

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: P838148

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-2LO-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: P838148
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-LD4-2LO-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

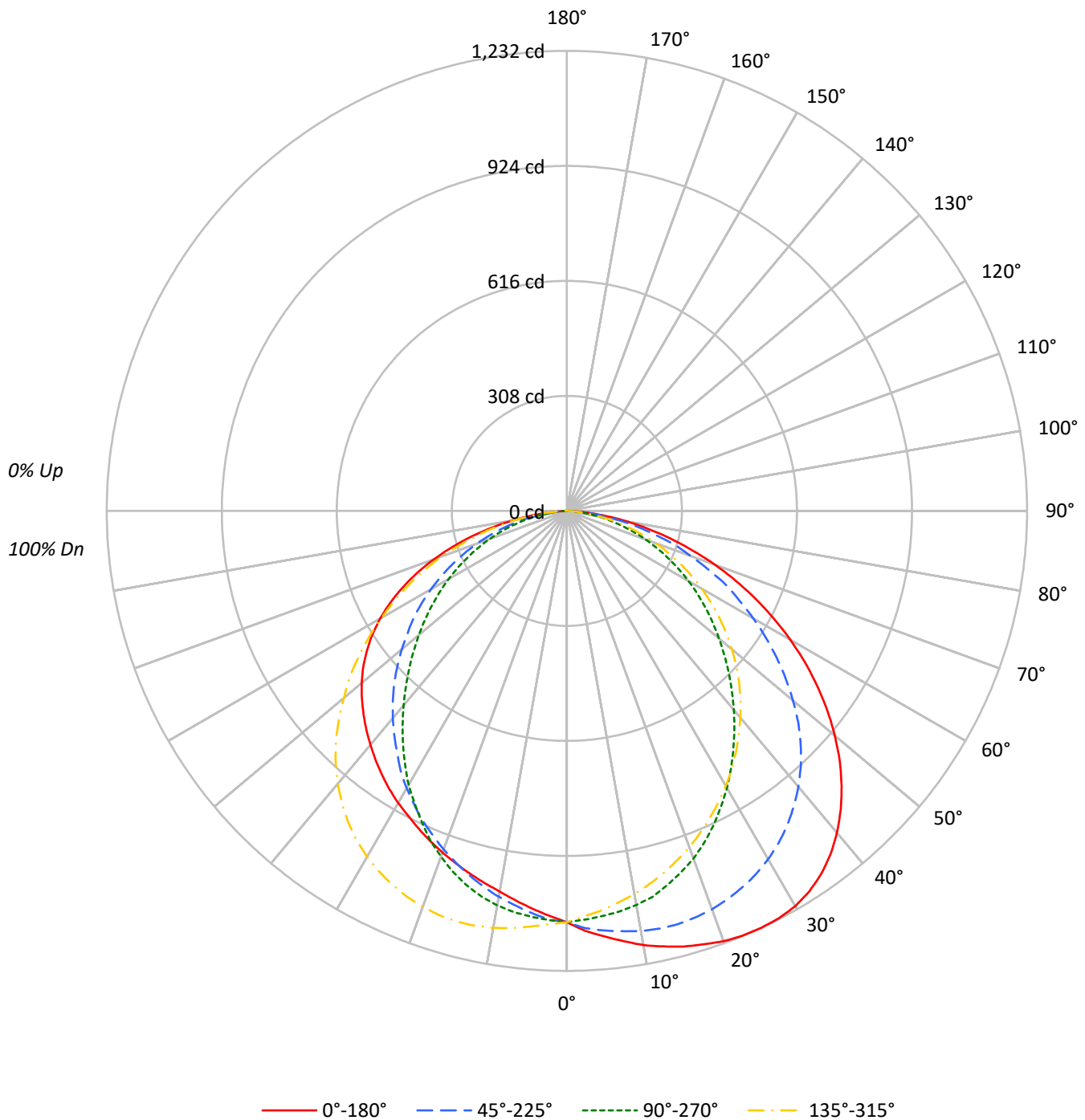
Lumens per Lamp: N/A
Luminaire Lumens: 3231.3 lumens
Efficiency: N/A
Efficacy: 69.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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°	1482	1482	1482	1482
5°	1544	1471	1444	1474
10°	1613	1464	1414	1466
15°	1682	1445	1400	1445
20°	1756	1419	1394	1411
25°	1829	1379	1394	1365
30°	1899	1331	1403	1316
35°	1950	1277	1418	1256
40°	1976	1222	1437	1194
45°	1979	1166	1465	1137
50°	1961	1113	1501	1083
55°	1920	1063	1534	1034
60°	1860	1012	1555	985
65°	1777	952	1547	930
70°	1660	882	1492	866
75°	1493	787	1369	783
80°	1266	659	1151	669
85°	880	437	730	448

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.6	3.2
10°-20°	302.8	9.4
20°-30°	464.1	14.4
30°-40°	564.3	17.5
40°-50°	586.6	18.2
50°-60°	529.9	16.4
60°-70°	402.8	12.5
70°-80°	224.6	7.0
80°-90°	51.7	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°	871.5	27.0
0°-40°	1435.7	44.4
0°-60°	2552.2	79.0
0°-90°	3231.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3231.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1101	1101	1101	1101	1101	
5°	1144	1089	1069	1091	1144	110
15°	1208	1037	1005	1038	1208	342
25°	1232	929	939	920	1232	569
35°	1187	777	863	765	1187	741
45°	1040	613	770	597	1040	801
55°	818	453	654	441	818	731
65°	558	299	486	292	558	551
75°	287	151	263	151	287	305
85°	57	28	47	29	57	72
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°	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4
2.5°	1125.8	1109.4	1109.6	1124.0	1113.0	1118.4	1102.9	1108.9	1107.1	1108.3	1095.7
5°	1143.5	1125.8	1125.6	1137.9	1125.6	1127.9	1108.3	1112.2	1106.5	1102.9	1089.3
7.5°	1162.3	1144.6	1142.8	1153.6	1137.4	1135.6	1114.0	1114.0	1103.7	1094.7	1081.9
10°	1180.8	1162.5	1160.2	1168.5	1148.4	1142.5	1116.3	1112.2	1098.6	1085.2	1071.3
12.5°	1194.7	1176.2	1174.4	1179.5	1156.9	1146.1	1116.3	1108.3	1088.3	1069.5	1058.8
15°	1207.8	1188.8	1183.9	1186.4	1160.5	1146.1	1112.7	1100.4	1074.7	1050.0	1037.4
17.5°	1217.0	1198.8	1193.9	1193.6	1162.3	1141.7	1105.0	1088.0	1057.2	1027.4	1014.8
20°	1226.3	1208.0	1201.9	1197.2	1161.8	1135.8	1093.7	1070.8	1034.9	1001.5	990.9
22.5°	1230.9	1212.1	1205.5	1198.5	1158.4	1125.0	1079.8	1050.8	1009.7	969.9	961.1
25°	1231.7	1212.4	1205.2	1195.2	1151.8	1112.2	1061.8	1026.6	980.6	936.5	929.0
27.5°	1229.6	1208.5	1201.3	1189.3	1141.7	1096.5	1040.5	999.1	949.8	901.0	893.0
30°	1222.4	1201.1	1194.1	1178.5	1127.6	1077.3	1017.1	968.6	915.6	863.8	856.8
32.5°	1208.0	1187.2	1181.6	1165.9	1112.2	1054.9	989.9	935.7	877.9	828.3	818.0
35°	1187.0	1166.1	1162.5	1146.1	1090.6	1028.2	960.1	899.7	837.8	787.2	777.2
37.5°	1159.5	1142.0	1136.6	1120.4	1065.2	997.9	925.9	860.7	797.0	742.5	736.3
40°	1124.8	1108.3	1104.2	1089.8	1035.6	964.2	888.9	820.3	754.8	704.2	695.5
42.5°	1085.2	1069.8	1067.5	1052.6	999.1	927.0	848.9	778.5	710.9	662.1	653.3
45°	1040.3	1025.4	1024.8	1010.7	959.3	885.6	806.7	736.1	668.0	617.4	612.7
47.5°	990.7	977.3	977.3	964.2	914.9	840.1	763.3	691.9	624.8	580.1	571.9
50°	936.7	924.1	920.3	913.9	865.8	790.5	717.6	648.7	582.2	539.5	531.6
52.5°	879.2	868.4	870.9	859.1	812.6	738.9	671.3	600.2	539.3	500.5	492.5
55°	818.5	803.1	805.4	801.1	757.1	685.7	619.4	560.1	497.1	460.7	453.2
57.5°	755.6	735.6	743.8	741.2	698.0	631.2	571.9	514.6	455.3	421.6	414.4
60°	691.1	671.8	680.3	678.0	637.4	576.8	522.8	469.6	413.6	383.1	375.9
62.5°	624.8	607.1	614.8	613.0	575.7	521.0	474.0	425.2	371.8	344.3	337.6
65°	558.0	541.1	548.0	546.7	512.3	470.7	423.9	379.2	329.6	305.7	299.1
67.5°	489.7	474.0	480.4	480.4	448.8	409.0	373.6	332.7	288.3	267.7	261.5
70°	421.9	407.2	412.9	412.4	385.6	353.3	322.7	286.2	246.4	229.4	224.3
72.5°	353.5	340.7	345.8	345.3	322.9	302.1	271.8	240.2	205.5	191.9	187.3
75°	287.2	275.2	280.0	279.5	261.3	241.8	221.5	195.3	165.5	155.9	151.3
77.5°	224.0	211.7	215.8	215.8	202.5	188.3	172.1	151.8	130.8	120.5	117.2
80°	163.4	157.5	155.4	155.7	146.7	137.5	129.2	109.7	94.3	87.4	85.0
82.5°	107.4	102.5	100.5	101.0	95.8	90.2	85.0	71.4	61.1	57.0	55.8
85°	57.0	53.4	51.6	52.9	51.9	48.8	46.2	37.0	30.6	29.0	28.3
87.5°	18.0	15.7	14.4	19.0	16.2	14.4	13.9	11.0	8.5	8.5	8.2
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°	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4
2.5°	1099.9	1099.9	1089.8	1087.5	1086.5	1087.8	1077.8	1076.0	1090.4	1085.5	1074.4
5°	1091.1	1090.6	1076.5	1073.9	1073.9	1072.4	1061.1	1058.5	1072.9	1068.8	1056.7
7.5°	1080.3	1078.8	1062.1	1060.3	1057.7	1056.7	1044.1	1042.3	1054.6	1052.1	1040.8
10°	1067.2	1065.7	1045.9	1044.6	1041.8	1039.7	1027.9	1026.6	1039.2	1035.1	1026.1
12.5°	1050.0	1047.2	1026.9	1025.6	1023.3	1022.5	1011.0	1010.5	1024.3	1020.2	1010.7
15°	1027.4	1025.1	1002.5	1003.0	1003.3	1003.3	994.0	993.5	1007.1	1005.3	995.0
17.5°	1002.5	999.4	977.8	979.4	981.2	983.2	976.0	977.3	991.7	989.4	980.1
20°	974.2	971.1	950.1	954.4	958.3	962.4	957.8	961.4	974.7	973.7	966.8
22.5°	942.6	939.5	920.0	926.7	933.1	940.8	938.8	942.9	957.0	956.8	950.6
25°	904.1	904.9	887.6	895.9	906.7	917.4	918.2	924.9	940.6	939.0	933.4
27.5°	868.1	869.1	850.9	864.8	879.2	893.0	896.4	905.6	921.6	920.3	915.4
30°	830.4	831.6	813.9	832.9	850.4	867.3	874.5	887.1	903.3	903.3	898.2
32.5°	791.0	793.4	774.9	800.3	820.6	840.4	853.0	866.1	884.6	884.0	879.7
35°	750.7	753.3	736.3	768.7	789.0	813.1	828.8	846.3	862.7	863.0	859.6
37.5°	709.6	712.7	697.3	732.7	755.8	784.4	804.4	821.9	840.1	841.1	838.1
40°	668.8	672.1	658.7	692.9	722.2	754.0	777.2	797.7	817.8	818.3	816.2
42.5°	627.9	631.5	621.5	654.9	688.0	722.2	749.4	772.8	793.4	794.6	792.3
45°	588.1	591.2	584.0	620.5	652.3	689.6	720.9	747.4	768.2	770.0	769.2
47.5°	548.5	551.3	544.9	578.3	615.1	654.6	690.8	720.1	742.2	744.3	743.8
50°	509.7	512.0	505.1	540.0	576.5	618.7	656.4	690.3	715.0	717.1	716.8
52.5°	471.2	473.5	467.6	504.3	537.5	581.9	623.0	659.8	684.2	687.3	687.8
55°	433.9	435.0	430.3	465.5	497.6	544.1	591.4	627.1	651.5	654.1	655.7
57.5°	396.7	396.9	393.1	426.7	457.6	505.1	554.7	592.2	615.3	617.9	620.2
60°	359.7	359.4	355.1	387.7	417.2	464.2	515.9	553.1	575.5	577.8	580.9
62.5°	322.9	322.2	318.3	348.4	376.1	422.6	474.5	510.5	531.8	533.4	537.5
65°	286.5	285.7	282.1	309.8	335.0	379.5	430.3	464.5	483.8	485.8	485.1
67.5°	250.5	249.0	246.1	271.0	293.9	335.0	383.8	416.5	432.4	434.2	439.1
70°	214.5	212.7	206.3	232.8	252.8	289.5	335.0	364.1	377.4	379.2	378.4
72.5°	179.1	177.3	170.3	194.7	211.7	243.8	284.4	308.6	320.1	321.7	321.7
75°	144.6	143.6	139.2	157.7	171.9	198.1	232.5	252.5	261.5	263.3	262.8
77.5°	111.5	110.7	106.4	122.3	133.3	152.9	180.6	196.3	203.0	205.0	209.4
80°	79.9	79.6	72.7	88.4	93.3	109.7	130.0	142.1	145.7	148.5	151.6
82.5°	51.1	51.4	44.4	57.8	59.9	70.4	83.0	90.4	93.0	95.3	97.6
85°	24.9	25.9	22.1	30.6	30.8	36.2	41.6	44.4	45.5	47.3	49.3
87.5°	6.4	7.5	4.1	8.7	7.7	10.0	11.6	12.3	12.1	13.4	14.1
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°	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4
2.5°	1078.0	1086.2	1082.1	1095.5	1100.6	1092.4	1106.8	1107.1	1096.8	1108.9	1115.5
5°	1061.3	1069.8	1067.2	1081.1	1087.5	1080.3	1097.8	1101.1	1091.1	1104.7	1115.5
7.5°	1044.4	1054.4	1051.0	1065.2	1072.9	1067.2	1086.0	1091.4	1083.7	1098.6	1113.0
10°	1029.7	1038.2	1034.6	1049.5	1056.2	1051.6	1070.1	1080.1	1072.9	1091.1	1108.3
12.5°	1015.3	1022.3	1018.2	1030.5	1036.9	1031.0	1053.6	1062.9	1057.7	1076.7	1098.8
15°	996.8	1004.5	998.9	1009.9	1014.8	1009.7	1028.2	1044.1	1037.7	1058.5	1082.9
17.5°	982.7	987.1	979.4	988.1	990.9	984.0	1002.7	1018.4	1013.8	1036.4	1064.7
20°	967.0	970.6	959.8	964.7	964.5	955.7	972.9	988.4	985.3	1010.2	1042.3
22.5°	949.6	951.4	938.8	939.8	939.3	924.9	940.3	956.0	954.7	979.9	1015.8
25°	931.1	931.3	915.1	914.6	909.0	892.0	905.6	923.4	919.5	946.7	984.5
27.5°	912.8	910.3	890.7	886.1	877.1	856.8	868.9	884.8	882.5	909.2	951.1
30°	893.3	890.0	866.1	857.6	844.5	821.1	831.1	846.0	847.3	870.7	914.6
32.5°	874.8	866.3	839.9	827.5	811.1	783.9	789.2	804.4	806.5	830.1	875.3
35°	850.9	845.3	812.6	791.6	775.4	745.6	751.2	761.8	764.8	788.0	834.0
37.5°	828.3	819.3	784.6	758.9	738.1	706.8	708.3	719.1	722.2	745.6	791.0
40°	804.9	792.1	754.8	724.8	700.9	668.0	666.2	677.5	679.8	702.7	743.8
42.5°	780.0	764.6	722.7	689.8	662.3	628.9	625.3	635.1	637.7	660.0	700.4
45°	754.8	736.3	689.8	653.9	623.8	589.6	586.0	593.5	597.3	618.4	657.2
47.5°	728.1	706.5	655.9	615.8	584.7	550.6	546.2	553.7	556.7	577.5	614.3
50°	700.1	673.9	621.0	576.8	545.9	512.3	505.9	514.6	517.4	537.0	572.9
52.5°	669.3	640.2	583.7	537.5	506.6	474.5	466.8	475.3	478.6	497.6	530.8
55°	636.6	605.3	546.2	501.2	467.8	436.5	430.1	433.4	440.6	458.6	489.4
57.5°	599.9	568.8	506.6	460.9	428.8	398.7	393.3	396.4	403.1	420.6	448.3
60°	560.8	528.0	466.3	420.6	389.5	361.0	356.1	358.9	366.1	382.0	407.7
62.5°	522.3	485.3	424.7	379.2	350.9	324.5	323.2	322.2	328.9	344.3	366.9
65°	475.6	440.1	381.3	338.1	312.4	288.5	283.4	285.7	292.1	306.2	329.9
67.5°	425.5	393.3	336.8	297.0	274.1	252.8	248.4	249.5	256.1	268.5	289.0
70°	372.3	344.0	291.3	255.6	236.4	216.3	213.5	213.8	220.2	231.0	249.0
72.5°	316.5	291.1	245.4	214.8	198.9	184.5	181.9	178.8	184.7	194.0	209.4
75°	259.7	237.4	199.6	174.7	162.1	150.0	147.7	144.6	150.6	158.5	170.6
77.5°	202.5	184.5	155.2	135.9	126.1	117.2	115.1	111.8	117.7	123.6	133.1
80°	146.4	133.3	115.9	95.6	92.2	86.3	84.3	80.7	86.3	90.2	97.4
82.5°	94.5	85.8	75.8	61.7	61.1	56.8	55.8	51.6	56.8	59.1	64.5
85°	47.8	43.7	41.1	31.3	32.4	29.5	29.3	24.9	29.0	30.1	33.1
87.5°	13.6	14.4	12.8	7.7	9.8	9.2	9.2	6.7	9.2	9.2	10.5
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: P838148

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-2LO-20-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4	1101.4
2.5°	1102.4	1106.8	1107.8	1107.6	1110.4	1125.8	1120.7	1125.8
5°	1105.0	1114.8	1117.3	1120.9	1125.6	1143.0	1137.4	1143.5
7.5°	1106.5	1121.2	1126.8	1133.8	1141.2	1160.7	1156.1	1162.3
10°	1106.5	1125.6	1133.8	1145.3	1155.4	1178.0	1173.6	1180.8
12.5°	1101.9	1126.3	1137.9	1154.1	1166.9	1191.3	1189.5	1194.7
15°	1092.4	1122.5	1138.4	1159.2	1175.1	1202.4	1201.6	1207.8
17.5°	1079.6	1115.8	1135.1	1161.3	1181.3	1211.9	1213.7	1217.0
20°	1063.4	1103.2	1128.4	1160.5	1185.7	1219.3	1221.6	1226.3
22.5°	1042.1	1088.0	1118.4	1157.2	1186.2	1222.4	1226.5	1230.9
25°	1016.9	1069.8	1105.3	1150.7	1183.6	1222.2	1227.8	1231.7
27.5°	988.1	1046.2	1088.6	1140.5	1176.4	1218.0	1225.0	1229.6
30°	954.7	1021.0	1069.5	1127.1	1166.7	1210.3	1217.8	1222.4
32.5°	920.3	993.2	1046.9	1109.9	1152.5	1198.0	1204.4	1208.0
35°	882.8	959.6	1019.7	1087.8	1134.3	1178.2	1183.1	1187.0
37.5°	841.9	923.1	988.6	1062.9	1108.6	1150.7	1155.1	1159.5
40°	799.8	884.8	953.7	1032.3	1078.0	1117.1	1121.7	1124.8
42.5°	757.4	842.4	916.4	996.3	1041.8	1079.3	1082.1	1085.2
45°	714.5	798.5	874.5	956.5	1001.5	1036.7	1037.7	1040.3
47.5°	670.8	753.0	828.6	911.0	955.5	987.6	988.6	990.7
50°	626.9	707.5	779.5	862.0	905.4	939.3	934.7	936.7
52.5°	583.7	659.8	733.2	809.0	851.9	882.0	883.3	879.2
55°	541.3	613.0	680.6	753.5	794.4	817.8	817.0	818.5
57.5°	498.4	565.7	627.6	694.4	734.3	756.4	761.0	755.6
60°	454.7	517.9	573.4	633.8	672.3	690.8	696.2	691.1
62.5°	411.3	469.4	519.7	572.4	608.1	631.0	630.5	624.8
65°	367.9	420.6	465.5	510.2	541.3	564.2	563.2	558.0
67.5°	327.8	371.2	411.6	447.8	474.8	490.5	495.8	489.7
70°	283.6	321.1	356.6	385.6	408.0	422.1	427.3	421.9
72.5°	239.4	271.3	296.2	324.2	341.4	353.3	358.7	353.5
75°	195.8	222.0	242.3	264.1	276.2	286.2	292.4	287.2
77.5°	153.4	173.7	189.9	205.8	219.7	222.0	227.4	224.0
80°	113.0	127.7	139.5	150.0	160.1	161.1	165.5	163.4
82.5°	75.3	85.0	88.1	99.2	105.6	104.6	108.9	107.4
85°	39.8	45.7	51.1	54.5	58.1	54.7	58.6	57.0
87.5°	13.4	14.1	12.3	17.5	19.3	16.4	18.8	18.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)