	822.5	831.5	836.5
5°	795.9	802.2	800.3	810.7	815.5	810.1	823.2	825.7	818.2	828.4	836.5
7.5°	783.1	790.7	788.2	798.8	804.5	800.3	814.4	818.4	812.6	823.8	834.6
10°	772.2	778.5	775.8	787.0	792.0	788.5	802.4	809.9	804.5	818.2	831.1
12.5°	761.4	766.6	763.5	772.7	777.6	773.1	790.1	797.0	793.2	807.4	824.0
15°	747.5	753.3	749.0	757.3	761.0	757.1	771.0	783.0	778.1	793.7	812.0
17.5°	736.9	740.2	734.4	741.0	743.1	737.9	751.9	763.7	760.2	777.2	798.4
20°	725.2	727.9	719.8	723.4	723.2	716.7	729.6	741.1	738.8	757.5	781.6
22.5°	712.1	713.4	704.0	704.7	704.4	693.6	705.1	716.9	715.9	734.8	761.8
25°	698.2	698.4	686.2	685.9	681.6	668.9	679.1	692.4	689.5	709.9	738.3
27.5°	684.5	682.6	667.9	664.5	657.7	642.5	651.6	663.5	661.8	681.8	713.2
30°	669.9	667.4	649.4	643.1	633.3	615.7	623.2	634.4	635.4	652.9	685.9
32.5°	656.0	649.6	629.8	620.5	608.2	587.8	591.8	603.2	604.7	622.5	656.4
35°	638.1	633.8	609.4	593.6	581.4	559.1	563.3	571.2	573.5	590.9	625.4
37.5°	621.1	614.4	588.4	569.1	553.5	530.0	531.2	539.2	541.6	559.1	593.2
40°	603.6	594.0	566.0	543.5	525.6	500.9	499.6	508.0	509.8	526.9	557.7
42.5°	584.9	573.3	541.9	517.3	496.7	471.6	468.9	476.2	478.2	494.9	525.2
45°	566.0	552.2	517.3	490.3	467.8	442.1	439.4	445.0	447.9	463.7	492.8
47.5°	546.0	529.8	491.9	461.8	438.5	412.9	409.6	415.2	417.5	433.1	460.6
50°	525.0	505.3	465.7	432.5	409.4	384.2	379.3	385.9	388.0	402.7	429.6
52.5°	501.9	480.1	437.7	403.0	379.9	355.8	350.1	356.4	358.9	373.2	398.0
55°	477.4	453.9	409.6	375.9	350.8	327.3	322.5	325.0	330.4	343.9	367.0
57.5°	449.9	426.5	379.9	345.6	321.5	299.0	295.0	297.3	302.3	315.4	336.2
60°	420.6	395.9	349.7	315.4	292.1	270.7	267.0	269.1	274.5	286.5	305.7
62.5°	391.7	363.9	318.5	284.4	263.2	243.3	242.4	241.6	246.6	258.2	275.1
65°	356.6	330.0	285.9	253.5	234.3	216.4	212.5	214.2	219.1	229.6	247.4
67.5°	319.0	295.0	252.6	222.7	205.6	189.6	186.3	187.1	192.1	201.3	216.7
70°	279.2	258.0	218.5	191.7	177.2	162.2	160.1	160.3	165.1	173.2	186.7
72.5°	237.4	218.3	184.0	161.1	149.1	138.3	136.4	134.1	138.5	145.5	157.0
75°	194.8	178.0	149.7	131.0	121.6	112.5	110.8	108.5	112.9	118.9	127.9
77.5°	151.8	138.3	116.4	101.9	94.6	87.9	86.3	83.8	88.2	92.7	99.8
80°	109.8	100.0	86.9	71.7	69.2	64.7	63.2	60.5	64.7	67.6	73.0
82.5°	70.9	64.3	56.8	46.2	45.9	42.6	41.8	38.7	42.6	44.3	48.4
85°	35.8	32.8	30.8	23.5	24.3	22.2	22.0	18.7	21.8	22.5	24.9
87.5°	10.2	10.8	9.6	5.8	7.3	6.9	6.9	5.0	6.9	6.9	7.9
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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TEST NUMBER: P838217

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1LO-40-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	825.9	825.9	825.9	825.9	825.9	825.9	825.9	825.9
2.5°	826.7	830.0	830.7	830.5	832.7	844.2	840.4	844.2
5°	828.6	835.9	837.9	840.6	844.0	857.1	852.9	857.5
7.5°	829.8	840.8	845.0	850.2	855.8	870.4	867.0	871.6
10°	829.8	844.0	850.2	858.9	866.4	883.3	880.1	885.4
12.5°	826.3	844.6	853.3	865.4	875.0	893.3	892.0	895.9
15°	819.2	841.7	853.7	869.3	881.2	901.6	901.1	905.7
17.5°	809.5	836.7	851.2	870.8	885.8	908.8	910.1	912.6
20°	797.4	827.3	846.1	870.2	889.1	914.3	916.1	919.5
22.5°	781.4	815.9	838.6	867.7	889.5	916.7	919.7	923.0
25°	762.5	802.2	828.8	862.9	887.6	916.5	920.7	923.6
27.5°	741.0	784.5	816.3	855.2	882.2	913.4	918.6	922.1
30°	715.9	765.6	802.0	845.2	874.9	907.6	913.2	916.7
32.5°	690.1	744.8	785.1	832.3	864.3	898.4	903.2	905.9
35°	662.0	719.6	764.7	815.7	850.6	883.5	887.2	890.1
37.5°	631.3	692.2	741.3	797.0	831.3	862.9	866.2	869.5
40°	599.7	663.5	715.1	774.1	808.4	837.7	841.1	843.5
42.5°	568.0	631.7	687.2	747.1	781.2	809.3	811.5	813.8
45°	535.8	598.8	655.8	717.3	751.0	777.4	778.1	780.1
47.5°	503.0	564.7	621.3	683.2	716.5	740.6	741.3	742.9
50°	470.1	530.6	584.5	646.4	678.9	704.4	700.9	702.4
52.5°	437.7	494.7	549.8	606.7	638.8	661.4	662.4	659.3
55°	405.9	459.7	510.3	565.1	595.7	613.2	612.6	613.8
57.5°	373.8	424.2	470.7	520.8	550.6	567.2	570.6	566.6
60°	341.0	388.4	430.0	475.3	504.2	518.1	522.1	518.2
62.5°	308.4	352.0	389.7	429.2	456.0	473.2	472.8	468.5
65°	275.9	315.4	349.1	382.6	405.9	423.1	422.3	418.4
67.5°	245.8	278.4	308.6	335.8	356.0	367.8	371.8	367.2
70°	212.7	240.8	267.4	289.2	305.9	316.5	320.4	316.3
72.5°	179.6	203.4	222.1	243.1	256.0	264.9	268.9	265.1
75°	146.8	166.5	181.7	198.1	207.1	214.6	219.2	215.4
77.5°	115.0	130.2	142.4	154.3	164.7	166.5	170.5	168.0
80°	84.8	95.8	104.6	112.5	120.0	120.8	124.1	122.5
82.5°	56.4	63.8	66.1	74.4	79.2	78.4	81.7	80.5
85°	29.9	34.3	38.3	40.8	43.5	41.0	43.9	42.8
87.5°	10.0	10.6	9.2	13.1	14.4	12.3	14.1	13.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)