

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: METALUX

Report Number: P236210

Luminaire Tested: **2SWLED-28HL-LC-UNV-L850-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P236210  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1709-316-8 )  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2SWLED-28HL-LC-UNV-L850-CD1-U  
Description: METALUX SWLED LINEAR LUMINAIRE  
2FT FIXTURE WITH 2 ROW LED, CLEAR LENS  
Light Source: (112) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

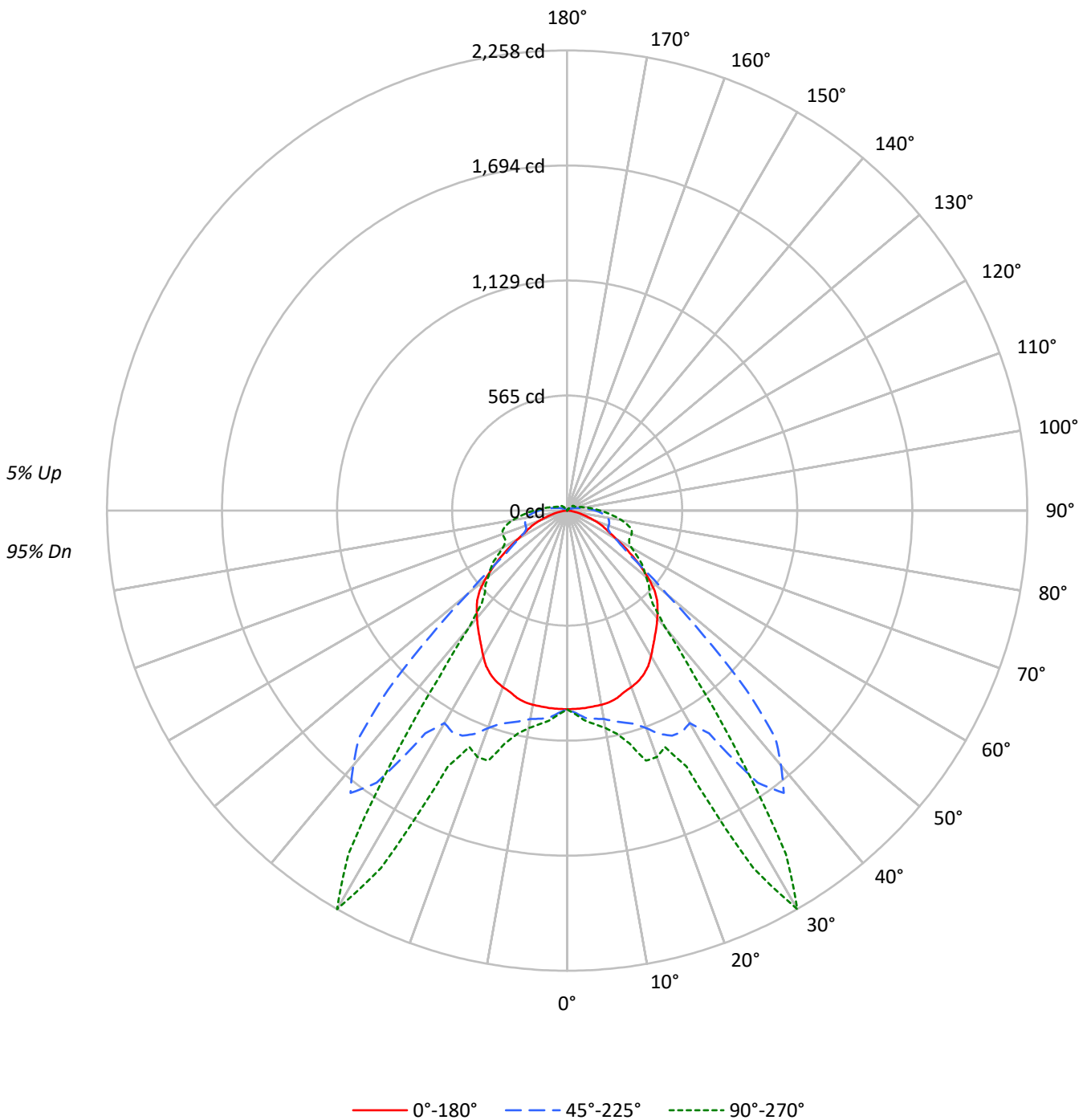
Lumens per Lamp: N/A  
Luminaire Lumens: 3745.0 lumens  
Efficiency: N/A  
Efficacy: 134.2 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.55 / 1.55  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.15')  
CIE Type: Direct

Input Watts (W): 27.9  
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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CATALOG NUMBER: 2SWLED-28HL-LC-UNV-L850-CD1-U

### 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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	118	118	118	118	115	115	115	115	108	108	108	103	103	103	98	98	98	95
1	107	102	98	94	104	100	96	92	94	91	88	90	87	85	85	83	81	79
2	98	90	83	77	95	87	81	76	83	78	74	79	75	71	75	72	69	66
3	90	79	71	65	87	77	70	64	74	67	62	70	65	61	67	63	59	57
4	82	71	62	55	80	69	61	55	66	59	54	63	57	52	60	55	51	49
5	76	63	54	48	73	62	54	48	59	52	47	57	51	46	54	49	45	42
6	70	57	48	42	68	56	48	42	54	46	41	51	45	40	49	44	39	37
7	65	52	43	37	63	51	43	37	49	41	36	47	40	36	45	39	35	33
8	60	47	39	33	59	46	38	33	45	37	32	43	36	32	41	36	31	29
9	56	43	35	30	55	42	35	29	41	34	29	39	33	29	38	32	28	26
10	53	40	32	27	51	39	32	27	38	31	26	36	30	26	35	30	25	24

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13990	13990	13990
5°	13926	14301	14426
10°	13924	14310	14778
15°	13862	14707	15920
20°	13710	15506	17216
25°	13593	16754	18570
30°	13104	16784	30565
35°	12520	23251	20462
40°	12155	24023	10538
45°	11821	19029	8337
50°	10772	10307	7703
55°	8976	6269	7131
60°	7062	4985	6248
65°	6026	4448	6212
70°	4985	4789	6828
75°	3622	5333	7218
80°	2397	5828	6985
85°	1195	6107	6454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.3	2.6
10°-20°	306.2	8.2
20°-30°	558.8	14.9
30°-40°	828.4	22.1
40°-50°	651.5	17.4
50°-60°	448.7	12.0
60°-70°	292.1	7.8
70°-80°	225.0	6.0
80°-90°	153.2	4.1
90°-100°	87.1	2.3
100°-110°	44.7	1.2
110°-120°	23.7	0.6
120°-130°	15.4	0.4
130°-140°	9.0	0.2
140°-150°	3.1	0.1
150°-160°	0.7	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	962.3	25.7
0°-40°	1790.7	47.8
0°-60°	2890.9	77.2
0°-90°	3561.2	95.1
90°-120°	155.5	4.2
90°-150°	183.0	4.9
90°-180°	184.0	4.9
0°-180°	3745.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	975	975	975	975	975	
5°	973	994	1021	1030	1035	93
15°	951	986	1076	1142	1183	268
25°	888	957	1219	1251	1385	407
35°	751	973	1630	1813	1486	471
45°	625	1030	1244	568	570	477
55°	396	708	367	406	443	354
65°	205	401	223	305	336	204
75°	83	167	213	298	319	91
85°	13	65	176	202	213	17
90°	0	49	138	154	162	1
95°	0	38	102	113	121	0
105°	0	18	49	64	68	0
115°	0	8	26	38	44	0
125°	0	3	15	31	39	0
135°	0	1	10	22	26	0
145°	1	1	4	8	9	1
155°	1	1	1	2	2	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8
2.5°	973.8	975.9	977.9	978.9	981.0	982.0	983.0	987.1	991.3	993.3	994.3
5°	972.8	974.8	980.0	985.1	991.3	994.3	999.5	1006.6	1013.8	1017.9	1021.0
7.5°	969.7	973.8	983.0	992.3	1001.5	1006.6	1011.8	1019.0	1025.1	1028.2	1030.2
10°	967.7	971.8	984.1	995.4	1005.6	1008.7	1012.8	1019.0	1025.1	1031.3	1038.5
12.5°	962.5	968.7	981.0	992.3	999.5	1001.5	1005.6	1014.9	1029.2	1043.6	1058.0
15°	951.2	955.3	968.7	975.9	982.0	986.1	993.3	1014.9	1040.5	1059.0	1076.4
17.5°	932.8	934.8	943.0	947.1	956.4	967.7	983.0	1017.9	1047.7	1072.3	1096.9
20°	921.5	919.4	918.4	921.5	941.0	959.4	978.9	1016.9	1052.8	1090.8	1135.9
22.5°	908.1	899.9	893.8	899.9	934.8	957.4	980.0	1024.1	1076.4	1131.8	1186.2
25°	887.6	875.3	866.1	881.5	930.7	957.4	986.1	1049.7	1118.5	1170.8	1219.1
27.5°	860.9	847.6	838.4	866.1	927.6	965.6	1006.6	1084.6	1147.2	1195.5	1223.2
30°	824.0	810.7	808.6	849.6	931.7	980.0	1025.1	1101.0	1157.5	1198.5	1203.7
32.5°	785.0	776.8	779.9	837.3	936.9	984.1	1027.2	1095.9	1154.4	1193.4	1296.0
35°	751.1	750.1	762.4	832.2	930.7	972.8	1011.8	1087.7	1167.7	1323.7	1630.5
37.5°	719.3	724.5	750.1	820.9	910.2	952.3	997.4	1110.3	1302.2	1600.8	1746.5
40°	688.5	699.8	730.6	794.2	880.4	933.8	1005.6	1237.5	1511.5	1594.6	1633.6
42.5°	656.7	668.0	696.8	752.2	855.8	946.1	1081.6	1402.7	1461.2	1467.4	1511.5
45°	624.9	633.1	652.6	707.0	873.2	1030.2	1208.8	1350.4	1290.9	1372.0	1243.7
47.5°	581.8	590.0	605.4	681.4	934.8	1103.1	1209.8	1160.6	1199.6	1179.0	907.1
50°	524.4	535.6	558.2	684.4	949.2	1035.4	1056.9	1017.9	1083.6	912.2	641.3
52.5°	459.7	474.1	522.3	680.3	847.6	875.3	872.2	913.3	920.4	659.8	472.0
55°	396.1	412.5	492.5	615.7	686.5	708.0	741.9	823.0	723.4	473.1	367.4
57.5°	333.5	358.1	442.3	496.7	541.8	594.1	658.8	720.4	544.9	359.1	310.9
60°	277.1	310.9	366.3	377.6	447.4	522.3	593.1	606.4	411.5	291.4	271.9
62.5°	234.0	261.7	286.3	290.4	384.8	463.8	530.5	488.4	315.0	243.2	238.1
65°	205.2	213.4	215.5	227.8	329.4	401.2	454.6	382.8	252.4	217.5	222.7
67.5°	175.5	169.3	166.2	185.7	276.0	337.6	375.6	302.7	217.5	204.2	217.5
70°	142.6	134.4	130.3	151.9	226.8	275.0	299.6	242.2	195.0	197.0	216.5
72.5°	111.8	105.7	104.7	125.2	181.6	215.5	231.9	199.1	179.6	191.9	216.5
75°	83.1	81.1	84.1	101.6	143.7	167.3	178.5	166.2	167.3	187.8	213.4
77.5°	59.5	61.6	65.7	81.1	110.8	127.2	138.5	144.7	158.0	183.7	209.3
80°	41.0	43.1	50.3	63.6	86.2	98.5	109.8	127.2	149.8	177.5	201.1
82.5°	25.7	28.7	35.9	49.3	67.7	79.0	89.3	114.9	142.6	169.3	189.8
85°	13.3	17.4	25.7	38.0	54.4	64.6	77.0	105.7	135.5	159.1	175.5
87.5°	6.2	9.2	17.4	28.7	45.2	56.4	69.8	98.5	125.2	145.7	157.0
90°	0.0	4.1	11.3	22.6	38.0	49.3	62.6	90.3	112.9	129.3	138.5
92.5°	0.0	2.1	8.2	17.4	32.8	43.1	55.4	80.0	98.5	111.8	119.0
95°	0.0	1.0	6.2	14.4	28.7	38.0	48.2	68.8	84.1	95.4	101.6
97.5°	0.0	1.0	4.1	11.3	24.6	32.8	41.0	58.5	70.8	80.0	85.2
100°	0.0	0.0	3.1	9.2	20.5	26.7	33.9	48.2	58.5	66.7	70.8
102.5°	0.0	0.0	2.1	8.2	17.4	22.6	27.7	39.0	48.2	54.4	59.5
105°	0.0	0.0	2.1	6.2	14.4	18.5	22.6	31.8	39.0	45.2	49.3
107.5°	0.0	0.0	1.0	5.1	11.3	14.4	18.5	25.7	31.8	36.9	42.1
110°	0.0	0.0	1.0	4.1	9.2	12.3	14.4	20.5	25.7	30.8	34.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	0.0	1.0	3.1	7.2	9.2	12.3	17.4	21.5	25.7	29.8
115°	0.0	0.0	0.0	2.1	6.2	8.2	10.3	14.4	18.5	21.5	25.7
117.5°	0.0	0.0	0.0	2.1	5.1	6.2	8.2	11.3	15.4	18.5	21.5
120°	0.0	0.0	0.0	1.0	4.1	5.1	6.2	9.2	13.3	16.4	19.5
122.5°	0.0	0.0	0.0	1.0	3.1	4.1	5.1	8.2	11.3	14.4	17.4
125°	0.0	0.0	0.0	1.0	2.1	3.1	4.1	7.2	9.2	12.3	15.4
127.5°	0.0	0.0	0.0	1.0	2.1	2.1	3.1	6.2	8.2	11.3	14.4
130°	0.0	0.0	0.0	0.0	1.0	2.1	3.1	5.1	7.2	10.3	13.3
132.5°	0.0	0.0	0.0	0.0	1.0	1.0	2.1	4.1	6.2	9.2	12.3
135°	0.0	1.0	0.0	0.0	1.0	1.0	2.1	3.1	5.1	8.2	10.3
137.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	3.1	4.1	6.2	9.2
140°	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	5.1	7.2
142.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.1	4.1	5.1
145°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1	4.1
147.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	3.1
150°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1
152.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
155°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
157.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
160°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8	974.8
2.5°	997.4	1000.5	1002.5	1001.5	1001.5	1001.5	1002.5	1002.5	1000.5	1002.5
5°	1024.1	1028.2	1029.2	1030.2	1030.2	1031.3	1033.3	1034.4	1032.3	1035.4
7.5°	1035.4	1039.5	1043.6	1045.6	1046.7	1047.7	1051.8	1054.9	1054.9	1058.0
10°	1048.7	1058.0	1064.1	1068.2	1070.3	1071.3	1076.4	1079.5	1080.5	1083.6
12.5°	1070.3	1082.6	1091.8	1100.0	1103.1	1105.2	1110.3	1114.4	1117.5	1120.5
15°	1093.9	1111.3	1125.7	1137.0	1142.1	1150.3	1159.5	1168.8	1178.0	1183.1
17.5°	1125.7	1157.5	1187.2	1211.9	1225.2	1236.5	1256.0	1269.3	1280.6	1286.8
20°	1183.1	1229.3	1266.3	1284.7	1289.9	1292.9	1291.9	1288.8	1288.8	1286.8
22.5°	1237.5	1270.4	1277.5	1268.3	1265.2	1262.2	1256.0	1250.9	1250.9	1255.0
25°	1248.8	1248.8	1240.6	1241.6	1250.9	1256.0	1283.7	1326.8	1357.6	1385.3
27.5°	1221.1	1226.2	1280.6	1396.6	1486.9	1554.6	1717.8	1839.9	1915.8	1977.4
30°	1249.8	1427.4	1689.0	1930.2	2031.8	2104.6	2202.1	2241.1	2249.3	2258.5
32.5°	1557.7	1870.7	2045.1	2110.8	2110.8	2113.9	2079.0	2033.8	1984.6	1997.9
35°	1861.4	1951.7	1951.7	1885.0	1813.2	1761.9	1634.6	1539.2	1476.6	1485.9
37.5°	1797.8	1780.4	1652.1	1456.1	1351.4	1280.6	1145.2	1067.2	1025.1	1030.2
40°	1633.6	1448.9	1217.0	1012.8	930.7	884.5	803.5	763.4	744.0	746.0
42.5°	1319.6	1033.3	836.3	716.2	682.4	656.7	633.1	623.9	619.8	621.8
45°	937.9	717.3	613.6	571.6	567.5	563.4	561.3	564.4	567.5	570.5
47.5°	662.9	546.9	518.2	515.1	518.2	523.3	530.5	536.7	539.8	543.9
50°	502.8	462.8	461.8	471.0	476.1	483.3	491.5	497.7	500.8	504.9
52.5°	407.4	402.2	413.5	428.9	437.1	445.3	457.7	466.9	471.0	474.1
55°	349.9	361.2	380.7	397.1	406.4	414.6	426.9	436.1	440.2	443.3
57.5°	313.0	329.4	344.8	360.2	366.3	373.5	384.8	393.0	396.1	399.2
60°	277.1	293.5	310.9	326.3	334.5	341.7	352.0	359.1	362.2	364.3
62.5°	250.4	270.9	291.4	306.8	314.0	320.2	329.4	336.6	339.7	342.7
65°	240.1	262.7	284.2	298.6	304.8	310.9	322.2	329.4	333.5	335.5
67.5°	240.1	262.7	283.2	298.6	305.8	311.9	324.3	331.4	334.5	336.6
70°	241.1	263.7	286.3	301.7	306.8	314.0	325.3	332.5	335.5	336.6
72.5°	241.1	264.7	284.2	300.7	305.8	311.9	322.2	328.4	331.4	332.5
75°	238.1	260.6	278.1	293.5	297.6	301.7	311.9	317.1	319.1	319.1
77.5°	231.9	250.4	266.8	277.1	281.2	283.2	290.4	295.5	297.6	297.6
80°	221.6	235.0	248.3	255.5	256.5	258.6	264.7	267.8	268.8	270.9
82.5°	206.3	216.5	222.7	227.8	227.8	229.9	237.0	239.1	241.1	242.2
85°	186.8	193.9	197.0	200.1	202.1	203.2	208.3	210.4	212.4	213.4
87.5°	165.2	170.3	172.4	176.5	176.5	178.5	182.7	184.7	185.7	186.8
90°	143.7	147.8	149.8	152.9	153.9	154.9	159.1	160.1	161.1	162.1
92.5°	123.1	126.2	128.3	131.3	132.4	132.4	136.5	137.5	138.5	139.6
95°	105.7	107.7	109.8	111.8	112.9	113.9	117.0	119.0	120.1	121.1
97.5°	89.3	91.3	94.4	96.5	97.5	99.5	101.6	103.6	103.6	104.7
100°	74.9	78.0	81.1	83.1	85.2	85.2	88.2	89.3	90.3	90.3
102.5°	63.6	66.7	69.8	71.8	72.9	73.9	75.9	77.0	78.0	78.0
105°	53.4	56.4	59.5	62.6	63.6	63.6	65.7	66.7	67.7	67.7
107.5°	45.2	48.2	51.3	54.4	55.4	56.4	57.5	59.5	60.5	60.5
110°	39.0	42.1	45.2	47.2	49.3	49.3	51.3	53.4	53.4	54.4





TEST NUMBER: P236210

CATALOG NUMBER: 2SWLED-28HL-LC-UNV-L850-CD1-U

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	32.8	35.9	39.0	42.1	43.1	44.1	46.2	47.2	48.2	48.2
115°	28.7	31.8	34.9	36.9	38.0	39.0	41.0	43.1	44.1	44.1
117.5°	24.6	27.7	30.8	32.8	34.9	35.9	38.0	40.0	41.0	41.0
120°	21.5	24.6	27.7	30.8	31.8	32.8	35.9	38.0	39.0	39.0
122.5°	19.5	22.6	25.7	28.7	30.8	31.8	34.9	36.9	38.0	39.0
125°	18.5	21.5	25.7	28.7	30.8	31.8	34.9	36.9	38.0	39.0
127.5°	17.4	21.5	24.6	28.7	29.8	31.8	34.9	36.9	38.0	38.0
130°	16.4	20.5	23.6	26.7	28.7	29.8	32.8	33.9	34.9	35.9
132.5°	15.4	18.5	21.5	24.6	25.7	26.7	28.7	29.8	30.8	30.8
135°	13.3	16.4	18.5	20.5	21.5	22.6	23.6	24.6	25.7	25.7
137.5°	11.3	13.3	15.4	16.4	17.4	18.5	19.5	19.5	20.5	20.5
140°	9.2	10.3	12.3	13.3	13.3	14.4	15.4	15.4	15.4	15.4
142.5°	7.2	8.2	9.2	10.3	10.3	11.3	11.3	12.3	12.3	12.3
145°	5.1	6.2	7.2	8.2	8.2	8.2	9.2	9.2	9.2	9.2
147.5°	4.1	4.1	5.1	6.2	6.2	6.2	7.2	7.2	7.2	7.2
150°	2.1	3.1	4.1	4.1	4.1	4.1	5.1	5.1	5.1	5.1
152.5°	2.1	2.1	3.1	3.1	3.1	3.1	3.1	4.1	4.1	4.1
155°	1.0	1.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
157.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
160°	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)