

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: P236107

Luminaire Tested: **CFA-3-LD4-UNV-HI-35-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

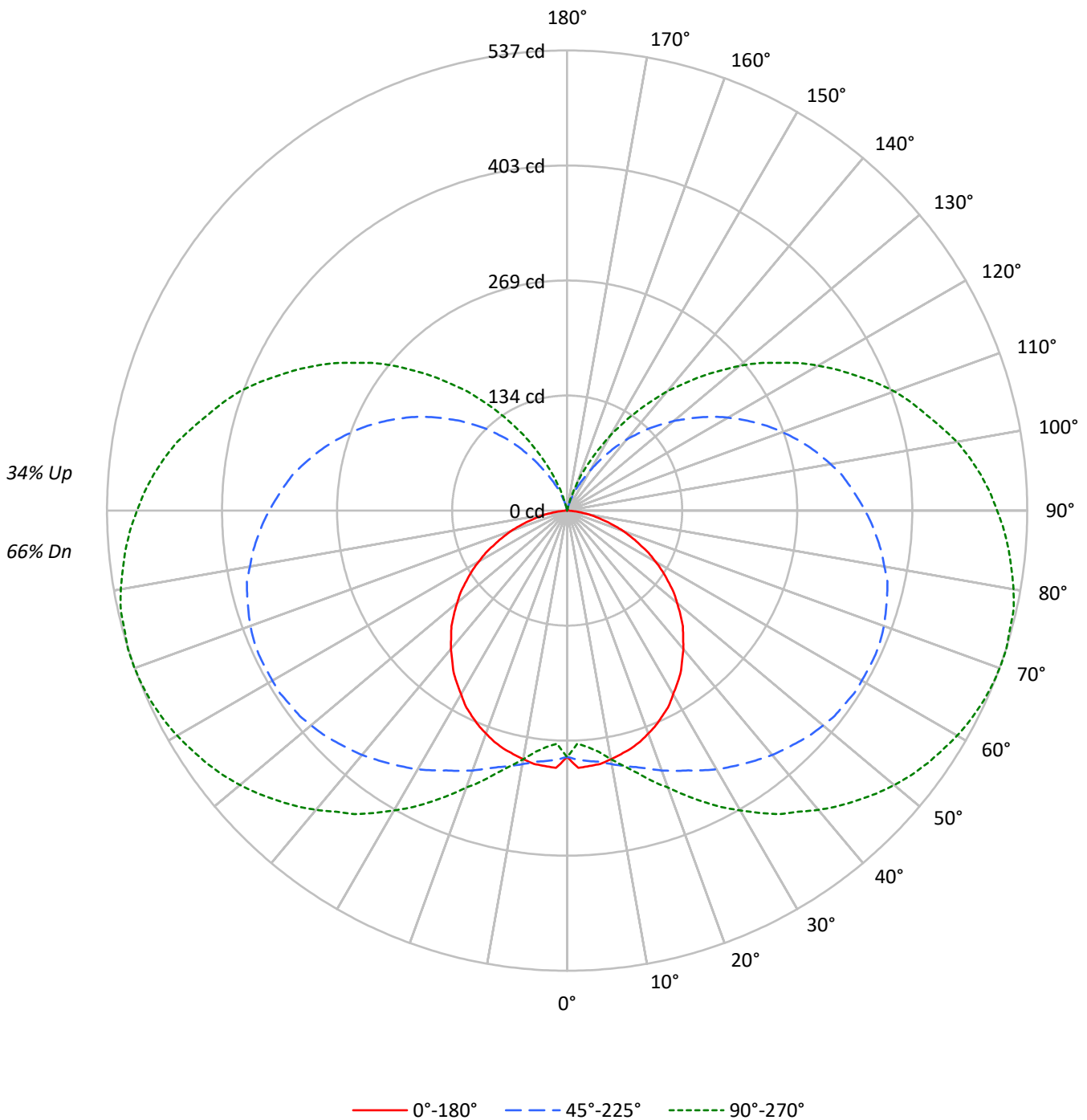
Test Method: LM-79-08  
Report Number: P236107  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-5)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CFA-3-LD4-UNV-HI-35-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
3ft  
Light Source: (84) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3295.1 lumens  
Efficiency: N/A  
Efficacy: 90.0 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): 36.6  
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	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°	6189	6189	6189
5°	6417	5732	5239
10°	6339	5412	5006
15°	6256	5213	4920
20°	6142	5130	4952
25°	6015	5077	5064
30°	5845	5100	5183
35°	5707	5123	5316
40°	5509	5185	5422
45°	5331	5251	5549
50°	5059	5341	5684
55°	4777	5422	5806
60°	4431	5514	5931
65°	3973	5617	6062
70°	3505	5717	6189
75°	2787	5817	6298
80°	2025	5915	6420
85°	863	6031	6527



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.0	0.8
10°-20°	87.3	2.7
20°-30°	152.2	4.6
30°-40°	218.2	6.6
40°-50°	279.1	8.5
50°-60°	328.3	10.0
60°-70°	358.7	10.9
70°-80°	367.2	11.1
80°-90°	351.9	10.7
90°-100°	319.6	9.7
100°-110°	272.3	8.3
110°-120°	214.7	6.5
120°-130°	153.8	4.7
130°-140°	96.2	2.9
140°-150°	48.7	1.5
150°-160°	16.8	0.5
160°-170°	2.2	0.1
170°-180°	0.0	0.0
0°-30°	267.5	8.1
0°-40°	485.7	14.7
0°-60°	1093.2	33.2
0°-90°	2171.0	65.9
90°-120°	806.5	24.5
90°-150°	1105.2	33.5
90°-180°	1124.0	34.1
0°-180°	3295.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	288	288	288	288	288	
5°	299	297	293	285	277	28
15°	288	295	310	320	317	81
25°	264	290	335	369	375	122
35°	231	279	360	418	432	144
45°	191	266	382	460	478	147
55°	144	252	395	489	514	129
65°	93	232	397	503	534	93
75°	45	208	386	501	535	48
85°	7	179	363	481	517	9
90°	0	165	348	465	502	0
95°	0	150	331	448	484	0
105°	0	121	291	401	434	0
115°	0	92	243	343	372	0
125°	1	66	190	277	300	1
135°	1	45	136	203	222	1
145°	1	25	80	128	140	1
155°	1	12	34	59	65	1
165°	1	4	7	8	9	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236107

CATALOG NUMBER: CFA-3-LD4-UNV-HI-35-OP-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5
2.5°	300.5	299.3	298.1	298.1	298.1	296.9	296.9	295.7	294.6	293.4	291.0
5°	299.3	298.1	296.9	298.1	296.9	296.9	296.9	296.9	296.9	294.6	293.4
7.5°	298.1	296.9	295.7	296.9	296.9	296.9	296.9	296.9	298.1	296.9	295.7
10°	294.6	294.6	293.4	294.6	295.7	295.7	296.9	298.1	299.3	299.3	300.5
12.5°	291.0	291.0	291.0	292.2	294.6	295.7	296.9	299.3	301.6	302.8	305.2
15°	287.5	286.3	287.5	289.8	293.4	294.6	296.9	300.5	304.0	306.3	309.9
17.5°	282.8	282.8	282.8	287.5	291.0	293.4	296.9	301.6	307.5	312.2	315.8
20°	276.9	276.9	279.2	284.0	289.8	292.2	295.7	302.8	309.9	315.8	322.8
22.5°	271.0	271.0	274.5	280.4	287.5	291.0	294.6	304.0	312.2	320.5	328.7
25°	263.9	265.1	268.6	275.7	284.0	289.8	294.6	305.2	315.8	325.2	334.6
27.5°	256.9	258.0	261.6	271.0	281.6	287.5	293.4	306.3	318.1	331.1	341.7
30°	247.4	249.8	255.7	266.3	278.1	285.1	292.2	306.3	320.5	334.6	348.8
32.5°	239.2	241.5	248.6	260.4	274.5	282.8	291.0	307.5	324.0	339.3	354.6
35°	230.9	233.3	241.5	254.5	271.0	279.2	288.7	307.5	326.4	344.0	360.5
37.5°	220.3	223.9	234.5	248.6	266.3	275.7	286.3	307.5	327.6	347.6	366.4
40°	210.9	215.6	226.2	242.7	262.7	273.4	285.1	307.5	329.9	352.3	372.3
42.5°	200.3	205.0	218.0	236.8	258.0	269.8	282.8	307.5	332.3	355.8	377.0
45°	190.9	195.6	209.7	229.8	253.3	266.3	280.4	307.5	333.4	358.2	381.7
47.5°	179.1	185.0	200.3	222.7	248.6	263.9	278.1	307.5	334.6	361.7	386.5
50°	167.3	174.4	192.1	215.6	245.1	259.2	275.7	306.3	335.8	364.1	390.0
52.5°	156.7	163.8	182.6	209.7	240.4	256.9	273.4	305.2	337.0	365.3	393.5
55°	143.7	152.0	173.2	202.7	234.5	252.1	269.8	304.0	335.8	366.4	394.7
57.5°	132.0	141.4	163.8	194.4	229.8	247.4	266.3	301.6	335.8	367.6	397.1
60°	119.0	129.6	154.3	187.3	223.9	242.7	261.6	299.3	333.4	366.4	397.1
62.5°	107.2	117.8	144.9	180.3	218.0	238.0	256.9	295.7	332.3	365.3	397.1
65°	93.1	106.0	135.5	172.0	212.1	232.1	252.1	292.2	329.9	364.1	397.1
67.5°	81.3	94.3	124.9	165.0	206.2	227.4	247.4	288.7	326.4	361.7	395.9
70°	69.5	83.7	116.6	156.7	200.3	221.5	242.7	284.0	322.8	359.4	393.5
72.5°	56.6	73.1	107.2	148.5	193.2	214.4	236.8	279.2	318.1	355.8	390.0
75°	44.8	62.4	99.0	141.4	186.2	208.5	230.9	273.4	314.6	352.3	386.5
77.5°	34.2	51.8	89.5	133.1	179.1	201.5	223.9	267.5	308.7	347.6	382.9
80°	24.7	42.4	80.1	124.9	170.8	194.4	216.8	260.4	302.8	341.7	375.9
82.5°	14.1	35.3	73.1	117.8	163.8	187.3	209.7	253.3	295.7	334.6	370.0
85°	7.1	28.3	66.0	109.6	156.7	179.1	202.7	246.3	288.7	327.6	362.9
87.5°	2.4	22.4	58.9	102.5	149.6	172.0	194.4	239.2	281.6	320.5	355.8
90°	0.0	17.7	53.0	96.6	141.4	165.0	187.3	230.9	273.4	312.2	347.6
92.5°	0.0	14.1	48.3	89.5	134.3	157.9	179.1	223.9	265.1	305.2	339.3
95°	0.0	11.8	43.6	83.7	127.2	149.6	172.0	215.6	256.9	295.7	331.1
97.5°	0.0	9.4	38.9	77.8	120.2	142.6	165.0	207.4	248.6	287.5	322.8
100°	0.0	8.2	35.3	71.9	114.3	135.5	156.7	199.1	239.2	278.1	312.2
102.5°	0.0	8.2	31.8	67.2	107.2	128.4	148.5	190.9	229.8	267.5	301.6
105°	0.0	7.1	29.5	62.4	101.3	121.4	141.4	181.4	220.3	256.9	291.0
107.5°	0.0	7.1	25.9	57.7	94.3	114.3	133.1	173.2	210.9	246.3	279.2
110°	0.0	5.9	23.6	53.0	88.4	106.0	126.1	163.8	200.3	235.6	267.5



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CATALOG NUMBER: CFA-3-LD4-UNV-HI-35-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	5.9	22.4	48.3	81.3	99.0	117.8	154.3	189.7	223.9	255.7
115°	0.0	5.9	20.0	44.8	75.4	91.9	109.6	144.9	179.1	212.1	242.7
117.5°	0.0	5.9	18.9	41.2	69.5	84.8	102.5	135.5	168.5	201.5	229.8
120°	0.0	4.7	17.7	37.7	63.6	78.9	94.3	126.1	157.9	188.5	216.8
122.5°	0.0	4.7	16.5	35.3	58.9	71.9	87.2	116.6	147.3	176.7	203.8
125°	1.2	4.7	15.3	31.8	54.2	66.0	80.1	108.4	136.7	163.8	189.7
127.5°	1.2	4.7	14.1	29.5	49.5	61.3	73.1	99.0	124.9	150.8	175.6
130°	1.2	4.7	13.0	27.1	44.8	55.4	66.0	89.5	114.3	139.0	162.6
132.5°	1.2	3.5	11.8	24.7	40.1	49.5	60.1	81.3	103.7	127.2	148.5
135°	1.2	3.5	10.6	21.2	36.5	44.8	54.2	73.1	94.3	114.3	135.5
137.5°	1.2	3.5	9.4	18.9	31.8	40.1	47.1	64.8	83.7	102.5	121.4
140°	1.2	3.5	8.2	16.5	28.3	34.2	41.2	56.6	73.1	90.7	108.4
142.5°	1.2	2.4	7.1	15.3	23.6	29.5	35.3	48.3	63.6	78.9	94.3
145°	1.2	2.4	7.1	13.0	21.2	24.7	30.6	41.2	53.0	66.0	80.1
147.5°	1.2	2.4	5.9	10.6	17.7	21.2	25.9	35.3	44.8	55.4	67.2
150°	1.2	2.4	4.7	9.4	14.1	17.7	21.2	28.3	36.5	46.0	54.2
152.5°	1.2	2.4	3.5	7.1	11.8	14.1	16.5	23.6	29.5	36.5	43.6
155°	1.2	2.4	3.5	5.9	9.4	11.8	13.0	18.9	23.6	29.5	34.2
157.5°	1.2	1.2	3.5	4.7	7.1	8.2	10.6	14.1	17.7	22.4	25.9
160°	1.2	1.2	2.4	3.5	5.9	7.1	8.2	10.6	13.0	15.3	17.7
162.5°	1.2	1.2	2.4	3.5	4.7	4.7	5.9	7.1	8.2	10.6	11.8
165°	1.2	1.2	2.4	2.4	3.5	3.5	3.5	4.7	4.7	5.9	7.1
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



TEST NUMBER: P236107

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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5
2.5°	288.7	286.3	285.1	282.8	281.6	280.4	278.1	275.7	273.4	272.2
5°	292.2	289.8	288.7	286.3	285.1	284.0	282.8	280.4	278.1	276.9
7.5°	295.7	294.6	293.4	292.2	292.2	291.0	289.8	287.5	285.1	284.0
10°	300.5	301.6	300.5	300.5	300.5	299.3	298.1	296.9	294.6	294.6
12.5°	306.3	307.5	308.7	308.7	309.9	309.9	308.7	307.5	306.3	305.2
15°	313.4	316.9	318.1	319.3	320.5	320.5	320.5	318.1	318.1	316.9
17.5°	320.5	324.0	327.6	329.9	332.3	331.1	332.3	332.3	331.1	331.1
20°	328.7	333.4	338.2	342.9	342.9	344.0	346.4	346.4	346.4	344.0
22.5°	335.8	342.9	348.8	354.6	357.0	357.0	360.5	360.5	359.4	359.4
25°	344.0	352.3	359.4	366.4	368.8	371.1	373.5	375.9	375.9	374.7
27.5°	352.3	362.9	371.1	378.2	381.7	384.1	388.8	391.2	390.0	390.0
30°	360.5	372.3	382.9	391.2	394.7	398.2	403.0	404.1	405.3	404.1
32.5°	368.8	381.7	393.5	403.0	406.5	410.0	414.7	418.3	418.3	418.3
35°	377.0	391.2	403.0	413.6	418.3	421.8	427.7	431.2	431.2	432.4
37.5°	384.1	399.4	412.4	424.2	428.9	432.4	438.3	441.8	443.0	443.0
40°	391.2	407.7	421.8	434.8	439.5	444.2	451.3	453.6	456.0	456.0
42.5°	397.1	414.7	431.2	444.2	448.9	454.8	461.9	465.4	467.8	467.8
45°	403.0	421.8	438.3	452.4	459.5	463.0	471.3	476.0	478.4	478.4
47.5°	408.8	428.9	446.6	460.7	467.8	472.5	480.7	486.6	489.0	489.0
50°	413.6	434.8	452.4	467.8	474.8	480.7	490.1	494.9	498.4	498.4
52.5°	417.1	439.5	459.5	474.8	481.9	487.8	498.4	503.1	506.6	506.6
55°	420.6	444.2	464.2	480.7	489.0	493.7	504.3	510.2	513.7	513.7
57.5°	423.0	447.7	467.8	485.4	493.7	499.6	510.2	516.1	519.6	519.6
60°	425.3	450.1	471.3	490.1	497.2	504.3	514.9	522.0	525.5	525.5
62.5°	425.3	451.3	473.7	492.5	500.8	506.6	518.4	525.5	529.0	530.2
65°	426.5	452.4	474.8	493.7	503.1	510.2	520.8	527.9	532.6	533.7
67.5°	425.3	452.4	474.8	494.9	503.1	510.2	522.0	530.2	534.9	536.1
70°	424.2	451.3	474.8	494.9	504.3	511.4	523.1	531.4	536.1	537.3
72.5°	421.8	448.9	473.7	493.7	503.1	510.2	523.1	531.4	534.9	537.3
75°	418.3	446.6	471.3	492.5	500.8	509.0	520.8	530.2	534.9	534.9
77.5°	414.7	443.0	467.8	489.0	498.4	505.5	518.4	527.9	532.6	533.7
80°	408.8	437.1	461.9	483.1	492.5	500.8	513.7	523.1	527.9	529.0
82.5°	403.0	431.2	456.0	477.2	487.8	494.9	507.8	517.2	522.0	523.1
85°	395.9	424.2	450.1	471.3	480.7	489.0	501.9	511.4	516.1	517.2
87.5°	387.6	417.1	441.8	464.2	472.5	480.7	494.9	503.1	509.0	510.2
90°	380.6	408.8	433.6	456.0	465.4	473.7	486.6	496.0	500.8	501.9
92.5°	372.3	400.6	426.5	447.7	457.2	465.4	478.4	487.8	492.5	493.7
95°	362.9	392.4	417.1	438.3	447.7	456.0	468.9	477.2	483.1	484.3
97.5°	354.6	382.9	407.7	428.9	438.3	446.6	458.3	467.8	471.3	473.7
100°	342.9	371.1	397.1	417.1	426.5	434.8	447.7	454.8	459.5	461.9
102.5°	332.3	360.5	385.3	404.1	413.6	420.6	433.6	441.8	447.7	447.7
105°	320.5	348.8	372.3	392.4	400.6	407.7	420.6	427.7	433.6	433.6
107.5°	309.9	335.8	359.4	379.4	387.6	395.9	406.5	414.7	419.5	420.6
110°	296.9	322.8	346.4	365.3	373.5	381.7	392.4	400.6	404.1	406.5





TEST NUMBER: P236107

CATALOG NUMBER: CFA-3-LD4-UNV-HI-35-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	284.0	309.9	332.3	351.1	358.2	365.3	377.0	384.1	388.8	390.0
115°	269.8	295.7	316.9	335.8	342.9	348.8	360.5	367.6	371.1	372.3
117.5°	256.9	281.6	302.8	319.3	327.6	333.4	344.0	351.1	354.6	355.8
120°	242.7	266.3	286.3	302.8	311.1	316.9	327.6	333.4	337.0	338.2
122.5°	228.6	251.0	271.0	287.5	294.6	300.5	309.9	316.9	319.3	320.5
125°	213.3	235.6	253.3	269.8	276.9	282.8	292.2	298.1	299.3	300.5
127.5°	199.1	219.2	236.8	252.1	258.0	263.9	273.4	279.2	281.6	282.8
130°	183.8	203.8	220.3	234.5	240.4	245.1	253.3	259.2	261.6	262.7
132.5°	168.5	186.2	202.7	216.8	221.5	227.4	234.5	239.2	241.5	241.5
135°	153.2	169.7	185.0	196.8	202.7	207.4	214.4	219.2	221.5	221.5
137.5°	139.0	154.3	168.5	179.1	183.8	187.3	195.6	199.1	200.3	200.3
140°	123.7	137.9	150.8	161.4	165.0	169.7	175.6	179.1	180.3	181.4
142.5°	109.6	121.4	133.1	142.6	146.1	150.8	156.7	159.1	161.4	160.2
145°	93.1	106.0	116.6	126.1	128.4	130.8	136.7	139.0	140.2	140.2
147.5°	78.9	89.5	100.2	108.4	110.8	114.3	117.8	120.2	121.4	120.2
150°	63.6	73.1	82.5	90.7	94.3	95.4	99.0	100.2	101.3	101.3
152.5°	50.7	58.9	67.2	73.1	77.8	78.9	81.3	82.5	83.7	82.5
155°	40.1	44.8	50.7	56.6	58.9	63.6	66.0	66.0	66.0	64.8
157.5°	29.5	33.0	37.7	41.2	43.6	46.0	49.5	50.7	49.5	49.5
160°	21.2	23.6	24.7	28.3	28.3	30.6	33.0	36.5	35.3	34.2
162.5°	13.0	14.1	15.3	16.5	16.5	17.7	18.9	22.4	22.4	21.2
165°	7.1	7.1	8.2	8.2	8.2	8.2	7.1	8.2	10.6	9.4
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)