

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: P236095

Luminaire Tested: **CFA-2-LD4-UNV-HI-35-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236095
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-HI-35-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
2ft
Light Source: (42) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

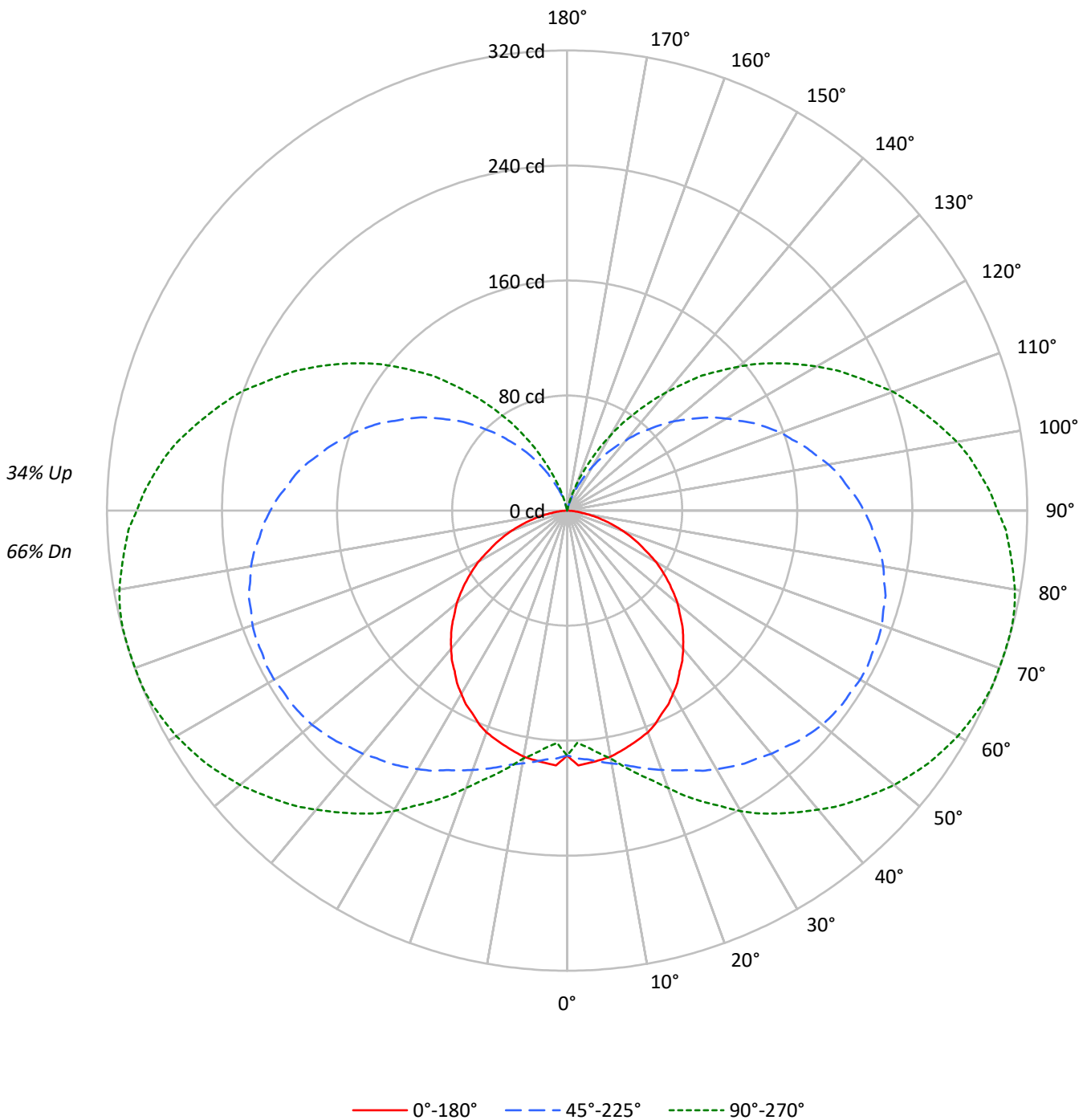
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1956.9 lumens
Efficiency: N/A
Efficacy: 88.1 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): 22.2
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°	5496	5496	5496
5°	5645	5080	4691
10°	5566	4802	4460
15°	5452	4628	4413
20°	5374	4538	4431
25°	5218	4489	4526
30°	5091	4504	4644
35°	4911	4524	4741
40°	4751	4552	4842
45°	4561	4616	4955
50°	4334	4687	5079
55°	4043	4745	5196
60°	3725	4815	5313
65°	3286	4875	5428
70°	2821	4975	5525
75°	2205	5067	5648
80°	1399	5152	5756
85°	698	5226	5847



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	16.6	0.8
10°-20°	51.9	2.7
20°-30°	90.5	4.6
30°-40°	129.8	6.6
40°-50°	165.7	8.5
50°-60°	194.9	10.0
60°-70°	212.9	10.9
70°-80°	218.1	11.1
80°-90°	209.3	10.7
90°-100°	189.7	9.7
100°-110°	161.2	8.2
110°-120°	127.0	6.5
120°-130°	91.0	4.7
130°-140°	57.1	2.9
140°-150°	29.4	1.5
150°-160°	10.5	0.5
160°-170°	1.4	0.1
170°-180°	0.0	0.0
0°-30°	159.1	8.1
0°-40°	288.9	14.8
0°-60°	649.5	33.2
0°-90°	1289.7	65.9
90°-120°	477.9	24.4
90°-150°	655.4	33.5
90°-180°	667.0	34.1
0°-180°	1956.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	170	170	170	170	170	
5°	176	176	174	170	165	17
15°	169	175	185	191	190	48
25°	156	171	199	220	223	72
35°	136	166	215	249	257	86
45°	113	158	227	272	285	87
55°	86	150	234	290	306	77
65°	56	138	234	298	319	55
75°	27	123	229	298	320	28
85°	5	106	215	287	309	6
90°	0	98	206	276	299	0
95°	0	88	196	267	288	0
105°	0	71	171	238	258	0
115°	0	54	144	203	221	0
125°	0	40	112	163	179	0
135°	0	27	80	120	133	0
145°	0	17	50	76	83	0
155°	0	7	22	36	39	0
165°	0	1	4	5	5	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°	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2
2.5°	177.4	177.4	177.4	177.4	176.2	176.2	176.2	175.0	175.0	173.8	172.6
5°	176.2	176.2	176.2	176.2	176.2	176.2	176.2	176.2	175.0	175.0	173.8
7.5°	175.0	175.0	176.2	176.2	176.2	176.2	176.2	176.2	176.2	176.2	176.2
10°	173.8	173.8	173.8	175.0	175.0	176.2	176.2	177.4	177.4	178.6	178.6
12.5°	171.4	172.6	172.6	173.8	175.0	175.0	176.2	177.4	178.6	179.8	181.0
15°	169.0	170.2	171.4	172.6	173.8	175.0	176.2	178.6	181.0	182.2	184.6
17.5°	166.5	167.7	169.0	170.2	173.8	175.0	176.2	178.6	182.2	185.9	188.3
20°	164.1	164.1	166.5	169.0	172.6	173.8	176.2	179.8	183.4	188.3	191.9
22.5°	160.5	160.5	162.9	166.5	170.2	172.6	175.0	181.0	185.9	190.7	195.5
25°	155.7	158.1	160.5	164.1	169.0	171.4	175.0	181.0	187.1	193.1	199.1
27.5°	152.1	153.3	156.9	161.7	167.7	171.4	173.8	181.0	189.5	196.7	204.0
30°	147.2	148.4	153.3	158.1	165.3	169.0	173.8	182.2	190.7	199.1	207.6
32.5°	142.4	143.6	148.4	155.7	162.9	167.7	172.6	182.2	191.9	201.5	211.2
35°	136.4	138.8	144.8	152.1	161.7	166.5	171.4	182.2	193.1	204.0	214.8
37.5°	131.5	134.0	140.0	148.4	158.1	164.1	170.2	182.2	194.3	206.4	217.2
40°	125.5	127.9	135.2	144.8	155.7	162.9	169.0	182.2	195.5	208.8	220.8
42.5°	119.5	121.9	130.3	141.2	153.3	160.5	167.7	182.2	196.7	211.2	223.3
45°	113.4	115.9	125.5	136.4	150.9	158.1	166.5	182.2	197.9	212.4	226.9
47.5°	106.2	109.8	119.5	132.8	148.4	156.9	165.3	182.2	197.9	213.6	229.3
50°	100.2	103.8	114.6	129.1	146.0	154.5	162.9	181.0	199.1	216.0	231.7
52.5°	92.9	97.8	108.6	124.3	142.4	152.1	161.7	181.0	199.1	216.0	232.9
55°	85.7	90.5	103.8	120.7	140.0	149.6	159.3	179.8	199.1	217.2	234.1
57.5°	78.4	84.5	97.8	115.9	136.4	147.2	156.9	178.6	197.9	217.2	234.1
60°	71.2	77.2	91.7	111.0	132.8	143.6	154.5	176.2	197.9	217.2	235.3
62.5°	62.8	70.0	86.9	107.4	129.1	141.2	152.1	175.0	195.5	216.0	235.3
65°	55.5	62.8	80.9	102.6	125.5	137.6	149.6	172.6	194.3	214.8	234.1
67.5°	48.3	56.7	74.8	97.8	121.9	134.0	146.0	170.2	193.1	213.6	234.1
70°	41.0	49.5	68.8	92.9	118.3	130.3	142.4	167.7	190.7	212.4	232.9
72.5°	33.8	43.4	64.0	88.1	113.4	126.7	140.0	164.1	188.3	210.0	230.5
75°	26.6	37.4	57.9	83.3	109.8	123.1	136.4	161.7	184.6	207.6	229.3
77.5°	20.5	31.4	53.1	78.4	106.2	119.5	131.5	158.1	182.2	205.2	225.7
80°	13.3	25.3	48.3	73.6	101.4	114.6	127.9	154.5	178.6	201.5	223.3
82.5°	8.4	20.5	43.4	70.0	96.5	111.0	124.3	149.6	175.0	197.9	219.6
85°	4.8	16.9	38.6	65.2	92.9	106.2	119.5	146.0	170.2	193.1	214.8
87.5°	1.2	13.3	35.0	60.3	88.1	101.4	114.6	141.2	166.5	189.5	211.2
90°	0.0	10.9	31.4	56.7	84.5	97.8	111.0	136.4	161.7	184.6	206.4
92.5°	0.0	8.4	29.0	53.1	79.7	92.9	106.2	132.8	156.9	179.8	201.5
95°	0.0	7.2	25.3	49.5	76.0	88.1	101.4	127.9	152.1	175.0	195.5
97.5°	0.0	6.0	22.9	45.9	71.2	84.5	96.5	121.9	146.0	169.0	190.7
100°	0.0	4.8	20.5	42.2	67.6	79.7	92.9	117.1	141.2	162.9	184.6
102.5°	0.0	4.8	19.3	39.8	62.8	76.0	88.1	112.2	135.2	156.9	177.4
105°	0.0	4.8	16.9	36.2	59.1	71.2	83.3	107.4	130.3	150.9	171.4
107.5°	0.0	3.6	15.7	33.8	55.5	67.6	78.4	101.4	124.3	144.8	164.1
110°	0.0	3.6	14.5	31.4	51.9	62.8	73.6	96.5	118.3	138.8	158.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	3.6	13.3	29.0	48.3	59.1	70.0	90.5	112.2	131.5	150.9
115°	0.0	3.6	12.1	26.6	44.7	54.3	65.2	85.7	106.2	125.5	143.6
117.5°	0.0	3.6	10.9	24.1	41.0	50.7	60.3	79.7	100.2	118.3	135.2
120°	0.0	3.6	10.9	22.9	38.6	47.1	55.5	74.8	92.9	111.0	127.9
122.5°	0.0	2.4	9.7	20.5	35.0	43.4	51.9	70.0	86.9	103.8	120.7
125°	0.0	2.4	9.7	19.3	32.6	39.8	47.1	64.0	80.9	96.5	112.2
127.5°	0.0	2.4	8.4	16.9	29.0	36.2	43.4	59.1	73.6	89.3	103.8
130°	0.0	2.4	7.2	15.7	26.6	32.6	39.8	53.1	67.6	82.1	96.5
132.5°	0.0	2.4	7.2	14.5	24.1	30.2	35.0	48.3	61.5	74.8	88.1
135°	0.0	2.4	6.0	13.3	21.7	26.6	32.6	43.4	55.5	67.6	79.7
137.5°	0.0	2.4	6.0	12.1	19.3	24.1	29.0	38.6	49.5	61.5	72.4
140°	0.0	2.4	4.8	10.9	18.1	21.7	25.3	35.0	44.7	54.3	64.0
142.5°	0.0	1.2	4.8	9.7	15.7	19.3	22.9	31.4	38.6	48.3	56.7
145°	0.0	1.2	4.8	8.4	13.3	16.9	19.3	26.6	33.8	42.2	49.5
147.5°	0.0	1.2	3.6	7.2	10.9	13.3	16.9	22.9	29.0	36.2	42.2
150°	0.0	1.2	3.6	6.0	9.7	12.1	13.3	18.1	24.1	30.2	35.0
152.5°	0.0	1.2	2.4	4.8	7.2	9.7	10.9	14.5	19.3	24.1	29.0
155°	0.0	1.2	2.4	3.6	6.0	7.2	8.4	12.1	14.5	18.1	21.7
157.5°	0.0	1.2	1.2	2.4	4.8	6.0	7.2	9.7	12.1	14.5	16.9
160°	0.0	1.2	1.2	2.4	3.6	3.6	4.8	7.2	8.4	9.7	12.1
162.5°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	4.8	6.0	6.0	7.2
165°	0.0	1.2	1.2	1.2	1.2	1.2	1.2	2.4	2.4	3.6	3.6
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°	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2	170.2
2.5°	171.4	170.2	169.0	167.7	166.5	166.5	164.1	162.9	161.7	161.7
5°	173.8	172.6	171.4	170.2	170.2	169.0	167.7	166.5	165.3	165.3
7.5°	176.2	175.0	175.0	173.8	173.8	173.8	171.4	171.4	170.2	170.2
10°	178.6	178.6	178.6	178.6	178.6	178.6	177.4	176.2	175.0	175.0
12.5°	182.2	183.4	183.4	184.6	184.6	184.6	183.4	183.4	182.2	182.2
15°	187.1	188.3	189.5	190.7	190.7	190.7	190.7	190.7	189.5	189.5
17.5°	190.7	193.1	195.5	196.7	197.9	197.9	197.9	197.9	197.9	196.7
20°	195.5	199.1	201.5	204.0	204.0	205.2	206.4	206.4	206.4	205.2
22.5°	200.3	204.0	207.6	211.2	212.4	212.4	213.6	214.8	214.8	214.8
25°	205.2	210.0	214.8	218.4	219.6	220.8	222.1	223.3	223.3	223.3
27.5°	210.0	216.0	220.8	225.7	226.9	228.1	230.5	231.7	231.7	231.7
30°	214.8	222.1	228.1	231.7	234.1	236.5	239.0	240.2	240.2	241.4
32.5°	219.6	226.9	234.1	239.0	241.4	243.8	246.2	248.6	249.8	249.8
35°	224.5	232.9	240.2	246.2	248.6	251.0	253.4	255.8	257.1	257.1
37.5°	228.1	237.7	245.0	252.2	254.6	257.1	260.7	263.1	264.3	264.3
40°	231.7	241.4	251.0	258.3	260.7	263.1	267.9	270.3	271.5	271.5
42.5°	235.3	246.2	255.8	263.1	266.7	269.1	273.9	276.4	277.6	278.8
45°	239.0	251.0	260.7	267.9	271.5	275.2	278.8	282.4	284.8	284.8
47.5°	242.6	254.6	264.3	272.7	277.6	280.0	284.8	288.4	290.8	290.8
50°	245.0	258.3	269.1	277.6	282.4	284.8	290.8	294.5	296.9	296.9
52.5°	247.4	260.7	272.7	281.2	286.0	289.6	295.7	299.3	301.7	301.7
55°	249.8	263.1	275.2	284.8	289.6	293.3	299.3	304.1	305.3	306.5
57.5°	251.0	265.5	277.6	288.4	292.1	296.9	302.9	307.7	308.9	310.2
60°	252.2	266.7	278.8	290.8	295.7	299.3	305.3	310.2	312.6	313.8
62.5°	252.2	267.9	280.0	292.1	296.9	301.7	307.7	312.6	315.0	316.2
65°	252.2	267.9	281.2	293.3	298.1	302.9	310.2	315.0	317.4	318.6
67.5°	252.2	267.9	282.4	294.5	300.5	304.1	311.4	316.2	319.8	319.8
70°	251.0	266.7	281.2	294.5	299.3	304.1	311.4	317.4	319.8	319.8
72.5°	249.8	266.7	281.2	293.3	299.3	304.1	311.4	317.4	319.8	319.8
75°	247.4	264.3	280.0	292.1	298.1	302.9	311.4	316.2	319.8	319.8
77.5°	246.2	263.1	278.8	290.8	296.9	301.7	310.2	315.0	317.4	318.6
80°	242.6	259.5	275.2	288.4	293.3	299.3	306.5	312.6	315.0	316.2
82.5°	239.0	257.1	271.5	284.8	290.8	295.7	302.9	308.9	312.6	312.6
85°	235.3	252.2	267.9	281.2	287.2	292.1	299.3	305.3	308.9	308.9
87.5°	230.5	247.4	263.1	276.4	281.2	287.2	295.7	300.5	304.1	305.3
90°	225.7	242.6	258.3	271.5	276.4	282.4	290.8	295.7	298.1	299.3
92.5°	220.8	237.7	253.4	266.7	271.5	276.4	284.8	290.8	293.3	294.5
95°	214.8	232.9	247.4	260.7	266.7	271.5	280.0	284.8	287.2	288.4
97.5°	210.0	226.9	241.4	254.6	260.7	265.5	272.7	278.8	281.2	282.4
100°	202.7	219.6	235.3	247.4	253.4	258.3	265.5	271.5	273.9	275.2
102.5°	196.7	213.6	228.1	240.2	246.2	249.8	258.3	263.1	265.5	266.7
105°	189.5	206.4	220.8	232.9	237.7	242.6	249.8	254.6	258.3	258.3
107.5°	182.2	199.1	212.4	224.5	229.3	234.1	241.4	246.2	248.6	249.8
110°	175.0	190.7	205.2	217.2	220.8	225.7	232.9	237.7	240.2	241.4



TEST NUMBER: P236095

CATALOG NUMBER: CFA-2-LD4-UNV-HI-35-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	167.7	182.2	195.5	207.6	212.4	216.0	223.3	228.1	230.5	230.5
115°	159.3	173.8	187.1	197.9	202.7	207.6	213.6	217.2	220.8	220.8
117.5°	152.1	165.3	178.6	188.3	193.1	196.7	204.0	207.6	210.0	211.2
120°	143.6	158.1	169.0	179.8	183.4	188.3	194.3	197.9	200.3	200.3
122.5°	135.2	148.4	160.5	169.0	173.8	177.4	183.4	187.1	189.5	189.5
125°	126.7	138.8	149.6	159.3	162.9	167.7	172.6	176.2	178.6	178.6
127.5°	117.1	129.1	140.0	149.6	152.1	156.9	161.7	165.3	166.5	167.7
130°	108.6	120.7	130.3	138.8	142.4	144.8	150.9	153.3	154.5	155.7
132.5°	100.2	111.0	119.5	127.9	131.5	134.0	138.8	142.4	143.6	143.6
135°	91.7	101.4	109.8	117.1	119.5	123.1	126.7	130.3	131.5	132.8
137.5°	82.1	91.7	99.0	106.2	108.6	112.2	115.9	118.3	119.5	119.5
140°	73.6	82.1	89.3	95.3	97.8	100.2	103.8	106.2	107.4	107.4
142.5°	65.2	72.4	79.7	84.5	86.9	89.3	92.9	94.1	95.3	95.3
145°	56.7	62.8	68.8	74.8	76.0	78.4	80.9	83.3	83.3	83.3
147.5°	49.5	54.3	59.1	64.0	66.4	67.6	70.0	71.2	72.4	72.4
150°	41.0	45.9	50.7	54.3	56.7	56.7	59.1	60.3	60.3	60.3
152.5°	33.8	38.6	42.2	44.7	47.1	47.1	48.3	49.5	49.5	49.5
155°	25.3	29.0	33.8	36.2	36.2	37.4	38.6	38.6	39.8	38.6
157.5°	19.3	21.7	24.1	27.8	29.0	29.0	29.0	30.2	30.2	29.0
160°	13.3	15.7	16.9	19.3	19.3	20.5	21.7	21.7	21.7	20.5
162.5°	8.4	9.7	10.9	10.9	12.1	12.1	13.3	13.3	13.3	13.3
165°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	6.0	6.0	4.8
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)