

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: P838073

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1LO-30-120-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: P838073
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-30-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

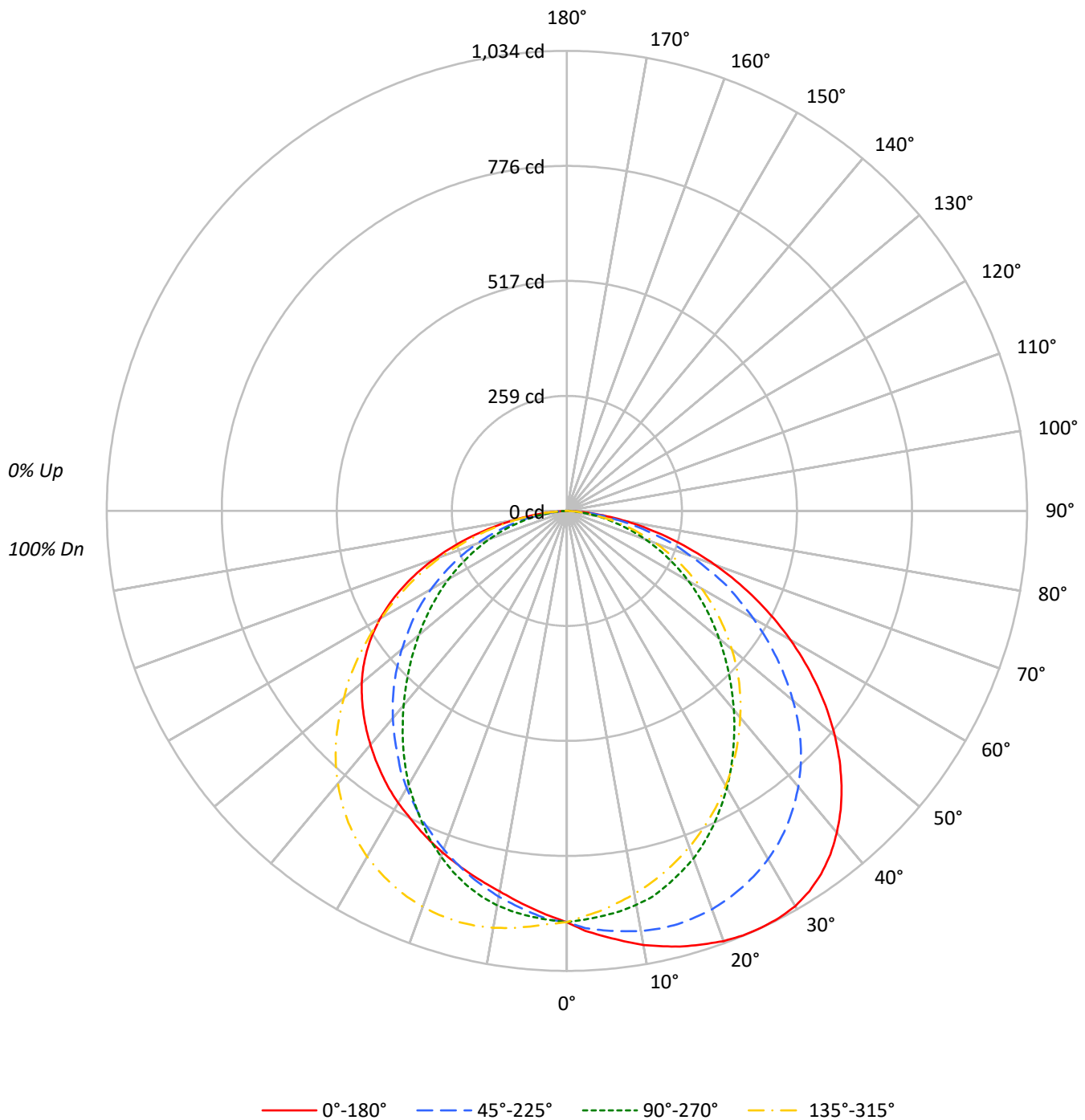
Lumens per Lamp: N/A
Luminaire Lumens: 2711.6 lumens
Efficiency: N/A
Efficacy: 115.9 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	1244	1244	1244	1244
5°	1296	1235	1211	1237
10°	1354	1228	1187	1230
15°	1412	1213	1175	1213
20°	1473	1191	1170	1184
25°	1534	1157	1170	1146
30°	1594	1117	1178	1105
35°	1636	1071	1190	1054
40°	1658	1025	1206	1002
45°	1661	978	1229	954
50°	1645	934	1259	909
55°	1611	892	1288	867
60°	1560	849	1305	827
65°	1491	799	1298	780
70°	1393	740	1252	727
75°	1253	660	1149	657
80°	1062	553	965	561
85°	739	366	613	377

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.8	3.2
10°-20°	254.1	9.4
20°-30°	389.4	14.4
30°-40°	473.5	17.5
40°-50°	492.2	18.2
50°-60°	444.6	16.4
60°-70°	338.0	12.5
70°-80°	188.5	7.0
80°-90°	43.4	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°	731.3	27.0
0°-40°	1204.8	44.4
0°-60°	2141.7	79.0
0°-90°	2711.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2711.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	924	924	924	924	924	
5°	960	914	897	916	960	93
15°	1014	871	844	871	1014	287
25°	1034	780	788	772	1034	477
35°	996	652	724	642	996	622
45°	873	514	646	501	873	672
55°	687	380	549	370	687	613
65°	468	251	408	245	468	463
75°	241	127	221	126	241	256
85°	48	24	40	24	48	60
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°	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2
2.5°	944.7	930.9	931.1	943.2	933.9	938.5	925.5	930.5	929.0	930.1	919.5
5°	959.6	944.7	944.5	954.9	944.5	946.4	930.1	933.3	928.6	925.5	914.1
7.5°	975.3	960.5	959.0	968.0	954.4	952.9	934.8	934.8	926.2	918.6	907.9
10°	990.9	975.6	973.6	980.5	963.7	958.7	936.7	933.3	921.9	910.7	899.0
12.5°	1002.5	987.0	985.5	989.8	970.8	961.8	936.7	930.1	913.2	897.5	888.5
15°	1013.5	997.5	993.4	995.6	973.8	961.8	933.7	923.4	901.8	881.1	870.6
17.5°	1021.3	1006.0	1001.9	1001.6	975.3	958.1	927.3	913.0	887.2	862.2	851.6
20°	1029.0	1013.7	1008.5	1004.7	974.9	953.1	917.8	898.6	868.4	840.4	831.5
22.5°	1032.9	1017.2	1011.6	1005.7	972.1	944.1	906.1	881.8	847.3	813.9	806.5
25°	1033.5	1017.4	1011.3	1002.9	966.5	933.3	891.0	861.5	822.9	785.8	779.6
27.5°	1031.8	1014.1	1008.1	998.0	958.1	920.1	873.1	838.4	797.0	756.1	749.4
30°	1025.8	1007.9	1002.1	988.9	946.2	904.0	853.5	812.8	768.4	724.8	719.0
32.5°	1013.7	996.2	991.5	978.4	933.3	885.2	830.7	785.2	736.7	695.1	686.4
35°	996.0	978.6	975.6	961.8	915.2	862.8	805.7	755.0	703.0	660.6	652.2
37.5°	973.0	958.3	953.8	940.2	893.8	837.4	777.0	722.2	668.8	623.1	617.9
40°	943.9	930.1	926.6	914.5	869.1	809.1	745.9	688.4	633.4	590.9	583.6
42.5°	910.7	897.7	895.8	883.3	838.4	777.9	712.3	653.2	596.5	555.6	548.2
45°	872.9	860.4	860.0	848.1	805.0	743.1	677.0	617.7	560.5	518.1	514.2
47.5°	831.3	820.1	820.1	809.1	767.7	705.0	640.5	580.6	524.3	486.8	479.9
50°	786.0	775.5	772.2	766.9	726.5	663.4	602.1	544.4	488.5	452.7	446.1
52.5°	737.8	728.7	730.9	720.9	681.9	620.0	563.3	503.6	452.5	420.0	413.3
55°	686.9	673.9	675.9	672.2	635.3	575.4	519.8	470.0	417.2	386.6	380.3
57.5°	634.1	617.2	624.1	622.0	585.8	529.7	479.9	431.8	382.0	353.8	347.7
60°	579.9	563.8	570.9	568.9	534.9	484.0	438.7	394.1	347.1	321.4	315.4
62.5°	524.3	509.4	515.9	514.4	483.1	437.2	397.8	356.8	312.0	288.9	283.3
65°	468.3	454.0	459.9	458.8	429.9	395.0	355.7	318.2	276.6	256.6	250.9
67.5°	410.9	397.8	403.2	403.2	376.6	343.2	313.5	279.2	241.9	224.6	219.5
70°	354.0	341.7	346.5	346.0	323.6	296.4	270.8	240.2	206.8	192.5	188.2
72.5°	296.7	285.9	290.2	289.8	271.0	253.5	228.1	201.6	172.5	161.0	157.2
75°	241.0	230.9	235.0	234.6	219.3	202.9	185.8	163.8	138.8	130.9	127.0
77.5°	188.0	177.6	181.1	181.1	169.9	158.0	144.4	127.4	109.7	101.1	98.3
80°	137.1	132.2	130.4	130.6	123.1	115.3	108.4	92.1	79.1	73.3	71.4
82.5°	90.1	86.0	84.3	84.7	80.4	75.7	71.4	59.9	51.3	47.9	46.8
85°	47.9	44.8	43.3	44.4	43.5	41.0	38.8	31.0	25.7	24.4	23.7
87.5°	15.1	13.2	12.1	16.0	13.6	12.1	11.6	9.3	7.1	7.1	6.9
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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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2
2.5°	922.9	922.9	914.5	912.6	911.7	912.8	904.4	902.9	915.0	910.9	901.6
5°	915.6	915.2	903.3	901.2	901.2	899.9	890.4	888.2	900.3	896.9	886.7
7.5°	906.6	905.3	891.3	889.7	887.6	886.7	876.2	874.7	885.0	882.8	873.4
10°	895.6	894.3	877.7	876.6	874.2	872.5	862.6	861.5	872.1	868.6	861.1
12.5°	881.1	878.8	861.7	860.6	858.7	858.1	848.4	847.9	859.6	856.1	848.1
15°	862.2	860.2	841.2	841.7	841.9	841.9	834.1	833.7	845.1	843.6	835.0
17.5°	841.2	838.7	820.5	821.8	823.3	825.1	819.0	820.1	832.2	830.2	822.5
20°	817.5	814.9	797.3	800.9	804.2	807.6	803.7	806.7	818.0	817.1	811.3
22.5°	791.0	788.4	772.0	777.6	783.0	789.5	787.8	791.2	803.1	802.9	797.7
25°	758.7	759.3	744.9	751.8	760.8	769.9	770.5	776.1	789.3	788.0	783.2
27.5°	728.5	729.3	714.0	725.7	737.8	749.4	752.2	760.0	773.3	772.2	768.2
30°	696.8	697.9	683.0	698.9	713.6	727.8	733.9	744.4	758.0	758.0	753.7
32.5°	663.8	665.7	650.2	671.6	688.6	705.2	715.8	726.8	742.3	741.9	738.2
35°	630.0	632.1	617.9	645.1	662.1	682.3	695.5	710.2	724.0	724.2	721.4
37.5°	595.5	598.1	585.1	614.9	634.3	658.2	675.0	689.7	705.0	705.8	703.3
40°	561.2	564.0	552.8	581.5	606.0	632.8	652.2	669.4	686.2	686.7	684.9
42.5°	526.9	529.9	521.5	549.5	577.4	606.0	628.9	648.5	665.7	666.8	664.9
45°	493.5	496.1	490.0	520.7	547.4	578.6	605.0	627.2	644.6	646.1	645.5
47.5°	460.3	462.7	457.3	485.3	516.1	549.3	579.7	604.3	622.8	624.6	624.1
50°	427.7	429.7	423.9	453.2	483.8	519.1	550.8	579.3	600.0	601.7	601.5
52.5°	395.4	397.3	392.4	423.2	451.0	488.3	522.8	553.6	574.1	576.7	577.1
55°	364.1	365.0	361.1	390.7	417.6	456.6	496.3	526.3	546.7	548.9	550.2
57.5°	332.9	333.1	329.9	358.1	384.0	423.9	465.5	496.9	516.3	518.5	520.4
60°	301.8	301.6	297.9	325.3	350.1	389.6	432.9	464.2	482.9	484.9	487.5
62.5°	271.0	270.4	267.1	292.3	315.6	354.6	398.2	428.4	446.3	447.6	451.0
65°	240.4	239.7	236.7	260.0	281.1	318.4	361.1	389.8	406.0	407.7	407.0
67.5°	210.2	208.9	206.5	227.4	246.6	281.1	322.1	349.5	362.8	364.4	368.4
70°	180.0	178.5	173.1	195.3	212.1	243.0	281.1	305.5	316.7	318.2	317.6
72.5°	150.3	148.8	142.9	163.4	177.6	204.6	238.7	258.9	268.6	269.9	269.9
75°	121.4	120.5	116.9	132.4	144.2	166.2	195.1	211.9	219.5	221.0	220.6
77.5°	93.6	92.9	89.3	102.6	111.9	128.3	151.6	164.7	170.3	172.0	175.7
80°	67.0	66.8	61.0	74.2	78.3	92.1	109.1	119.2	122.2	124.6	127.2
82.5°	42.9	43.1	37.3	48.5	50.2	59.1	69.6	75.9	78.0	80.0	81.9
85°	20.9	21.8	18.5	25.7	25.9	30.4	34.9	37.3	38.2	39.7	41.4
87.5°	5.4	6.3	3.4	7.3	6.5	8.4	9.7	10.3	10.1	11.2	11.9
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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CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2
2.5°	904.6	911.5	908.1	919.3	923.6	916.7	928.8	929.0	920.4	930.5	936.1
5°	890.6	897.7	895.6	907.2	912.6	906.6	921.2	924.0	915.6	927.0	936.1
7.5°	876.4	884.8	882.0	893.8	900.3	895.6	911.3	915.8	909.4	921.9	933.9
10°	864.1	871.2	868.2	880.7	886.3	882.4	897.9	906.3	900.3	915.6	930.1
12.5°	852.0	857.8	854.4	864.7	870.1	865.2	884.1	891.9	887.6	903.5	922.1
15°	836.5	843.0	838.2	847.5	851.6	847.3	862.8	876.2	870.8	888.2	908.7
17.5°	824.6	828.3	821.8	829.2	831.5	825.7	841.5	854.6	850.7	869.7	893.4
20°	811.5	814.5	805.5	809.5	809.3	802.0	816.4	829.4	826.8	847.7	874.7
22.5°	796.8	798.3	787.8	788.6	788.2	776.1	789.1	802.2	801.1	822.3	852.4
25°	781.3	781.5	767.9	767.5	762.8	748.5	760.0	774.8	771.6	794.5	826.1
27.5°	766.0	763.8	747.5	743.6	736.0	719.0	729.1	742.5	740.6	763.0	798.1
30°	749.6	746.8	726.8	719.6	708.7	689.0	697.4	709.9	711.0	730.6	767.5
32.5°	734.1	727.0	704.8	694.4	680.6	657.8	662.3	675.0	676.7	696.6	734.5
35°	714.0	709.3	681.9	664.2	650.7	625.6	630.4	639.2	641.8	661.2	699.8
37.5°	695.1	687.5	658.4	636.9	619.4	593.1	594.4	603.4	606.0	625.6	663.8
40°	675.4	664.7	633.4	608.2	588.1	560.5	559.0	568.5	570.5	589.6	624.1
42.5°	654.5	641.6	606.5	578.9	555.8	527.8	524.8	532.9	535.1	553.9	587.7
45°	633.4	617.9	578.9	548.7	523.5	494.8	491.8	498.0	501.3	518.9	551.5
47.5°	611.0	592.9	550.4	516.8	490.7	462.0	458.3	464.6	467.2	484.7	515.5
50°	587.5	565.5	521.1	484.0	458.1	429.9	424.5	431.8	434.2	450.6	480.8
52.5°	561.6	537.3	489.8	451.0	425.1	398.2	391.7	398.8	401.6	417.6	445.4
55°	534.2	507.9	458.3	420.6	392.6	366.3	360.9	363.7	369.7	384.8	410.7
57.5°	503.4	477.3	425.1	386.8	359.8	334.6	330.1	332.7	338.3	352.9	376.2
60°	470.6	443.0	391.3	352.9	326.8	302.9	298.8	301.2	307.2	320.6	342.1
62.5°	438.3	407.3	356.4	318.2	294.5	272.3	271.2	270.4	276.0	288.9	307.9
65°	399.1	369.3	319.9	283.7	262.2	242.1	237.8	239.7	245.1	257.0	276.8
67.5°	357.0	330.1	282.6	249.2	230.0	212.1	208.5	209.3	214.9	225.3	242.5
70°	312.4	288.7	244.5	214.5	198.3	181.5	179.2	179.4	184.8	193.8	208.9
72.5°	265.6	244.3	205.9	180.2	166.9	154.8	152.6	150.1	155.0	162.8	175.7
75°	218.0	199.2	167.5	146.6	136.0	125.9	124.0	121.4	126.3	133.0	143.2
77.5°	169.9	154.8	130.2	114.0	105.9	98.3	96.6	93.8	98.7	103.7	111.7
80°	122.9	111.9	97.2	80.2	77.4	72.4	70.7	67.7	72.4	75.7	81.7
82.5°	79.3	72.0	63.6	51.7	51.3	47.6	46.8	43.3	47.6	49.6	54.1
85°	40.1	36.7	34.5	26.3	27.2	24.8	24.6	20.9	24.4	25.2	27.8
87.5°	11.4	12.1	10.8	6.5	8.2	7.8	7.8	5.6	7.8	7.8	8.8
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: P838073

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1LO-30-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	924.2	924.2	924.2	924.2	924.2	924.2	924.2	924.2
2.5°	925.1	928.8	929.6	929.4	931.8	944.7	940.4	944.7
5°	927.3	935.5	937.6	940.6	944.5	959.2	954.4	959.6
7.5°	928.6	940.8	945.6	951.4	957.7	974.0	970.2	975.3
10°	928.6	944.5	951.4	961.1	969.5	988.5	984.8	990.9
12.5°	924.7	945.2	954.9	968.4	979.2	999.7	998.2	1002.5
15°	916.7	941.9	955.3	972.8	986.1	1009.0	1008.3	1013.5
17.5°	905.9	936.3	952.5	974.5	991.3	1016.9	1018.5	1021.3
20°	892.3	925.8	946.9	973.8	995.0	1023.2	1025.1	1029.0
22.5°	874.4	913.0	938.5	971.0	995.4	1025.8	1029.2	1032.9
25°	853.3	897.7	927.5	965.6	993.2	1025.6	1030.3	1033.5
27.5°	829.2	877.9	913.5	957.0	987.2	1022.1	1027.9	1031.8
30°	801.1	856.8	897.5	945.8	979.0	1015.7	1021.9	1025.8
32.5°	772.2	833.5	878.5	931.4	967.1	1005.3	1010.7	1013.7
35°	740.8	805.2	855.7	912.8	951.8	988.7	992.8	996.0
37.5°	706.5	774.6	829.6	891.9	930.3	965.6	969.3	973.0
40°	671.1	742.5	800.3	866.2	904.6	937.4	941.3	943.9
42.5°	635.6	706.9	769.0	836.1	874.2	905.7	908.1	910.7
45°	599.6	670.1	733.9	802.6	840.4	869.9	870.8	872.9
47.5°	562.9	631.9	695.3	764.5	801.8	828.7	829.6	831.3
50°	526.0	593.7	654.1	723.3	759.7	788.2	784.3	786.0
52.5°	489.8	553.6	615.3	678.9	714.9	740.1	741.2	737.8
55°	454.3	514.4	571.1	632.3	666.6	686.2	685.6	686.9
57.5°	418.2	474.7	526.7	582.7	616.2	634.7	638.6	634.1
60°	381.6	434.6	481.2	531.9	564.2	579.7	584.3	579.9
62.5°	345.2	393.9	436.1	480.3	510.3	529.5	529.1	524.3
65°	308.7	352.9	390.7	428.2	454.3	473.4	472.6	468.3
67.5°	275.1	311.5	345.4	375.8	398.4	411.6	416.1	410.9
70°	238.0	269.5	299.2	323.6	342.4	354.2	358.5	354.0
72.5°	200.9	227.7	248.6	272.1	286.5	296.4	301.0	296.7
75°	164.3	186.3	203.3	221.6	231.8	240.2	245.3	241.0
77.5°	128.7	145.7	159.3	172.7	184.3	186.3	190.8	188.0
80°	94.9	107.1	117.1	125.9	134.3	135.2	138.8	137.1
82.5°	63.2	71.4	73.9	83.2	88.6	87.7	91.4	90.1
85°	33.4	38.4	42.9	45.7	48.7	45.9	49.2	47.9
87.5°	11.2	11.9	10.3	14.7	16.2	13.8	15.7	15.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)