

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: P176114

Luminaire Tested: **4BCLED-LD4-28SL-F-UNV-L830-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P176114
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U
Description: METALUX 4FT BC LED WALL BRACKET CORRIDOR LUMINAIRE WITH A
Light Source: (112) COOPER LIGHTING 3000K LEDS
Ballast/Driver: (1) ELECTRONIC DRIVER

Summary

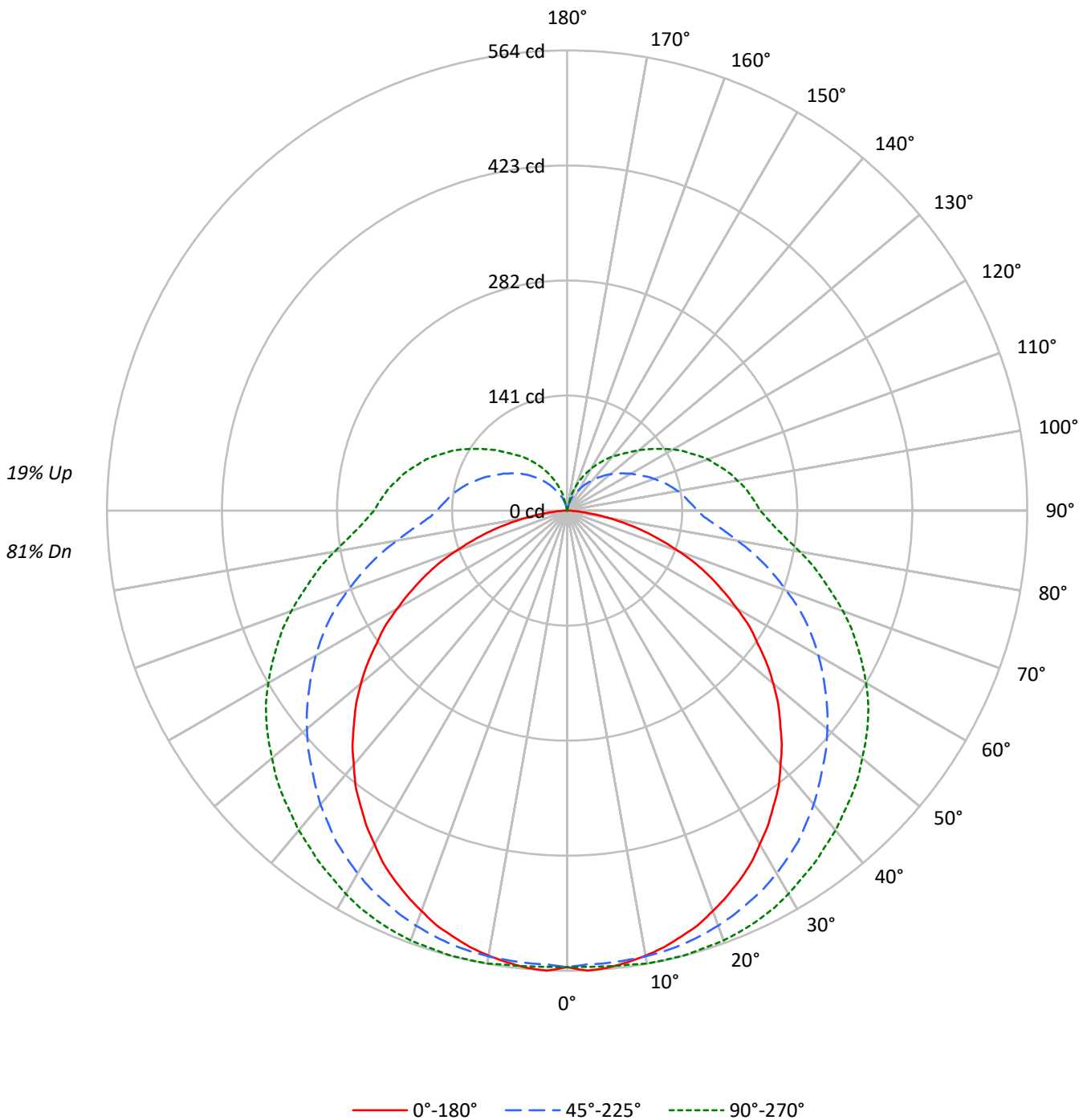
Lumens per Lamp: N/A
Luminaire Lumens: 2677.3 lumens
Efficiency: N/A
Efficacy: 90.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 4' x H: 0.21')
CIE Type: Semi-Direct

Input Watts (W): 29.5
Input Voltage (V): NR
Input Current (A_{in}): 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: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-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	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	47	44	40
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	38	34	41	36	31	29
6	63	50	40	34	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°	4016	4016	4016
5°	4034	3866	3852
10°	3999	3759	3740
15°	3960	3665	3645
20°	3914	3575	3562
25°	3866	3489	3483
30°	3798	3409	3403
35°	3731	3329	3330
40°	3651	3238	3269
45°	3562	3147	3219
50°	3468	3074	3172
55°	3326	2997	3140
60°	3165	2928	3095
65°	2968	2855	3040
70°	2665	2748	2987
75°	2254	2653	2924
80°	1627	2544	2882
85°	795	2504	2887



TEST NUMBER: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.4	2.0
10°-20°	156.2	5.8
20°-30°	244.2	9.1
30°-40°	307.2	11.5
40°-50°	339.3	12.7
50°-60°	339.3	12.7
60°-70°	306.2	11.4
70°-80°	245.8	9.2
80°-90°	179.7	6.7
90°-100°	145.1	5.4
100°-110°	120.5	4.5
110°-120°	93.4	3.5
120°-130°	66.6	2.5
130°-140°	43.1	1.6
140°-150°	24.4	0.9
150°-160°	10.6	0.4
160°-170°	2.3	0.1
170°-180°	0.0	0.0
0°-30°	453.8	17.0
0°-40°	761.0	28.4
0°-60°	1439.6	53.8
0°-90°	2171.4	81.1
90°-120°	359.0	13.4
90°-150°	493.0	18.4
90°-180°	506.0	18.9
0°-180°	2677.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	560	560	560	560	560	
5°	563	561	557	562	561	53
15°	540	545	550	562	564	153
25°	500	513	529	549	554	230
35°	441	463	494	520	528	276
45°	369	402	443	480	493	285
55°	286	328	387	433	450	256
65°	194	247	323	374	392	192
75°	97	165	249	304	324	102
85°	15	93	180	238	258	20
90°	0	74	160	216	237	1
95°	0	65	148	205	225	0
105°	0	50	126	179	198	0
115°	0	41	101	149	166	0
125°	0	33	80	117	132	0
135°	0	23	59	89	99	0
145°	0	15	39	64	73	0
155°	1	8	22	35	46	0
165°	1	3	10	13	20	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	559.7	559.7	559.7	559.7	559.7	559.7	559.7	559.7	559.7	559.7	559.7
2.5°	564.5	563.6	562.6	561.6	562.6	562.6	561.6	559.7	558.7	556.8	556.8
5°	562.6	561.6	560.7	559.7	560.7	560.7	559.7	559.7	557.8	556.8	557.8
7.5°	558.7	558.7	557.8	556.8	557.8	558.7	558.7	557.8	556.8	555.9	556.8
10°	553.9	553.9	553.0	553.0	554.9	555.9	555.9	555.9	555.9	554.9	556.8
12.5°	548.2	548.2	547.2	548.2	550.1	551.1	552.0	552.0	553.0	553.0	554.9
15°	540.5	541.4	540.5	541.4	544.3	546.2	548.2	548.2	549.1	550.1	553.0
17.5°	532.8	532.8	532.8	534.7	537.6	539.5	542.4	543.4	544.3	546.2	550.1
20°	522.2	523.2	524.1	526.0	528.9	531.8	534.7	536.6	539.5	541.4	545.3
22.5°	511.6	511.6	513.5	516.4	520.3	524.1	527.0	529.9	532.8	535.7	540.5
25°	500.1	501.0	503.0	505.9	510.7	514.5	518.4	522.2	525.1	528.9	534.7
27.5°	487.6	487.6	489.5	493.4	499.1	503.9	508.7	512.6	517.4	522.2	527.0
30°	472.2	474.1	477.0	480.8	487.6	493.4	498.2	503.0	507.8	513.5	519.3
32.5°	457.8	458.7	461.6	467.4	473.2	480.8	486.6	492.4	497.2	503.9	510.7
35°	441.4	443.3	447.2	453.0	459.7	466.4	474.1	480.8	487.6	494.3	501.0
37.5°	426.0	427.0	430.8	437.6	445.3	453.9	460.7	467.4	474.1	481.8	489.5
40°	406.8	409.7	414.5	421.2	429.9	438.5	446.2	453.9	462.6	470.3	478.0
42.5°	389.5	390.5	396.2	403.9	413.5	422.2	430.8	439.5	448.2	456.8	465.5
45°	369.3	372.2	377.9	386.6	396.2	406.8	415.5	425.1	434.7	443.3	453.0
47.5°	351.0	352.9	359.7	368.3	378.9	389.5	399.1	409.7	421.2	430.8	440.5
50°	329.9	332.7	339.5	349.1	360.6	372.2	382.8	393.3	404.9	416.4	427.0
52.5°	308.7	311.6	319.3	328.9	341.4	352.9	364.5	377.0	389.5	402.0	413.5
55°	285.6	289.5	297.2	308.7	322.2	334.7	347.2	360.6	374.1	386.6	399.1
57.5°	265.4	268.3	276.0	287.5	302.0	315.4	328.9	343.3	357.8	371.2	384.7
60°	240.4	245.2	254.9	267.4	280.8	296.2	310.6	326.0	341.4	355.8	369.3
62.5°	217.3	222.2	230.8	245.2	259.7	275.0	291.4	308.7	325.1	339.5	352.9
65°	194.3	198.1	208.7	223.1	238.5	255.8	273.1	290.4	306.8	323.1	336.6
67.5°	171.2	175.0	185.6	200.0	217.3	235.6	253.9	272.2	288.5	304.9	318.3
70°	145.2	151.0	162.5	177.9	196.2	215.4	234.7	252.9	270.2	285.6	300.1
72.5°	120.2	126.9	139.4	155.8	175.0	195.2	214.5	233.7	252.0	267.4	282.7
75°	97.1	102.9	115.4	134.6	154.8	176.0	195.2	214.5	231.8	249.1	263.5
77.5°	73.1	79.8	94.2	114.4	135.6	156.8	176.0	195.2	213.5	230.8	245.2
80°	51.0	58.7	75.0	94.2	115.4	137.5	157.7	177.0	195.2	211.6	227.0
82.5°	30.8	39.4	55.8	76.9	98.1	119.3	140.4	159.6	177.9	195.2	210.6
85°	15.4	24.0	40.4	61.5	82.7	103.9	125.0	144.3	163.5	179.8	196.2
87.5°	3.8	12.5	28.9	49.0	71.2	92.3	112.5	131.8	150.0	167.3	182.7
90°	0.0	7.7	23.1	42.3	63.5	84.6	104.8	124.1	142.3	159.6	175.0
92.5°	0.0	5.8	20.2	38.5	58.7	78.9	100.0	119.3	136.6	153.9	169.3
95°	0.0	4.8	17.3	35.6	54.8	75.0	94.2	113.5	131.8	148.1	163.5
97.5°	0.0	4.8	16.3	31.7	51.0	70.2	90.4	108.7	126.9	143.3	158.7
100°	0.0	4.8	15.4	29.8	47.1	66.4	85.6	103.9	121.2	137.5	152.9
102.5°	0.0	4.8	14.4	27.9	44.2	62.5	80.8	98.1	115.4	131.8	146.2
105°	0.0	3.8	14.4	26.9	42.3	58.7	76.0	93.3	109.6	126.0	140.4
107.5°	0.0	3.8	13.5	26.0	39.4	55.8	72.1	88.5	104.8	119.3	133.7
110°	0.0	3.8	12.5	25.0	37.5	52.9	67.3	83.7	99.1	113.5	127.9



TEST NUMBER: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-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	24.0	36.5	50.0	63.5	78.9	93.3	107.7	121.2
115°	0.0	3.8	11.5	23.1	34.6	47.1	60.6	74.1	88.5	101.0	114.4
117.5°	0.0	2.9	10.6	22.1	33.7	45.2	57.7	70.2	82.7	95.2	107.7
120°	0.0	2.9	10.6	20.2	31.7	43.3	54.8	66.4	78.9	90.4	101.0
122.5°	0.0	2.9	9.6	19.2	29.8	40.4	51.9	63.5	74.1	84.6	95.2
125°	0.0	1.9	8.7	17.3	27.9	38.5	49.0	59.6	70.2	79.8	89.4
127.5°	0.0	1.9	7.7	15.4	25.0	34.6	45.2	54.8	65.4	75.0	83.7
130°	0.0	1.9	6.7	14.4	23.1	32.7	41.4	51.0	59.6	69.2	78.9
132.5°	0.0	1.0	6.7	13.5	21.2	29.8	38.5	47.1	55.8	64.4	73.1
135°	0.0	1.0	5.8	11.5	19.2	26.9	34.6	43.3	51.0	58.7	66.4
137.5°	0.0	1.0	4.8	10.6	17.3	24.0	31.7	39.4	46.2	53.9	60.6
140°	0.0	1.0	4.8	9.6	15.4	22.1	28.9	35.6	42.3	49.0	54.8
142.5°	0.0	1.0	3.8	8.7	13.5	19.2	26.0	31.7	37.5	44.2	50.0
145°	0.0	1.0	3.8	7.7	12.5	17.3	23.1	27.9	33.7	39.4	44.2
147.5°	0.0	1.0	2.9	6.7	10.6	16.3	20.2	25.0	29.8	34.6	39.4
150°	1.0	1.0	1.9	5.8	9.6	13.5	18.3	22.1	26.0	29.8	34.6
152.5°	1.0	1.0	1.9	4.8	7.7	11.5	16.3	19.2	23.1	26.0	29.8
155°	1.0	1.0	1.9	3.8	6.7	9.6	13.5	16.3	20.2	22.1	25.0
157.5°	1.0	1.0	1.0	2.9	5.8	8.7	11.5	14.4	16.3	19.2	21.2
160°	1.0	1.0	1.0	1.9	4.8	6.7	8.7	11.5	13.5	16.3	17.3
162.5°	1.0	1.0	1.0	1.9	2.9	4.8	6.7	8.7	10.6	12.5	14.4
165°	1.0	1.0	1.0	1.0	1.9	3.8	4.8	6.7	7.7	9.6	10.6
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: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	559.7	559.7	559.7	559.7	559.7	559.7	559.7	559.7
2.5°	558.7	559.7	560.7	560.7	560.7	559.7	558.7	559.7
5°	559.7	560.7	561.6	561.6	561.6	561.6	560.7	560.7
7.5°	559.7	560.7	562.6	562.6	562.6	562.6	562.6	561.6
10°	558.7	561.6	562.6	563.6	563.6	563.6	563.6	563.6
12.5°	558.7	560.7	562.6	563.6	563.6	564.5	564.5	563.6
15°	556.8	558.7	560.7	562.6	563.6	563.6	563.6	563.6
17.5°	553.9	556.8	558.7	560.7	562.6	562.6	562.6	561.6
20°	549.1	553.0	555.9	557.8	559.7	560.7	560.7	560.7
22.5°	545.3	549.1	553.0	554.9	555.9	556.8	557.8	557.8
25°	539.5	543.4	547.2	550.1	552.0	553.0	553.0	553.9
27.5°	532.8	537.6	541.4	544.3	546.2	548.2	548.2	549.1
30°	525.1	529.9	533.7	537.6	540.5	541.4	542.4	542.4
32.5°	516.4	522.2	526.0	529.9	532.8	533.7	535.7	534.7
35°	506.8	512.6	518.4	521.2	524.1	526.0	527.0	528.0
37.5°	497.2	503.9	508.7	512.6	515.5	518.4	519.3	519.3
40°	485.7	492.4	498.2	503.0	506.8	509.7	510.7	511.6
42.5°	474.1	481.8	488.5	493.4	497.2	500.1	502.0	502.0
45°	461.6	470.3	477.0	482.8	487.6	491.4	493.4	493.4
47.5°	450.1	458.7	466.4	472.2	477.0	480.8	482.8	483.7
50°	437.6	447.2	454.9	461.6	466.4	470.3	472.2	472.2
52.5°	425.1	434.7	442.4	449.1	454.9	458.7	460.7	461.6
55°	411.6	421.2	429.9	436.6	442.4	446.2	449.1	450.1
57.5°	397.2	407.8	416.4	424.1	429.9	433.7	436.6	437.6
60°	381.8	391.4	401.0	409.7	415.5	419.3	421.2	423.1
62.5°	365.4	377.0	385.6	394.3	400.1	404.9	406.8	407.8
65°	349.1	359.7	370.3	377.9	383.7	389.5	391.4	392.4
67.5°	331.8	343.3	352.9	360.6	368.3	373.1	375.1	377.0
70°	313.5	326.0	335.6	344.3	351.0	354.9	357.8	359.7
72.5°	295.2	307.7	317.4	327.0	333.7	337.6	340.4	341.4
75°	277.0	289.5	300.1	308.7	315.4	320.2	323.1	324.1
77.5°	259.7	272.2	282.7	290.4	297.2	302.9	304.9	307.7
80°	241.4	253.9	264.5	273.1	280.8	285.6	287.5	289.5
82.5°	225.0	237.5	248.1	256.8	264.5	268.3	272.2	272.2
85°	209.7	222.2	232.7	242.3	249.1	253.9	256.8	257.7
87.5°	197.1	209.7	220.2	229.8	236.6	242.3	244.3	246.2
90°	188.5	201.0	211.6	221.2	227.9	232.7	235.6	236.6
92.5°	183.7	195.2	206.8	215.4	222.2	227.0	229.8	230.8
95°	177.9	190.4	201.0	208.7	216.4	221.2	224.1	225.0
97.5°	172.1	184.6	195.2	203.9	210.6	215.4	218.3	219.3
100°	166.4	177.9	188.5	197.1	203.9	208.7	211.6	211.6
102.5°	159.6	171.2	181.8	190.4	197.1	202.0	204.8	205.8
105°	152.9	164.5	175.0	183.7	190.4	194.3	197.1	198.1
107.5°	147.1	157.7	168.3	176.0	182.7	187.5	190.4	190.4
110°	139.4	151.0	160.6	169.3	175.0	179.8	182.7	183.7



TEST NUMBER: P176114

CATALOG NUMBER: 4BCLED-LD4-28SL-F-UNV-L830-CD1-U

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	132.7	143.3	152.9	160.6	167.3	171.2	174.1	175.0
115°	126.0	136.6	145.2	152.9	158.7	163.5	166.4	166.4
117.5°	118.3	128.9	137.5	145.2	150.0	154.8	157.7	158.7
120°	111.6	121.2	129.8	136.6	142.3	146.2	148.1	150.0
122.5°	104.8	114.4	122.1	127.9	133.7	137.5	139.4	140.4
125°	99.1	106.7	114.4	120.2	125.0	128.9	131.8	131.8
127.5°	92.3	100.0	106.7	112.5	117.3	120.2	122.1	123.1
130°	86.6	94.2	100.0	104.8	108.7	112.5	114.4	115.4
132.5°	80.8	87.5	93.3	98.1	101.9	104.8	105.8	106.7
135°	75.0	81.7	87.5	91.4	94.2	97.1	99.1	99.1
137.5°	67.3	75.0	81.7	85.6	88.5	90.4	92.3	92.3
140°	61.5	68.3	75.0	79.8	81.7	84.6	85.6	86.6
142.5°	55.8	61.5	68.3	73.1	76.0	77.9	78.9	79.8
145°	50.0	54.8	60.6	66.4	69.2	71.2	72.1	73.1
147.5°	44.2	49.0	53.9	58.7	63.5	64.4	65.4	66.4
150°	38.5	42.3	47.1	51.0	56.7	58.7	58.7	59.6
152.5°	32.7	36.5	40.4	44.2	48.1	51.0	51.9	52.9
155°	27.9	30.8	33.7	36.5	40.4	45.2	45.2	46.2
157.5°	23.1	25.0	27.9	30.8	32.7	37.5	38.5	39.4
160°	19.2	20.2	22.1	24.0	26.9	29.8	32.7	32.7
162.5°	15.4	16.3	17.3	19.2	20.2	22.1	26.0	26.0
165°	11.5	11.5	12.5	13.5	14.4	16.3	18.3	20.2
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)