

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: P176122

Luminaire Tested: **2BCLED-LD4-8SL-F-UNV-L840-CD1-U**

Test Date: 04/05/15



**Test Information**

Test Method: LM-79-08  
Report Number: P176122  
Test Lab: INNOVATION CENTER-P3  
Test Date: 04/05/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2BCLED-LD4-8SL-F-UNV-L840-CD1-U  
Description:  
Light Source: (56) COOPER LIGHTING 4000K LEDS  
Ballast/Driver: (1) ELECTRONIC DRIVER

**Summary**

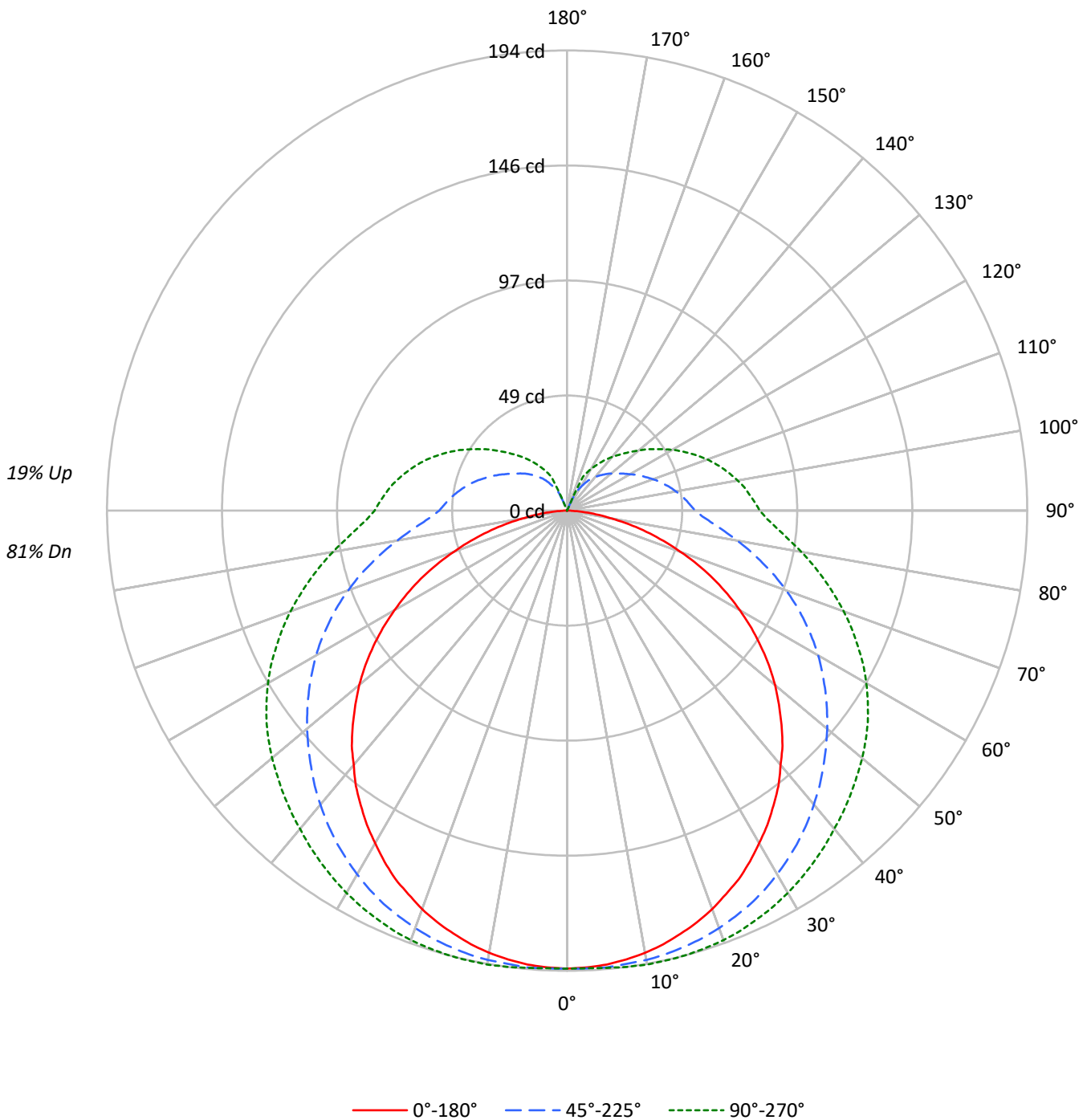
Lumens per Lamp: N/A  
Luminaire Lumens: 918.7 lumens  
Efficiency: N/A  
Efficacy: 91.0 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.51  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.21')  
CIE Type: Semi-Direct

Input Watts (W): 10.1  
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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### 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	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°	2771	2771	2771
5°	2743	2676	2658
10°	2709	2591	2579
15°	2670	2515	2509
20°	2631	2445	2448
25°	2588	2380	2388
30°	2531	2312	2335
35°	2477	2246	2284
40°	2412	2179	2239
45°	2349	2113	2206
50°	2272	2053	2182
55°	2172	1996	2160
60°	2045	1942	2131
65°	1888	1876	2095
70°	1661	1806	2061
75°	1382	1726	2024
80°	977	1648	1997
85°	489	1599	1996



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	18.4	2.0
10°-20°	53.7	5.8
20°-30°	83.9	9.1
30°-40°	105.5	11.5
40°-50°	116.6	12.7
50°-60°	116.8	12.7
60°-70°	105.5	11.5
70°-80°	84.9	9.2
80°-90°	61.7	6.7
90°-100°	49.4	5.4
100°-110°	41.0	4.5
110°-120°	31.8	3.5
120°-130°	22.8	2.5
130°-140°	15.1	1.6
140°-150°	8.7	0.9
150°-160°	2.8	0.3
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	156.0	17.0
0°-40°	261.5	28.5
0°-60°	495.0	53.9
0°-90°	747.1	81.3
90°-120°	122.2	13.3
90°-150°	168.8	18.4
90°-180°	172.0	18.7
0°-180°	918.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	193	193	193	193	193	
5°	192	192	193	194	194	18
15°	185	187	190	193	194	52
25°	171	175	183	188	190	79
35°	152	159	170	178	181	95
45°	128	138	153	165	169	99
55°	100	113	133	149	155	89
65°	68	85	110	129	135	67
75°	35	57	85	105	112	37
85°	6	32	62	82	89	8
90°	0	25	54	74	81	0
95°	0	22	50	70	77	0
105°	0	17	43	61	68	0
115°	0	14	34	51	57	0
125°	0	11	27	40	45	0
135°	0	8	21	31	34	0
145°	0	5	15	22	25	0
155°	0	2	8	14	16	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°	25°	30°	35°	40°	45°	50°
0°	193.1	193.1	193.1	193.1	193.1	193.1	193.1	193.1	193.1	193.1	193.1
2.5°	192.8	192.6	192.5	192.6	192.8	193.1	193.2	193.3	193.3	193.2	193.2
5°	192.1	192.0	191.9	192.1	192.3	192.6	192.9	193.2	193.2	193.3	193.3
7.5°	190.9	190.8	190.7	190.9	191.4	191.7	192.1	192.6	192.7	192.7	193.1
10°	189.3	189.3	189.4	189.7	190.1	190.6	191.2	191.8	192.2	192.4	192.9
12.5°	187.3	187.4	187.6	187.9	188.4	189.2	189.8	190.5	191.2	191.6	192.1
15°	184.7	184.7	185.1	185.6	186.3	187.2	188.0	188.9	189.8	190.4	191.2
17.5°	182.0	181.9	182.3	183.2	184.0	185.0	185.9	187.2	188.1	189.1	189.9
20°	178.8	178.9	179.5	180.2	181.2	182.4	183.6	185.2	186.2	187.3	188.5
22.5°	175.0	175.3	175.9	176.8	178.1	179.6	181.0	182.4	183.9	185.2	186.5
25°	171.4	171.2	172.0	173.3	174.6	176.3	177.9	179.6	181.2	183.0	184.4
27.5°	166.8	167.1	167.9	169.2	171.0	172.8	174.8	176.6	178.3	180.2	181.9
30°	161.9	162.5	163.5	165.1	166.9	168.8	170.9	173.0	175.1	177.1	179.1
32.5°	157.1	157.3	158.8	160.3	162.6	164.7	167.0	169.4	171.7	173.7	175.9
35°	151.7	152.2	153.6	155.5	157.9	160.1	162.7	165.3	167.7	170.1	172.4
37.5°	146.3	146.7	148.1	150.2	152.6	155.4	158.0	160.8	163.5	166.1	168.7
40°	140.0	140.8	142.6	145.0	147.4	150.3	153.3	156.3	159.1	161.8	164.6
42.5°	134.4	135.0	136.8	139.1	142.0	145.1	148.2	151.2	154.6	157.5	160.4
45°	127.8	128.5	130.5	133.2	136.0	139.3	142.8	146.1	149.6	152.7	156.0
47.5°	121.1	122.0	124.1	127.0	130.1	133.5	137.4	140.9	144.5	148.0	151.5
50°	114.4	115.0	117.6	120.7	123.7	127.5	131.6	135.3	139.3	143.1	147.0
52.5°	107.2	108.3	110.6	113.9	117.4	121.5	125.7	129.8	134.1	138.1	142.2
55°	99.7	100.9	103.5	106.7	110.7	114.7	119.3	124.0	128.6	132.9	137.4
57.5°	92.1	93.2	96.1	99.6	103.8	108.4	113.0	117.9	123.0	127.6	132.1
60°	84.1	85.3	88.4	92.3	96.6	101.4	106.6	111.9	117.3	122.3	126.8
62.5°	76.1	77.4	80.6	84.9	89.5	94.6	100.3	105.8	111.4	116.5	121.4
65°	68.0	69.5	72.5	77.0	82.2	87.7	93.6	99.5	105.2	110.5	115.4
67.5°	59.6	61.2	64.5	69.4	74.8	81.1	87.0	93.4	99.2	104.5	109.6
70°	50.9	53.2	56.5	61.5	67.5	74.0	80.5	86.7	92.7	98.2	103.3
72.5°	42.6	44.7	48.8	54.1	60.6	67.0	73.6	80.0	86.0	91.9	97.1
75°	34.6	36.4	40.7	46.8	53.6	60.5	66.9	73.3	79.6	85.3	90.8
77.5°	26.7	28.7	33.5	39.8	46.7	53.6	60.5	67.0	72.9	79.1	84.5
80°	18.8	21.1	26.2	33.0	40.1	47.0	53.9	60.4	66.8	72.7	78.1
82.5°	12.3	14.3	20.0	26.7	33.8	41.0	47.8	54.5	60.7	67.0	72.2
85°	6.5	8.9	14.5	21.3	28.3	35.5	42.4	49.1	55.6	61.5	66.9
87.5°	2.4	4.7	10.1	16.9	24.0	31.0	38.0	44.8	51.1	57.1	62.6
90°	0.1	2.6	7.7	14.1	21.1	28.1	35.0	41.7	48.0	53.9	59.3
92.5°	0.1	2.0	6.7	12.8	19.6	26.4	33.4	40.0	46.2	52.0	57.4
95°	0.1	1.6	5.8	11.7	18.2	25.0	31.9	38.3	44.5	50.3	55.6
97.5°	0.1	1.5	5.2	10.7	17.0	23.6	30.2	36.6	42.7	48.5	53.8
100°	0.0	1.4	4.8	9.8	15.8	22.1	28.6	34.9	40.9	46.5	51.7
102.5°	0.1	1.3	4.6	9.2	14.8	20.8	27.0	33.2	39.0	44.7	49.8
105°	0.1	1.2	4.5	8.8	13.9	19.6	25.6	31.6	37.2	42.6	47.6
107.5°	0.1	1.1	4.3	8.4	13.1	18.4	24.1	29.8	35.4	40.7	45.5
110°	0.1	1.1	4.1	8.1	12.5	17.4	22.7	28.2	33.5	38.6	43.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.1	1.0	3.8	7.7	12.0	16.5	21.4	26.5	31.6	36.5	41.1
115°	0.0	0.9	3.6	7.4	11.5	15.8	20.4	25.1	29.8	34.5	38.8
117.5°	0.1	0.9	3.4	7.1	11.0	15.2	19.4	23.7	28.2	32.6	36.7
120°	0.1	0.8	3.2	6.7	10.6	14.5	18.4	22.5	26.5	30.6	34.6
122.5°	0.0	0.6	2.9	6.1	9.9	13.6	17.5	21.3	25.0	28.9	32.5
125°	0.1	0.5	2.7	5.7	9.4	13.0	16.7	20.3	23.7	27.1	30.5
127.5°	0.1	0.5	2.6	5.3	8.8	12.3	15.9	19.3	22.5	25.7	28.7
130°	0.1	0.4	2.4	4.9	8.2	11.6	15.0	18.1	21.3	24.3	27.0
132.5°	0.2	0.4	2.2	4.6	7.6	10.9	14.0	17.1	20.1	22.9	25.5
135°	0.1	0.3	1.8	4.1	6.9	9.9	13.0	16.0	18.7	21.4	23.9
137.5°	0.2	0.3	1.6	3.7	6.1	9.0	12.1	15.0	17.4	20.0	22.3
140°	0.2	0.3	1.3	3.3	5.4	8.0	10.9	13.6	16.2	18.5	20.7
142.5°	0.1	0.2	1.1	2.8	4.8	7.0	9.5	12.2	14.6	17.0	19.1
145°	0.1	0.2	0.8	2.4	4.1	6.1	8.3	10.7	13.0	15.3	17.3
147.5°	0.2	0.2	0.7	1.9	3.5	5.3	7.2	9.2	11.2	13.3	15.4
150°	0.1	0.1	0.5	1.5	3.0	4.5	6.0	7.8	9.6	11.4	13.3
152.5°	0.2	0.2	0.4	1.2	2.4	3.8	5.1	6.6	8.1	9.7	11.3
155°	0.1	0.1	0.3	0.8	1.7	3.0	4.2	5.4	6.7	7.9	9.3
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



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	193.1	193.1	193.1	193.1	193.1	193.1	193.1	193.1
2.5°	193.4	193.3	193.5	193.4	193.3	193.3	193.3	193.1
5°	193.4	193.5	193.7	193.8	193.7	193.6	193.6	193.5
7.5°	193.4	193.5	193.8	194.0	193.9	193.9	193.9	194.0
10°	193.4	193.6	194.0	194.2	194.3	194.3	194.3	194.3
12.5°	192.7	193.2	193.7	194.0	194.2	194.3	194.2	194.2
15°	192.0	192.5	193.0	193.5	193.7	193.9	193.9	194.0
17.5°	190.8	191.6	192.3	192.8	193.1	193.4	193.4	193.4
20°	189.4	190.3	191.3	191.8	192.2	192.5	192.6	192.7
22.5°	187.8	188.8	189.7	190.4	191.1	191.3	191.5	191.6
25°	185.6	186.9	187.9	188.7	189.5	189.7	189.8	189.9
27.5°	183.4	184.7	185.8	186.6	187.5	187.9	188.2	188.2
30°	180.7	182.2	183.4	184.5	185.2	185.7	186.0	186.1
32.5°	177.8	179.3	180.8	181.8	182.8	183.4	183.8	183.7
35°	174.3	176.2	177.8	179.1	180.0	180.7	181.0	181.1
37.5°	170.9	172.7	174.6	175.8	176.9	177.7	178.0	178.3
40°	167.0	168.9	171.1	172.6	173.7	174.8	175.2	175.2
42.5°	163.1	165.4	167.4	169.1	170.6	171.6	172.0	172.3
45°	158.9	161.3	163.9	165.7	167.2	168.3	168.8	169.1
47.5°	154.7	157.6	160.1	162.3	163.9	165.1	165.7	165.7
50°	150.4	153.6	156.2	158.4	160.2	161.5	162.2	162.4
52.5°	145.9	149.3	152.0	154.5	156.2	157.7	158.5	158.7
55°	141.2	144.7	147.7	150.2	152.1	153.6	154.2	154.8
57.5°	136.1	140.0	143.0	145.6	147.6	149.2	150.0	150.3
60°	131.0	134.9	138.1	140.7	142.8	144.3	145.3	145.7
62.5°	125.6	129.5	133.0	135.7	137.8	139.2	140.3	140.7
65°	119.9	123.8	127.4	130.2	132.6	134.1	134.9	135.2
67.5°	113.9	118.3	121.6	124.5	126.8	128.7	129.4	129.8
70°	108.0	112.2	115.9	118.8	120.9	122.6	123.7	124.1
72.5°	101.6	106.1	109.7	112.7	115.0	116.8	117.8	118.1
75°	95.5	100.0	103.5	106.6	109.1	110.8	111.8	112.2
77.5°	89.2	93.7	97.5	100.5	103.0	104.8	105.8	106.2
80°	83.2	87.6	91.3	94.3	96.9	98.6	99.8	100.3
82.5°	77.1	81.7	85.3	88.6	91.2	92.8	94.1	94.3
85°	71.9	76.4	80.2	83.5	85.8	87.7	88.7	89.1
87.5°	67.4	71.7	75.6	78.9	81.3	83.2	84.2	84.5
90°	64.2	68.7	72.4	75.6	78.1	79.8	80.8	81.2
92.5°	62.3	66.7	70.5	73.7	76.0	77.9	78.9	79.2
95°	60.4	64.9	68.5	71.8	74.3	75.9	76.9	77.2
97.5°	58.6	63.0	66.6	69.7	72.1	73.9	74.9	75.3
100°	56.4	60.8	64.4	67.5	69.9	71.7	72.6	73.0
102.5°	54.3	58.6	62.2	65.2	67.5	69.2	70.3	70.6
105°	52.3	56.4	59.9	62.8	65.2	66.9	67.8	68.1
107.5°	49.9	54.0	57.5	60.4	62.7	64.3	65.3	65.6
110°	47.6	51.6	55.0	57.9	60.1	61.7	62.6	62.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	45.4	49.0	52.3	55.1	57.3	58.7	59.6	60.0
115°	42.9	46.5	49.7	52.3	54.5	55.9	56.9	57.1
117.5°	40.5	44.0	47.1	49.7	51.6	53.1	53.9	54.2
120°	38.2	41.6	44.5	46.9	48.8	50.2	51.0	51.2
122.5°	35.9	39.0	41.7	44.0	45.8	47.0	47.8	48.1
125°	33.7	36.7	39.2	41.3	42.9	44.3	45.0	45.2
127.5°	31.6	34.3	36.7	38.6	40.3	41.5	42.1	42.4
130°	29.6	32.1	34.2	36.2	37.6	38.7	39.3	39.4
132.5°	27.9	30.0	32.1	33.6	35.0	36.0	36.5	36.7
135°	26.0	28.2	29.9	31.3	32.6	33.4	33.9	34.1
137.5°	24.4	26.3	27.9	29.3	30.4	31.1	31.6	31.7
140°	22.7	24.5	25.9	27.2	28.2	28.9	29.4	29.5
142.5°	20.9	22.5	24.0	25.1	25.9	26.7	27.0	27.1
145°	19.1	20.6	21.9	22.9	23.8	24.5	24.8	24.9
147.5°	17.3	18.6	19.9	20.8	21.6	22.2	22.5	22.5
150°	15.1	16.7	17.7	18.6	19.4	19.9	20.2	20.3
152.5°	12.9	14.5	15.7	16.5	17.2	17.6	17.9	18.1
155°	10.7	12.1	13.4	14.2	14.9	15.4	15.6	15.5
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)