

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: FAIL-SAFE

Report Number: P236102

Luminaire Tested: **CFA-2-LD4-UNV-LO-30-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236102
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-8)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CFA-2-LD4-UNV-LO-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
2ft
Light Source: (42) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

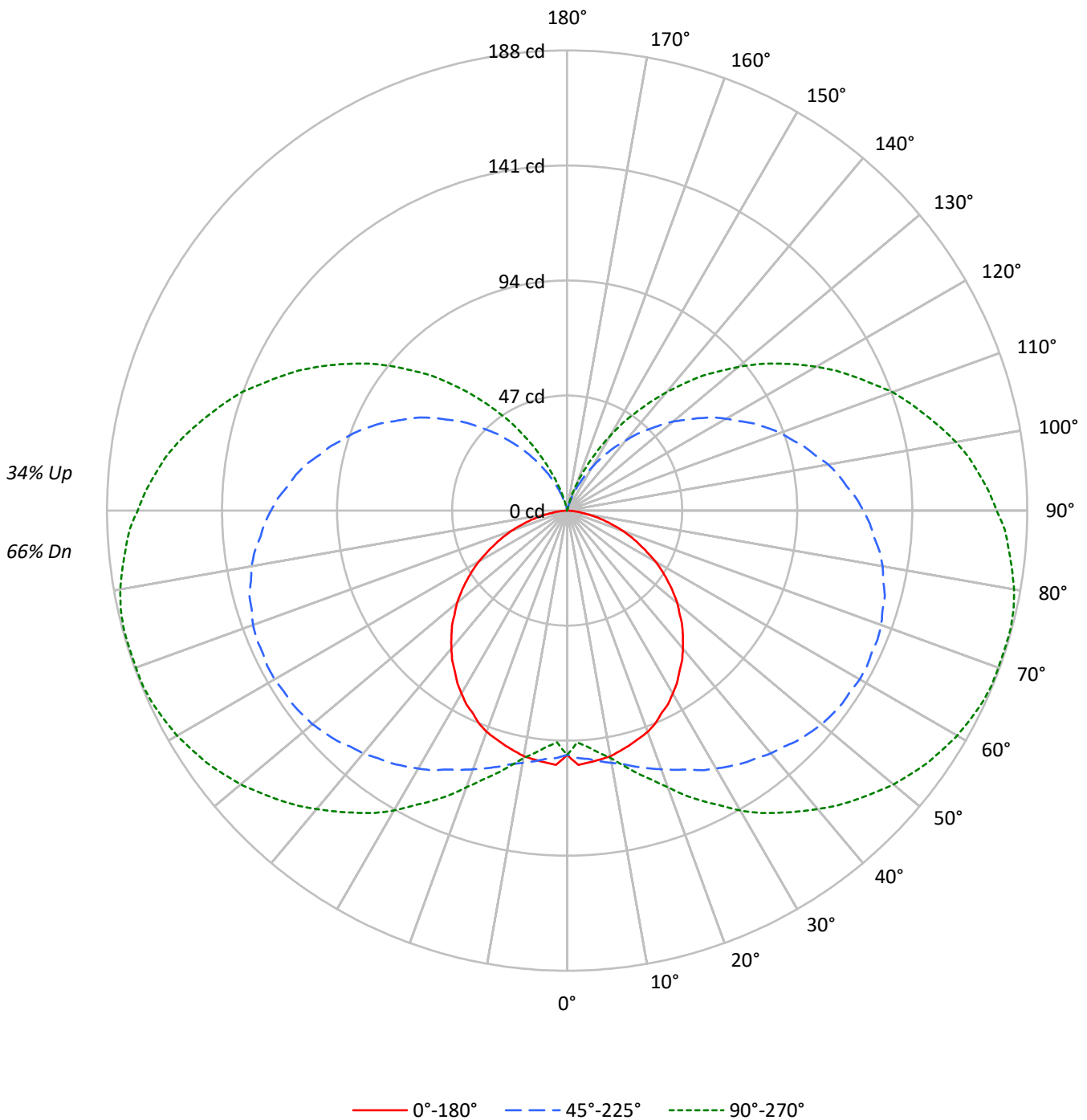
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1147.3 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.26 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 2' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 12.4
Input Voltage (V): 120
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: P236102
CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66
1	96	89	83	78	90	84	78	73	73	69	65	63	60	57	54	52	49	44
2	85	75	66	59	79	70	62	56	61	55	49	52	48	43	45	41	37	33
3	77	64	55	47	71	60	51	44	52	45	39	45	39	34	38	33	29	26
4	69	56	46	38	64	52	43	36	45	38	32	39	33	28	33	28	24	21
5	63	49	39	32	59	46	37	30	40	32	27	34	28	23	29	24	20	17
6	58	44	34	27	54	41	32	26	36	28	23	31	24	20	26	21	17	14
7	53	39	30	23	49	37	28	22	32	25	20	28	22	17	23	18	15	12
8	49	35	26	20	46	33	25	19	29	22	17	25	19	15	21	16	13	10
9	46	32	24	18	43	30	22	17	26	20	15	23	17	13	20	15	11	9
10	43	29	21	16	40	28	20	15	24	18	13	21	16	12	18	13	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3223	3223	3223
5°	3309	2979	2750
10°	3263	2815	2615
15°	3197	2715	2588
20°	3151	2661	2598
25°	3060	2631	2653
30°	2985	2640	2722
35°	2881	2652	2779
40°	2786	2670	2839
45°	2675	2706	2905
50°	2539	2747	2978
55°	2368	2783	3047
60°	2181	2824	3115
65°	1924	2859	3183
70°	1658	2918	3240
75°	1293	2970	3311
80°	820	3020	3375
85°	407	3063	3428



TEST NUMBER: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.7	0.8
10°-20°	30.5	2.7
20°-30°	53.1	4.6
30°-40°	76.1	6.6
40°-50°	97.2	8.5
50°-60°	114.3	10.0
60°-70°	124.8	10.9
70°-80°	127.8	11.1
80°-90°	122.7	10.7
90°-100°	111.2	9.7
100°-110°	94.5	8.2
110°-120°	74.4	6.5
120°-130°	53.4	4.7
130°-140°	33.5	2.9
140°-150°	17.2	1.5
150°-160°	6.1	0.5
160°-170°	0.8	0.1
170°-180°	0.0	0.0
0°-30°	93.3	8.1
0°-40°	169.3	14.8
0°-60°	380.8	33.2
0°-90°	756.1	65.9
90°-120°	280.2	24.4
90°-150°	384.2	33.5
90°-180°	391.0	34.1
0°-180°	1147.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	100	100	100	100	100	
5°	103	103	102	100	97	10
15°	99	103	108	112	111	28
25°	91	100	117	129	131	42
35°	80	98	126	146	151	50
45°	66	93	133	159	167	51
55°	50	88	137	170	180	45
65°	32	81	137	175	187	32
75°	16	72	134	175	188	17
85°	3	62	126	168	181	3
90°	0	57	121	162	176	0
95°	0	52	115	156	169	0
105°	0	42	100	139	151	0
115°	0	32	84	119	130	0
125°	0	23	66	96	105	0
135°	0	16	47	70	78	0
145°	0	10	29	45	49	0
155°	0	4	13	21	23	0
165°	0	1	2	3	3	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
2.5°	104.0	104.0	104.0	104.0	103.3	103.3	103.3	102.6	102.6	101.9	101.2
5°	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	102.6	102.6	101.9
7.5°	102.6	102.6	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3
10°	101.9	101.9	101.9	102.6	102.6	103.3	103.3	104.0	104.0	104.7	104.7
12.5°	100.5	101.2	101.2	101.9	102.6	102.6	103.3	104.0	104.7	105.4	106.1
15°	99.1	99.8	100.5	101.2	101.9	102.6	103.3	104.7	106.1	106.8	108.3
17.5°	97.6	98.3	99.1	99.8	101.9	102.6	103.3	104.7	106.8	109.0	110.4
20°	96.2	96.2	97.6	99.1	101.2	101.9	103.3	105.4	107.5	110.4	112.5
22.5°	94.1	94.1	95.5	97.6	99.8	101.2	102.6	106.1	109.0	111.8	114.6
25°	91.3	92.7	94.1	96.2	99.1	100.5	102.6	106.1	109.7	113.2	116.7
27.5°	89.2	89.9	92.0	94.8	98.3	100.5	101.9	106.1	111.1	115.3	119.6
30°	86.3	87.0	89.9	92.7	96.9	99.1	101.9	106.8	111.8	116.7	121.7
32.5°	83.5	84.2	87.0	91.3	95.5	98.3	101.2	106.8	112.5	118.2	123.8
35°	80.0	81.4	84.9	89.2	94.8	97.6	100.5	106.8	113.2	119.6	125.9
37.5°	77.1	78.5	82.1	87.0	92.7	96.2	99.8	106.8	113.9	121.0	127.4
40°	73.6	75.0	79.2	84.9	91.3	95.5	99.1	106.8	114.6	122.4	129.5
42.5°	70.0	71.5	76.4	82.8	89.9	94.1	98.3	106.8	115.3	123.8	130.9
45°	66.5	67.9	73.6	80.0	88.4	92.7	97.6	106.8	116.0	124.5	133.0
47.5°	62.3	64.4	70.0	77.8	87.0	92.0	96.9	106.8	116.0	125.2	134.4
50°	58.7	60.8	67.2	75.7	85.6	90.6	95.5	106.1	116.7	126.7	135.8
52.5°	54.5	57.3	63.7	72.9	83.5	89.2	94.8	106.1	116.7	126.7	136.6
55°	50.2	53.1	60.8	70.8	82.1	87.7	93.4	105.4	116.7	127.4	137.3
57.5°	46.0	49.5	57.3	67.9	80.0	86.3	92.0	104.7	116.0	127.4	137.3
60°	41.7	45.3	53.8	65.1	77.8	84.2	90.6	103.3	116.0	127.4	138.0
62.5°	36.8	41.0	50.9	63.0	75.7	82.8	89.2	102.6	114.6	126.7	138.0
65°	32.5	36.8	47.4	60.1	73.6	80.7	87.7	101.2	113.9	125.9	137.3
67.5°	28.3	33.3	43.9	57.3	71.5	78.5	85.6	99.8	113.2	125.2	137.3
70°	24.1	29.0	40.3	54.5	69.3	76.4	83.5	98.3	111.8	124.5	136.6
72.5°	19.8	25.5	37.5	51.7	66.5	74.3	82.1	96.2	110.4	123.1	135.1
75°	15.6	21.9	34.0	48.8	64.4	72.2	80.0	94.8	108.3	121.7	134.4
77.5°	12.0	18.4	31.1	46.0	62.3	70.0	77.1	92.7	106.8	120.3	132.3
80°	7.8	14.9	28.3	43.2	59.4	67.2	75.0	90.6	104.7	118.2	130.9
82.5°	5.0	12.0	25.5	41.0	56.6	65.1	72.9	87.7	102.6	116.0	128.8
85°	2.8	9.9	22.6	38.2	54.5	62.3	70.0	85.6	99.8	113.2	125.9
87.5°	0.7	7.8	20.5	35.4	51.7	59.4	67.2	82.8	97.6	111.1	123.8
90°	0.0	6.4	18.4	33.3	49.5	57.3	65.1	80.0	94.8	108.3	121.0
92.5°	0.0	5.0	17.0	31.1	46.7	54.5	62.3	77.8	92.0	105.4	118.2
95°	0.0	4.2	14.9	29.0	44.6	51.7	59.4	75.0	89.2	102.6	114.6
97.5°	0.0	3.5	13.4	26.9	41.7	49.5	56.6	71.5	85.6	99.1	111.8
100°	0.0	2.8	12.0	24.8	39.6	46.7	54.5	68.6	82.8	95.5	108.3
102.5°	0.0	2.8	11.3	23.3	36.8	44.6	51.7	65.8	79.2	92.0	104.0
105°	0.0	2.8	9.9	21.2	34.7	41.7	48.8	63.0	76.4	88.4	100.5
107.5°	0.0	2.1	9.2	19.8	32.5	39.6	46.0	59.4	72.9	84.9	96.2
110°	0.0	2.1	8.5	18.4	30.4	36.8	43.2	56.6	69.3	81.4	92.7



TEST NUMBER: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	2.1	7.8	17.0	28.3	34.7	41.0	53.1	65.8	77.1	88.4
115°	0.0	2.1	7.1	15.6	26.2	31.8	38.2	50.2	62.3	73.6	84.2
117.5°	0.0	2.1	6.4	14.2	24.1	29.7	35.4	46.7	58.7	69.3	79.2
120°	0.0	2.1	6.4	13.4	22.6	27.6	32.5	43.9	54.5	65.1	75.0
122.5°	0.0	1.4	5.7	12.0	20.5	25.5	30.4	41.0	50.9	60.8	70.8
125°	0.0	1.4	5.7	11.3	19.1	23.3	27.6	37.5	47.4	56.6	65.8
127.5°	0.0	1.4	5.0	9.9	17.0	21.2	25.5	34.7	43.2	52.4	60.8
130°	0.0	1.4	4.2	9.2	15.6	19.1	23.3	31.1	39.6	48.1	56.6
132.5°	0.0	1.4	4.2	8.5	14.2	17.7	20.5	28.3	36.1	43.9	51.7
135°	0.0	1.4	3.5	7.8	12.7	15.6	19.1	25.5	32.5	39.6	46.7
137.5°	0.0	1.4	3.5	7.1	11.3	14.2	17.0	22.6	29.0	36.1	42.5
140°	0.0	1.4	2.8	6.4	10.6	12.7	14.9	20.5	26.2	31.8	37.5
142.5°	0.0	0.7	2.8	5.7	9.2	11.3	13.4	18.4	22.6	28.3	33.3
145°	0.0	0.7	2.8	5.0	7.8	9.9	11.3	15.6	19.8	24.8	29.0
147.5°	0.0	0.7	2.1	4.2	6.4	7.8	9.9	13.4	17.0	21.2	24.8
150°	0.0	0.7	2.1	3.5	5.7	7.1	7.8	10.6	14.2	17.7	20.5
152.5°	0.0	0.7	1.4	2.8	4.2	5.7	6.4	8.5	11.3	14.2	17.0
155°	0.0	0.7	1.4	2.1	3.5	4.2	5.0	7.1	8.5	10.6	12.7
157.5°	0.0	0.7	0.7	1.4	2.8	3.5	4.2	5.7	7.1	8.5	9.9
160°	0.0	0.7	0.7	1.4	2.1	2.1	2.8	4.2	5.0	5.7	7.1
162.5°	0.0	0.7	0.7	0.7	1.4	1.4	1.4	2.8	3.5	3.5	4.2
165°	0.0	0.7	0.7	0.7	0.7	0.7	0.7	1.4	1.4	2.1	2.1
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: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
2.5°	100.5	99.8	99.1	98.3	97.6	97.6	96.2	95.5	94.8	94.8
5°	101.9	101.2	100.5	99.8	99.8	99.1	98.3	97.6	96.9	96.9
7.5°	103.3	102.6	102.6	101.9	101.9	101.9	100.5	100.5	99.8	99.8
10°	104.7	104.7	104.7	104.7	104.7	104.7	104.0	103.3	102.6	102.6
12.5°	106.8	107.5	107.5	108.3	108.3	108.3	107.5	107.5	106.8	106.8
15°	109.7	110.4	111.1	111.8	111.8	111.8	111.8	111.8	111.1	111.1
17.5°	111.8	113.2	114.6	115.3	116.0	116.0	116.0	116.0	116.0	115.3
20°	114.6	116.7	118.2	119.6	119.6	120.3	121.0	121.0	121.0	120.3
22.5°	117.5	119.6	121.7	123.8	124.5	124.5	125.2	125.9	125.9	125.9
25°	120.3	123.1	125.9	128.1	128.8	129.5	130.2	130.9	130.9	130.9
27.5°	123.1	126.7	129.5	132.3	133.0	133.7	135.1	135.8	135.8	135.8
30°	125.9	130.2	133.7	135.8	137.3	138.7	140.1	140.8	140.8	141.5
32.5°	128.8	133.0	137.3	140.1	141.5	142.9	144.3	145.8	146.5	146.5
35°	131.6	136.6	140.8	144.3	145.8	147.2	148.6	150.0	150.7	150.7
37.5°	133.7	139.4	143.6	147.9	149.3	150.7	152.8	154.2	155.0	155.0
40°	135.8	141.5	147.2	151.4	152.8	154.2	157.1	158.5	159.2	159.2
42.5°	138.0	144.3	150.0	154.2	156.4	157.8	160.6	162.0	162.7	163.4
45°	140.1	147.2	152.8	157.1	159.2	161.3	163.4	165.6	167.0	167.0
47.5°	142.2	149.3	155.0	159.9	162.7	164.2	167.0	169.1	170.5	170.5
50°	143.6	151.4	157.8	162.7	165.6	167.0	170.5	172.6	174.1	174.1
52.5°	145.0	152.8	159.9	164.9	167.7	169.8	173.3	175.5	176.9	176.9
55°	146.5	154.2	161.3	167.0	169.8	171.9	175.5	178.3	179.0	179.7
57.5°	147.2	155.7	162.7	169.1	171.2	174.1	177.6	180.4	181.1	181.8
60°	147.9	156.4	163.4	170.5	173.3	175.5	179.0	181.8	183.3	184.0
62.5°	147.9	157.1	164.2	171.2	174.1	176.9	180.4	183.3	184.7	185.4
65°	147.9	157.1	164.9	171.9	174.8	177.6	181.8	184.7	186.1	186.8
67.5°	147.9	157.1	165.6	172.6	176.2	178.3	182.5	185.4	187.5	187.5
70°	147.2	156.4	164.9	172.6	175.5	178.3	182.5	186.1	187.5	187.5
72.5°	146.5	156.4	164.9	171.9	175.5	178.3	182.5	186.1	187.5	187.5
75°	145.0	155.0	164.2	171.2	174.8	177.6	182.5	185.4	187.5	187.5
77.5°	144.3	154.2	163.4	170.5	174.1	176.9	181.8	184.7	186.1	186.8
80°	142.2	152.1	161.3	169.1	171.9	175.5	179.7	183.3	184.7	185.4
82.5°	140.1	150.7	159.2	167.0	170.5	173.3	177.6	181.1	183.3	183.3
85°	138.0	147.9	157.1	164.9	168.4	171.2	175.5	179.0	181.1	181.1
87.5°	135.1	145.0	154.2	162.0	164.9	168.4	173.3	176.2	178.3	179.0
90°	132.3	142.2	151.4	159.2	162.0	165.6	170.5	173.3	174.8	175.5
92.5°	129.5	139.4	148.6	156.4	159.2	162.0	167.0	170.5	171.9	172.6
95°	125.9	136.6	145.0	152.8	156.4	159.2	164.2	167.0	168.4	169.1
97.5°	123.1	133.0	141.5	149.3	152.8	155.7	159.9	163.4	164.9	165.6
100°	118.9	128.8	138.0	145.0	148.6	151.4	155.7	159.2	160.6	161.3
102.5°	115.3	125.2	133.7	140.8	144.3	146.5	151.4	154.2	155.7	156.4
105°	111.1	121.0	129.5	136.6	139.4	142.2	146.5	149.3	151.4	151.4
107.5°	106.8	116.7	124.5	131.6	134.4	137.3	141.5	144.3	145.8	146.5
110°	102.6	111.8	120.3	127.4	129.5	132.3	136.6	139.4	140.8	141.5



TEST NUMBER: P236102

CATALOG NUMBER: CFA-2-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	98.3	106.8	114.6	121.7	124.5	126.7	130.9	133.7	135.1	135.1
115°	93.4	101.9	109.7	116.0	118.9	121.7	125.2	127.4	129.5	129.5
117.5°	89.2	96.9	104.7	110.4	113.2	115.3	119.6	121.7	123.1	123.8
120°	84.2	92.7	99.1	105.4	107.5	110.4	113.9	116.0	117.5	117.5
122.5°	79.2	87.0	94.1	99.1	101.9	104.0	107.5	109.7	111.1	111.1
125°	74.3	81.4	87.7	93.4	95.5	98.3	101.2	103.3	104.7	104.7
127.5°	68.6	75.7	82.1	87.7	89.2	92.0	94.8	96.9	97.6	98.3
130°	63.7	70.8	76.4	81.4	83.5	84.9	88.4	89.9	90.6	91.3
132.5°	58.7	65.1	70.0	75.0	77.1	78.5	81.4	83.5	84.2	84.2
135°	53.8	59.4	64.4	68.6	70.0	72.2	74.3	76.4	77.1	77.8
137.5°	48.1	53.8	58.0	62.3	63.7	65.8	67.9	69.3	70.0	70.0
140°	43.2	48.1	52.4	55.9	57.3	58.7	60.8	62.3	63.0	63.0
142.5°	38.2	42.5	46.7	49.5	50.9	52.4	54.5	55.2	55.9	55.9
145°	33.3	36.8	40.3	43.9	44.6	46.0	47.4	48.8	48.8	48.8
147.5°	29.0	31.8	34.7	37.5	38.9	39.6	41.0	41.7	42.5	42.5
150°	24.1	26.9	29.7	31.8	33.3	33.3	34.7	35.4	35.4	35.4
152.5°	19.8	22.6	24.8	26.2	27.6	27.6	28.3	29.0	29.0	29.0
155°	14.9	17.0	19.8	21.2	21.2	21.9	22.6	22.6	23.3	22.6
157.5°	11.3	12.7	14.2	16.3	17.0	17.0	17.0	17.7	17.7	17.0
160°	7.8	9.2	9.9	11.3	11.3	12.0	12.7	12.7	12.7	12.0
162.5°	5.0	5.7	6.4	6.4	7.1	7.1	7.8	7.8	7.8	7.8
165°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.5	3.5	2.8
167.5°	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
172.5°	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
177.5°	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

(END OF REPORT)