

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: P837915

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-2STD-50-120-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: P837915
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-2STD-50-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

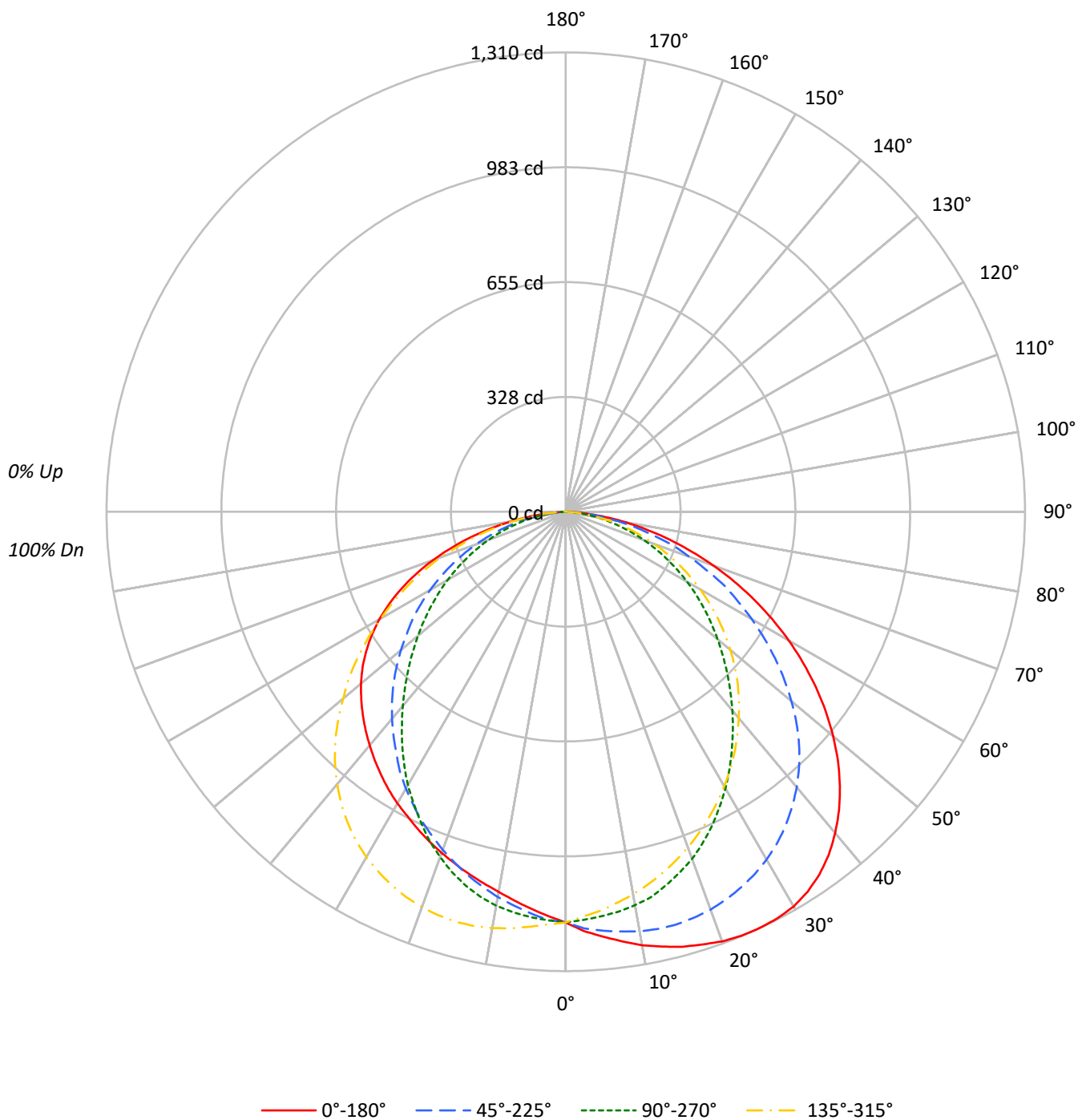
Lumens per Lamp: N/A
Luminaire Lumens: 3435.5 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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

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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
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°	3151	3151	3151	3151
5°	3284	3128	3069	3134
10°	3430	3112	3007	3117
15°	3577	3073	2978	3073
20°	3733	3017	2964	3000
25°	3888	2933	2964	2903
30°	4038	2830	2984	2799
35°	4145	2714	3014	2671
40°	4201	2597	3056	2539
45°	4209	2479	3115	2417
50°	4169	2366	3192	2303
55°	4083	2260	3263	2198
60°	3955	2151	3306	2095
65°	3778	2024	3289	1978
70°	3529	1876	3172	1842
75°	3175	1673	2911	1665
80°	2692	1401	2447	1423
85°	1871	926	1553	954



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.2	3.2
10°-20°	321.9	9.4
20°-30°	493.4	14.4
30°-40°	599.9	17.5
40°-50°	623.7	18.2
50°-60°	563.4	16.4
60°-70°	428.3	12.5
70°-80°	238.8	7.0
80°-90°	55.0	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°	926.5	27.0
0°-40°	1526.4	44.4
0°-60°	2713.5	79.0
0°-90°	3435.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3435.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1171	1171	1171	1171	1171	
5°	1216	1158	1136	1160	1216	117
15°	1284	1103	1069	1103	1284	364
25°	1310	988	998	978	1310	605
35°	1262	826	918	813	1262	788
45°	1106	652	819	635	1106	852
55°	870	482	695	468	870	777
65°	593	318	516	311	593	586
75°	305	161	280	160	305	324
85°	61	30	50	31	61	76
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°	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0
2.5°	1196.9	1179.4	1179.7	1195.0	1183.3	1189.0	1172.6	1178.9	1177.0	1178.4	1165.0
5°	1215.8	1196.9	1196.7	1209.8	1196.7	1199.1	1178.4	1182.5	1176.4	1172.6	1158.1
7.5°	1235.7	1216.9	1215.0	1226.4	1209.2	1207.3	1184.4	1184.4	1173.4	1163.9	1150.2
10°	1255.4	1236.0	1233.5	1242.3	1221.0	1214.7	1186.8	1182.5	1168.0	1153.8	1139.0
12.5°	1270.1	1250.5	1248.6	1254.0	1230.0	1218.5	1186.8	1178.4	1157.0	1137.1	1125.6
15°	1284.1	1263.8	1258.7	1261.4	1233.8	1218.5	1183.0	1169.9	1142.6	1116.4	1103.0
17.5°	1293.9	1274.5	1269.3	1269.0	1235.7	1213.9	1174.8	1156.8	1124.0	1092.3	1078.9
20°	1303.7	1284.3	1277.8	1272.9	1235.2	1207.6	1162.8	1138.5	1100.2	1064.7	1053.5
22.5°	1308.6	1288.7	1281.6	1274.2	1231.6	1196.1	1148.0	1117.2	1073.5	1031.1	1021.8
25°	1309.5	1289.0	1281.3	1270.7	1224.5	1182.5	1128.9	1091.5	1042.6	995.6	987.7
27.5°	1307.3	1284.9	1277.2	1264.4	1213.9	1165.8	1106.2	1062.3	1009.8	957.9	949.5
30°	1299.6	1277.0	1269.6	1252.9	1198.8	1145.3	1081.4	1029.8	973.5	918.3	910.9
32.5°	1284.3	1262.2	1256.2	1239.5	1182.5	1121.5	1052.4	994.8	933.3	880.6	869.7
35°	1261.9	1239.8	1236.0	1218.5	1159.5	1093.1	1020.7	956.6	890.7	836.9	826.3
37.5°	1232.7	1214.1	1208.4	1191.2	1132.5	1060.9	984.4	915.0	847.3	789.4	782.8
40°	1195.8	1178.4	1174.0	1158.7	1101.1	1025.1	945.1	872.2	802.5	748.7	739.4
42.5°	1153.8	1137.4	1134.9	1119.1	1062.3	985.5	902.5	827.6	755.8	703.9	694.6
45°	1106.0	1090.1	1089.6	1074.6	1019.9	941.5	857.7	782.6	710.2	656.4	651.5
47.5°	1053.3	1039.0	1039.0	1025.1	972.7	893.2	811.5	735.6	664.3	616.8	608.0
50°	995.9	982.5	978.4	971.6	920.5	840.5	762.9	689.7	619.0	573.6	565.1
52.5°	934.7	923.2	926.0	913.4	864.0	785.6	713.7	638.1	573.3	532.1	523.6
55°	870.2	853.9	856.3	851.7	805.0	729.0	658.6	595.5	528.5	489.8	481.8
57.5°	803.3	782.0	790.8	788.0	742.1	671.1	608.0	547.1	484.0	448.2	440.6
60°	734.8	714.3	723.3	720.8	677.7	613.2	555.9	499.3	439.8	407.3	399.6
62.5°	664.3	645.4	653.6	651.7	612.1	553.9	504.0	452.1	395.2	366.0	358.9
65°	593.3	575.2	582.6	581.3	544.7	500.4	450.7	403.2	350.4	325.0	317.9
67.5°	520.6	504.0	510.8	510.8	477.2	434.8	397.2	353.7	306.5	284.6	278.1
70°	448.5	432.9	438.9	438.4	410.0	375.6	343.1	304.3	261.9	243.9	238.5
72.5°	375.8	362.2	367.7	367.1	343.3	321.2	289.0	255.4	218.5	204.0	199.1
75°	305.4	292.5	297.7	297.2	277.8	257.0	235.5	207.6	175.9	165.8	160.9
77.5°	238.2	225.1	229.4	229.4	215.2	200.2	183.0	161.4	139.0	128.1	124.6
80°	173.7	167.4	165.3	165.5	156.0	146.1	137.4	116.6	100.2	92.9	90.4
82.5°	114.2	109.0	106.8	107.3	101.9	95.9	90.4	75.9	65.0	60.6	59.3
85°	60.6	56.8	54.9	56.3	55.2	51.9	49.2	39.3	32.5	30.9	30.0
87.5°	19.1	16.7	15.3	20.2	17.2	15.3	14.7	11.7	9.0	9.0	8.7
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°	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0
2.5°	1169.3	1169.3	1158.7	1156.2	1155.1	1156.5	1145.9	1143.9	1159.2	1154.0	1142.3
5°	1160.1	1159.5	1144.5	1141.8	1141.8	1140.1	1128.1	1125.4	1140.7	1136.3	1123.5
7.5°	1148.6	1146.9	1129.2	1127.3	1124.5	1123.5	1110.1	1108.2	1121.3	1118.5	1106.5
10°	1134.7	1133.0	1112.0	1110.6	1107.6	1105.4	1092.9	1091.5	1104.9	1100.5	1090.9
12.5°	1116.4	1113.3	1091.8	1090.4	1087.9	1087.1	1074.8	1074.3	1089.0	1084.7	1074.6
15°	1092.3	1089.9	1065.8	1066.4	1066.6	1066.6	1056.8	1056.3	1070.7	1068.8	1057.9
17.5°	1065.8	1062.5	1039.6	1041.2	1043.1	1045.3	1037.7	1039.0	1054.3	1051.9	1042.1
20°	1035.8	1032.5	1010.1	1014.7	1018.8	1023.2	1018.3	1022.1	1036.3	1035.2	1027.9
22.5°	1002.2	998.9	978.1	985.2	992.1	1000.3	998.1	1002.4	1017.5	1017.2	1010.6
25°	961.2	962.0	943.7	952.5	963.9	975.4	976.2	983.3	1000.0	998.4	992.3
27.5°	923.0	924.1	904.7	919.4	934.7	949.5	953.0	962.8	979.8	978.4	973.2
30°	882.8	884.2	865.3	885.5	904.1	922.1	929.8	943.2	960.4	960.4	954.9
32.5°	841.0	843.5	823.8	850.9	872.4	893.5	906.8	920.8	940.4	939.9	935.3
35°	798.1	800.9	782.8	817.3	838.8	864.5	881.2	899.7	917.2	917.5	913.9
37.5°	754.4	757.7	741.3	779.0	803.6	833.9	855.2	873.8	893.2	894.3	891.0
40°	711.0	714.6	700.3	736.7	767.8	801.7	826.3	848.1	869.4	870.0	867.8
42.5°	667.6	671.4	660.7	696.3	731.5	767.8	796.8	821.6	843.5	844.8	842.4
45°	625.2	628.5	620.9	659.6	693.5	733.1	766.4	794.6	816.7	818.6	817.8
47.5°	583.2	586.2	579.3	614.9	653.9	696.0	734.5	765.6	789.1	791.3	790.8
50°	541.9	544.4	537.0	574.2	612.9	657.7	697.9	733.9	760.2	762.4	762.1
52.5°	501.0	503.4	497.1	536.2	571.4	618.7	662.4	701.4	727.4	730.7	731.2
55°	461.3	462.4	457.5	494.9	529.1	578.5	628.8	666.8	692.7	695.4	697.1
57.5°	421.7	422.0	417.9	453.7	486.5	537.0	589.7	629.6	654.2	656.9	659.4
60°	382.4	382.1	377.5	412.2	443.6	493.6	548.5	588.1	611.8	614.3	617.6
62.5°	343.3	342.5	338.4	370.4	399.9	449.3	504.5	542.7	565.4	567.1	571.4
65°	304.6	303.7	299.9	329.4	356.2	403.4	457.5	493.8	514.3	516.5	515.7
67.5°	266.3	264.7	261.7	288.2	312.5	356.2	408.1	442.8	459.7	461.6	466.8
70°	228.1	226.2	219.3	247.5	268.8	307.8	356.2	387.0	401.3	403.2	402.3
72.5°	190.4	188.5	181.1	207.0	225.1	259.2	302.4	328.0	340.3	342.0	342.0
75°	153.8	152.7	148.0	167.7	182.7	210.6	247.2	268.5	278.1	280.0	279.4
77.5°	118.5	117.7	113.1	130.0	141.8	162.5	192.0	208.7	215.8	218.0	222.6
80°	84.9	84.7	77.3	94.0	99.2	116.6	138.2	151.1	154.9	157.9	161.2
82.5°	54.4	54.6	47.3	61.5	63.6	74.8	88.2	96.1	98.9	101.3	103.8
85°	26.5	27.6	23.5	32.5	32.8	38.5	44.2	47.3	48.3	50.3	52.4
87.5°	6.8	7.9	4.4	9.3	8.2	10.7	12.3	13.1	12.8	14.2	15.0
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°	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0
2.5°	1146.1	1154.9	1150.5	1164.7	1170.2	1161.4	1176.7	1177.0	1166.1	1178.9	1186.0
5°	1128.4	1137.4	1134.7	1149.4	1156.2	1148.6	1167.2	1170.7	1160.1	1174.5	1186.0
7.5°	1110.3	1121.0	1117.4	1132.5	1140.7	1134.7	1154.6	1160.3	1152.1	1168.0	1183.3
10°	1094.8	1103.8	1100.0	1115.8	1122.9	1118.0	1137.7	1148.3	1140.7	1160.1	1178.4
12.5°	1079.5	1086.9	1082.5	1095.6	1102.4	1096.1	1120.2	1130.0	1124.5	1144.8	1168.2
15°	1059.8	1068.0	1062.0	1073.7	1078.9	1073.5	1093.1	1110.1	1103.2	1125.4	1151.3
17.5°	1044.8	1049.4	1041.2	1050.5	1053.5	1046.2	1066.1	1082.8	1077.8	1101.9	1131.9
20°	1028.1	1031.9	1020.5	1025.7	1025.4	1016.1	1034.4	1050.8	1047.5	1074.0	1108.2
22.5°	1009.5	1011.5	998.1	999.2	998.6	983.3	999.7	1016.4	1015.0	1041.8	1080.0
25°	989.9	990.2	972.9	972.4	966.4	948.4	962.8	981.7	977.6	1006.5	1046.7
27.5°	970.5	967.8	947.0	942.1	932.5	910.9	923.8	940.7	938.3	966.7	1011.2
30°	949.7	946.2	920.8	911.8	897.8	873.0	883.6	899.5	900.8	925.7	972.4
32.5°	930.1	921.1	892.9	879.8	862.3	833.4	839.1	855.2	857.4	882.5	930.6
35°	904.7	898.7	864.0	841.6	824.4	792.7	798.7	809.9	813.2	837.7	886.6
37.5°	880.6	871.1	834.2	806.9	784.8	751.4	753.1	764.5	767.8	792.7	841.0
40°	855.8	842.1	802.5	770.5	745.1	710.2	708.3	720.3	722.7	747.1	790.8
42.5°	829.3	812.9	768.4	733.4	704.2	668.7	664.8	675.2	677.9	701.7	744.6
45°	802.5	782.8	733.4	695.2	663.2	626.9	623.0	631.0	635.1	657.5	698.7
47.5°	774.1	751.2	697.3	654.7	621.7	585.4	580.7	588.6	591.9	614.0	653.1
50°	744.3	716.5	660.2	613.2	580.4	544.7	537.8	547.1	550.1	570.9	609.1
52.5°	711.5	680.7	620.6	571.4	538.6	504.5	496.3	505.3	508.9	529.1	564.3
55°	676.9	643.5	580.7	532.9	497.4	464.1	457.2	460.8	468.4	487.6	520.3
57.5°	637.8	604.7	538.6	490.0	455.9	423.9	418.2	421.5	428.6	447.1	476.6
60°	596.3	561.3	495.8	447.1	414.1	383.8	378.6	381.6	389.2	406.2	433.5
62.5°	555.3	516.0	451.5	403.2	373.1	345.0	343.6	342.5	349.6	366.0	390.1
65°	505.6	467.9	405.3	359.5	332.1	306.7	301.3	303.7	310.6	325.6	350.7
67.5°	452.3	418.2	358.1	315.8	291.4	268.8	264.1	265.2	272.3	285.4	307.3
70°	395.8	365.7	309.7	271.8	251.3	230.0	227.0	227.3	234.1	245.6	264.7
72.5°	336.5	309.5	260.9	228.4	211.4	196.1	193.4	190.1	196.4	206.2	222.6
75°	276.2	252.4	212.2	185.7	172.4	159.5	157.1	153.8	160.1	168.5	181.4
77.5°	215.2	196.1	165.0	144.5	134.1	124.6	122.4	118.8	125.1	131.4	141.5
80°	155.7	141.8	123.2	101.6	98.1	91.8	89.6	85.8	91.8	95.9	103.5
82.5°	100.5	91.2	80.6	65.6	65.0	60.4	59.3	54.9	60.4	62.8	68.6
85°	50.8	46.4	43.7	33.3	34.4	31.4	31.1	26.5	30.9	32.0	35.2
87.5°	14.5	15.3	13.7	8.2	10.4	9.8	9.8	7.1	9.8	9.8	11.2
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: P837915

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-2STD-50-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0	1171.0
2.5°	1172.1	1176.7	1177.8	1177.5	1180.5	1196.9	1191.5	1196.9
5°	1174.8	1185.2	1187.9	1191.7	1196.7	1215.2	1209.2	1215.8
7.5°	1176.4	1192.0	1198.0	1205.4	1213.3	1234.1	1229.2	1235.7
10°	1176.4	1196.7	1205.4	1217.7	1228.3	1252.4	1247.7	1255.4
12.5°	1171.5	1197.5	1209.8	1227.0	1240.6	1266.6	1264.7	1270.1
15°	1161.4	1193.4	1210.3	1232.4	1249.4	1278.3	1277.5	1284.1
17.5°	1147.8	1186.3	1206.8	1234.6	1255.9	1288.4	1290.3	1293.9
20°	1130.6	1172.9	1199.7	1233.8	1260.6	1296.4	1298.8	1303.7
22.5°	1107.9	1156.8	1189.0	1230.3	1261.1	1299.6	1304.0	1308.6
25°	1081.1	1137.4	1175.1	1223.4	1258.4	1299.4	1305.4	1309.5
27.5°	1050.5	1112.3	1157.3	1212.5	1250.7	1295.0	1302.4	1307.3
30°	1015.0	1085.5	1137.1	1198.3	1240.4	1286.8	1294.7	1299.6
32.5°	978.4	1056.0	1113.1	1180.0	1225.3	1273.7	1280.5	1284.3
35°	938.5	1020.2	1084.1	1156.5	1205.9	1252.7	1257.8	1261.9
37.5°	895.1	981.4	1051.1	1130.0	1178.6	1223.4	1228.1	1232.7
40°	850.3	940.7	1013.9	1097.5	1146.1	1187.6	1192.6	1195.8
42.5°	805.2	895.6	974.3	1059.3	1107.6	1147.5	1150.5	1153.8
45°	759.6	848.9	929.8	1016.9	1064.7	1102.1	1103.2	1106.0
47.5°	713.2	800.6	880.9	968.6	1015.8	1050.0	1051.1	1053.3
50°	666.5	752.2	828.7	916.4	962.6	998.6	993.7	995.9
52.5°	620.6	701.4	779.6	860.1	905.8	937.7	939.1	934.7
55°	575.5	651.7	723.6	801.1	844.6	869.4	868.6	870.2
57.5°	529.9	601.5	667.3	738.3	780.7	804.1	809.1	803.3
60°	483.5	550.7	609.7	673.9	714.8	734.5	740.2	734.8
62.5°	437.3	499.0	552.6	608.6	646.5	670.8	670.3	664.3
65°	391.1	447.1	494.9	542.5	575.5	599.8	598.7	593.3
67.5°	348.5	394.7	437.6	476.1	504.8	521.4	527.2	520.6
70°	301.6	341.4	379.1	410.0	433.8	448.8	454.2	448.5
72.5°	254.6	288.4	314.9	344.7	363.0	375.6	381.3	375.8
75°	208.1	236.0	257.6	280.8	293.6	304.3	310.8	305.4
77.5°	163.1	184.6	201.9	218.8	233.5	236.0	241.7	238.2
80°	120.2	135.8	148.3	159.5	170.2	171.3	175.9	173.7
82.5°	80.0	90.4	93.7	105.4	112.3	111.2	115.8	114.2
85°	42.3	48.6	54.4	57.9	61.7	58.2	62.3	60.6
87.5°	14.2	15.0	13.1	18.6	20.5	17.5	19.9	19.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)