

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: P176126

Luminaire Tested: **2BCLED-LD4-20SL-F-UNV-L840-CD1-U**

Test Date: 04/06/15



**Test Information**

Test Method: LM-79-08  
Report Number: P176126  
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-LD4-20SL-F-UNV-L840-CD1-U  
Description:  
Light Source: (56) COOPER LIGHTING 4000K LEDS  
Ballast/Driver: (1) ELECTRONIC DRIVER PROGRAMED

**Summary**

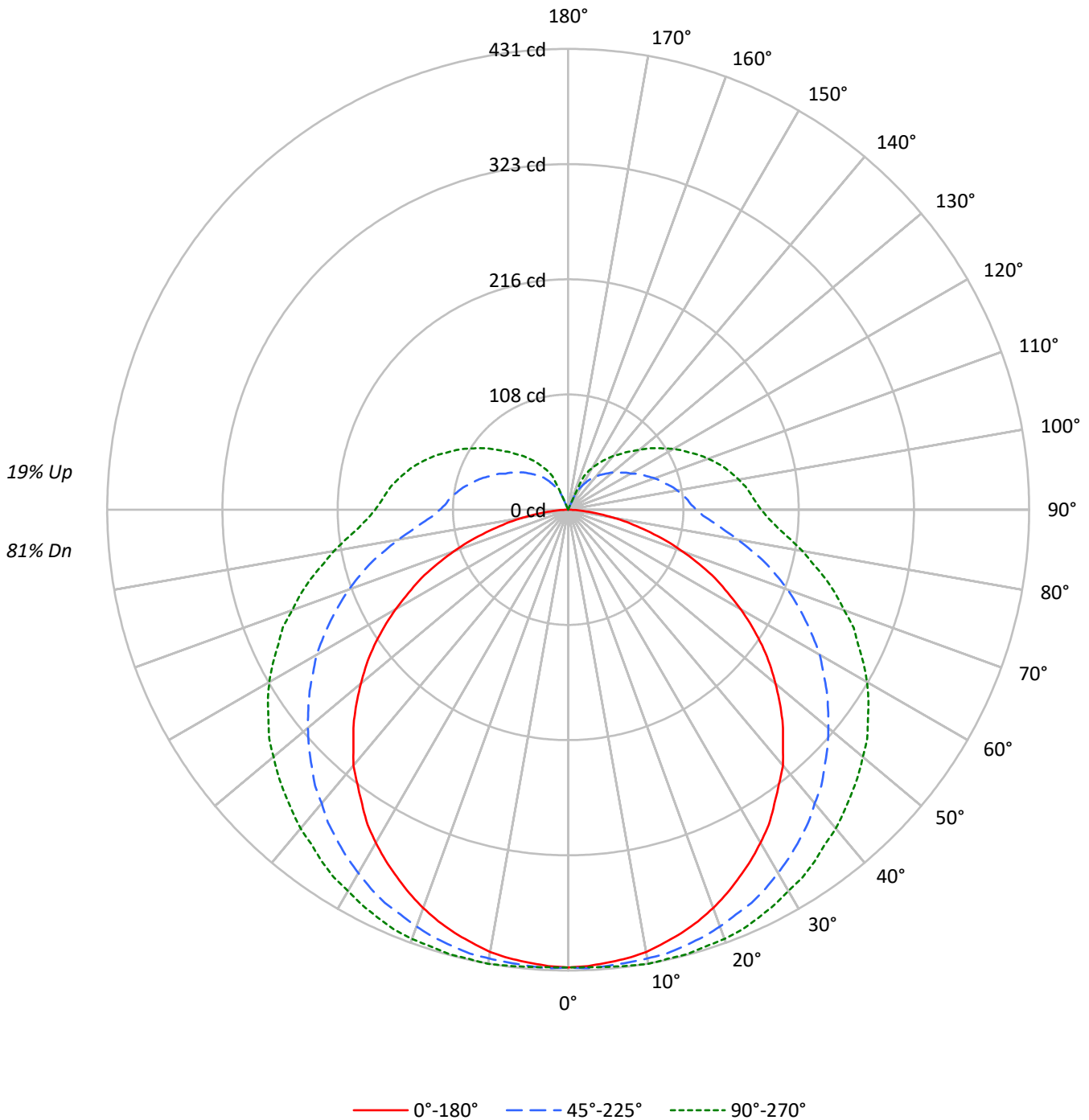
Lumens per Lamp: N/A  
Luminaire Lumens: 2037.8 lumens  
Efficiency: N/A  
Efficacy: 86.7 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.21')  
CIE Type: Semi-Direct

Input Watts (W): 23.5  
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: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-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	115	115	115	115	110	110	110	110	101	101	101	92	92	92	85	85	85	81
1	102	96	91	86	97	92	87	83	84	80	77	77	74	71	70	68	66	62
2	91	82	74	68	87	78	71	65	72	66	61	66	61	57	60	56	53	50
3	83	71	62	55	78	68	60	53	62	56	50	57	51	47	52	48	44	41
4	75	62	53	46	71	60	51	44	55	48	42	50	44	39	46	41	37	34
5	69	55	46	39	65	53	44	38	49	41	36	45	39	34	41	36	32	29
6	63	50	40	33	60	48	39	33	44	36	31	40	34	29	37	32	27	25
7	59	45	36	29	56	43	34	28	40	32	27	37	30	26	34	28	24	22
8	54	41	32	26	52	39	31	25	36	29	24	33	27	23	31	25	21	19
9	51	37	29	23	48	36	28	22	33	26	21	31	25	20	28	23	19	17
10	47	34	26	21	45	33	25	20	31	24	19	28	22	18	26	21	17	15

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

	0°	45°	90°
0°	6145	6145	6145
5°	6069	5927	5897
10°	6010	5739	5725
15°	5924	5575	5564
20°	5833	5417	5427
25°	5724	5277	5295
30°	5621	5122	5167
35°	5487	4979	5066
40°	5382	4827	4975
45°	5217	4693	4892
50°	5025	4558	4831
55°	4820	4430	4773
60°	4533	4310	4720
65°	4208	4156	4635
70°	3709	4013	4559
75°	3027	3854	4491
80°	2234	3645	4426
85°	1075	3542	4407



TEST NUMBER: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.8	2.0
10°-20°	119.1	5.8
20°-30°	186.0	9.1
30°-40°	234.1	11.5
40°-50°	258.8	12.7
50°-60°	258.9	12.7
60°-70°	233.9	11.5
70°-80°	188.3	9.2
80°-90°	137.0	6.7
90°-100°	109.5	5.4
100°-110°	91.1	4.5
110°-120°	70.5	3.5
120°-130°	50.6	2.5
130°-140°	33.5	1.6
140°-150°	19.4	1.0
150°-160°	6.3	0.3
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	345.9	17.0
0°-40°	579.9	28.5
0°-60°	1097.6	53.9
0°-90°	1656.8	81.3
90°-120°	271.1	13.3
90°-150°	374.7	18.4
90°-180°	381.0	18.7
0°-180°	2037.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	428	428	428	428	428	
5°	425	427	428	429	429	40
15°	410	414	422	429	430	116
25°	379	389	406	417	421	175
35°	336	353	377	395	402	211
45°	284	306	339	365	375	219
55°	221	250	295	330	342	197
65°	152	188	245	285	299	149
75°	76	126	190	233	249	81
85°	14	71	136	181	197	18
90°	0	55	120	164	180	1
95°	0	48	112	155	171	0
105°	0	37	94	136	152	0
115°	0	30	77	113	126	0
125°	0	25	60	89	100	0
135°	0	19	47	68	76	0
145°	0	12	34	50	55	0
155°	0	5	18	31	35	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	428.2	428.2	428.2	428.2	428.2	428.2	428.2	428.2	428.2	428.2	428.2
2.5°	427.2	427.2	427.2	427.2	428.2	428.2	429.2	429.2	429.2	429.2	429.2
5°	425.1	425.1	425.1	426.2	426.2	427.2	427.2	428.2	428.2	428.2	428.2
7.5°	423.1	423.1	423.1	423.1	424.1	425.1	426.2	427.2	428.2	427.2	428.2
10°	420.0	419.0	420.0	420.0	421.0	423.1	424.1	425.1	426.2	426.2	427.2
12.5°	414.9	414.9	415.9	416.9	418.0	419.0	420.0	423.1	424.1	425.1	426.2
15°	409.8	409.8	410.8	411.8	412.8	414.9	416.9	420.0	421.0	422.1	424.1
17.5°	403.6	403.6	404.6	405.7	407.7	410.8	412.8	414.9	416.9	419.0	421.0
20°	396.4	396.4	397.5	399.5	401.6	404.6	406.7	409.8	412.8	414.9	418.0
22.5°	388.2	388.2	390.3	392.3	395.4	397.5	401.6	404.6	407.7	409.8	413.9
25°	379.0	380.1	381.1	384.2	387.2	391.3	394.4	398.5	402.6	405.7	408.7
27.5°	369.8	370.8	372.9	376.0	379.0	383.1	387.2	391.3	395.4	399.5	403.6
30°	359.6	360.6	362.6	365.7	369.8	374.9	379.0	384.2	388.2	392.3	396.4
32.5°	349.3	349.3	352.4	356.5	360.6	365.7	370.8	376.0	381.1	385.2	390.3
35°	336.0	338.1	341.1	344.2	350.3	355.5	360.6	366.7	371.9	377.0	383.1
37.5°	323.7	325.8	328.8	334.0	339.1	345.2	350.3	357.5	362.6	368.8	374.9
40°	312.4	312.4	316.5	321.7	326.8	332.9	340.1	346.2	352.4	358.5	364.7
42.5°	297.1	299.1	303.2	308.3	314.5	321.7	327.8	336.0	342.1	350.3	356.5
45°	283.8	284.8	289.9	296.1	302.2	309.4	316.5	323.7	331.9	339.1	346.2
47.5°	268.4	271.5	275.6	281.7	288.9	297.1	304.2	313.5	320.6	328.8	336.0
50°	253.0	256.1	260.2	267.4	274.5	283.8	290.9	300.1	308.3	317.6	324.7
52.5°	237.7	239.7	244.8	253.0	261.2	269.4	278.6	287.9	297.1	306.3	315.5
55°	221.3	223.3	229.5	236.6	245.9	255.1	265.3	274.5	284.8	295.0	304.2
57.5°	203.9	206.9	213.1	221.3	230.5	239.7	250.0	262.2	272.5	282.7	293.0
60°	186.4	189.5	195.7	204.9	214.1	225.4	236.6	248.9	260.2	271.5	281.7
62.5°	168.0	172.1	179.3	188.5	198.7	210.0	222.3	234.6	246.9	258.1	269.4
65°	151.6	153.7	160.8	171.1	181.3	194.6	208.0	220.2	232.5	244.8	255.1
67.5°	132.1	135.2	143.4	153.7	166.0	179.3	193.6	206.9	220.2	231.5	241.8
70°	113.7	116.8	126.0	137.3	149.6	163.9	178.2	192.6	204.9	218.2	229.5
72.5°	95.3	99.4	108.6	119.9	134.2	149.6	163.9	178.2	191.6	203.9	216.1
75°	75.8	80.9	91.2	103.5	118.8	133.2	148.5	162.9	176.2	190.5	200.8
77.5°	59.4	63.5	74.8	88.1	103.5	118.8	134.2	148.5	162.9	175.2	187.5
80°	43.0	47.1	58.4	73.8	89.1	104.5	119.9	134.2	148.5	160.8	173.1
82.5°	26.6	32.8	45.1	59.4	75.8	91.2	106.5	120.9	135.2	147.5	160.8
85°	14.3	19.5	31.8	47.1	63.5	78.9	94.2	108.6	122.9	136.2	148.5
87.5°	5.1	11.3	23.6	37.9	53.3	68.6	85.0	99.4	113.7	126.0	138.3
90°	0.0	6.1	17.4	31.8	47.1	62.5	77.9	92.2	106.5	119.9	131.1
92.5°	0.0	4.1	15.4	28.7	44.0	58.4	73.8	89.1	102.4	114.7	127.0
95°	0.0	4.1	13.3	26.6	41.0	55.3	70.7	85.0	98.3	111.7	122.9
97.5°	0.0	3.1	12.3	23.6	37.9	52.2	67.6	80.9	95.3	107.6	118.8
100°	0.0	3.1	11.3	22.5	34.8	49.2	63.5	77.9	91.2	103.5	114.7
102.5°	0.0	3.1	10.2	20.5	32.8	46.1	60.4	73.8	87.1	99.4	110.6
105°	0.0	3.1	10.2	19.5	30.7	44.0	57.4	69.7	83.0	94.2	105.5
107.5°	0.0	3.1	10.2	18.4	29.7	41.0	53.3	66.6	78.9	90.1	100.4
110°	0.0	3.1	9.2	18.4	27.7	38.9	50.2	62.5	74.8	86.0	96.3



TEST NUMBER: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	2.0	9.2	17.4	26.6	36.9	48.1	59.4	70.7	80.9	91.2
115°	0.0	2.0	8.2	16.4	25.6	34.8	45.1	55.3	66.6	76.8	86.0
117.5°	0.0	2.0	8.2	15.4	24.6	33.8	43.0	52.2	62.5	72.7	80.9
120°	0.0	2.0	7.2	15.4	23.6	31.8	41.0	50.2	59.4	67.6	76.8
122.5°	0.0	2.0	7.2	14.3	22.5	30.7	38.9	47.1	55.3	64.5	71.7
125°	0.0	1.0	6.1	13.3	21.5	28.7	36.9	45.1	53.3	60.4	67.6
127.5°	0.0	1.0	5.1	12.3	19.5	27.7	35.9	43.0	50.2	57.4	63.5
130°	0.0	1.0	5.1	11.3	18.4	25.6	33.8	40.0	47.1	54.3	60.4
132.5°	0.0	1.0	4.1	10.2	17.4	23.6	30.7	37.9	44.0	50.2	56.3
135°	0.0	1.0	4.1	9.2	15.4	22.5	28.7	35.9	42.0	47.1	53.3
137.5°	0.0	1.0	3.1	8.2	14.3	20.5	26.6	32.8	38.9	44.0	49.2
140°	0.0	1.0	3.1	7.2	12.3	18.4	24.6	30.7	35.9	41.0	46.1
142.5°	0.0	1.0	3.1	6.1	11.3	16.4	21.5	26.6	32.8	37.9	42.0
145°	0.0	1.0	2.0	5.1	9.2	14.3	18.4	23.6	28.7	33.8	38.9
147.5°	0.0	0.0	2.0	4.1	7.2	12.3	16.4	20.5	25.6	29.7	33.8
150°	0.0	0.0	1.0	4.1	6.1	10.2	14.3	17.4	21.5	25.6	29.7
152.5°	0.0	0.0	1.0	3.1	5.1	8.2	11.3	15.4	18.4	21.5	25.6
155°	0.0	0.0	1.0	2.0	4.1	6.1	9.2	12.3	15.4	18.4	21.5
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: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	428.2	428.2	428.2	428.2	428.2	428.2	428.2	428.2
2.5°	429.2	429.2	429.2	429.2	429.2	429.2	428.2	428.2
5°	429.2	428.2	429.2	429.2	429.2	429.2	429.2	429.2
7.5°	429.2	429.2	430.2	430.2	430.2	430.2	430.2	430.2
10°	428.2	429.2	430.2	430.2	431.3	431.3	431.3	431.3
12.5°	427.2	428.2	429.2	430.2	430.2	431.3	430.2	430.2
15°	426.2	427.2	428.2	429.2	430.2	430.2	430.2	430.2
17.5°	423.1	424.1	426.2	427.2	428.2	428.2	429.2	428.2
20°	420.0	422.1	424.1	425.1	426.2	427.2	427.2	427.2
22.5°	415.9	418.0	420.0	422.1	423.1	424.1	424.1	425.1
25°	410.8	413.9	416.9	418.0	420.0	421.0	421.0	421.0
27.5°	406.7	409.8	411.8	414.9	414.9	415.9	416.9	416.9
30°	400.5	403.6	406.7	408.7	410.8	411.8	411.8	411.8
32.5°	393.4	397.5	400.5	402.6	404.6	406.7	407.7	407.7
35°	386.2	390.3	394.4	396.4	399.5	400.5	401.6	401.6
37.5°	379.0	383.1	386.2	390.3	392.3	394.4	395.4	394.4
40°	369.8	374.9	380.1	383.1	385.2	387.2	388.2	389.3
42.5°	361.6	366.7	371.9	374.9	378.0	380.1	381.1	382.1
45°	352.4	358.5	363.7	366.7	370.8	372.9	374.9	374.9
47.5°	343.2	349.3	356.5	360.6	363.7	366.7	367.8	367.8
50°	332.9	341.1	346.2	351.4	355.5	358.5	359.6	359.6
52.5°	323.7	330.9	337.0	343.2	347.3	349.3	351.4	352.4
55°	312.4	320.6	326.8	332.9	337.0	340.1	342.1	342.1
57.5°	302.2	310.4	316.5	322.7	327.8	329.9	331.9	332.9
60°	290.9	299.1	306.3	311.4	316.5	319.6	321.7	322.7
62.5°	278.6	287.9	295.0	301.2	305.3	309.4	311.4	311.4
65°	265.3	274.5	281.7	287.9	293.0	296.1	299.1	299.1
67.5°	253.0	262.2	269.4	275.6	281.7	284.8	286.8	288.9
70°	239.7	248.9	257.1	263.3	268.4	272.5	273.5	274.5
72.5°	225.4	234.6	243.8	250.0	255.1	259.2	262.2	262.2
75°	212.1	221.3	229.5	236.6	241.8	244.8	247.9	248.9
77.5°	197.7	208.0	216.1	222.3	227.4	232.5	233.6	234.6
80°	184.4	194.6	201.8	210.0	215.1	218.2	221.3	222.3
82.5°	171.1	181.3	189.5	196.7	201.8	205.9	208.0	209.0
85°	159.8	169.0	177.2	185.4	190.5	194.6	196.7	196.7
87.5°	149.6	158.8	168.0	175.2	180.3	184.4	186.4	187.5
90°	142.4	152.6	160.8	168.0	173.1	177.2	179.3	180.3
92.5°	138.3	147.5	156.7	162.9	169.0	172.1	175.2	175.2
95°	134.2	143.4	151.6	158.8	163.9	168.0	171.1	171.1
97.5°	130.1	139.3	147.5	154.7	159.8	163.9	166.0	167.0
100°	125.0	135.2	143.4	149.6	154.7	158.8	160.8	161.9
102.5°	120.9	130.1	138.3	144.4	149.6	153.7	155.7	156.7
105°	115.8	125.0	133.2	139.3	144.4	148.5	150.6	151.6
107.5°	110.6	119.9	128.0	134.2	139.3	142.4	144.4	145.5
110°	105.5	114.7	121.9	128.0	133.2	137.3	139.3	139.3





TEST NUMBER: P176126

CATALOG NUMBER: 2BCLED-LD4-20SL-F-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	100.4	108.6	115.8	121.9	127.0	130.1	132.1	133.2
115°	95.3	103.5	110.6	115.8	120.9	124.0	126.0	126.0
117.5°	90.1	97.3	104.5	109.6	114.7	117.8	119.9	119.9
120°	85.0	92.2	98.3	103.5	107.6	111.7	112.7	113.7
122.5°	79.9	87.1	92.2	97.3	101.4	104.5	106.5	106.5
125°	74.8	80.9	87.1	91.2	95.3	98.3	99.4	100.4
127.5°	69.7	75.8	82.0	86.0	89.1	92.2	93.2	94.2
130°	65.6	70.7	75.8	79.9	83.0	86.0	87.1	87.1
132.5°	61.5	66.6	70.7	74.8	77.9	79.9	80.9	80.9
135°	58.4	62.5	66.6	69.7	72.7	73.8	74.8	75.8
137.5°	54.3	58.4	61.5	64.5	67.6	68.6	69.7	69.7
140°	50.2	54.3	57.4	60.4	62.5	64.5	64.5	65.6
142.5°	46.1	50.2	53.3	55.3	57.4	59.4	60.4	60.4
145°	42.0	46.1	48.1	51.2	53.3	54.3	55.3	55.3
147.5°	37.9	41.0	44.0	46.1	48.1	49.2	50.2	50.2
150°	33.8	36.9	40.0	42.0	43.0	44.0	45.1	45.1
152.5°	28.7	31.8	34.8	36.9	37.9	38.9	40.0	40.0
155°	23.6	26.6	29.7	31.8	32.8	33.8	34.8	34.8
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)