

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: P192452

Luminaire Tested: **4WSL-LD2-40-UPL8-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192452
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U
Description: 4FT Linear Wavestream System, 8% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT50W

Summary

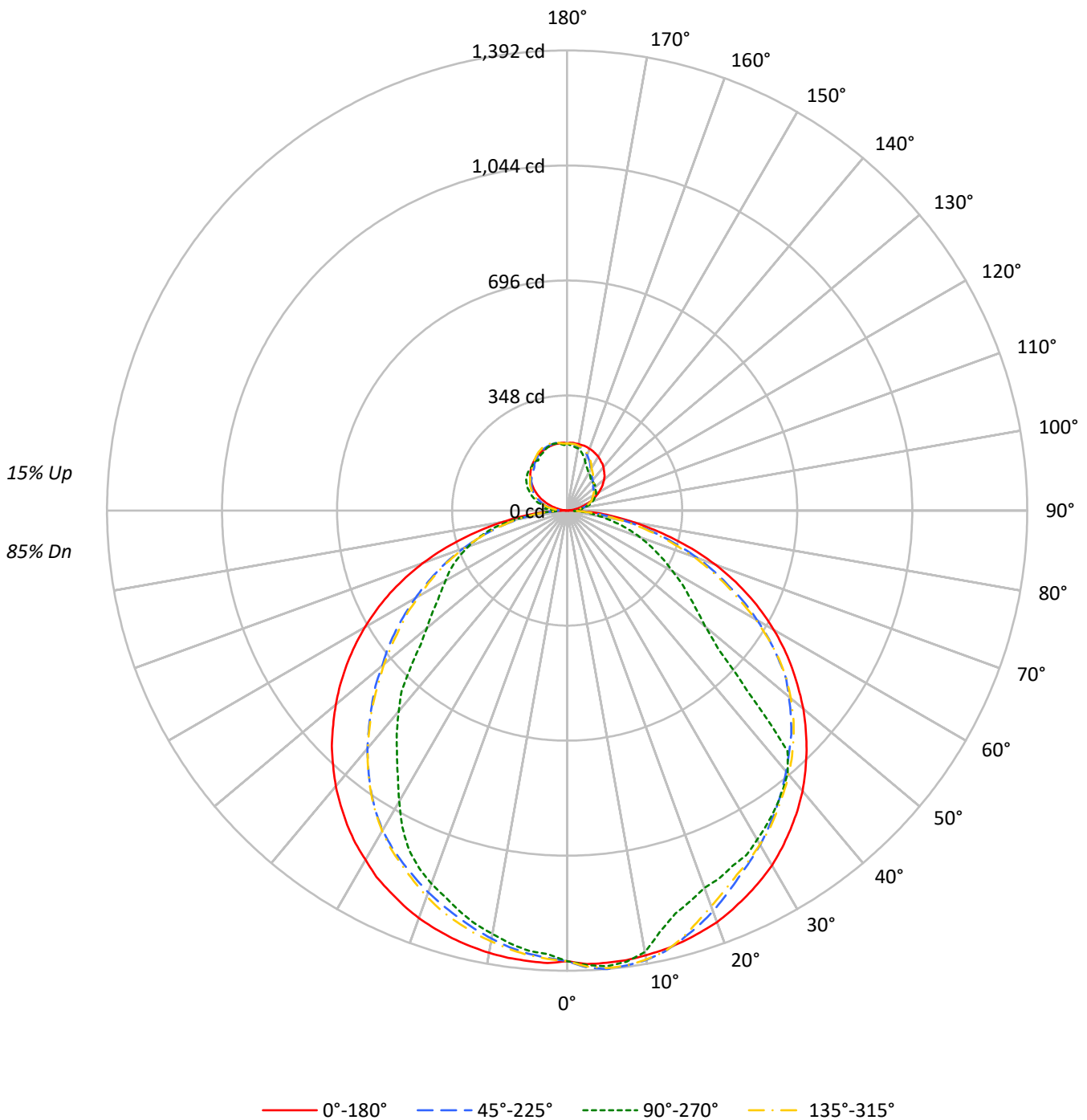
Lumens per Lamp: N/A
Luminaire Lumens: 4521.0 lumens
Efficiency: N/A
Efficacy: 128.8 lumens/watt
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 35.1
Input Voltage (V): NR
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: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P192452

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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	115	115	115	115	111	111	111	111	103	103	103	95	95	95	88	88	88	85
1	105	101	96	92	101	97	93	90	90	87	84	83	81	79	78	76	74	71
2	96	88	81	75	92	84	78	73	78	73	69	73	69	65	68	65	62	59
3	87	77	69	62	83	74	67	61	69	63	58	64	59	55	60	56	52	50
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	53	49	45	42
5	73	61	52	45	70	59	51	44	55	48	43	51	45	41	48	43	39	37
6	68	55	46	40	65	53	45	39	50	43	37	47	40	36	44	38	34	32
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25
9	54	41	33	28	52	40	33	27	38	31	26	36	30	26	34	29	25	23
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	7722	7722	7722	7722
5°	7809	7868	7776	7602
10°	7857	7799	7816	7480
15°	7917	7403	7857	7361
20°	7989	7320	7909	7241
25°	8037	7407	7945	7078
30°	8105	7523	7981	6644
35°	8145	7600	8024	6207
40°	8191	7673	8051	5860
45°	8208	6173	8067	5355
50°	8219	4797	8051	4887
55°	8202	4440	8043	4742
60°	8185	4183	8003	4812
65°	8099	4011	7922	5047
70°	7879	3868	7687	5269
75°	7379	3642	7155	5558
80°	6714	3334	6427	5285
85°	6546	3608	5883	4745



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.6	2.9
10°-20°	367.9	8.1
20°-30°	557.0	12.3
30°-40°	672.6	14.9
40°-50°	686.7	15.2
50°-60°	600.4	13.3
60°-70°	465.3	10.3
70°-80°	279.8	6.2
80°-90°	86.4	1.9
90°-100°	36.4	0.8
100°-110°	69.6	1.5
110°-120°	94.6	2.1
120°-130°	107.5	2.4
130°-140°	109.1	2.4
140°-150°	100.4	2.2
150°-160°	82.8	1.8
160°-170°	55.7	1.2
170°-180°	19.4	0.4
0°-30°	1054.5	23.3
0°-40°	1727.1	38.2
0°-60°	3014.1	66.7
0°-90°	3845.6	85.1
90°-120°	200.6	4.4
90°-150°	517.6	11.4
90°-180°	675.0	14.9
0°-180°	4521.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1363	1363	1363	1363	1363	
5°	1373	1384	1367	1337	1373	131
15°	1350	1262	1340	1255	1350	382
25°	1286	1185	1271	1132	1286	593
35°	1178	1099	1160	898	1178	737
45°	1024	770	1007	668	1024	790
55°	830	450	814	480	830	742
65°	604	299	591	376	604	596
75°	337	166	327	254	337	358
85°	101	56	90	73	101	102
90°	2	31	2	35	2	7
95°	9	42	9	67	9	11
105°	47	72	45	90	47	50
115°	90	92	89	123	90	90
125°	130	105	127	150	130	115
135°	159	115	158	166	159	123
145°	180	123	178	177	180	113
155°	194	143	193	187	194	90
165°	203	178	201	203	203	57
175°	206	196	206	201	206	20
180°	203	203	203	203	203	



TEST NUMBER: P192452

CATALOG NUMBER: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0
2.5°	1373.2	1365.9	1383.5	1386.4	1376.2	1379.1	1380.5	1364.5	1370.3	1348.4	1354.3
5°	1373.2	1371.8	1392.2	1389.3	1383.5	1384.9	1389.3	1370.3	1367.4	1341.1	1345.5
7.5°	1371.8	1374.7	1387.8	1384.9	1376.2	1380.5	1387.8	1373.2	1364.5	1333.8	1332.4
10°	1365.9	1370.3	1380.5	1371.8	1355.7	1363.0	1379.1	1370.3	1358.6	1322.2	1314.9
12.5°	1360.1	1363.0	1365.9	1329.5	1303.2	1320.7	1365.9	1363.0	1349.9	1309.0	1295.9
15°	1349.9	1354.3	1342.6	1290.1	1262.3	1279.8	1339.7	1351.3	1339.7	1290.1	1274.0
17.5°	1338.2	1342.6	1317.8	1259.4	1239.0	1247.7	1306.1	1336.8	1326.5	1272.5	1252.1
20°	1325.1	1329.5	1290.1	1227.3	1214.2	1221.5	1274.0	1320.7	1311.9	1252.1	1228.8
22.5°	1306.1	1313.4	1257.9	1205.4	1204.0	1204.0	1243.4	1301.7	1293.0	1227.3	1202.5
25°	1285.7	1293.0	1225.8	1185.0	1185.0	1185.0	1215.6	1276.9	1271.1	1201.0	1176.2
27.5°	1263.8	1271.1	1196.7	1170.4	1174.8	1167.5	1192.3	1249.2	1249.2	1174.8	1148.5
30°	1239.0	1246.3	1167.5	1147.0	1150.0	1147.0	1166.0	1220.0	1220.0	1144.1	1116.4
32.5°	1209.8	1217.1	1135.4	1119.3	1125.1	1122.2	1141.2	1190.8	1192.3	1112.0	1078.4
35°	1177.7	1186.4	1101.8	1093.0	1098.9	1094.5	1107.6	1160.2	1160.2	1077.0	1034.7
37.5°	1144.1	1152.9	1066.8	1063.9	1069.7	1065.3	1075.5	1128.1	1125.1	1040.5	988.0
40°	1107.6	1117.9	1030.3	1030.3	1037.6	1034.7	1043.4	1094.5	1088.7	1004.0	939.8
42.5°	1066.8	1079.9	993.8	995.3	986.5	998.2	1006.9	1059.5	1047.8	963.2	887.3
45°	1024.5	1040.5	958.8	932.5	770.5	922.3	969.0	1024.5	1006.9	922.3	836.2
47.5°	979.2	999.6	917.9	821.6	620.2	808.5	928.1	980.7	960.2	878.5	786.6
50°	932.5	955.9	875.6	726.7	544.3	712.2	882.9	936.9	913.5	833.3	729.7
52.5°	881.4	907.7	834.7	643.6	493.3	630.4	836.2	894.6	865.4	785.1	683.0
55°	830.4	858.1	779.3	572.1	449.5	560.4	782.2	840.6	814.3	735.5	631.9
57.5°	777.8	805.6	723.8	509.3	411.5	497.6	720.9	791.0	761.8	684.4	580.8
60°	722.4	750.1	664.0	452.4	369.2	443.6	658.2	735.5	706.3	631.9	531.2
62.5°	664.0	691.7	607.1	399.9	334.2	392.6	589.6	681.5	649.4	576.4	480.1
65°	604.2	624.6	540.0	350.2	299.2	344.4	528.3	614.4	591.0	518.1	432.0
67.5°	541.4	561.8	481.6	306.5	265.6	300.6	468.4	554.5	528.3	461.2	383.8
70°	475.7	493.3	420.3	264.1	233.5	259.8	405.7	487.4	464.1	401.3	332.7
72.5°	408.6	424.7	354.6	224.7	199.9	221.8	340.0	420.3	396.9	338.6	286.0
75°	337.1	353.2	293.3	185.3	166.4	182.4	280.2	348.8	326.9	278.7	237.9
77.5°	270.0	288.9	232.0	145.9	132.8	143.0	220.4	281.7	259.8	223.3	191.2
80°	205.8	221.8	172.2	110.9	102.2	109.5	160.5	214.5	197.0	172.2	148.9
82.5°	148.9	157.6	118.2	81.7	77.3	80.3	109.5	151.8	143.0	124.0	109.5
85°	100.7	99.2	73.0	56.9	55.5	56.9	65.7	91.9	90.5	83.2	70.0
87.5°	42.3	39.4	33.6	23.3	20.4	21.9	26.3	35.0	33.6	35.0	33.6
90°	1.5	14.6	23.3	29.2	30.6	29.2	23.3	14.6	1.5	16.1	26.3
92.5°	2.9	19.0	27.7	32.1	35.0	32.1	26.3	19.0	2.9	24.8	26.3
95°	8.8	26.3	32.1	39.4	42.3	39.4	32.1	24.8	8.8	21.9	39.4
97.5°	17.5	33.6	37.9	43.8	45.2	42.3	36.5	33.6	16.1	39.4	40.9
100°	26.3	42.3	49.6	49.6	51.1	49.6	48.2	40.9	24.8	43.8	49.6
102.5°	36.5	48.2	56.9	61.3	61.3	61.3	56.9	48.2	33.6	54.0	68.6
105°	46.7	52.5	62.8	68.6	71.5	68.6	62.8	54.0	45.2	62.8	73.0
107.5°	58.4	56.9	68.6	74.4	77.3	74.4	68.6	58.4	55.5	70.0	81.7
110°	70.0	62.8	74.4	80.3	81.7	80.3	74.4	62.8	67.1	78.8	90.5



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CATALOG NUMBER: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	80.3	67.1	80.3	86.1	87.6	86.1	80.3	68.6	77.3	84.6	99.2
115°	90.5	71.5	83.2	90.5	91.9	90.5	83.2	73.0	89.0	91.9	106.5
117.5°	100.7	77.3	86.1	94.9	96.3	94.9	87.6	78.8	99.2	100.7	113.8
120°	110.9	84.6	90.5	97.8	100.7	99.2	90.5	86.1	108.0	108.0	119.7
122.5°	119.7	90.5	94.9	100.7	103.6	100.7	94.9	93.4	118.2	115.3	127.0
125°	129.9	96.3	97.8	103.6	105.1	103.6	99.2	97.8	127.0	121.1	131.3
127.5°	137.2	103.6	100.7	106.5	108.0	106.5	102.2	105.1	135.7	132.8	135.7
130°	145.9	110.9	103.6	109.5	110.9	110.9	103.6	113.8	143.0	141.6	141.6
132.5°	153.2	118.2	106.5	112.4	113.8	113.8	108.0	119.7	150.3	148.9	145.9
135°	159.1	128.4	112.4	112.4	115.3	115.3	113.8	129.9	157.6	156.1	153.2
137.5°	164.9	137.2	116.7	113.8	115.3	115.3	119.7	138.6	163.4	163.4	157.6
140°	170.7	145.9	119.7	116.7	116.7	119.7	124.0	147.4	169.3	169.3	159.1
142.5°	176.6	153.2	124.0	121.1	118.2	124.0	128.4	156.1	173.7	175.1	163.4
145°	179.5	160.5	129.9	125.5	122.6	129.9	135.7	163.4	178.0	181.0	172.2
147.5°	183.9	167.8	137.2	128.4	128.4	132.8	141.6	169.3	182.4	185.3	176.6
150°	188.3	173.7	143.0	132.8	129.9	137.2	147.4	175.1	186.8	189.7	182.4
152.5°	191.2	179.5	151.8	138.6	135.7	144.5	157.6	179.5	189.7	192.6	188.3
155°	194.1	183.9	162.0	144.5	143.0	150.3	166.4	183.9	192.6	195.6	192.6
157.5°	197.0	188.3	169.3	153.2	147.4	159.1	173.7	189.7	195.6	198.5	197.0
160°	198.5	191.2	178.0	162.0	159.1	169.3	181.0	191.2	197.0	201.4	199.9
162.5°	201.4	194.1	183.9	172.2	169.3	178.0	186.8	195.6	199.9	202.8	202.8
165°	202.8	197.0	189.7	181.0	178.0	186.8	191.2	198.5	201.4	202.8	204.3
167.5°	202.8	199.9	194.1	186.8	185.3	192.6	197.0	201.4	202.8	202.8	205.8
170°	204.3	201.4	197.0	192.6	191.2	197.0	198.5	202.8	204.3	202.8	207.2
172.5°	204.3	202.8	199.9	195.6	192.6	199.9	201.4	202.8	204.3	202.8	205.8
175°	205.8	202.8	202.8	199.9	195.6	202.8	202.8	202.8	205.8	202.8	204.3
177.5°	205.8	202.8	202.8	201.4	198.5	202.8	202.8	202.8	205.8	202.8	204.3
180°	202.8	202.8	202.8	202.8	202.8	202.8	202.8	202.8	202.8	202.8	202.8



TEST NUMBER: P192452

CATALOG NUMBER: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1363.0	1363.0	1363.0	1363.0	1363.0	1363.0
2.5°	1352.8	1342.6	1345.5	1357.2	1352.8	1373.2
5°	1342.6	1336.8	1336.8	1349.9	1348.4	1373.2
7.5°	1326.5	1320.7	1323.6	1338.2	1341.1	1371.8
10°	1307.6	1300.3	1303.2	1323.6	1330.9	1365.9
12.5°	1287.1	1281.3	1284.2	1307.6	1317.8	1360.1
15°	1263.8	1255.0	1263.8	1288.6	1301.7	1349.9
17.5°	1237.5	1225.8	1236.1	1268.2	1284.2	1338.2
20°	1211.2	1201.0	1206.9	1241.9	1265.2	1325.1
22.5°	1185.0	1170.4	1176.2	1212.7	1241.9	1306.1
25°	1154.3	1132.4	1144.1	1183.5	1217.1	1285.7
27.5°	1113.5	1079.9	1104.7	1154.3	1187.9	1263.8
30°	1059.5	1015.7	1052.2	1119.3	1157.3	1239.0
32.5°	999.6	952.9	993.8	1079.9	1125.1	1209.8
35°	939.8	897.5	934.0	1036.1	1091.6	1177.7
37.5°	882.9	846.4	880.0	989.4	1056.6	1144.1
40°	828.9	792.4	827.4	938.4	1018.6	1107.6
42.5°	774.9	741.3	774.9	884.4	979.2	1066.8
45°	720.9	668.4	718.0	831.8	936.9	1024.5
47.5°	662.5	601.2	658.2	774.9	891.7	979.2
50°	607.1	554.5	604.2	722.4	845.0	932.5
52.5°	558.9	516.6	556.0	668.4	796.8	881.4
55°	513.7	480.1	513.7	615.8	745.7	830.4
57.5°	472.8	450.9	474.3	570.6	693.2	777.8
60°	437.8	424.7	439.3	515.1	640.6	722.4
62.5°	404.2	402.8	405.7	471.4	585.2	664.0
65°	369.2	376.5	369.2	424.7	529.7	604.2
67.5°	334.2	348.8	337.1	378.0	469.9	541.4
70°	302.1	318.1	302.1	329.8	410.1	475.7
72.5°	265.6	286.0	265.6	284.6	347.3	408.6
75°	230.6	253.9	232.0	237.9	287.5	337.1
77.5°	192.6	214.5	197.0	192.6	232.0	270.0
80°	153.2	162.0	153.2	151.8	179.5	205.8
82.5°	106.5	113.8	106.5	110.9	131.3	148.9
85°	70.0	73.0	70.0	71.5	87.6	100.7
87.5°	29.2	29.2	29.2	36.5	39.4	42.3
90°	32.1	35.0	32.1	26.3	16.1	1.5
92.5°	33.6	36.5	33.6	29.2	19.0	2.9
95°	59.8	67.1	56.9	36.5	30.6	8.8
97.5°	48.2	52.5	49.6	42.3	37.9	17.5
100°	56.9	61.3	56.9	59.8	46.7	26.3
102.5°	67.1	70.0	68.6	70.0	56.9	36.5
105°	87.6	90.5	87.6	75.9	65.7	46.7
107.5°	93.4	100.7	94.9	84.6	74.4	58.4
110°	100.7	106.5	102.2	93.4	81.7	70.0



TEST NUMBER: P192452

CATALOG NUMBER: 4WSL-LD2-40-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	108.0	115.3	110.9	103.6	87.6	80.3
115°	116.7	122.6	119.7	110.9	96.3	90.5
117.5°	125.5	129.9	127.0	116.7	105.1	100.7
120°	132.8	138.6	135.7	124.0	112.4	110.9
122.5°	138.6	144.5	141.6	131.3	119.7	119.7
125°	144.5	150.3	147.4	137.2	125.5	129.9
127.5°	148.9	156.1	153.2	141.6	138.6	137.2
130°	154.7	159.1	157.6	145.9	145.9	145.9
132.5°	157.6	163.4	160.5	151.8	154.7	153.2
135°	159.1	166.4	163.4	159.1	162.0	159.1
137.5°	162.0	167.8	166.4	163.4	169.3	164.9
140°	166.4	169.3	170.7	166.4	175.1	170.7
142.5°	170.7	172.2	175.1	170.7	181.0	176.6
145°	173.7	176.6	179.5	179.5	185.3	179.5
147.5°	173.7	178.0	178.0	182.4	191.2	183.9
150°	178.0	175.1	183.9	188.3	194.1	188.3
152.5°	183.9	182.4	189.7	194.1	197.0	191.2
155°	185.3	186.8	191.2	198.5	199.9	194.1
157.5°	191.2	189.7	197.0	202.8	202.8	197.0
160°	195.6	195.6	202.8	205.8	204.3	198.5
162.5°	199.9	199.9	207.2	207.2	205.8	201.4
165°	202.8	202.8	210.1	208.7	205.8	202.8
167.5°	204.3	205.8	211.6	210.1	205.8	202.8
170°	205.8	205.8	211.6	208.7	205.8	204.3
172.5°	205.8	204.3	210.1	207.2	204.3	204.3
175°	204.3	201.4	207.2	204.3	204.3	205.8
177.5°	202.8	198.5	202.8	202.8	204.3	205.8
180°	202.8	202.8	202.8	202.8	202.8	202.8

(END OF REPORT)