

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: P176131

Luminaire Tested: **2BCLED-LD4-28HL-F-UNV-L830-CD1-U**

Test Date: 04/06/15



**Test Information**

Test Method: LM-79-08  
Report Number: P176131  
Test Lab: INNOVATION CENTER-P3  
Test Date: 04/06/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U  
Description: METALUX 2FT BC LED WALL BRACKET CORRIDOR LUMINAIRE WITH A WHITE  
Light Source: (112) COOPER LIGHTING 3000K LEDS  
Ballast/Driver: (1) ELECTRONIC DRIVER

**Summary**

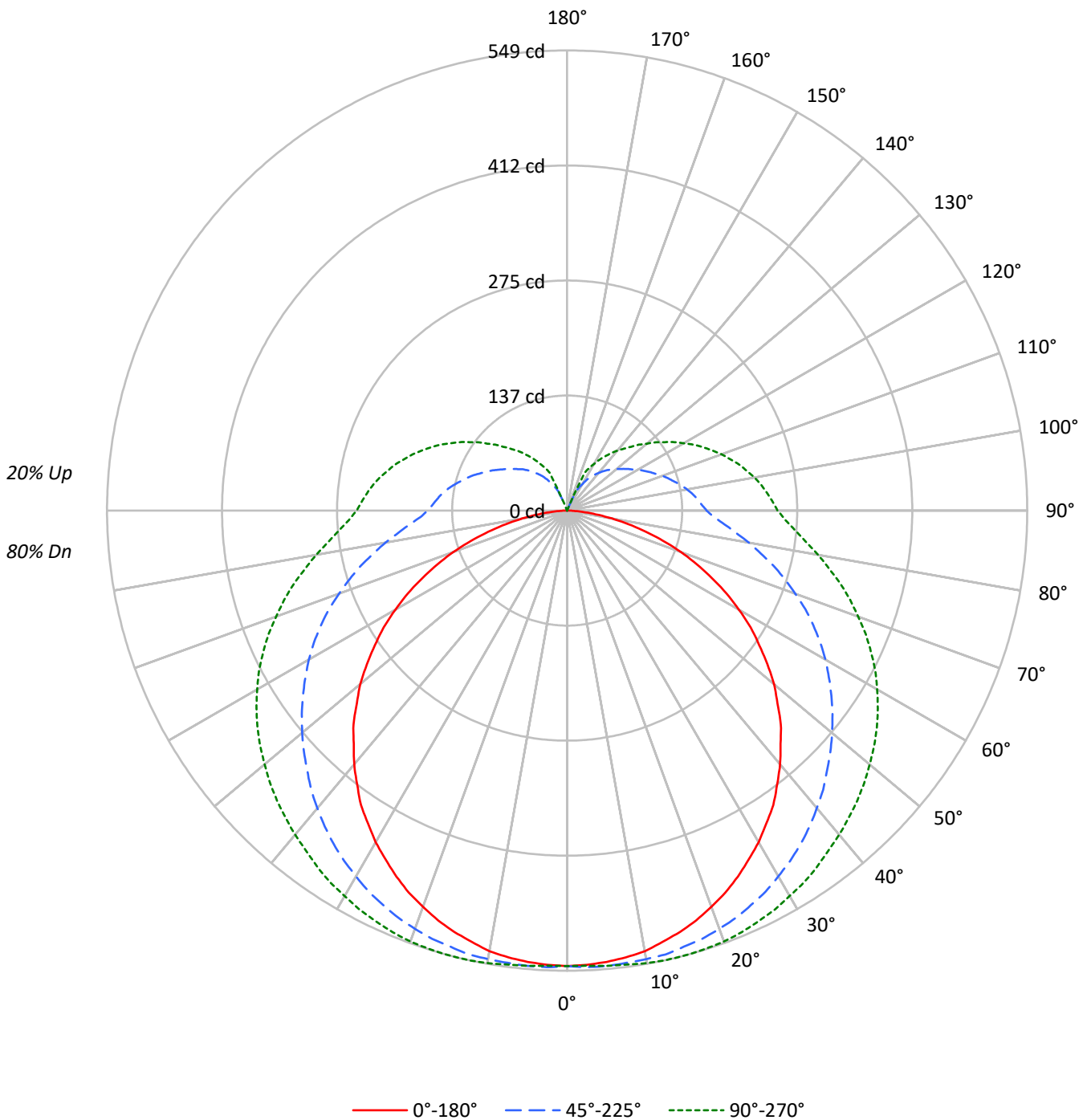
Lumens per Lamp: N/A  
Luminaire Lumens: 2702.2 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.46 / 1.53  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.21')  
CIE Type: Semi-Direct

Input Watts (W): 29.1  
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

TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**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	114	114	114	114	109	109	109	109	100	100	100	92	92	92	84	84	84	80
1	101	95	90	85	96	91	86	82	83	79	76	76	73	70	69	67	64	61
2	91	82	74	67	86	78	71	65	71	65	60	65	60	56	59	55	52	48
3	82	71	62	54	78	67	59	53	62	55	49	56	51	46	51	47	43	39
4	75	62	53	45	71	59	51	44	54	47	41	49	43	38	45	40	36	33
5	68	55	45	38	65	53	44	37	48	41	35	44	38	33	40	35	31	28
6	63	49	40	33	60	47	38	32	43	36	30	40	33	28	36	31	27	24
7	58	44	35	29	55	42	34	28	39	32	26	36	30	25	33	28	23	21
8	54	40	31	25	51	39	30	25	36	28	23	33	27	22	30	25	21	19
9	50	37	28	23	48	35	27	22	33	26	21	30	24	20	28	23	19	17
10	47	34	26	20	45	32	25	20	30	23	19	28	22	18	26	21	17	15

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

	0°	45°	90°
0°	7799	7799	7799
5°	7717	7548	7492
10°	7637	7317	7276
15°	7521	7113	7101
20°	7402	6932	6952
25°	7276	6754	6798
30°	7141	6579	6661
35°	7004	6414	6550
40°	6811	6241	6452
45°	6628	6069	6387
50°	6400	5921	6330
55°	6097	5777	6292
60°	5753	5649	6246
65°	5285	5502	6200
70°	4708	5324	6134
75°	3877	5157	6091
80°	2800	4992	6051
85°	1376	4902	6119



TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.8	1.9
10°-20°	151.8	5.6
20°-30°	238.0	8.8
30°-40°	300.8	11.1
40°-50°	334.3	12.4
50°-60°	337.2	12.5
60°-70°	308.2	11.4
70°-80°	252.5	9.3
80°-90°	188.7	7.0
90°-100°	153.3	5.7
100°-110°	128.3	4.7
110°-120°	99.9	3.7
120°-130°	72.3	2.7
130°-140°	48.1	1.8
140°-150°	27.9	1.0
150°-160°	9.1	0.3
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	441.7	16.3
0°-40°	742.5	27.5
0°-60°	1414.0	52.3
0°-90°	2163.3	80.1
90°-120°	381.5	14.1
90°-150°	529.8	19.6
90°-180°	539.0	19.9
0°-180°	2702.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	543	543	543	543	543	
5°	540	542	545	545	545	51
15°	520	527	539	547	549	147
25°	482	496	519	536	540	222
35°	429	451	486	511	519	268
45°	361	392	438	476	490	277
55°	280	322	385	434	451	250
65°	190	245	324	379	400	189
75°	97	167	255	315	338	103
85°	18	98	188	251	273	23
90°	1	76	166	229	251	1
95°	1	68	156	217	240	0
105°	0	53	133	191	212	0
115°	0	44	109	160	179	0
125°	0	37	87	127	142	0
135°	0	28	68	98	108	0
145°	0	17	49	72	79	0
155°	0	7	26	45	50	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	543.4	543.4	543.4	543.4	543.4	543.4	543.4	543.4	543.4	543.4	543.4
2.5°	542.4	542.4	542.4	542.4	542.4	543.4	544.3	544.3	544.3	545.3	545.3
5°	540.5	540.5	540.5	540.5	541.4	542.4	543.4	543.4	544.3	545.3	545.3
7.5°	537.6	537.6	537.6	537.6	539.5	540.5	541.4	542.4	543.4	544.3	545.3
10°	533.7	533.7	533.7	534.7	535.7	537.6	539.5	540.5	542.4	543.4	545.3
12.5°	527.0	528.0	528.0	528.9	530.9	533.7	535.7	537.6	539.5	542.4	543.4
15°	520.3	520.3	521.2	523.2	526.0	528.0	530.9	533.7	536.6	538.6	540.5
17.5°	512.6	512.6	513.5	516.4	519.3	522.2	526.0	528.9	531.8	535.7	538.6
20°	503.0	503.9	505.9	508.7	511.6	515.5	519.3	523.2	527.0	530.9	534.7
22.5°	493.4	494.3	496.2	499.1	503.0	507.8	512.6	516.4	521.2	526.0	529.9
25°	481.8	482.8	485.7	488.5	493.4	499.1	503.0	509.7	514.5	519.3	524.1
27.5°	469.3	470.3	473.2	478.0	483.7	488.5	495.3	501.0	506.8	512.6	517.4
30°	456.8	457.8	460.7	465.5	471.2	478.0	484.7	491.4	498.2	503.9	509.7
32.5°	442.4	443.3	448.2	453.9	459.7	467.4	474.1	481.8	489.5	495.3	502.0
35°	428.9	428.9	433.7	439.5	447.2	453.9	462.6	470.3	478.0	485.7	492.4
37.5°	411.6	413.5	418.3	425.1	432.8	440.5	450.1	457.8	466.4	475.1	481.8
40°	395.3	397.2	403.0	409.7	418.3	427.0	436.6	445.3	454.9	463.5	471.2
42.5°	377.0	379.9	385.6	393.3	403.0	412.6	422.2	432.8	441.4	452.0	459.7
45°	360.6	361.6	368.3	377.0	386.6	397.2	407.8	418.3	428.9	438.5	449.1
47.5°	340.4	344.3	350.1	359.7	369.3	380.8	391.4	403.9	414.5	426.0	436.6
50°	322.2	325.1	331.8	341.4	352.9	364.5	376.0	388.5	401.0	412.6	424.1
52.5°	301.0	304.9	312.6	323.1	334.7	347.2	359.7	373.1	385.6	399.1	411.6
55°	279.9	283.7	292.4	303.9	315.4	328.9	342.4	356.8	371.2	384.7	398.1
57.5°	259.7	263.5	271.2	282.7	297.2	309.7	326.0	340.4	355.8	370.3	383.7
60°	236.6	241.4	250.0	262.5	277.0	291.4	307.7	324.1	340.4	355.8	369.3
62.5°	214.5	219.3	227.9	241.4	256.8	273.1	289.5	306.8	324.1	340.4	354.9
65°	190.4	196.2	206.8	220.2	235.6	253.9	272.2	289.5	307.7	324.1	338.5
67.5°	167.3	172.1	183.7	199.1	215.4	234.7	253.9	272.2	290.4	307.7	322.2
70°	144.3	149.1	161.6	177.0	195.2	215.4	235.6	253.9	272.2	289.5	305.8
72.5°	120.2	126.0	138.5	155.8	176.0	196.2	216.4	236.6	254.9	272.2	288.5
75°	97.1	102.9	117.3	135.6	156.8	177.9	198.1	218.3	237.5	254.9	271.2
77.5°	75.0	81.7	96.2	116.4	137.5	158.7	179.8	200.0	219.3	236.6	253.9
80°	53.9	60.6	76.9	97.1	119.3	140.4	162.5	181.8	202.0	220.2	236.6
82.5°	34.6	41.4	58.7	79.8	101.9	124.1	145.2	165.4	184.6	202.9	220.2
85°	18.3	26.0	43.3	64.4	86.6	108.7	129.8	151.0	170.2	188.5	204.8
87.5°	7.7	14.4	31.7	51.9	74.1	95.2	117.3	137.5	156.8	175.0	192.3
90°	1.0	8.7	24.0	44.2	65.4	87.5	108.7	128.9	149.1	166.4	183.7
92.5°	1.0	6.7	21.2	40.4	61.5	82.7	103.9	124.1	143.3	160.6	177.9
95°	1.0	5.8	18.3	36.5	57.7	78.9	99.1	119.3	138.5	155.8	172.1
97.5°	0.0	4.8	17.3	33.7	53.9	74.1	94.2	114.4	132.7	151.0	167.3
100°	0.0	4.8	16.3	31.7	50.0	70.2	89.4	109.6	127.9	145.2	161.6
102.5°	0.0	4.8	15.4	29.8	47.1	66.4	84.6	103.9	122.1	139.4	154.8
105°	0.0	4.8	14.4	27.9	44.2	62.5	80.8	99.1	116.4	132.7	149.1
107.5°	0.0	3.8	14.4	26.9	42.3	58.7	76.0	93.3	111.6	126.9	142.3
110°	0.0	3.8	13.5	26.0	40.4	55.8	72.1	88.5	104.8	121.2	135.6



TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	3.8	12.5	25.0	38.5	52.9	68.3	83.7	100.0	114.4	128.9
115°	0.0	2.9	12.5	24.0	36.5	51.0	64.4	78.9	94.2	108.7	122.1
117.5°	0.0	2.9	11.5	23.1	35.6	48.1	61.5	75.0	89.4	102.9	115.4
120°	0.0	2.9	10.6	22.1	33.7	46.2	58.7	71.2	84.6	97.1	108.7
122.5°	0.0	1.9	10.6	20.2	31.7	44.2	55.8	68.3	79.8	91.4	102.9
125°	0.0	1.9	9.6	19.2	30.8	42.3	53.9	64.4	76.0	86.6	97.1
127.5°	0.0	1.9	8.7	18.3	28.9	39.4	51.0	61.5	72.1	81.7	91.4
130°	0.0	1.9	7.7	16.3	26.9	37.5	48.1	57.7	68.3	76.9	85.6
132.5°	0.0	1.0	6.7	15.4	25.0	34.6	45.2	54.8	64.4	73.1	80.8
135°	0.0	1.0	5.8	13.5	23.1	32.7	41.4	51.0	59.6	68.3	76.0
137.5°	0.0	1.0	4.8	12.5	21.2	29.8	38.5	47.1	55.8	63.5	71.2
140°	0.0	1.0	3.8	10.6	18.3	26.9	35.6	43.3	51.9	58.7	66.4
142.5°	0.0	1.0	3.8	8.7	16.3	23.1	30.8	39.4	47.1	53.9	60.6
145°	0.0	1.0	2.9	7.7	13.5	20.2	27.9	34.6	41.4	49.0	55.8
147.5°	1.0	1.0	1.9	5.8	11.5	17.3	24.0	29.8	36.5	43.3	49.0
150°	1.0	0.0	1.9	4.8	8.7	14.4	20.2	26.0	30.8	36.5	43.3
152.5°	1.0	1.0	1.0	3.8	7.7	11.5	16.3	22.1	26.9	31.7	36.5
155°	0.0	1.0	1.0	2.9	5.8	8.7	13.5	17.3	22.1	26.0	30.8
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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



TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	543.4	543.4	543.4	543.4	543.4	543.4	543.4	543.4
2.5°	545.3	544.3	544.3	544.3	543.4	543.4	543.4	543.4
5°	545.3	545.3	545.3	545.3	545.3	545.3	545.3	545.3
7.5°	546.2	546.2	546.2	546.2	546.2	546.2	546.2	546.2
10°	546.2	547.2	547.2	548.2	548.2	548.2	548.2	548.2
12.5°	545.3	546.2	547.2	548.2	549.1	549.1	549.1	549.1
15°	543.4	545.3	546.2	547.2	548.2	548.2	549.1	549.1
17.5°	540.5	543.4	545.3	546.2	547.2	547.2	548.2	548.2
20°	537.6	540.5	542.4	544.3	545.3	546.2	547.2	547.2
22.5°	533.7	536.6	539.5	541.4	542.4	544.3	544.3	544.3
25°	528.0	531.8	534.7	537.6	538.6	539.5	540.5	540.5
27.5°	522.2	526.0	529.9	531.8	533.7	535.7	536.6	536.6
30°	515.5	519.3	523.2	526.0	528.9	530.9	530.9	530.9
32.5°	507.8	513.5	517.4	520.3	523.2	525.1	526.0	526.0
35°	499.1	504.9	509.7	512.6	516.4	518.4	519.3	519.3
37.5°	489.5	495.3	500.1	504.9	508.7	510.7	511.6	511.6
40°	478.9	485.7	491.4	496.2	500.1	503.0	504.9	504.9
42.5°	468.3	476.0	481.8	487.6	491.4	495.3	496.2	497.2
45°	457.8	465.5	473.2	478.9	482.8	486.6	488.5	489.5
47.5°	446.2	454.9	462.6	469.3	474.1	478.0	479.9	480.8
50°	434.7	444.3	452.0	458.7	464.5	468.3	470.3	471.2
52.5°	423.1	432.8	441.4	449.1	454.9	458.7	460.7	461.6
55°	409.7	421.2	429.9	437.6	443.3	448.2	450.1	451.0
57.5°	397.2	407.8	418.3	426.0	431.8	436.6	439.5	439.5
60°	382.8	394.3	404.9	412.6	419.3	424.1	426.0	427.0
62.5°	368.3	379.9	390.5	399.1	405.8	410.6	413.5	414.5
65°	352.9	364.5	375.1	383.7	391.4	395.3	398.1	400.1
67.5°	336.6	349.1	359.7	368.3	376.0	380.8	383.7	385.6
70°	320.2	332.7	343.3	352.0	360.6	365.4	368.3	369.3
72.5°	303.9	316.4	327.0	336.6	344.3	349.1	352.9	353.9
75°	285.6	299.1	310.6	320.2	327.0	332.7	335.6	337.6
77.5°	268.3	281.8	293.3	302.9	310.6	316.4	319.3	320.2
80°	252.0	265.4	277.0	285.6	294.3	299.1	302.9	303.9
82.5°	234.7	249.1	260.6	270.2	277.9	283.7	286.6	287.5
85°	220.2	233.7	246.2	255.8	263.5	269.3	273.1	273.1
87.5°	207.7	221.2	232.7	243.3	251.0	255.8	259.7	260.6
90°	198.1	212.5	224.1	233.7	241.4	247.2	250.0	251.0
92.5°	192.3	205.8	217.3	227.9	235.6	240.4	244.3	245.2
95°	187.5	201.0	212.5	222.2	229.8	235.6	238.5	239.5
97.5°	182.7	195.2	206.8	216.4	224.1	228.9	232.7	233.7
100°	176.0	189.5	200.0	209.7	217.3	222.2	226.0	227.0
102.5°	169.3	182.7	194.3	202.9	209.7	215.4	218.3	219.3
105°	163.5	176.0	186.6	195.2	202.9	207.7	211.6	212.5
107.5°	156.8	169.3	178.9	188.5	195.2	201.0	203.9	203.9
110°	150.0	161.6	172.1	180.8	187.5	192.3	195.2	196.2





TEST NUMBER: P176131

CATALOG NUMBER: 2BCLED-LD4-28HL-F-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	142.3	153.9	163.5	172.1	178.9	183.7	186.6	187.5
115°	134.6	146.2	155.8	163.5	170.2	175.0	177.9	178.9
117.5°	127.9	138.5	148.1	155.8	161.6	166.4	169.3	170.2
120°	120.2	130.8	139.4	147.1	152.9	157.7	159.6	160.6
122.5°	113.5	123.1	131.8	138.5	144.3	148.1	151.0	151.9
125°	106.7	115.4	124.1	130.8	135.6	139.4	142.3	142.3
127.5°	100.0	108.7	116.4	122.1	126.9	130.8	132.7	133.7
130°	94.2	101.9	108.7	114.4	119.3	122.1	124.1	124.1
132.5°	88.5	95.2	101.9	106.7	110.6	113.5	115.4	116.4
135°	82.7	89.4	95.2	100.0	102.9	105.8	107.7	107.7
137.5°	77.9	83.7	88.5	93.3	96.2	99.1	100.0	100.0
140°	72.1	77.9	82.7	86.6	89.4	91.4	93.3	93.3
142.5°	66.4	71.2	76.0	79.8	82.7	84.6	86.6	86.6
145°	60.6	65.4	70.2	73.1	76.0	77.9	78.9	78.9
147.5°	54.8	59.6	63.5	66.4	69.2	70.2	72.1	72.1
150°	48.1	52.9	56.7	59.6	61.5	63.5	64.4	64.4
152.5°	41.4	46.2	50.0	52.9	54.8	55.8	57.7	57.7
155°	34.6	39.4	43.3	46.2	48.1	49.0	50.0	50.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	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
167.5°	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
172.5°	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
177.5°	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

(END OF REPORT)