

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: P236208

Luminaire Tested: **2SWLED-28HL-LC-UNV-L835-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236208
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-L835-CD1-U
Description: METALUX SWLED LINEAR LUMINAIRE
2FT FIXTURE WITH 2 ROW LED, CLEAR LENS
Light Source: (112) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

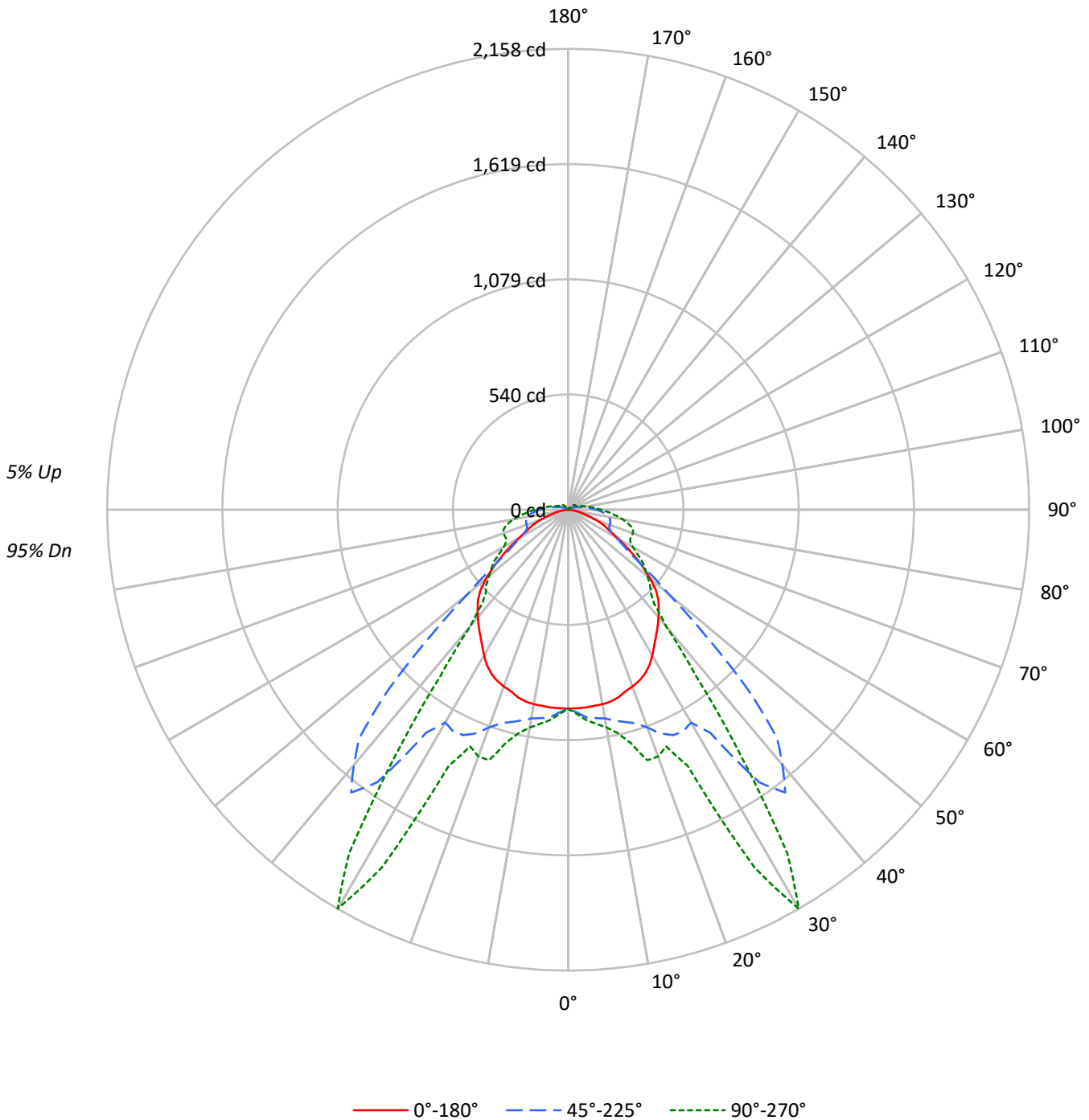
Lumens per Lamp: N/A
Luminaire Lumens: 3579.0 lumens
Efficiency: N/A
Efficacy: 128.3 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.55 / 1.55
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.15')
CIE Type: Direct

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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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°	13370	13370	13370
5°	13309	13668	13786
10°	13306	13675	14124
15°	13249	14055	15215
20°	13102	14819	16452
25°	12992	16010	17747
30°	12523	16039	29211
35°	11965	22221	19554
40°	11617	22958	10070
45°	11297	18186	7967
50°	10294	9851	7361
55°	8578	5991	6815
60°	6748	4765	5970
65°	5759	4250	5938
70°	4765	4576	6526
75°	3461	5099	6899
80°	2292	5570	6675
85°	1141	5835	6169



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.9	2.6
10°-20°	292.7	8.2
20°-30°	534.0	14.9
30°-40°	791.6	22.1
40°-50°	622.7	17.4
50°-60°	428.8	12.0
60°-70°	279.2	7.8
70°-80°	215.1	6.0
80°-90°	146.4	4.1
90°-100°	83.2	2.3
100°-110°	42.7	1.2
110°-120°	22.7	0.6
120°-130°	14.7	0.4
130°-140°	8.6	0.2
140°-150°	2.9	0.1
150°-160°	0.7	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	919.6	25.7
0°-40°	1711.3	47.8
0°-60°	2762.8	77.2
0°-90°	3403.4	95.1
90°-120°	148.6	4.2
90°-150°	174.9	4.9
90°-180°	176.0	4.9
0°-180°	3579.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	932	932	932	932	932	
5°	930	950	976	985	990	89
15°	909	942	1029	1092	1131	256
25°	848	915	1165	1195	1324	389
35°	718	930	1558	1733	1420	450
45°	597	985	1189	542	545	455
55°	378	677	351	388	424	339
65°	196	383	213	291	321	195
75°	79	160	204	284	305	87
85°	13	62	168	193	204	16
90°	0	47	132	147	155	1
95°	0	36	97	108	116	0
105°	0	18	47	61	65	0
115°	0	8	24	36	42	0
125°	0	3	15	29	37	0
135°	0	1	10	21	24	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°	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6
2.5°	930.6	932.6	934.6	935.5	937.5	938.5	939.5	943.4	947.3	949.3	950.3
5°	929.7	931.6	936.5	941.4	947.3	950.3	955.2	962.0	968.9	972.8	975.8
7.5°	926.7	930.6	939.5	948.3	957.1	962.0	966.9	973.8	979.7	982.6	984.6
10°	924.8	928.7	940.5	951.2	961.0	964.0	967.9	973.8	979.7	985.6	992.4
12.5°	919.9	925.7	937.5	948.3	955.2	957.1	961.0	969.9	983.6	997.3	1011.1
15°	909.1	913.0	925.7	932.6	938.5	942.4	949.3	969.9	994.4	1012.0	1028.7
17.5°	891.4	893.4	901.2	905.1	914.0	924.8	939.5	972.8	1001.3	1024.8	1048.3
20°	880.6	878.7	877.7	880.6	899.3	916.9	935.5	971.8	1006.2	1042.4	1085.6
22.5°	867.9	860.0	854.2	860.0	893.4	915.0	936.5	978.7	1028.7	1081.7	1133.6
25°	848.3	836.5	827.7	842.4	889.5	915.0	942.4	1003.2	1068.9	1118.9	1165.0
27.5°	822.8	810.0	801.2	827.7	886.5	922.8	962.0	1036.6	1096.4	1142.5	1168.9
30°	787.5	774.7	772.8	812.0	890.4	936.5	979.7	1052.2	1106.2	1145.4	1150.3
32.5°	750.2	742.4	745.3	800.2	895.3	940.5	981.6	1047.3	1103.2	1140.5	1238.6
35°	717.8	716.9	728.6	795.3	889.5	929.7	966.9	1039.5	1116.0	1265.0	1558.3
37.5°	687.4	692.3	716.9	784.5	869.8	910.0	953.2	1061.1	1244.5	1529.8	1669.1
40°	658.0	668.8	698.2	759.0	841.4	892.4	961.0	1182.7	1444.5	1523.9	1561.2
42.5°	627.6	638.4	665.9	718.8	817.9	904.2	1033.6	1340.6	1396.5	1402.3	1444.5
45°	597.2	605.1	623.7	675.7	834.5	984.6	1155.2	1290.5	1233.7	1311.1	1188.6
47.5°	556.0	563.9	578.6	651.2	893.4	1054.2	1156.2	1109.1	1146.4	1126.8	866.9
50°	501.1	511.9	533.5	654.1	907.1	989.5	1010.1	972.8	1035.6	871.8	612.9
52.5°	439.3	453.1	499.2	650.2	810.0	836.5	833.6	872.8	879.6	630.6	451.1
55°	378.5	394.2	470.7	588.4	656.1	676.7	709.0	786.5	691.4	452.1	351.1
57.5°	318.7	342.2	422.7	474.6	517.8	567.8	629.6	688.4	520.7	343.2	297.1
60°	264.8	297.1	350.1	360.9	427.6	499.2	566.8	579.6	393.2	278.5	259.9
62.5°	223.6	250.1	273.6	277.5	367.7	443.3	507.0	466.8	301.1	232.4	227.5
65°	196.1	204.0	205.9	217.7	314.8	383.4	434.4	365.8	241.2	207.9	212.8
67.5°	167.7	161.8	158.9	177.5	263.8	322.6	358.9	289.3	207.9	195.2	207.9
70°	136.3	128.5	124.5	145.1	216.7	262.8	286.4	231.4	186.3	188.3	206.9
72.5°	106.9	101.0	100.0	119.6	173.6	205.9	221.6	190.2	171.6	183.4	206.9
75°	79.4	77.5	80.4	97.1	137.3	159.8	170.6	158.9	159.8	179.5	204.0
77.5°	56.9	58.8	62.8	77.5	105.9	121.6	132.4	138.3	151.0	175.5	200.1
80°	39.2	41.2	48.1	60.8	82.4	94.1	104.9	121.6	143.2	169.7	192.2
82.5°	24.5	27.5	34.3	47.1	64.7	75.5	85.3	109.8	136.3	161.8	181.4
85°	12.7	16.7	24.5	36.3	52.0	61.8	73.5	101.0	129.4	152.0	167.7
87.5°	5.9	8.8	16.7	27.5	43.1	53.9	66.7	94.1	119.6	139.3	150.0
90°	0.0	3.9	10.8	21.6	36.3	47.1	59.8	86.3	107.9	123.6	132.4
92.5°	0.0	2.0	7.8	16.7	31.4	41.2	53.0	76.5	94.1	106.9	113.8
95°	0.0	1.0	5.9	13.7	27.5	36.3	46.1	65.7	80.4	91.2	97.1
97.5°	0.0	1.0	3.9	10.8	23.5	31.4	39.2	55.9	67.7	76.5	81.4
100°	0.0	0.0	2.9	8.8	19.6	25.5	32.4	46.1	55.9	63.7	67.7
102.5°	0.0	0.0	2.0	7.8	16.7	21.6	26.5	37.3	46.1	52.0	56.9
105°	0.0	0.0	2.0	5.9	13.7	17.7	21.6	30.4	37.3	43.1	47.1
107.5°	0.0	0.0	1.0	4.9	10.8	13.7	17.7	24.5	30.4	35.3	40.2
110°	0.0	0.0	1.0	3.9	8.8	11.8	13.7	19.6	24.5	29.4	33.3



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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	2.9	6.9	8.8	11.8	16.7	20.6	24.5	28.4
115°	0.0	0.0	0.0	2.0	5.9	7.8	9.8	13.7	17.7	20.6	24.5
117.5°	0.0	0.0	0.0	2.0	4.9	5.9	7.8	10.8	14.7	17.7	20.6
120°	0.0	0.0	0.0	1.0	3.9	4.9	5.9	8.8	12.7	15.7	18.6
122.5°	0.0	0.0	0.0	1.0	2.9	3.9	4.9	7.8	10.8	13.7	16.7
125°	0.0	0.0	0.0	1.0	2.0	2.9	3.9	6.9	8.8	11.8	14.7
127.5°	0.0	0.0	0.0	1.0	2.0	2.0	2.9	5.9	7.8	10.8	13.7
130°	0.0	0.0	0.0	0.0	1.0	2.0	2.9	4.9	6.9	9.8	12.7
132.5°	0.0	0.0	0.0	0.0	1.0	1.0	2.0	3.9	5.9	8.8	11.8
135°	0.0	1.0	0.0	0.0	1.0	1.0	2.0	2.9	4.9	7.8	9.8
137.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	2.9	3.9	5.9	8.8
140°	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.9	4.9	6.9
142.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.9	3.9	4.9
145°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.9	3.9
147.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.9
150°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
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°	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6	931.6
2.5°	953.2	956.1	958.1	957.1	957.1	957.1	958.1	958.1	956.1	958.1
5°	978.7	982.6	983.6	984.6	984.6	985.6	987.5	988.5	986.5	989.5
7.5°	989.5	993.4	997.3	999.3	1000.3	1001.3	1005.2	1008.1	1008.1	1011.1
10°	1002.2	1011.1	1016.9	1020.9	1022.8	1023.8	1028.7	1031.7	1032.6	1035.6
12.5°	1022.8	1034.6	1043.4	1051.3	1054.2	1056.2	1061.1	1065.0	1067.9	1070.9
15°	1045.4	1062.1	1075.8	1086.6	1091.5	1099.3	1108.1	1117.0	1125.8	1130.7
17.5°	1075.8	1106.2	1134.6	1158.2	1170.9	1181.7	1200.3	1213.1	1223.9	1229.7
20°	1130.7	1174.8	1210.1	1227.8	1232.7	1235.6	1234.6	1231.7	1231.7	1229.7
22.5°	1182.7	1214.1	1220.9	1212.1	1209.2	1206.2	1200.3	1195.4	1195.4	1199.3
25°	1193.5	1193.5	1185.6	1186.6	1195.4	1200.3	1226.8	1268.0	1297.4	1323.9
27.5°	1167.0	1171.9	1223.9	1334.7	1421.0	1485.7	1641.6	1758.3	1830.9	1889.7
30°	1194.4	1364.1	1614.2	1844.6	1941.7	2011.3	2104.5	2141.8	2149.6	2158.4
32.5°	1488.6	1787.7	1954.4	2017.2	2017.2	2020.2	1986.8	1943.7	1896.6	1909.3
35°	1778.9	1865.2	1865.2	1801.5	1732.8	1683.8	1562.2	1471.0	1411.2	1420.0
37.5°	1718.1	1701.4	1578.9	1391.6	1291.5	1223.9	1094.4	1019.9	979.7	984.6
40°	1561.2	1384.7	1163.1	967.9	889.5	845.3	767.9	729.6	711.0	712.9
42.5°	1261.1	987.5	799.2	684.5	652.1	627.6	605.1	596.2	592.3	594.3
45°	896.3	685.5	586.4	546.2	542.3	538.4	536.4	539.4	542.3	545.2
47.5°	633.5	522.7	495.2	492.3	495.2	500.1	507.0	512.9	515.8	519.7
50°	480.5	442.3	441.3	450.1	455.0	461.9	469.7	475.6	478.6	482.5
52.5°	389.3	384.4	395.2	409.9	417.8	425.6	437.4	446.2	450.1	453.1
55°	334.4	345.2	363.8	379.5	388.3	396.2	408.0	416.8	420.7	423.6
57.5°	299.1	314.8	329.5	344.2	350.1	357.0	367.7	375.6	378.5	381.5
60°	264.8	280.5	297.1	311.8	319.7	326.6	336.4	343.2	346.2	348.1
62.5°	239.3	258.9	278.5	293.2	300.1	306.0	314.8	321.7	324.6	327.5
65°	229.5	251.0	271.6	285.4	291.3	297.1	307.9	314.8	318.7	320.7
67.5°	229.5	251.0	270.7	285.4	292.2	298.1	309.9	316.8	319.7	321.7
70°	230.5	252.0	273.6	288.3	293.2	300.1	310.9	317.7	320.7	321.7
72.5°	230.5	253.0	271.6	287.3	292.2	298.1	307.9	313.8	316.8	317.7
75°	227.5	249.1	265.8	280.5	284.4	288.3	298.1	303.0	305.0	305.0
77.5°	221.6	239.3	255.0	264.8	268.7	270.7	277.5	282.4	284.4	284.4
80°	211.8	224.6	237.3	244.2	245.2	247.1	253.0	256.0	256.9	258.9
82.5°	197.1	206.9	212.8	217.7	217.7	219.7	226.5	228.5	230.5	231.4
85°	178.5	185.3	188.3	191.2	193.2	194.2	199.1	201.0	203.0	204.0
87.5°	157.9	162.8	164.8	168.7	168.7	170.6	174.6	176.5	177.5	178.5
90°	137.3	141.2	143.2	146.1	147.1	148.1	152.0	153.0	154.0	154.9
92.5°	117.7	120.6	122.6	125.5	126.5	126.5	130.4	131.4	132.4	133.4
95°	101.0	103.0	104.9	106.9	107.9	108.9	111.8	113.8	114.7	115.7
97.5°	85.3	87.3	90.2	92.2	93.2	95.1	97.1	99.0	99.0	100.0
100°	71.6	74.5	77.5	79.4	81.4	81.4	84.3	85.3	86.3	86.3
102.5°	60.8	63.7	66.7	68.6	69.6	70.6	72.6	73.5	74.5	74.5
105°	51.0	53.9	56.9	59.8	60.8	60.8	62.8	63.7	64.7	64.7
107.5°	43.1	46.1	49.0	52.0	53.0	53.9	54.9	56.9	57.9	57.9
110°	37.3	40.2	43.1	45.1	47.1	47.1	49.0	51.0	51.0	52.0



TEST NUMBER: P236208

CATALOG NUMBER: 2SWLED-28HL-LC-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	31.4	34.3	37.3	40.2	41.2	42.2	44.1	45.1	46.1	46.1
115°	27.5	30.4	33.3	35.3	36.3	37.3	39.2	41.2	42.2	42.2
117.5°	23.5	26.5	29.4	31.4	33.3	34.3	36.3	38.2	39.2	39.2
120°	20.6	23.5	26.5	29.4	30.4	31.4	34.3	36.3	37.3	37.3
122.5°	18.6	21.6	24.5	27.5	29.4	30.4	33.3	35.3	36.3	37.3
125°	17.7	20.6	24.5	27.5	29.4	30.4	33.3	35.3	36.3	37.3
127.5°	16.7	20.6	23.5	27.5	28.4	30.4	33.3	35.3	36.3	36.3
130°	15.7	19.6	22.6	25.5	27.5	28.4	31.4	32.4	33.3	34.3
132.5°	14.7	17.7	20.6	23.5	24.5	25.5	27.5	28.4	29.4	29.4
135°	12.7	15.7	17.7	19.6	20.6	21.6	22.6	23.5	24.5	24.5
137.5°	10.8	12.7	14.7	15.7	16.7	17.7	18.6	18.6	19.6	19.6
140°	8.8	9.8	11.8	12.7	12.7	13.7	14.7	14.7	14.7	14.7
142.5°	6.9	7.8	8.8	9.8	9.8	10.8	10.8	11.8	11.8	11.8
145°	4.9	5.9	6.9	7.8	7.8	7.8	8.8	8.8	8.8	8.8
147.5°	3.9	3.9	4.9	5.9	5.9	5.9	6.9	6.9	6.9	6.9
150°	2.0	2.9	3.9	3.9	3.9	3.9	4.9	4.9	4.9	4.9
152.5°	2.0	2.0	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9
155°	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)