

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: P236098

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236098
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-STD-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
2ft
Light Source: (42) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

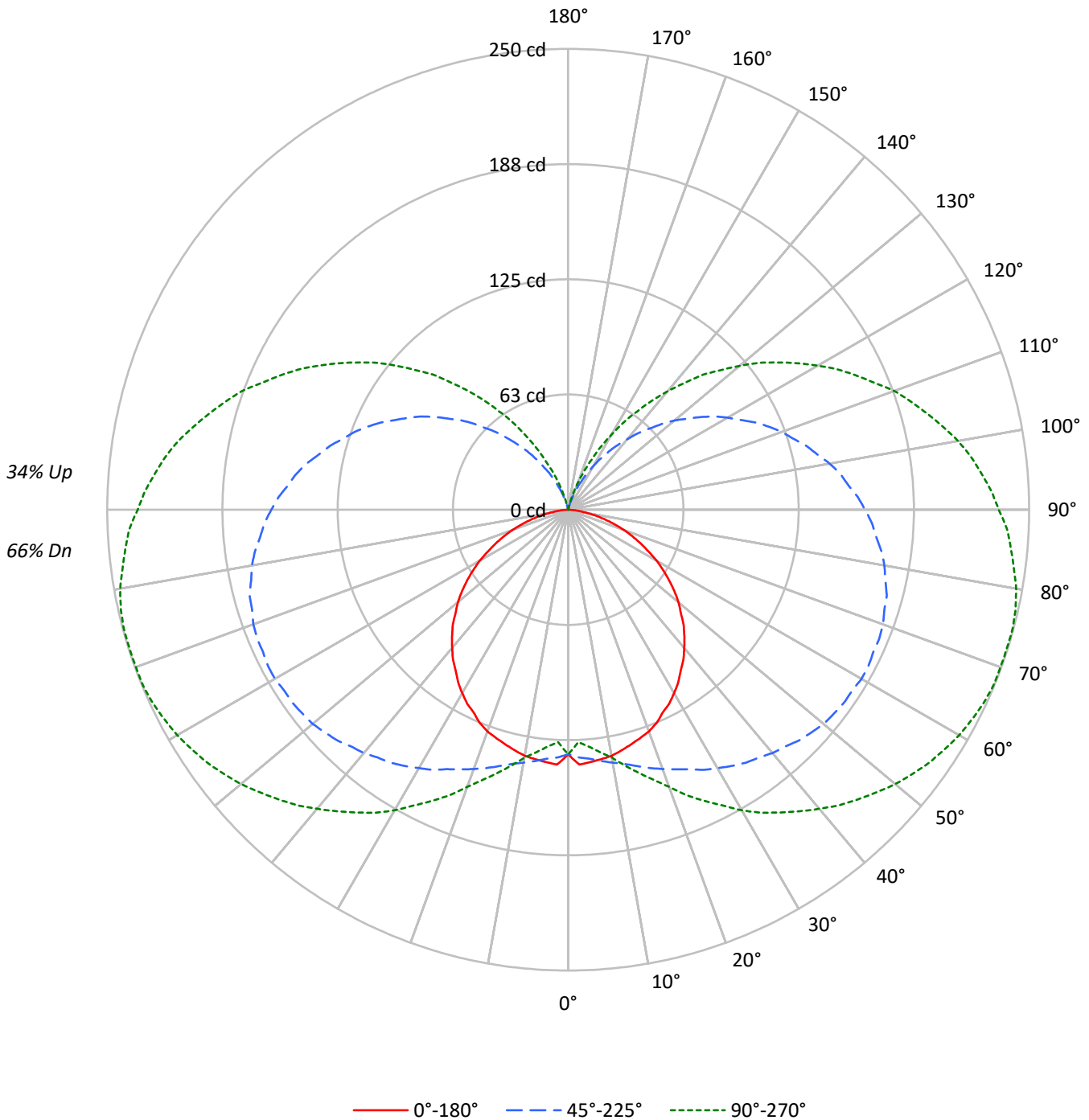
Lumens per Lamp: N/A
Luminaire Lumens: 1526.6 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.27 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 2' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 17.02
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

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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	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°	4285	4285	4285
5°	4405	3964	3661
10°	4343	3746	3479
15°	4252	3610	3442
20°	4192	3540	3455
25°	4069	3501	3531
30°	3974	3512	3623
35°	3831	3530	3697
40°	3706	3552	3777
45°	3560	3601	3866
50°	3378	3657	3962
55°	3151	3701	4054
60°	2903	3757	4145
65°	2564	3802	4234
70°	2202	3881	4311
75°	1716	3954	4406
80°	1094	4019	4491
85°	553	4078	4562



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.0	0.8
10°-20°	40.5	2.7
20°-30°	70.6	4.6
30°-40°	101.2	6.6
40°-50°	129.3	8.5
50°-60°	152.0	10.0
60°-70°	166.1	10.9
70°-80°	170.1	11.1
80°-90°	163.3	10.7
90°-100°	148.0	9.7
100°-110°	125.8	8.2
110°-120°	99.1	6.5
120°-130°	71.0	4.7
130°-140°	44.5	2.9
140°-150°	22.9	1.5
150°-160°	8.2	0.5
160°-170°	1.1	0.1
170°-180°	0.0	0.0
0°-30°	124.1	8.1
0°-40°	225.3	14.8
0°-60°	506.7	33.2
0°-90°	1006.1	65.9
90°-120°	372.8	24.4
90°-150°	511.3	33.5
90°-180°	520.0	34.1
0°-180°	1526.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	133	133	133	133	133	
5°	138	138	136	133	129	13
15°	132	136	144	149	148	37
25°	121	134	155	171	174	56
35°	106	130	168	194	200	67
45°	88	123	177	212	222	68
55°	67	117	183	226	239	60
65°	43	107	183	232	248	43
75°	21	96	179	232	250	22
85°	4	83	168	224	241	4
90°	0	76	161	216	234	0
95°	0	69	152	208	225	0
105°	0	56	134	186	202	0
115°	0	42	112	158	172	0
125°	0	31	88	127	139	0
135°	0	21	62	93	104	0
145°	0	13	39	59	65	0
155°	0	6	17	28	30	0
165°	0	1	3	4	4	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°	22.5°	25°	30°	35°	40°	45°
0°	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7
2.5°	138.4	138.4	138.4	138.4	137.5	137.5	137.5	136.5	136.5	135.6	134.6
5°	137.5	137.5	137.5	137.5	137.5	137.5	137.5	137.5	136.5	136.5	135.6
7.5°	136.5	136.5	137.5	137.5	137.5	137.5	137.5	137.5	137.5	137.5	137.5
10°	135.6	135.6	135.6	136.5	136.5	137.5	137.5	138.4	138.4	139.3	139.3
12.5°	133.7	134.6	134.6	135.6	136.5	136.5	137.5	138.4	139.3	140.3	141.2
15°	131.8	132.7	133.7	134.6	135.6	136.5	137.5	139.3	141.2	142.2	144.0
17.5°	129.9	130.9	131.8	132.7	135.6	136.5	137.5	139.3	142.2	145.0	146.9
20°	128.0	128.0	129.9	131.8	134.6	135.6	137.5	140.3	143.1	146.9	149.7
22.5°	125.2	125.2	127.1	129.9	132.7	134.6	136.5	141.2	145.0	148.8	152.5
25°	121.4	123.3	125.2	128.0	131.8	133.7	136.5	141.2	145.9	150.6	155.3
27.5°	118.6	119.6	122.4	126.2	130.9	133.7	135.6	141.2	147.8	153.5	159.1
30°	114.9	115.8	119.6	123.3	129.0	131.8	135.6	142.2	148.8	155.3	161.9
32.5°	111.1	112.0	115.8	121.4	127.1	130.9	134.6	142.2	149.7	157.2	164.8
35°	106.4	108.3	113.0	118.6	126.2	129.9	133.7	142.2	150.6	159.1	167.6
37.5°	102.6	104.5	109.2	115.8	123.3	128.0	132.7	142.2	151.6	161.0	169.5
40°	97.9	99.8	105.4	113.0	121.4	127.1	131.8	142.2	152.5	162.9	172.3
42.5°	93.2	95.1	101.7	110.2	119.6	125.2	130.9	142.2	153.5	164.8	174.2
45°	88.5	90.4	97.9	106.4	117.7	123.3	129.9	142.2	154.4	165.7	177.0
47.5°	82.8	85.7	93.2	103.6	115.8	122.4	129.0	142.2	154.4	166.6	178.9
50°	78.1	81.0	89.4	100.7	113.9	120.5	127.1	141.2	155.3	168.5	180.8
52.5°	72.5	76.3	84.7	97.0	111.1	118.6	126.2	141.2	155.3	168.5	181.7
55°	66.8	70.6	81.0	94.1	109.2	116.7	124.3	140.3	155.3	169.5	182.6
57.5°	61.2	65.9	76.3	90.4	106.4	114.9	122.4	139.3	154.4	169.5	182.6
60°	55.5	60.3	71.6	86.6	103.6	112.0	120.5	137.5	154.4	169.5	183.6
62.5°	49.0	54.6	67.8	83.8	100.7	110.2	118.6	136.5	152.5	168.5	183.6
65°	43.3	49.0	63.1	80.0	97.9	107.3	116.7	134.6	151.6	167.6	182.6
67.5°	37.7	44.2	58.4	76.3	95.1	104.5	113.9	132.7	150.6	166.6	182.6
70°	32.0	38.6	53.7	72.5	92.3	101.7	111.1	130.9	148.8	165.7	181.7
72.5°	26.4	33.9	49.9	68.7	88.5	98.9	109.2	128.0	146.9	163.8	179.8
75°	20.7	29.2	45.2	65.0	85.7	96.0	106.4	126.2	144.0	161.9	178.9
77.5°	16.0	24.5	41.4	61.2	82.8	93.2	102.6	123.3	142.2	160.0	176.1
80°	10.4	19.8	37.7	57.4	79.1	89.4	99.8	120.5	139.3	157.2	174.2
82.5°	6.6	16.0	33.9	54.6	75.3	86.6	97.0	116.7	136.5	154.4	171.3
85°	3.8	13.2	30.1	50.8	72.5	82.8	93.2	113.9	132.7	150.6	167.6
87.5°	0.9	10.4	27.3	47.1	68.7	79.1	89.4	110.2	129.9	147.8	164.8
90°	0.0	8.5	24.5	44.2	65.9	76.3	86.6	106.4	126.2	144.0	161.0
92.5°	0.0	6.6	22.6	41.4	62.1	72.5	82.8	103.6	122.4	140.3	157.2
95°	0.0	5.6	19.8	38.6	59.3	68.7	79.1	99.8	118.6	136.5	152.5
97.5°	0.0	4.7	17.9	35.8	55.5	65.9	75.3	95.1	113.9	131.8	148.8
100°	0.0	3.8	16.0	33.0	52.7	62.1	72.5	91.3	110.2	127.1	144.0
102.5°	0.0	3.8	15.1	31.1	49.0	59.3	68.7	87.6	105.4	122.4	138.4
105°	0.0	3.8	13.2	28.2	46.1	55.5	65.0	83.8	101.7	117.7	133.7
107.5°	0.0	2.8	12.2	26.4	43.3	52.7	61.2	79.1	97.0	113.0	128.0
110°	0.0	2.8	11.3	24.5	40.5	49.0	57.4	75.3	92.3	108.3	123.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	2.8	10.4	22.6	37.7	46.1	54.6	70.6	87.6	102.6	117.7
115°	0.0	2.8	9.4	20.7	34.8	42.4	50.8	66.8	82.8	97.9	112.0
117.5°	0.0	2.8	8.5	18.8	32.0	39.5	47.1	62.1	78.1	92.3	105.4
120°	0.0	2.8	8.5	17.9	30.1	36.7	43.3	58.4	72.5	86.6	99.8
122.5°	0.0	1.9	7.5	16.0	27.3	33.9	40.5	54.6	67.8	81.0	94.1
125°	0.0	1.9	7.5	15.1	25.4	31.1	36.7	49.9	63.1	75.3	87.6
127.5°	0.0	1.9	6.6	13.2	22.6	28.2	33.9	46.1	57.4	69.7	81.0
130°	0.0	1.9	5.6	12.2	20.7	25.4	31.1	41.4	52.7	64.0	75.3
132.5°	0.0	1.9	5.6	11.3	18.8	23.5	27.3	37.7	48.0	58.4	68.7
135°	0.0	1.9	4.7	10.4	16.9	20.7	25.4	33.9	43.3	52.7	62.1
137.5°	0.0	1.9	4.7	9.4	15.1	18.8	22.6	30.1	38.6	48.0	56.5
140°	0.0	1.9	3.8	8.5	14.1	16.9	19.8	27.3	34.8	42.4	49.9
142.5°	0.0	0.9	3.8	7.5	12.2	15.1	17.9	24.5	30.1	37.7	44.2
145°	0.0	0.9	3.8	6.6	10.4	13.2	15.1	20.7	26.4	33.0	38.6
147.5°	0.0	0.9	2.8	5.6	8.5	10.4	13.2	17.9	22.6	28.2	33.0
150°	0.0	0.9	2.8	4.7	7.5	9.4	10.4	14.1	18.8	23.5	27.3
152.5°	0.0	0.9	1.9	3.8	5.6	7.5	8.5	11.3	15.1	18.8	22.6
155°	0.0	0.9	1.9	2.8	4.7	5.6	6.6	9.4	11.3	14.1	16.9
157.5°	0.0	0.9	0.9	1.9	3.8	4.7	5.6	7.5	9.4	11.3	13.2
160°	0.0	0.9	0.9	1.9	2.8	2.8	3.8	5.6	6.6	7.5	9.4
162.5°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	3.8	4.7	4.7	5.6
165°	0.0	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9	2.8	2.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7	132.7
2.5°	133.7	132.7	131.8	130.9	129.9	129.9	128.0	127.1	126.2	126.2
5°	135.6	134.6	133.7	132.7	132.7	131.8	130.9	129.9	129.0	129.0
7.5°	137.5	136.5	136.5	135.6	135.6	135.6	133.7	133.7	132.7	132.7
10°	139.3	139.3	139.3	139.3	139.3	139.3	138.4	137.5	136.5	136.5
12.5°	142.2	143.1	143.1	144.0	144.0	144.0	143.1	143.1	142.2	142.2
15°	145.9	146.9	147.8	148.8	148.8	148.8	148.8	148.8	147.8	147.8
17.5°	148.8	150.6	152.5	153.5	154.4	154.4	154.4	154.4	154.4	153.5
20°	152.5	155.3	157.2	159.1	159.1	160.0	161.0	161.0	161.0	160.0
22.5°	156.3	159.1	161.9	164.8	165.7	165.7	166.6	167.6	167.6	167.6
25°	160.0	163.8	167.6	170.4	171.3	172.3	173.2	174.2	174.2	174.2
27.5°	163.8	168.5	172.3	176.1	177.0	177.9	179.8	180.8	180.8	180.8
30°	167.6	173.2	177.9	180.8	182.6	184.5	186.4	187.4	187.4	188.3
32.5°	171.3	177.0	182.6	186.4	188.3	190.2	192.1	193.9	194.9	194.9
35°	175.1	181.7	187.4	192.1	193.9	195.8	197.7	199.6	200.5	200.5
37.5°	177.9	185.5	191.1	196.8	198.6	200.5	203.4	205.2	206.2	206.2
40°	180.8	188.3	195.8	201.5	203.4	205.2	209.0	210.9	211.8	211.8
42.5°	183.6	192.1	199.6	205.2	208.1	209.9	213.7	215.6	216.5	217.5
45°	186.4	195.8	203.4	209.0	211.8	214.7	217.5	220.3	222.2	222.2
47.5°	189.2	198.6	206.2	212.8	216.5	218.4	222.2	225.0	226.9	226.9
50°	191.1	201.5	209.9	216.5	220.3	222.2	226.9	229.7	231.6	231.6
52.5°	193.0	203.4	212.8	219.4	223.1	226.0	230.7	233.5	235.4	235.4
55°	194.9	205.2	214.7	222.2	226.0	228.8	233.5	237.2	238.2	239.1
57.5°	195.8	207.1	216.5	225.0	227.8	231.6	236.3	240.1	241.0	242.0
60°	196.8	208.1	217.5	226.9	230.7	233.5	238.2	242.0	243.8	244.8
62.5°	196.8	209.0	218.4	227.8	231.6	235.4	240.1	243.8	245.7	246.7
65°	196.8	209.0	219.4	228.8	232.5	236.3	242.0	245.7	247.6	248.5
67.5°	196.8	209.0	220.3	229.7	234.4	237.2	242.9	246.7	249.5	249.5
70°	195.8	208.1	219.4	229.7	233.5	237.2	242.9	247.6	249.5	249.5
72.5°	194.9	208.1	219.4	228.8	233.5	237.2	242.9	247.6	249.5	249.5
75°	193.0	206.2	218.4	227.8	232.5	236.3	242.9	246.7	249.5	249.5
77.5°	192.1	205.2	217.5	226.9	231.6	235.4	242.0	245.7	247.6	248.5
80°	189.2	202.4	214.7	225.0	228.8	233.5	239.1	243.8	245.7	246.7
82.5°	186.4	200.5	211.8	222.2	226.9	230.7	236.3	241.0	243.8	243.8
85°	183.6	196.8	209.0	219.4	224.1	227.8	233.5	238.2	241.0	241.0
87.5°	179.8	193.0	205.2	215.6	219.4	224.1	230.7	234.4	237.2	238.2
90°	176.1	189.2	201.5	211.8	215.6	220.3	226.9	230.7	232.5	233.5
92.5°	172.3	185.5	197.7	208.1	211.8	215.6	222.2	226.9	228.8	229.7
95°	167.6	181.7	193.0	203.4	208.1	211.8	218.4	222.2	224.1	225.0
97.5°	163.8	177.0	188.3	198.6	203.4	207.1	212.8	217.5	219.4	220.3
100°	158.2	171.3	183.6	193.0	197.7	201.5	207.1	211.8	213.7	214.7
102.5°	153.5	166.6	177.9	187.4	192.1	194.9	201.5	205.2	207.1	208.1
105°	147.8	161.0	172.3	181.7	185.5	189.2	194.9	198.6	201.5	201.5
107.5°	142.2	155.3	165.7	175.1	178.9	182.6	188.3	192.1	193.9	194.9
110°	136.5	148.8	160.0	169.5	172.3	176.1	181.7	185.5	187.4	188.3



TEST NUMBER: P236098

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	130.9	142.2	152.5	161.9	165.7	168.5	174.2	177.9	179.8	179.8
115°	124.3	135.6	145.9	154.4	158.2	161.9	166.6	169.5	172.3	172.3
117.5°	118.6	129.0	139.3	146.9	150.6	153.5	159.1	161.9	163.8	164.8
120°	112.0	123.3	131.8	140.3	143.1	146.9	151.6	154.4	156.3	156.3
122.5°	105.4	115.8	125.2	131.8	135.6	138.4	143.1	145.9	147.8	147.8
125°	98.9	108.3	116.7	124.3	127.1	130.9	134.6	137.5	139.3	139.3
127.5°	91.3	100.7	109.2	116.7	118.6	122.4	126.2	129.0	129.9	130.9
130°	84.7	94.1	101.7	108.3	111.1	113.0	117.7	119.6	120.5	121.4
132.5°	78.1	86.6	93.2	99.8	102.6	104.5	108.3	111.1	112.0	112.0
135°	71.6	79.1	85.7	91.3	93.2	96.0	98.9	101.7	102.6	103.6
137.5°	64.0	71.6	77.2	82.8	84.7	87.6	90.4	92.3	93.2	93.2
140°	57.4	64.0	69.7	74.4	76.3	78.1	81.0	82.8	83.8	83.8
142.5°	50.8	56.5	62.1	65.9	67.8	69.7	72.5	73.4	74.4	74.4
145°	44.2	49.0	53.7	58.4	59.3	61.2	63.1	65.0	65.0	65.0
147.5°	38.6	42.4	46.1	49.9	51.8	52.7	54.6	55.5	56.5	56.5
150°	32.0	35.8	39.5	42.4	44.2	44.2	46.1	47.1	47.1	47.1
152.5°	26.4	30.1	33.0	34.8	36.7	36.7	37.7	38.6	38.6	38.6
155°	19.8	22.6	26.4	28.2	28.2	29.2	30.1	30.1	31.1	30.1
157.5°	15.1	16.9	18.8	21.7	22.6	22.6	22.6	23.5	23.5	22.6
160°	10.4	12.2	13.2	15.1	15.1	16.0	16.9	16.9	16.9	16.0
162.5°	6.6	7.5	8.5	8.5	9.4	9.4	10.4	10.4	10.4	10.4
165°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.7	4.7	3.8
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)