

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: P236114

Luminaire Tested: **CFA-3-LD4-UNV-LO-30-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236114
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-5)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CFA-3-LD4-UNV-LO-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
3ft
Light Source: (84) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

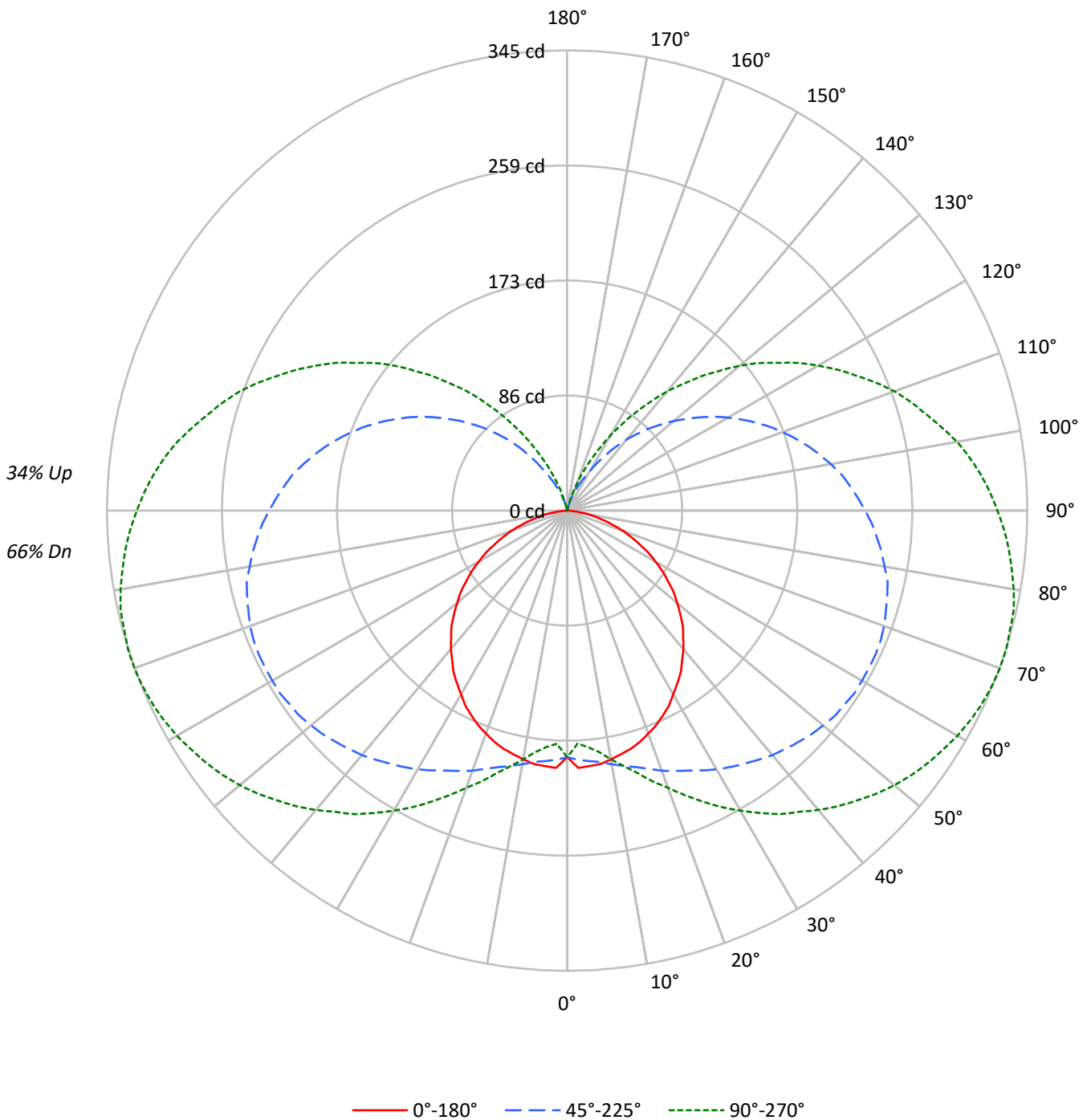
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2117.6 lumens
Efficiency: N/A
Efficacy: 100.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 2.26 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 3' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 21.1
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: P236114
CATALOG NUMBER: CFA-3-LD4-UNV-LO-30-OP-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: P236114

CATALOG NUMBER: CFA-3-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	51	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	35	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°	3978	3978	3978
5°	4123	3683	3366
10°	4073	3477	3216
15°	4021	3349	3163
20°	3946	3298	3183
25°	3866	3262	3254
30°	3757	3276	3331
35°	3668	3293	3416
40°	3540	3333	3484
45°	3426	3375	3565
50°	3251	3432	3653
55°	3072	3485	3731
60°	2848	3544	3812
65°	2552	3610	3896
70°	2254	3674	3977
75°	1792	3739	4048
80°	1304	3802	4126
85°	547	3875	4195



TEST NUMBER: P236114

CATALOG NUMBER: CFA-3-LD4-UNV-LO-30-OP-EDC1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	18.0	0.8
10°-20°	56.1	2.7
20°-30°	97.8	4.6
30°-40°	140.3	6.6
40°-50°	179.4	8.5
50°-60°	211.0	10.0
60°-70°	230.5	10.9
70°-80°	236.0	11.1
80°-90°	226.1	10.7
90°-100°	205.4	9.7
100°-110°	175.0	8.3
110°-120°	138.0	6.5
120°-130°	98.9	4.7
130°-140°	61.8	2.9
140°-150°	31.3	1.5
150°-160°	10.8	0.5
160°-170°	1.4	0.1
170°-180°	0.0	0.0
0°-30°	171.9	8.1
0°-40°	312.2	14.7
0°-60°	702.6	33.2
0°-90°	1395.2	65.9
90°-120°	518.3	24.5
90°-150°	710.3	33.5
90°-180°	722.0	34.1
0°-180°	2117.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	185	185	185	185	185	
5°	192	191	188	183	178	18
15°	185	189	199	206	204	52
25°	170	186	215	237	241	78
35°	148	180	232	269	278	93
45°	123	171	245	295	307	94
55°	92	162	254	314	330	83
65°	60	149	255	323	343	60
75°	29	134	248	322	344	31
85°	4	115	233	309	332	6
90°	0	106	223	299	323	0
95°	0	96	213	288	311	0
105°	0	78	187	258	279	0
115°	0	59	156	220	239	0
125°	1	42	122	178	193	0
135°	1	29	87	130	142	1
145°	1	16	52	82	90	1
155°	1	8	22	38	42	0
165°	1	2	4	5	6	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236114

CATALOG NUMBER: CFA-3-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8
2.5°	193.1	192.3	191.6	191.6	191.6	190.8	190.8	190.1	189.3	188.5	187.0
5°	192.3	191.6	190.8	191.6	190.8	190.8	190.8	190.8	190.8	189.3	188.5
7.5°	191.6	190.8	190.1	190.8	190.8	190.8	190.8	190.8	191.6	190.8	190.1
10°	189.3	189.3	188.5	189.3	190.1	190.1	190.8	191.6	192.3	192.3	193.1
12.5°	187.0	187.0	187.0	187.8	189.3	190.1	190.8	192.3	193.8	194.6	196.1
15°	184.8	184.0	184.8	186.3	188.5	189.3	190.8	193.1	195.4	196.9	199.1
17.5°	181.7	181.7	181.7	184.8	187.0	188.5	190.8	193.8	197.6	200.7	202.9
20°	177.9	177.9	179.5	182.5	186.3	187.8	190.1	194.6	199.1	202.9	207.5
22.5°	174.2	174.2	176.4	180.2	184.8	187.0	189.3	195.4	200.7	206.0	211.3
25°	169.6	170.4	172.6	177.2	182.5	186.3	189.3	196.1	202.9	209.0	215.0
27.5°	165.1	165.8	168.1	174.2	181.0	184.8	188.5	196.9	204.4	212.8	219.6
30°	159.0	160.5	164.3	171.1	178.7	183.2	187.8	196.9	206.0	215.0	224.1
32.5°	153.7	155.2	159.8	167.3	176.4	181.7	187.0	197.6	208.2	218.1	227.9
35°	148.4	149.9	155.2	163.6	174.2	179.5	185.5	197.6	209.7	221.1	231.7
37.5°	141.6	143.9	150.7	159.8	171.1	177.2	184.0	197.6	210.5	223.4	235.5
40°	135.5	138.6	145.4	156.0	168.9	175.7	183.2	197.6	212.0	226.4	239.3
42.5°	128.7	131.8	140.1	152.2	165.8	173.4	181.7	197.6	213.5	228.7	242.3
45°	122.7	125.7	134.8	147.7	162.8	171.1	180.2	197.6	214.3	230.2	245.3
47.5°	115.1	118.9	128.7	143.1	159.8	169.6	178.7	197.6	215.0	232.5	248.4
50°	107.5	112.1	123.4	138.6	157.5	166.6	177.2	196.9	215.8	234.0	250.6
52.5°	100.7	105.3	117.4	134.8	154.5	165.1	175.7	196.1	216.6	234.7	252.9
55°	92.4	97.7	111.3	130.2	150.7	162.0	173.4	195.4	215.8	235.5	253.7
57.5°	84.8	90.9	105.3	124.9	147.7	159.0	171.1	193.8	215.8	236.3	255.2
60°	76.5	83.3	99.2	120.4	143.9	156.0	168.1	192.3	214.3	235.5	255.2
62.5°	68.9	75.7	93.1	115.9	140.1	153.0	165.1	190.1	213.5	234.7	255.2
65°	59.8	68.1	87.1	110.6	136.3	149.2	162.0	187.8	212.0	234.0	255.2
67.5°	52.2	60.6	80.3	106.0	132.5	146.1	159.0	185.5	209.7	232.5	254.4
70°	44.7	53.8	75.0	100.7	128.7	142.4	156.0	182.5	207.5	231.0	252.9
72.5°	36.3	46.9	68.9	95.4	124.2	137.8	152.2	179.5	204.4	228.7	250.6
75°	28.8	40.1	63.6	90.9	119.6	134.0	148.4	175.7	202.2	226.4	248.4
77.5°	22.0	33.3	57.5	85.6	115.1	129.5	143.9	171.9	198.4	223.4	246.1
80°	15.9	27.3	51.5	80.3	109.8	124.9	139.3	167.3	194.6	219.6	241.6
82.5°	9.1	22.7	46.9	75.7	105.3	120.4	134.8	162.8	190.1	215.0	237.8
85°	4.5	18.2	42.4	70.4	100.7	115.1	130.2	158.3	185.5	210.5	233.2
87.5°	1.5	14.4	37.9	65.9	96.2	110.6	124.9	153.7	181.0	206.0	228.7
90°	0.0	11.4	34.1	62.1	90.9	106.0	120.4	148.4	175.7	200.7	223.4
92.5°	0.0	9.1	31.0	57.5	86.3	101.5	115.1	143.9	170.4	196.1	218.1
95°	0.0	7.6	28.0	53.8	81.8	96.2	110.6	138.6	165.1	190.1	212.8
97.5°	0.0	6.1	25.0	50.0	77.2	91.6	106.0	133.3	159.8	184.8	207.5
100°	0.0	5.3	22.7	46.2	73.4	87.1	100.7	128.0	153.7	178.7	200.7
102.5°	0.0	5.3	20.4	43.2	68.9	82.5	95.4	122.7	147.7	171.9	193.8
105°	0.0	4.5	18.9	40.1	65.1	78.0	90.9	116.6	141.6	165.1	187.0
107.5°	0.0	4.5	16.7	37.1	60.6	73.4	85.6	111.3	135.5	158.3	179.5
110°	0.0	3.8	15.1	34.1	56.8	68.1	81.0	105.3	128.7	151.4	171.9



TEST NUMBER: P236114

CATALOG NUMBER: CFA-3-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	3.8	14.4	31.0	52.2	63.6	75.7	99.2	121.9	143.9	164.3
115°	0.0	3.8	12.9	28.8	48.5	59.1	70.4	93.1	115.1	136.3	156.0
117.5°	0.0	3.8	12.1	26.5	44.7	54.5	65.9	87.1	108.3	129.5	147.7
120°	0.0	3.0	11.4	24.2	40.9	50.7	60.6	81.0	101.5	121.2	139.3
122.5°	0.0	3.0	10.6	22.7	37.9	46.2	56.0	75.0	94.7	113.6	131.0
125°	0.8	3.0	9.8	20.4	34.8	42.4	51.5	69.7	87.8	105.3	121.9
127.5°	0.8	3.0	9.1	18.9	31.8	39.4	46.9	63.6	80.3	96.9	112.8
130°	0.8	3.0	8.3	17.4	28.8	35.6	42.4	57.5	73.4	89.4	104.5
132.5°	0.8	2.3	7.6	15.9	25.7	31.8	38.6	52.2	66.6	81.8	95.4
135°	0.8	2.3	6.8	13.6	23.5	28.8	34.8	46.9	60.6	73.4	87.1
137.5°	0.8	2.3	6.1	12.1	20.4	25.7	30.3	41.6	53.8	65.9	78.0
140°	0.8	2.3	5.3	10.6	18.2	22.0	26.5	36.3	46.9	58.3	69.7
142.5°	0.8	1.5	4.5	9.8	15.1	18.9	22.7	31.0	40.9	50.7	60.6
145°	0.8	1.5	4.5	8.3	13.6	15.9	19.7	26.5	34.1	42.4	51.5
147.5°	0.8	1.5	3.8	6.8	11.4	13.6	16.7	22.7	28.8	35.6	43.2
150°	0.8	1.5	3.0	6.1	9.1	11.4	13.6	18.2	23.5	29.5	34.8
152.5°	0.8	1.5	2.3	4.5	7.6	9.1	10.6	15.1	18.9	23.5	28.0
155°	0.8	1.5	2.3	3.8	6.1	7.6	8.3	12.1	15.1	18.9	22.0
157.5°	0.8	0.8	2.3	3.0	4.5	5.3	6.8	9.1	11.4	14.4	16.7
160°	0.8	0.8	1.5	2.3	3.8	4.5	5.3	6.8	8.3	9.8	11.4
162.5°	0.8	0.8	1.5	2.3	3.0	3.0	3.8	4.5	5.3	6.8	7.6
165°	0.8	0.8	1.5	1.5	2.3	2.3	2.3	3.0	3.0	3.8	4.5
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: P236114

CATALOG NUMBER: CFA-3-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8
2.5°	185.5	184.0	183.2	181.7	181.0	180.2	178.7	177.2	175.7	174.9
5°	187.8	186.3	185.5	184.0	183.2	182.5	181.7	180.2	178.7	177.9
7.5°	190.1	189.3	188.5	187.8	187.8	187.0	186.3	184.8	183.2	182.5
10°	193.1	193.8	193.1	193.1	193.1	192.3	191.6	190.8	189.3	189.3
12.5°	196.9	197.6	198.4	198.4	199.1	199.1	198.4	197.6	196.9	196.1
15°	201.4	203.7	204.4	205.2	206.0	206.0	206.0	204.4	204.4	203.7
17.5°	206.0	208.2	210.5	212.0	213.5	212.8	213.5	213.5	212.8	212.8
20°	211.3	214.3	217.3	220.3	220.3	221.1	222.6	222.6	222.6	221.1
22.5°	215.8	220.3	224.1	227.9	229.4	229.4	231.7	231.7	231.0	231.0
25°	221.1	226.4	231.0	235.5	237.0	238.5	240.0	241.6	241.6	240.8
27.5°	226.4	233.2	238.5	243.1	245.3	246.9	249.9	251.4	250.6	250.6
30°	231.7	239.3	246.1	251.4	253.7	255.9	259.0	259.7	260.5	259.7
32.5°	237.0	245.3	252.9	259.0	261.2	263.5	266.5	268.8	268.8	268.8
35°	242.3	251.4	259.0	265.8	268.8	271.1	274.9	277.1	277.1	277.9
37.5°	246.9	256.7	265.0	272.6	275.6	277.9	281.7	284.0	284.7	284.7
40°	251.4	262.0	271.1	279.4	282.4	285.5	290.0	291.5	293.0	293.0
42.5°	255.2	266.5	277.1	285.5	288.5	292.3	296.8	299.1	300.6	300.6
45°	259.0	271.1	281.7	290.8	295.3	297.6	302.9	305.9	307.4	307.4
47.5°	262.8	275.6	287.0	296.1	300.6	303.6	308.9	312.7	314.2	314.2
50°	265.8	279.4	290.8	300.6	305.2	308.9	315.0	318.0	320.3	320.3
52.5°	268.1	282.4	295.3	305.2	309.7	313.5	320.3	323.3	325.6	325.6
55°	270.3	285.5	298.3	308.9	314.2	317.3	324.1	327.9	330.1	330.1
57.5°	271.8	287.7	300.6	312.0	317.3	321.1	327.9	331.7	333.9	333.9
60°	273.4	289.3	302.9	315.0	319.5	324.1	330.9	335.4	337.7	337.7
62.5°	273.4	290.0	304.4	316.5	321.8	325.6	333.2	337.7	340.0	340.7
65°	274.1	290.8	305.2	317.3	323.3	327.9	334.7	339.2	342.3	343.0
67.5°	273.4	290.8	305.2	318.0	323.3	327.9	335.4	340.7	343.8	344.5
70°	272.6	290.0	305.2	318.0	324.1	328.6	336.2	341.5	344.5	345.3
72.5°	271.1	288.5	304.4	317.3	323.3	327.9	336.2	341.5	343.8	345.3
75°	268.8	287.0	302.9	316.5	321.8	327.1	334.7	340.7	343.8	343.8
77.5°	266.5	284.7	300.6	314.2	320.3	324.8	333.2	339.2	342.3	343.0
80°	262.8	280.9	296.8	310.5	316.5	321.8	330.1	336.2	339.2	340.0
82.5°	259.0	277.1	293.0	306.7	313.5	318.0	326.4	332.4	335.4	336.2
85°	254.4	272.6	289.3	302.9	308.9	314.2	322.6	328.6	331.7	332.4
87.5°	249.1	268.1	284.0	298.3	303.6	308.9	318.0	323.3	327.1	327.9
90°	244.6	262.8	278.7	293.0	299.1	304.4	312.7	318.8	321.8	322.6
92.5°	239.3	257.5	274.1	287.7	293.8	299.1	307.4	313.5	316.5	317.3
95°	233.2	252.2	268.1	281.7	287.7	293.0	301.4	306.7	310.5	311.2
97.5°	227.9	246.1	262.0	275.6	281.7	287.0	294.6	300.6	302.9	304.4
100°	220.3	238.5	255.2	268.1	274.1	279.4	287.7	292.3	295.3	296.8
102.5°	213.5	231.7	247.6	259.7	265.8	270.3	278.7	284.0	287.7	287.7
105°	206.0	224.1	239.3	252.2	257.5	262.0	270.3	274.9	278.7	278.7
107.5°	199.1	215.8	231.0	243.8	249.1	254.4	261.2	266.5	269.6	270.3
110°	190.8	207.5	222.6	234.7	240.0	245.3	252.2	257.5	259.7	261.2



TEST NUMBER: P236114

CATALOG NUMBER: CFA-3-LD4-UNV-LO-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	182.5	199.1	213.5	225.6	230.2	234.7	242.3	246.9	249.9	250.6
115°	173.4	190.1	203.7	215.8	220.3	224.1	231.7	236.3	238.5	239.3
117.5°	165.1	181.0	194.6	205.2	210.5	214.3	221.1	225.6	227.9	228.7
120°	156.0	171.1	184.0	194.6	199.9	203.7	210.5	214.3	216.6	217.3
122.5°	146.9	161.3	174.2	184.8	189.3	193.1	199.1	203.7	205.2	206.0
125°	137.1	151.4	162.8	173.4	177.9	181.7	187.8	191.6	192.3	193.1
127.5°	128.0	140.8	152.2	162.0	165.8	169.6	175.7	179.5	181.0	181.7
130°	118.1	131.0	141.6	150.7	154.5	157.5	162.8	166.6	168.1	168.9
132.5°	108.3	119.6	130.2	139.3	142.4	146.1	150.7	153.7	155.2	155.2
135°	98.4	109.0	118.9	126.5	130.2	133.3	137.8	140.8	142.4	142.4
137.5°	89.4	99.2	108.3	115.1	118.1	120.4	125.7	128.0	128.7	128.7
140°	79.5	88.6	96.9	103.7	106.0	109.0	112.8	115.1	115.9	116.6
142.5°	70.4	78.0	85.6	91.6	93.9	96.9	100.7	102.2	103.7	103.0
145°	59.8	68.1	75.0	81.0	82.5	84.1	87.8	89.4	90.1	90.1
147.5°	50.7	57.5	64.4	69.7	71.2	73.4	75.7	77.2	78.0	77.2
150°	40.9	46.9	53.0	58.3	60.6	61.3	63.6	64.4	65.1	65.1
152.5°	32.6	37.9	43.2	46.9	50.0	50.7	52.2	53.0	53.8	53.0
155°	25.7	28.8	32.6	36.3	37.9	40.9	42.4	42.4	42.4	41.6
157.5°	18.9	21.2	24.2	26.5	28.0	29.5	31.8	32.6	31.8	31.8
160°	13.6	15.1	15.9	18.2	18.2	19.7	21.2	23.5	22.7	22.0
162.5°	8.3	9.1	9.8	10.6	10.6	11.4	12.1	14.4	14.4	13.6
165°	4.5	4.5	5.3	5.3	5.3	5.3	4.5	5.3	6.8	6.1
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)