

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: P236117

Luminaire Tested: **CFA-3-LD4-UNV-LO-50-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P236117  
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-50-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
3ft  
Light Source: (84) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

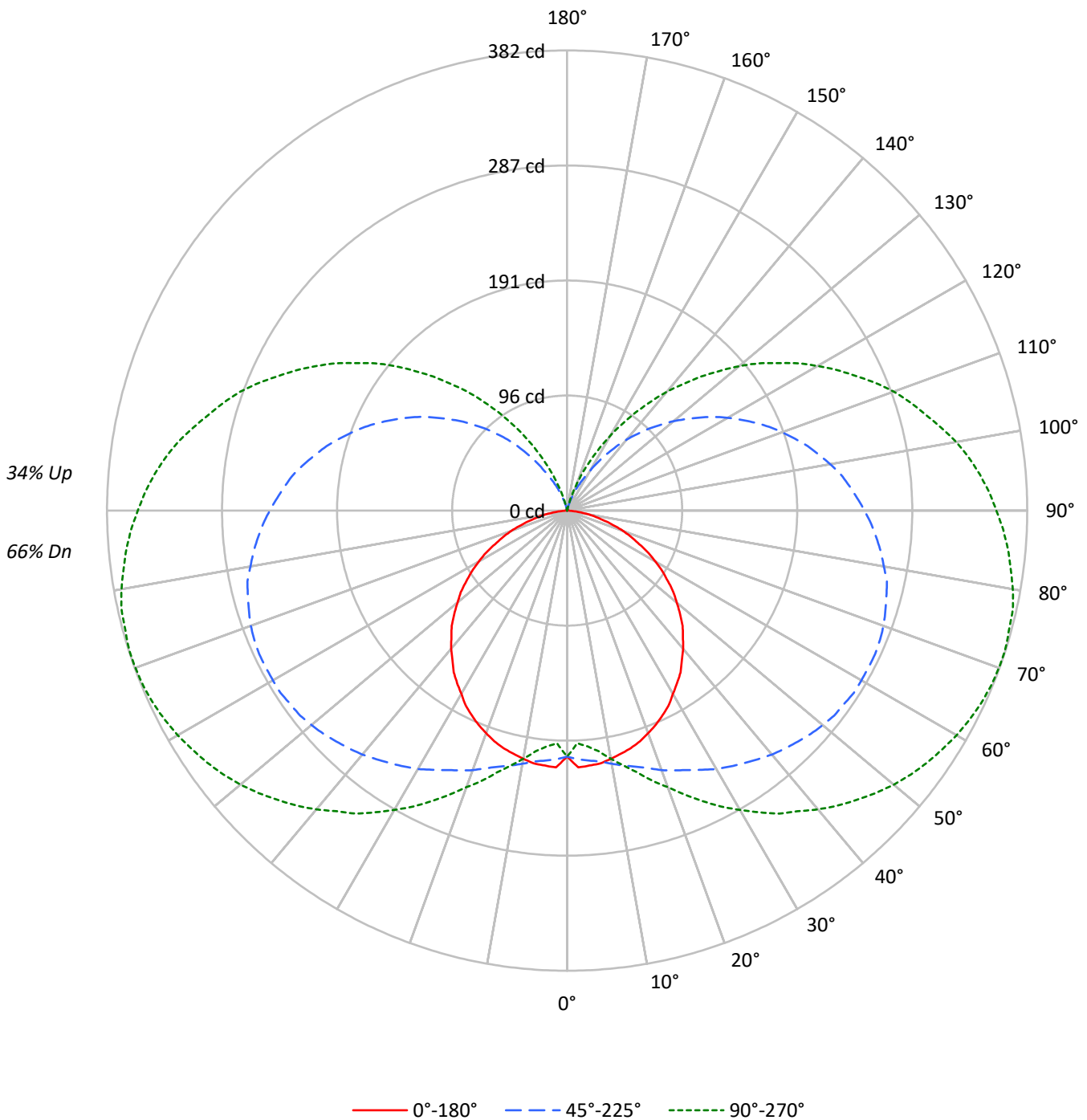
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2340.0 lumens  
Efficiency: N/A  
Efficacy: 110.9 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

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CATALOG NUMBER: CFA-3-LD4-UNV-LO-50-OP-EDC1

### 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	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°	4396	4396	4396
5°	4556	4070	3720
10°	4501	3843	3555
15°	4444	3702	3495
20°	4361	3644	3517
25°	4272	3605	3596
30°	4151	3621	3681
35°	4054	3638	3775
40°	3913	3683	3850
45°	3784	3730	3940
50°	3592	3794	4036
55°	3394	3851	4123
60°	3146	3916	4212
65°	2821	3989	4305
70°	2491	4061	4394
75°	1978	4130	4473
80°	1443	4200	4559
85°	608	4283	4635



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	19.9	0.8
10°-20°	62.0	2.7
20°-30°	108.1	4.6
30°-40°	155.0	6.6
40°-50°	198.2	8.5
50°-60°	233.2	10.0
60°-70°	254.7	10.9
70°-80°	260.7	11.1
80°-90°	249.9	10.7
90°-100°	226.9	9.7
100°-110°	193.3	8.3
110°-120°	152.5	6.5
120°-130°	109.2	4.7
130°-140°	68.3	2.9
140°-150°	34.6	1.5
150°-160°	11.9	0.5
160°-170°	1.5	0.1
170°-180°	0.0	0.0
0°-30°	190.0	8.1
0°-40°	344.9	14.7
0°-60°	776.3	33.2
0°-90°	1541.7	65.9
90°-120°	572.7	24.5
90°-150°	784.9	33.5
90°-180°	798.0	34.1
0°-180°	2340.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	204	204	204	204	204	
5°	212	211	208	202	197	20
15°	204	209	220	228	225	58
25°	187	206	238	262	266	86
35°	164	198	256	297	307	102
45°	136	189	271	326	340	104
55°	102	179	280	347	365	91
65°	66	165	282	357	379	66
75°	32	148	274	356	380	34
85°	5	127	258	341	367	7
90°	0	117	247	330	356	0
95°	0	106	235	318	344	0
105°	0	86	207	284	308	0
115°	0	65	172	244	264	0
125°	1	47	135	197	213	0
135°	1	32	96	144	157	1
145°	1	18	57	91	100	1
155°	1	8	24	42	46	0
165°	1	2	5	6	7	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236117

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2
2.5°	213.4	212.5	211.7	211.7	211.7	210.9	210.9	210.0	209.2	208.3	206.7
5°	212.5	211.7	210.9	211.7	210.9	210.9	210.9	210.9	210.9	209.2	208.3
7.5°	211.7	210.9	210.0	210.9	210.9	210.9	210.9	210.9	211.7	210.9	210.0
10°	209.2	209.2	208.3	209.2	210.0	210.0	210.9	211.7	212.5	212.5	213.4
12.5°	206.7	206.7	206.7	207.5	209.2	210.0	210.9	212.5	214.2	215.0	216.7
15°	204.2	203.3	204.2	205.8	208.3	209.2	210.9	213.4	215.9	217.5	220.1
17.5°	200.8	200.8	200.8	204.2	206.7	208.3	210.9	214.2	218.4	221.7	224.2
20°	196.6	196.6	198.3	201.6	205.8	207.5	210.0	215.0	220.1	224.2	229.3
22.5°	192.4	192.4	195.0	199.1	204.2	206.7	209.2	215.9	221.7	227.6	233.4
25°	187.4	188.3	190.8	195.8	201.6	205.8	209.2	216.7	224.2	230.9	237.6
27.5°	182.4	183.2	185.8	192.4	200.0	204.2	208.3	217.5	225.9	235.1	242.6
30°	175.7	177.4	181.6	189.1	197.5	202.5	207.5	217.5	227.6	237.6	247.7
32.5°	169.9	171.5	176.5	184.9	195.0	200.8	206.7	218.4	230.1	241.0	251.9
35°	164.0	165.7	171.5	180.7	192.4	198.3	205.0	218.4	231.8	244.3	256.0
37.5°	156.5	159.0	166.5	176.5	189.1	195.8	203.3	218.4	232.6	246.8	260.2
40°	149.8	153.1	160.7	172.4	186.6	194.1	202.5	218.4	234.3	250.2	264.4
42.5°	142.2	145.6	154.8	168.2	183.2	191.6	200.8	218.4	236.0	252.7	267.8
45°	135.5	138.9	148.9	163.2	179.9	189.1	199.1	218.4	236.8	254.4	271.1
47.5°	127.2	131.4	142.2	158.1	176.5	187.4	197.5	218.4	237.6	256.9	274.4
50°	118.8	123.8	136.4	153.1	174.0	184.1	195.8	217.5	238.5	258.5	277.0
52.5°	111.3	116.3	129.7	148.9	170.7	182.4	194.1	216.7	239.3	259.4	279.5
55°	102.1	107.9	123.0	143.9	166.5	179.1	191.6	215.9	238.5	260.2	280.3
57.5°	93.7	100.4	116.3	138.1	163.2	175.7	189.1	214.2	238.5	261.1	282.0
60°	84.5	92.0	109.6	133.0	159.0	172.4	185.8	212.5	236.8	260.2	282.0
62.5°	76.1	83.7	102.9	128.0	154.8	169.0	182.4	210.0	236.0	259.4	282.0
65°	66.1	75.3	96.2	122.2	150.6	164.8	179.1	207.5	234.3	258.5	282.0
67.5°	57.7	66.9	88.7	117.1	146.4	161.5	175.7	205.0	231.8	256.9	281.1
70°	49.4	59.4	82.8	111.3	142.2	157.3	172.4	201.6	229.3	255.2	279.5
72.5°	40.2	51.9	76.1	105.4	137.2	152.3	168.2	198.3	225.9	252.7	277.0
75°	31.8	44.3	70.3	100.4	132.2	148.1	164.0	194.1	223.4	250.2	274.4
77.5°	24.3	36.8	63.6	94.5	127.2	143.1	159.0	189.9	219.2	246.8	271.9
80°	17.6	30.1	56.9	88.7	121.3	138.1	154.0	184.9	215.0	242.6	266.9
82.5°	10.0	25.1	51.9	83.7	116.3	133.0	148.9	179.9	210.0	237.6	262.7
85°	5.0	20.1	46.9	77.8	111.3	127.2	143.9	174.9	205.0	232.6	257.7
87.5°	1.7	15.9	41.8	72.8	106.3	122.2	138.1	169.9	200.0	227.6	252.7
90°	0.0	12.6	37.7	68.6	100.4	117.1	133.0	164.0	194.1	221.7	246.8
92.5°	0.0	10.0	34.3	63.6	95.4	112.1	127.2	159.0	188.3	216.7	241.0
95°	0.0	8.4	31.0	59.4	90.4	106.3	122.2	153.1	182.4	210.0	235.1
97.5°	0.0	6.7	27.6	55.2	85.3	101.2	117.1	147.3	176.5	204.2	229.3
100°	0.0	5.9	25.1	51.0	81.2	96.2	111.3	141.4	169.9	197.5	221.7
102.5°	0.0	5.9	22.6	47.7	76.1	91.2	105.4	135.5	163.2	189.9	214.2
105°	0.0	5.0	20.9	44.3	72.0	86.2	100.4	128.9	156.5	182.4	206.7
107.5°	0.0	5.0	18.4	41.0	66.9	81.2	94.5	123.0	149.8	174.9	198.3
110°	0.0	4.2	16.7	37.7	62.8	75.3	89.5	116.3	142.2	167.3	189.9



TEST NUMBER: P236117

CATALOG NUMBER: CFA-3-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	4.2	15.9	34.3	57.7	70.3	83.7	109.6	134.7	159.0	181.6
115°	0.0	4.2	14.2	31.8	53.6	65.3	77.8	102.9	127.2	150.6	172.4
117.5°	0.0	4.2	13.4	29.3	49.4	60.2	72.8	96.2	119.7	143.1	163.2
120°	0.0	3.3	12.6	26.8	45.2	56.1	66.9	89.5	112.1	133.9	154.0
122.5°	0.0	3.3	11.7	25.1	41.8	51.0	61.9	82.8	104.6	125.5	144.8
125°	0.8	3.3	10.9	22.6	38.5	46.9	56.9	77.0	97.1	116.3	134.7
127.5°	0.8	3.3	10.0	20.9	35.1	43.5	51.9	70.3	88.7	107.1	124.7
130°	0.8	3.3	9.2	19.2	31.8	39.3	46.9	63.6	81.2	98.7	115.5
132.5°	0.8	2.5	8.4	17.6	28.4	35.1	42.7	57.7	73.6	90.4	105.4
135°	0.8	2.5	7.5	15.1	25.9	31.8	38.5	51.9	66.9	81.2	96.2
137.5°	0.8	2.5	6.7	13.4	22.6	28.4	33.5	46.0	59.4	72.8	86.2
140°	0.8	2.5	5.9	11.7	20.1	24.3	29.3	40.2	51.9	64.4	77.0
142.5°	0.8	1.7	5.0	10.9	16.7	20.9	25.1	34.3	45.2	56.1	66.9
145°	0.8	1.7	5.0	9.2	15.1	17.6	21.8	29.3	37.7	46.9	56.9
147.5°	0.8	1.7	4.2	7.5	12.6	15.1	18.4	25.1	31.8	39.3	47.7
150°	0.8	1.7	3.3	6.7	10.0	12.6	15.1	20.1	25.9	32.6	38.5
152.5°	0.8	1.7	2.5	5.0	8.4	10.0	11.7	16.7	20.9	25.9	31.0
155°	0.8	1.7	2.5	4.2	6.7	8.4	9.2	13.4	16.7	20.9	24.3
157.5°	0.8	0.8	2.5	3.3	5.0	5.9	7.5	10.0	12.6	15.9	18.4
160°	0.8	0.8	1.7	2.5	4.2	5.0	5.9	7.5	9.2	10.9	12.6
162.5°	0.8	0.8	1.7	2.5	3.3	3.3	4.2	5.0	5.9	7.5	8.4
165°	0.8	0.8	1.7	1.7	2.5	2.5	2.5	3.3	3.3	4.2	5.0
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: P236117

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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2	204.2
2.5°	205.0	203.3	202.5	200.8	200.0	199.1	197.5	195.8	194.1	193.3
5°	207.5	205.8	205.0	203.3	202.5	201.6	200.8	199.1	197.5	196.6
7.5°	210.0	209.2	208.3	207.5	207.5	206.7	205.8	204.2	202.5	201.6
10°	213.4	214.2	213.4	213.4	213.4	212.5	211.7	210.9	209.2	209.2
12.5°	217.5	218.4	219.2	219.2	220.1	220.1	219.2	218.4	217.5	216.7
15°	222.6	225.1	225.9	226.8	227.6	227.6	227.6	225.9	225.9	225.1
17.5°	227.6	230.1	232.6	234.3	236.0	235.1	236.0	236.0	235.1	235.1
20°	233.4	236.8	240.1	243.5	243.5	244.3	246.0	246.0	246.0	244.3
22.5°	238.5	243.5	247.7	251.9	253.5	253.5	256.0	256.0	255.2	255.2
25°	244.3	250.2	255.2	260.2	261.9	263.6	265.2	266.9	266.9	266.1
27.5°	250.2	257.7	263.6	268.6	271.1	272.8	276.1	277.8	277.0	277.0
30°	256.0	264.4	271.9	277.8	280.3	282.8	286.2	287.0	287.8	287.0
32.5°	261.9	271.1	279.5	286.2	288.7	291.2	294.5	297.0	297.0	297.0
35°	267.8	277.8	286.2	293.7	297.0	299.5	303.7	306.2	306.2	307.1
37.5°	272.8	283.6	292.9	301.2	304.6	307.1	311.3	313.8	314.6	314.6
40°	277.8	289.5	299.5	308.7	312.1	315.4	320.5	322.1	323.8	323.8
42.5°	282.0	294.5	306.2	315.4	318.8	323.0	328.0	330.5	332.2	332.2
45°	286.2	299.5	311.3	321.3	326.3	328.8	334.7	338.0	339.7	339.7
47.5°	290.3	304.6	317.1	327.2	332.2	335.5	341.4	345.6	347.2	347.2
50°	293.7	308.7	321.3	332.2	337.2	341.4	348.1	351.4	353.9	353.9
52.5°	296.2	312.1	326.3	337.2	342.2	346.4	353.9	357.3	359.8	359.8
55°	298.7	315.4	329.7	341.4	347.2	350.6	358.1	362.3	364.8	364.8
57.5°	300.4	318.0	332.2	344.7	350.6	354.8	362.3	366.5	369.0	369.0
60°	302.1	319.6	334.7	348.1	353.1	358.1	365.6	370.7	373.2	373.2
62.5°	302.1	320.5	336.4	349.7	355.6	359.8	368.2	373.2	375.7	376.5
65°	302.9	321.3	337.2	350.6	357.3	362.3	369.8	374.9	378.2	379.0
67.5°	302.1	321.3	337.2	351.4	357.3	362.3	370.7	376.5	379.9	380.7
70°	301.2	320.5	337.2	351.4	358.1	363.1	371.5	377.4	380.7	381.5
72.5°	299.5	318.8	336.4	350.6	357.3	362.3	371.5	377.4	379.9	381.5
75°	297.0	317.1	334.7	349.7	355.6	361.5	369.8	376.5	379.9	379.9
77.5°	294.5	314.6	332.2	347.2	353.9	359.0	368.2	374.9	378.2	379.0
80°	290.3	310.4	328.0	343.1	349.7	355.6	364.8	371.5	374.9	375.7
82.5°	286.2	306.2	323.8	338.9	346.4	351.4	360.6	367.3	370.7	371.5
85°	281.1	301.2	319.6	334.7	341.4	347.2	356.4	363.1	366.5	367.3
87.5°	275.3	296.2	313.8	329.7	335.5	341.4	351.4	357.3	361.5	362.3
90°	270.3	290.3	307.9	323.8	330.5	336.4	345.6	352.3	355.6	356.4
92.5°	264.4	284.5	302.9	318.0	324.6	330.5	339.7	346.4	349.7	350.6
95°	257.7	278.6	296.2	311.3	318.0	323.8	333.0	338.9	343.1	343.9
97.5°	251.9	271.9	289.5	304.6	311.3	317.1	325.5	332.2	334.7	336.4
100°	243.5	263.6	282.0	296.2	302.9	308.7	318.0	323.0	326.3	328.0
102.5°	236.0	256.0	273.6	287.0	293.7	298.7	307.9	313.8	318.0	318.0
105°	227.6	247.7	264.4	278.6	284.5	289.5	298.7	303.7	307.9	307.9
107.5°	220.1	238.5	255.2	269.4	275.3	281.1	288.7	294.5	297.9	298.7
110°	210.9	229.3	246.0	259.4	265.2	271.1	278.6	284.5	287.0	288.7





TEST NUMBER: P236117

CATALOG NUMBER: CFA-3-LD4-UNV-LO-50-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	201.6	220.1	236.0	249.3	254.4	259.4	267.8	272.8	276.1	277.0
115°	191.6	210.0	225.1	238.5	243.5	247.7	256.0	261.1	263.6	264.4
117.5°	182.4	200.0	215.0	226.8	232.6	236.8	244.3	249.3	251.9	252.7
120°	172.4	189.1	203.3	215.0	220.9	225.1	232.6	236.8	239.3	240.1
122.5°	162.3	178.2	192.4	204.2	209.2	213.4	220.1	225.1	226.8	227.6
125°	151.4	167.3	179.9	191.6	196.6	200.8	207.5	211.7	212.5	213.4
127.5°	141.4	155.6	168.2	179.1	183.2	187.4	194.1	198.3	200.0	200.8
130°	130.5	144.8	156.5	166.5	170.7	174.0	179.9	184.1	185.8	186.6
132.5°	119.7	132.2	143.9	154.0	157.3	161.5	166.5	169.9	171.5	171.5
135°	108.8	120.5	131.4	139.7	143.9	147.3	152.3	155.6	157.3	157.3
137.5°	98.7	109.6	119.7	127.2	130.5	133.0	138.9	141.4	142.2	142.2
140°	87.9	97.9	107.1	114.6	117.1	120.5	124.7	127.2	128.0	128.9
142.5°	77.8	86.2	94.5	101.2	103.8	107.1	111.3	113.0	114.6	113.8
145°	66.1	75.3	82.8	89.5	91.2	92.9	97.1	98.7	99.6	99.6
147.5°	56.1	63.6	71.1	77.0	78.7	81.2	83.7	85.3	86.2	85.3
150°	45.2	51.9	58.6	64.4	66.9	67.8	70.3	71.1	72.0	72.0
152.5°	36.0	41.8	47.7	51.9	55.2	56.1	57.7	58.6	59.4	58.6
155°	28.4	31.8	36.0	40.2	41.8	45.2	46.9	46.9	46.9	46.0
157.5°	20.9	23.4	26.8	29.3	31.0	32.6	35.1	36.0	35.1	35.1
160°	15.1	16.7	17.6	20.1	20.1	21.8	23.4	25.9	25.1	24.3
162.5°	9.2	10.0	10.9	11.7	11.7	12.6	13.4	15.9	15.9	15.1
165°	5.0	5.0	5.9	5.9	5.9	5.9	5.0	5.9	7.5	6.7
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)