

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: P236105

Luminaire Tested: **CFA-2-LD4-UNV-LO-50-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236105
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-50-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
2ft
Light Source: (42) 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

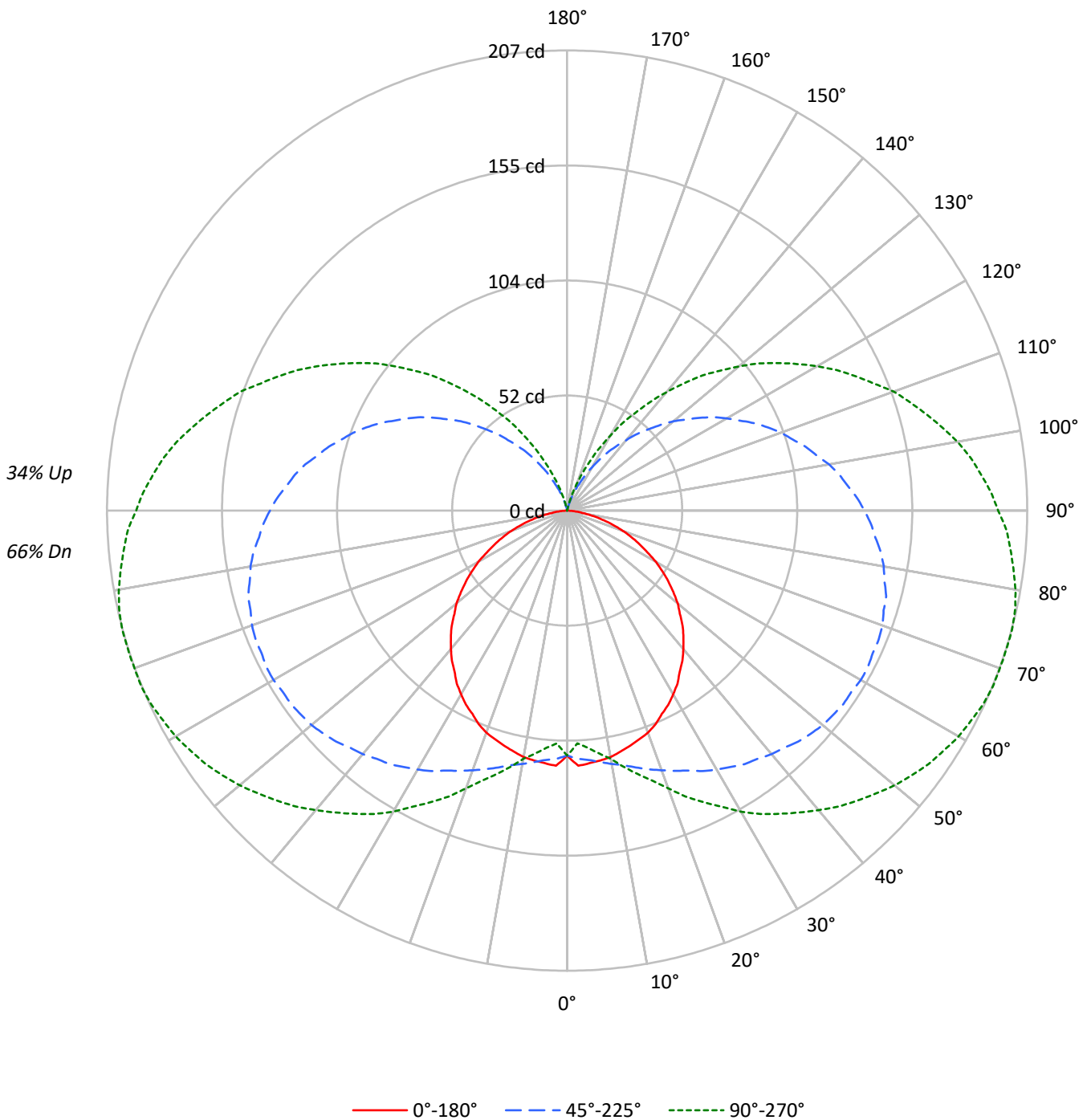
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1267.8 lumens
Efficiency: N/A
Efficacy: 102.2 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.27 / 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: P236105
CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-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°	3559	3559	3559
5°	3655	3291	3040
10°	3606	3111	2890
15°	3532	2998	2858
20°	3481	2940	2870
25°	3382	2908	2931
30°	3299	2918	3009
35°	3179	2932	3070
40°	3077	2950	3137
45°	2956	2991	3210
50°	2807	3036	3290
55°	2618	3075	3367
60°	2412	3121	3442
65°	2132	3159	3516
70°	1830	3223	3580
75°	1426	3284	3659
80°	905	3336	3728
85°	451	3387	3790



TEST NUMBER: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	10.8	0.8
10°-20°	33.7	2.7
20°-30°	58.6	4.6
30°-40°	84.1	6.6
40°-50°	107.4	8.5
50°-60°	126.3	10.0
60°-70°	137.9	10.9
70°-80°	141.3	11.1
80°-90°	135.6	10.7
90°-100°	122.9	9.7
100°-110°	104.4	8.2
110°-120°	82.3	6.5
120°-130°	59.0	4.7
130°-140°	37.0	2.9
140°-150°	19.0	1.5
150°-160°	6.8	0.5
160°-170°	0.9	0.1
170°-180°	0.0	0.0
0°-30°	103.1	8.1
0°-40°	187.1	14.8
0°-60°	420.8	33.2
0°-90°	835.5	65.9
90°-120°	309.6	24.4
90°-150°	424.6	33.5
90°-180°	432.0	34.1
0°-180°	1267.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	110	110	110	110	110	
5°	114	114	113	110	107	11
15°	110	113	120	124	123	31
25°	101	111	129	142	145	47
35°	88	108	139	161	166	55
45°	74	102	147	176	184	57
55°	56	97	152	188	199	50
65°	36	89	152	193	206	36
75°	17	80	149	193	207	18
85°	3	69	139	186	200	4
90°	0	63	134	179	194	0
95°	0	57	127	173	187	0
105°	0	46	111	154	167	0
115°	0	35	93	131	143	0
125°	0	26	73	106	116	0
135°	0	17	52	77	86	0
145°	0	11	32	49	54	0
155°	0	5	14	24	25	0
165°	0	1	2	3	3	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	114.9	114.9	114.9	114.9	114.1	114.1	114.1	113.4	113.4	112.6	111.8
5°	114.1	114.1	114.1	114.1	114.1	114.1	114.1	114.1	113.4	113.4	112.6
7.5°	113.4	113.4	114.1	114.1	114.1	114.1	114.1	114.1	114.1	114.1	114.1
10°	112.6	112.6	112.6	113.4	113.4	114.1	114.1	114.9	114.9	115.7	115.7
12.5°	111.0	111.8	111.8	112.6	113.4	113.4	114.1	114.9	115.7	116.5	117.3
15°	109.5	110.2	111.0	111.8	112.6	113.4	114.1	115.7	117.3	118.1	119.6
17.5°	107.9	108.7	109.5	110.2	112.6	113.4	114.1	115.7	118.1	120.4	122.0
20°	106.3	106.3	107.9	109.5	111.8	112.6	114.1	116.5	118.8	122.0	124.3
22.5°	104.0	104.0	105.5	107.9	110.2	111.8	113.4	117.3	120.4	123.5	126.7
25°	100.9	102.4	104.0	106.3	109.5	111.0	113.4	117.3	121.2	125.1	129.0
27.5°	98.5	99.3	101.6	104.8	108.7	111.0	112.6	117.3	122.7	127.4	132.1
30°	95.4	96.2	99.3	102.4	107.1	109.5	112.6	118.1	123.5	129.0	134.5
32.5°	92.3	93.0	96.2	100.9	105.5	108.7	111.8	118.1	124.3	130.6	136.8
35°	88.3	89.9	93.8	98.5	104.8	107.9	111.0	118.1	125.1	132.1	139.2
37.5°	85.2	86.8	90.7	96.2	102.4	106.3	110.2	118.1	125.9	133.7	140.7
40°	81.3	82.9	87.6	93.8	100.9	105.5	109.5	118.1	126.7	135.3	143.1
42.5°	77.4	79.0	84.4	91.5	99.3	104.0	108.7	118.1	127.4	136.8	144.6
45°	73.5	75.1	81.3	88.3	97.7	102.4	107.9	118.1	128.2	137.6	147.0
47.5°	68.8	71.1	77.4	86.0	96.2	101.6	107.1	118.1	128.2	138.4	148.6
50°	64.9	67.2	74.3	83.7	94.6	100.1	105.5	117.3	129.0	140.0	150.1
52.5°	60.2	63.3	70.4	80.5	92.3	98.5	104.8	117.3	129.0	140.0	150.9
55°	55.5	58.6	67.2	78.2	90.7	96.9	103.2	116.5	129.0	140.7	151.7
57.5°	50.8	54.7	63.3	75.1	88.3	95.4	101.6	115.7	128.2	140.7	151.7
60°	46.1	50.0	59.4	71.9	86.0	93.0	100.1	114.1	128.2	140.7	152.5
62.5°	40.7	45.3	56.3	69.6	83.7	91.5	98.5	113.4	126.7	140.0	152.5
65°	36.0	40.7	52.4	66.5	81.3	89.1	96.9	111.8	125.9	139.2	151.7
67.5°	31.3	36.7	48.5	63.3	79.0	86.8	94.6	110.2	125.1	138.4	151.7
70°	26.6	32.1	44.6	60.2	76.6	84.4	92.3	108.7	123.5	137.6	150.9
72.5°	21.9	28.1	41.4	57.1	73.5	82.1	90.7	106.3	122.0	136.0	149.3
75°	17.2	24.2	37.5	53.9	71.1	79.7	88.3	104.8	119.6	134.5	148.6
77.5°	13.3	20.3	34.4	50.8	68.8	77.4	85.2	102.4	118.1	132.9	146.2
80°	8.6	16.4	31.3	47.7	65.7	74.3	82.9	100.1	115.7	130.6	144.6
82.5°	5.5	13.3	28.1	45.3	62.5	71.9	80.5	96.9	113.4	128.2	142.3
85°	3.1	10.9	25.0	42.2	60.2	68.8	77.4	94.6	110.2	125.1	139.2
87.5°	0.8	8.6	22.7	39.1	57.1	65.7	74.3	91.5	107.9	122.7	136.8
90°	0.0	7.0	20.3	36.7	54.7	63.3	71.9	88.3	104.8	119.6	133.7
92.5°	0.0	5.5	18.8	34.4	51.6	60.2	68.8	86.0	101.6	116.5	130.6
95°	0.0	4.7	16.4	32.1	49.3	57.1	65.7	82.9	98.5	113.4	126.7
97.5°	0.0	3.9	14.9	29.7	46.1	54.7	62.5	79.0	94.6	109.5	123.5
100°	0.0	3.1	13.3	27.4	43.8	51.6	60.2	75.8	91.5	105.5	119.6
102.5°	0.0	3.1	12.5	25.8	40.7	49.3	57.1	72.7	87.6	101.6	114.9
105°	0.0	3.1	10.9	23.5	38.3	46.1	53.9	69.6	84.4	97.7	111.0
107.5°	0.0	2.3	10.2	21.9	36.0	43.8	50.8	65.7	80.5	93.8	106.3
110°	0.0	2.3	9.4	20.3	33.6	40.7	47.7	62.5	76.6	89.9	102.4



TEST NUMBER: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	2.3	8.6	18.8	31.3	38.3	45.3	58.6	72.7	85.2	97.7
115°	0.0	2.3	7.8	17.2	28.9	35.2	42.2	55.5	68.8	81.3	93.0
117.5°	0.0	2.3	7.0	15.6	26.6	32.8	39.1	51.6	64.9	76.6	87.6
120°	0.0	2.3	7.0	14.9	25.0	30.5	36.0	48.5	60.2	71.9	82.9
122.5°	0.0	1.6	6.3	13.3	22.7	28.1	33.6	45.3	56.3	67.2	78.2
125°	0.0	1.6	6.3	12.5	21.1	25.8	30.5	41.4	52.4	62.5	72.7
127.5°	0.0	1.6	5.5	10.9	18.8	23.5	28.1	38.3	47.7	57.9	67.2
130°	0.0	1.6	4.7	10.2	17.2	21.1	25.8	34.4	43.8	53.2	62.5
132.5°	0.0	1.6	4.7	9.4	15.6	19.5	22.7	31.3	39.9	48.5	57.1
135°	0.0	1.6	3.9	8.6	14.1	17.2	21.1	28.1	36.0	43.8	51.6
137.5°	0.0	1.6	3.9	7.8	12.5	15.6	18.8	25.0	32.1	39.9	46.9
140°	0.0	1.6	3.1	7.0	11.7	14.1	16.4	22.7	28.9	35.2	41.4
142.5°	0.0	0.8	3.1	6.3	10.2	12.5	14.9	20.3	25.0	31.3	36.7
145°	0.0	0.8	3.1	5.5	8.6	10.9	12.5	17.2	21.9	27.4	32.1
147.5°	0.0	0.8	2.3	4.7	7.0	8.6	10.9	14.9	18.8	23.5	27.4
150°	0.0	0.8	2.3	3.9	6.3	7.8	8.6	11.7	15.6	19.5	22.7
152.5°	0.0	0.8	1.6	3.1	4.7	6.3	7.0	9.4	12.5	15.6	18.8
155°	0.0	0.8	1.6	2.3	3.9	4.7	5.5	7.8	9.4	11.7	14.1
157.5°	0.0	0.8	0.8	1.6	3.1	3.9	4.7	6.3	7.8	9.4	10.9
160°	0.0	0.8	0.8	1.6	2.3	2.3	3.1	4.7	5.5	6.3	7.8
162.5°	0.0	0.8	0.8	0.8	1.6	1.6	1.6	3.1	3.9	3.9	4.7
165°	0.0	0.8	0.8	0.8	0.8	0.8	0.8	1.6	1.6	2.3	2.3
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: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	111.0	110.2	109.5	108.7	107.9	107.9	106.3	105.5	104.8	104.8
5°	112.6	111.8	111.0	110.2	110.2	109.5	108.7	107.9	107.1	107.1
7.5°	114.1	113.4	113.4	112.6	112.6	112.6	111.0	111.0	110.2	110.2
10°	115.7	115.7	115.7	115.7	115.7	115.7	114.9	114.1	113.4	113.4
12.5°	118.1	118.8	118.8	119.6	119.6	119.6	118.8	118.8	118.1	118.1
15°	121.2	122.0	122.7	123.5	123.5	123.5	123.5	123.5	122.7	122.7
17.5°	123.5	125.1	126.7	127.4	128.2	128.2	128.2	128.2	128.2	127.4
20°	126.7	129.0	130.6	132.1	132.1	132.9	133.7	133.7	133.7	132.9
22.5°	129.8	132.1	134.5	136.8	137.6	137.6	138.4	139.2	139.2	139.2
25°	132.9	136.0	139.2	141.5	142.3	143.1	143.9	144.6	144.6	144.6
27.5°	136.0	140.0	143.1	146.2	147.0	147.8	149.3	150.1	150.1	150.1
30°	139.2	143.9	147.8	150.1	151.7	153.2	154.8	155.6	155.6	156.4
32.5°	142.3	147.0	151.7	154.8	156.4	157.9	159.5	161.1	161.8	161.8
35°	145.4	150.9	155.6	159.5	161.1	162.6	164.2	165.8	166.5	166.5
37.5°	147.8	154.0	158.7	163.4	165.0	166.5	168.9	170.4	171.2	171.2
40°	150.1	156.4	162.6	167.3	168.9	170.4	173.6	175.1	175.9	175.9
42.5°	152.5	159.5	165.8	170.4	172.8	174.4	177.5	179.0	179.8	180.6
45°	154.8	162.6	168.9	173.6	175.9	178.3	180.6	183.0	184.5	184.5
47.5°	157.2	165.0	171.2	176.7	179.8	181.4	184.5	186.9	188.4	188.4
50°	158.7	167.3	174.4	179.8	183.0	184.5	188.4	190.8	192.3	192.3
52.5°	160.3	168.9	176.7	182.2	185.3	187.6	191.6	193.9	195.5	195.5
55°	161.8	170.4	178.3	184.5	187.6	190.0	193.9	197.0	197.8	198.6
57.5°	162.6	172.0	179.8	186.9	189.2	192.3	196.2	199.4	200.2	200.9
60°	163.4	172.8	180.6	188.4	191.6	193.9	197.8	200.9	202.5	203.3
62.5°	163.4	173.6	181.4	189.2	192.3	195.5	199.4	202.5	204.1	204.8
65°	163.4	173.6	182.2	190.0	193.1	196.2	200.9	204.1	205.6	206.4
67.5°	163.4	173.6	182.2	190.0	193.1	196.2	200.9	204.1	205.6	206.4
70°	162.6	172.8	182.2	190.8	193.9	197.0	201.7	205.6	207.2	207.2
72.5°	161.8	172.8	182.2	190.0	193.9	197.0	201.7	205.6	207.2	207.2
75°	160.3	171.2	181.4	189.2	193.1	196.2	201.7	204.8	207.2	207.2
77.5°	159.5	170.4	180.6	188.4	192.3	195.5	200.9	204.1	205.6	206.4
80°	157.2	168.1	178.3	186.9	190.0	193.9	198.6	202.5	204.1	204.8
82.5°	154.8	166.5	175.9	184.5	188.4	191.6	196.2	200.2	202.5	202.5
85°	152.5	163.4	173.6	182.2	186.1	189.2	193.9	197.8	200.2	200.2
87.5°	149.3	160.3	170.4	179.0	182.2	186.1	191.6	194.7	197.0	197.8
90°	146.2	157.2	167.3	175.9	179.0	183.0	188.4	191.6	193.1	193.9
92.5°	143.1	154.0	164.2	172.8	175.9	179.0	184.5	188.4	190.0	190.8
95°	139.2	150.9	160.3	168.9	172.8	175.9	181.4	184.5	186.1	186.9
97.5°	136.0	147.0	156.4	165.0	168.9	172.0	176.7	180.6	182.2	183.0
100°	131.3	142.3	152.5	160.3	164.2	167.3	172.0	175.9	177.5	178.3
102.5°	127.4	138.4	147.8	155.6	159.5	161.8	167.3	170.4	172.0	172.8
105°	122.7	133.7	143.1	150.9	154.0	157.2	161.8	165.0	167.3	167.3
107.5°	118.1	129.0	137.6	145.4	148.6	151.7	156.4	159.5	161.1	161.8
110°	113.4	123.5	132.9	140.7	143.1	146.2	150.9	154.0	155.6	156.4



TEST NUMBER: P236105

CATALOG NUMBER: CFA-2-LD4-UNV-LO-50-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	108.7	118.1	126.7	134.5	137.6	140.0	144.6	147.8	149.3	149.3
115°	103.2	112.6	121.2	128.2	131.3	134.5	138.4	140.7	143.1	143.1
117.5°	98.5	107.1	115.7	122.0	125.1	127.4	132.1	134.5	136.0	136.8
120°	93.0	102.4	109.5	116.5	118.8	122.0	125.9	128.2	129.8	129.8
122.5°	87.6	96.2	104.0	109.5	112.6	114.9	118.8	121.2	122.7	122.7
125°	82.1	89.9	96.9	103.2	105.5	108.7	111.8	114.1	115.7	115.7
127.5°	75.8	83.7	90.7	96.9	98.5	101.6	104.8	107.1	107.9	108.7
130°	70.4	78.2	84.4	89.9	92.3	93.8	97.7	99.3	100.1	100.9
132.5°	64.9	71.9	77.4	82.9	85.2	86.8	89.9	92.3	93.0	93.0
135°	59.4	65.7	71.1	75.8	77.4	79.7	82.1	84.4	85.2	86.0
137.5°	53.2	59.4	64.1	68.8	70.4	72.7	75.1	76.6	77.4	77.4
140°	47.7	53.2	57.9	61.8	63.3	64.9	67.2	68.8	69.6	69.6
142.5°	42.2	46.9	51.6	54.7	56.3	57.9	60.2	61.0	61.8	61.8
145°	36.7	40.7	44.6	48.5	49.3	50.8	52.4	53.9	53.9	53.9
147.5°	32.1	35.2	38.3	41.4	43.0	43.8	45.3	46.1	46.9	46.9
150°	26.6	29.7	32.8	35.2	36.7	36.7	38.3	39.1	39.1	39.1
152.5°	21.9	25.0	27.4	28.9	30.5	30.5	31.3	32.1	32.1	32.1
155°	16.4	18.8	21.9	23.5	23.5	24.2	25.0	25.0	25.8	25.0
157.5°	12.5	14.1	15.6	18.0	18.8	18.8	18.8	19.5	19.5	18.8
160°	8.6	10.2	10.9	12.5	12.5	13.3	14.1	14.1	14.1	13.3
162.5°	5.5	6.3	7.0	7.0	7.8	7.8	8.6	8.6	8.6	8.6
165°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.9	3.9	3.1
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)