

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: P236101

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236101
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-50-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
2ft
Light Source: (42) 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

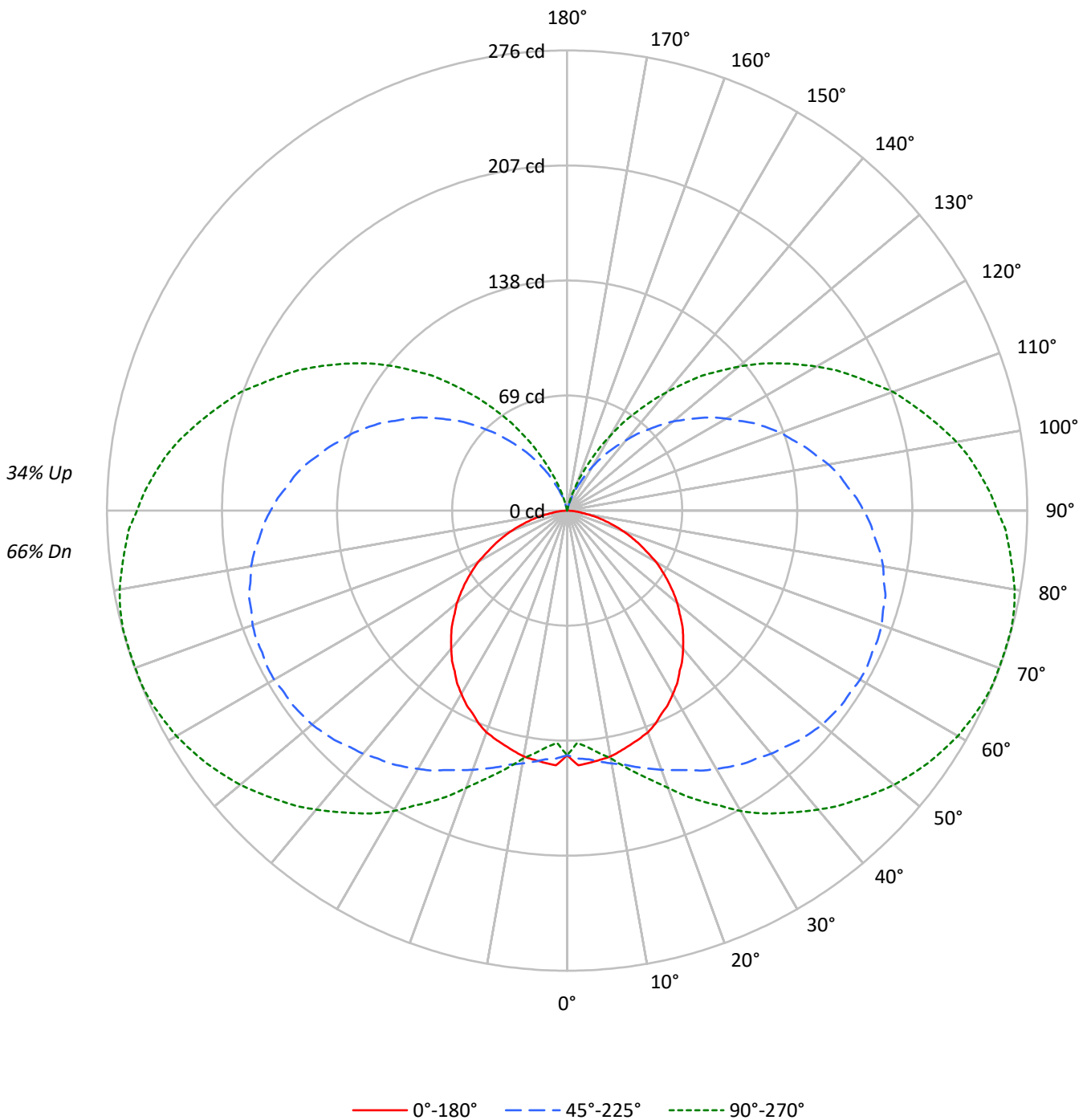
Lumens per Lamp: N/A
Luminaire Lumens: 1686.9 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.26 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 2' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 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°	4737	4737	4737
5°	4866	4379	4044
10°	4797	4141	3843
15°	4697	3991	3803
20°	4634	3912	3820
25°	4498	3871	3902
30°	4389	3881	4003
35°	4234	3901	4086
40°	4096	3926	4175
45°	3934	3979	4271
50°	3733	4040	4378
55°	3486	4090	4479
60°	3212	4152	4580
65°	2836	4202	4678
70°	2436	4289	4763
75°	1898	4369	4869
80°	1199	4442	4962
85°	611	4506	5041



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.3	0.8
10°-20°	44.8	2.7
20°-30°	78.0	4.6
30°-40°	111.9	6.6
40°-50°	142.9	8.5
50°-60°	168.0	10.0
60°-70°	183.5	10.9
70°-80°	188.0	11.1
80°-90°	180.4	10.7
90°-100°	163.5	9.7
100°-110°	139.0	8.2
110°-120°	109.5	6.5
120°-130°	78.5	4.7
130°-140°	49.2	2.9
140°-150°	25.3	1.5
150°-160°	9.0	0.5
160°-170°	1.2	0.1
170°-180°	0.0	0.0
0°-30°	137.1	8.1
0°-40°	249.0	14.8
0°-60°	559.9	33.2
0°-90°	1111.8	65.9
90°-120°	411.9	24.4
90°-150°	564.9	33.5
90°-180°	575.0	34.1
0°-180°	1686.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	147	147	147	147	147	
5°	152	152	150	147	142	14
15°	146	151	159	164	163	41
25°	134	148	172	189	192	62
35°	118	144	185	214	222	74
45°	98	136	196	234	246	75
55°	74	129	202	250	264	66
65°	48	119	202	257	275	47
75°	23	106	198	257	276	25
85°	4	92	185	248	266	5
90°	0	84	178	238	258	0
95°	0	76	168	230	249	0
105°	0	61	148	205	223	0
115°	0	47	124	175	190	0
125°	0	34	97	140	154	0
135°	0	23	69	103	114	0
145°	0	15	43	66	72	0
155°	0	6	19	31	33	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°	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7
2.5°	152.9	152.9	152.9	152.9	151.9	151.9	151.9	150.8	150.8	149.8	148.8
5°	151.9	151.9	151.9	151.9	151.9	151.9	151.9	151.9	150.8	150.8	149.8
7.5°	150.8	150.8	151.9	151.9	151.9	151.9	151.9	151.9	151.9	151.9	151.9
10°	149.8	149.8	149.8	150.8	150.8	151.9	151.9	152.9	152.9	154.0	154.0
12.5°	147.7	148.8	148.8	149.8	150.8	150.8	151.9	152.9	154.0	155.0	156.0
15°	145.6	146.7	147.7	148.8	149.8	150.8	151.9	154.0	156.0	157.1	159.2
17.5°	143.6	144.6	145.6	146.7	149.8	150.8	151.9	154.0	157.1	160.2	162.3
20°	141.5	141.5	143.6	145.6	148.8	149.8	151.9	155.0	158.1	162.3	165.4
22.5°	138.4	138.4	140.4	143.6	146.7	148.8	150.8	156.0	160.2	164.4	168.5
25°	134.2	136.3	138.4	141.5	145.6	147.7	150.8	156.0	161.2	166.5	171.7
27.5°	131.1	132.1	135.2	139.4	144.6	147.7	149.8	156.0	163.3	169.6	175.8
30°	126.9	128.0	132.1	136.3	142.5	145.6	149.8	157.1	164.4	171.7	178.9
32.5°	122.8	123.8	128.0	134.2	140.4	144.6	148.8	157.1	165.4	173.7	182.1
35°	117.6	119.6	124.8	131.1	139.4	143.6	147.7	157.1	166.5	175.8	185.2
37.5°	113.4	115.5	120.7	128.0	136.3	141.5	146.7	157.1	167.5	177.9	187.3
40°	108.2	110.3	116.5	124.8	134.2	140.4	145.6	157.1	168.5	180.0	190.4
42.5°	103.0	105.1	112.4	121.7	132.1	138.4	144.6	157.1	169.6	182.1	192.5
45°	97.8	99.9	108.2	117.6	130.0	136.3	143.6	157.1	170.6	183.1	195.6
47.5°	91.5	94.7	103.0	114.4	128.0	135.2	142.5	157.1	170.6	184.1	197.7
50°	86.3	89.5	98.8	111.3	125.9	133.2	140.4	156.0	171.7	186.2	199.7
52.5°	80.1	84.3	93.6	107.2	122.8	131.1	139.4	156.0	171.7	186.2	200.8
55°	73.9	78.0	89.5	104.0	120.7	129.0	137.3	155.0	171.7	187.3	201.8
57.5°	67.6	72.8	84.3	99.9	117.6	126.9	135.2	154.0	170.6	187.3	201.8
60°	61.4	66.6	79.1	95.7	114.4	123.8	133.2	151.9	170.6	187.3	202.9
62.5°	54.1	60.3	74.9	92.6	111.3	121.7	131.1	150.8	168.5	186.2	202.9
65°	47.9	54.1	69.7	88.4	108.2	118.6	129.0	148.8	167.5	185.2	201.8
67.5°	41.6	48.9	64.5	84.3	105.1	115.5	125.9	146.7	166.5	184.1	201.8
70°	35.4	42.7	59.3	80.1	102.0	112.4	122.8	144.6	164.4	183.1	200.8
72.5°	29.1	37.5	55.1	75.9	97.8	109.2	120.7	141.5	162.3	181.0	198.7
75°	22.9	32.2	49.9	71.8	94.7	106.1	117.6	139.4	159.2	178.9	197.7
77.5°	17.7	27.0	45.8	67.6	91.5	103.0	113.4	136.3	157.1	176.9	194.5
80°	11.4	21.8	41.6	63.5	87.4	98.8	110.3	133.2	154.0	173.7	192.5
82.5°	7.3	17.7	37.5	60.3	83.2	95.7	107.2	129.0	150.8	170.6	189.3
85°	4.2	14.6	33.3	56.2	80.1	91.5	103.0	125.9	146.7	166.5	185.2
87.5°	1.0	11.4	30.2	52.0	75.9	87.4	98.8	121.7	143.6	163.3	182.1
90°	0.0	9.4	27.0	48.9	72.8	84.3	95.7	117.6	139.4	159.2	177.9
92.5°	0.0	7.3	25.0	45.8	68.7	80.1	91.5	114.4	135.2	155.0	173.7
95°	0.0	6.2	21.8	42.7	65.5	75.9	87.4	110.3	131.1	150.8	168.5
97.5°	0.0	5.2	19.8	39.5	61.4	72.8	83.2	105.1	125.9	145.6	164.4
100°	0.0	4.2	17.7	36.4	58.3	68.7	80.1	100.9	121.7	140.4	159.2
102.5°	0.0	4.2	16.6	34.3	54.1	65.5	75.9	96.7	116.5	135.2	152.9
105°	0.0	4.2	14.6	31.2	51.0	61.4	71.8	92.6	112.4	130.0	147.7
107.5°	0.0	3.1	13.5	29.1	47.9	58.3	67.6	87.4	107.2	124.8	141.5
110°	0.0	3.1	12.5	27.0	44.7	54.1	63.5	83.2	102.0	119.6	136.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	3.1	11.4	25.0	41.6	51.0	60.3	78.0	96.7	113.4	130.0
115°	0.0	3.1	10.4	22.9	38.5	46.8	56.2	73.9	91.5	108.2	123.8
117.5°	0.0	3.1	9.4	20.8	35.4	43.7	52.0	68.7	86.3	102.0	116.5
120°	0.0	3.1	9.4	19.8	33.3	40.6	47.9	64.5	80.1	95.7	110.3
122.5°	0.0	2.1	8.3	17.7	30.2	37.5	44.7	60.3	74.9	89.5	104.0
125°	0.0	2.1	8.3	16.6	28.1	34.3	40.6	55.1	69.7	83.2	96.7
127.5°	0.0	2.1	7.3	14.6	25.0	31.2	37.5	51.0	63.5	77.0	89.5
130°	0.0	2.1	6.2	13.5	22.9	28.1	34.3	45.8	58.3	70.7	83.2
132.5°	0.0	2.1	6.2	12.5	20.8	26.0	30.2	41.6	53.1	64.5	75.9
135°	0.0	2.1	5.2	11.4	18.7	22.9	28.1	37.5	47.9	58.3	68.7
137.5°	0.0	2.1	5.2	10.4	16.6	20.8	25.0	33.3	42.7	53.1	62.4
140°	0.0	2.1	4.2	9.4	15.6	18.7	21.8	30.2	38.5	46.8	55.1
142.5°	0.0	1.0	4.2	8.3	13.5	16.6	19.8	27.0	33.3	41.6	48.9
145°	0.0	1.0	4.2	7.3	11.4	14.6	16.6	22.9	29.1	36.4	42.7
147.5°	0.0	1.0	3.1	6.2	9.4	11.4	14.6	19.8	25.0	31.2	36.4
150°	0.0	1.0	3.1	5.2	8.3	10.4	11.4	15.6	20.8	26.0	30.2
152.5°	0.0	1.0	2.1	4.2	6.2	8.3	9.4	12.5	16.6	20.8	25.0
155°	0.0	1.0	2.1	3.1	5.2	6.2	7.3	10.4	12.5	15.6	18.7
157.5°	0.0	1.0	1.0	2.1	4.2	5.2	6.2	8.3	10.4	12.5	14.6
160°	0.0	1.0	1.0	2.1	3.1	3.1	4.2	6.2	7.3	8.3	10.4
162.5°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	4.2	5.2	5.2	6.2
165°	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	3.1	3.1
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7
2.5°	147.7	146.7	145.6	144.6	143.6	143.6	141.5	140.4	139.4	139.4
5°	149.8	148.8	147.7	146.7	146.7	145.6	144.6	143.6	142.5	142.5
7.5°	151.9	150.8	150.8	149.8	149.8	149.8	147.7	147.7	146.7	146.7
10°	154.0	154.0	154.0	154.0	154.0	154.0	152.9	151.9	150.8	150.8
12.5°	157.1	158.1	158.1	159.2	159.2	159.2	158.1	158.1	157.1	157.1
15°	161.2	162.3	163.3	164.4	164.4	164.4	164.4	164.4	163.3	163.3
17.5°	164.4	166.5	168.5	169.6	170.6	170.6	170.6	170.6	170.6	169.6
20°	168.5	171.7	173.7	175.8	175.8	176.9	177.9	177.9	177.9	176.9
22.5°	172.7	175.8	178.9	182.1	183.1	183.1	184.1	185.2	185.2	185.2
25°	176.9	181.0	185.2	188.3	189.3	190.4	191.4	192.5	192.5	192.5
27.5°	181.0	186.2	190.4	194.5	195.6	196.6	198.7	199.7	199.7	199.7
30°	185.2	191.4	196.6	199.7	201.8	203.9	206.0	207.0	207.0	208.1
32.5°	189.3	195.6	201.8	206.0	208.1	210.1	212.2	214.3	215.3	215.3
35°	193.5	200.8	207.0	212.2	214.3	216.4	218.5	220.5	221.6	221.6
37.5°	196.6	204.9	211.2	217.4	219.5	221.6	224.7	226.8	227.8	227.8
40°	199.7	208.1	216.4	222.6	224.7	226.8	231.0	233.0	234.1	234.1
42.5°	202.9	212.2	220.5	226.8	229.9	232.0	236.2	238.2	239.3	240.3
45°	206.0	216.4	224.7	231.0	234.1	237.2	240.3	243.4	245.5	245.5
47.5°	209.1	219.5	227.8	235.1	239.3	241.4	245.5	248.6	250.7	250.7
50°	211.2	222.6	232.0	239.3	243.4	245.5	250.7	253.8	255.9	255.9
52.5°	213.3	224.7	235.1	242.4	246.6	249.7	254.9	258.0	260.1	260.1
55°	215.3	226.8	237.2	245.5	249.7	252.8	258.0	262.2	263.2	264.2
57.5°	216.4	228.9	239.3	248.6	251.8	255.9	261.1	265.3	266.3	267.4
60°	217.4	229.9	240.3	250.7	254.9	258.0	263.2	267.4	269.4	270.5
62.5°	217.4	231.0	241.4	251.8	255.9	260.1	265.3	269.4	271.5	272.6
65°	217.4	231.0	242.4	252.8	257.0	261.1	267.4	271.5	273.6	274.6
67.5°	217.4	231.0	243.4	253.8	259.0	262.2	268.4	272.6	275.7	275.7
70°	216.4	229.9	242.4	253.8	258.0	262.2	268.4	273.6	275.7	275.7
72.5°	215.3	229.9	242.4	252.8	258.0	262.2	268.4	273.6	275.7	275.7
75°	213.3	227.8	241.4	251.8	257.0	261.1	268.4	272.6	275.7	275.7
77.5°	212.2	226.8	240.3	250.7	255.9	260.1	267.4	271.5	273.6	274.6
80°	209.1	223.7	237.2	248.6	252.8	258.0	264.2	269.4	271.5	272.6
82.5°	206.0	221.6	234.1	245.5	250.7	254.9	261.1	266.3	269.4	269.4
85°	202.9	217.4	231.0	242.4	247.6	251.8	258.0	263.2	266.3	266.3
87.5°	198.7	213.3	226.8	238.2	242.4	247.6	254.9	259.0	262.2	263.2
90°	194.5	209.1	222.6	234.1	238.2	243.4	250.7	254.9	257.0	258.0
92.5°	190.4	204.9	218.5	229.9	234.1	238.2	245.5	250.7	252.8	253.8
95°	185.2	200.8	213.3	224.7	229.9	234.1	241.4	245.5	247.6	248.6
97.5°	181.0	195.6	208.1	219.5	224.7	228.9	235.1	240.3	242.4	243.4
100°	174.8	189.3	202.9	213.3	218.5	222.6	228.9	234.1	236.2	237.2
102.5°	169.6	184.1	196.6	207.0	212.2	215.3	222.6	226.8	228.9	229.9
105°	163.3	177.9	190.4	200.8	204.9	209.1	215.3	219.5	222.6	222.6
107.5°	157.1	171.7	183.1	193.5	197.7	201.8	208.1	212.2	214.3	215.3
110°	150.8	164.4	176.9	187.3	190.4	194.5	200.8	204.9	207.0	208.1



TEST NUMBER: P236101

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	144.6	157.1	168.5	178.9	183.1	186.2	192.5	196.6	198.7	198.7
115°	137.3	149.8	161.2	170.6	174.8	178.9	184.1	187.3	190.4	190.4
117.5°	131.1	142.5	154.0	162.3	166.5	169.6	175.8	178.9	181.0	182.1
120°	123.8	136.3	145.6	155.0	158.1	162.3	167.5	170.6	172.7	172.7
122.5°	116.5	128.0	138.4	145.6	149.8	152.9	158.1	161.2	163.3	163.3
125°	109.2	119.6	129.0	137.3	140.4	144.6	148.8	151.9	154.0	154.0
127.5°	100.9	111.3	120.7	129.0	131.1	135.2	139.4	142.5	143.6	144.6
130°	93.6	104.0	112.4	119.6	122.8	124.8	130.0	132.1	133.2	134.2
132.5°	86.3	95.7	103.0	110.3	113.4	115.5	119.6	122.8	123.8	123.8
135°	79.1	87.4	94.7	100.9	103.0	106.1	109.2	112.4	113.4	114.4
137.5°	70.7	79.1	85.3	91.5	93.6	96.7	99.9	102.0	103.0	103.0
140°	63.5	70.7	77.0	82.2	84.3	86.3	89.5	91.5	92.6	92.6
142.5°	56.2	62.4	68.7	72.8	74.9	77.0	80.1	81.1	82.2	82.2
145°	48.9	54.1	59.3	64.5	65.5	67.6	69.7	71.8	71.8	71.8
147.5°	42.7	46.8	51.0	55.1	57.2	58.3	60.3	61.4	62.4	62.4
150°	35.4	39.5	43.7	46.8	48.9	48.9	51.0	52.0	52.0	52.0
152.5°	29.1	33.3	36.4	38.5	40.6	40.6	41.6	42.7	42.7	42.7
155°	21.8	25.0	29.1	31.2	31.2	32.2	33.3	33.3	34.3	33.3
157.5°	16.6	18.7	20.8	23.9	25.0	25.0	25.0	26.0	26.0	25.0
160°	11.4	13.5	14.6	16.6	16.6	17.7	18.7	18.7	18.7	17.7
162.5°	7.3	8.3	9.4	9.4	10.4	10.4	11.4	11.4	11.4	11.4
165°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	5.2	5.2	4.2
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)