

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: P236123

Luminaire Tested: **CFA-4-LD4-UNV-STD-35-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P236123  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-2)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CFA-4-LD4-UNV-STD-35-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
4ft  
Light Source: (112) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

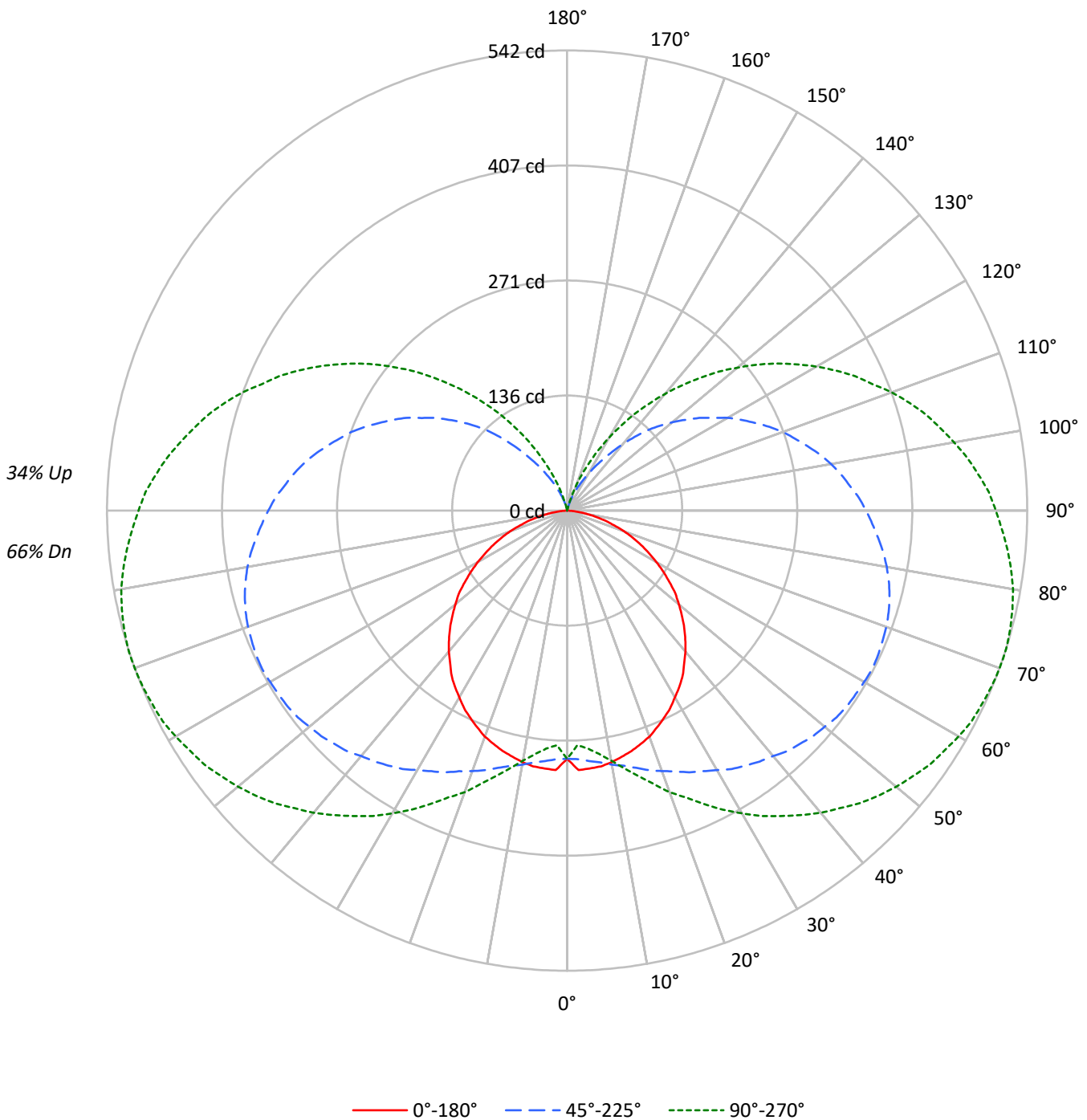
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3332.3 lumens  
Efficiency: N/A  
Efficacy: 100.5 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 2.26 / 2.09  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.27')  
CIE Type: Semi-Direct  
  
Input Watts (W): 33.16  
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	45
2	85	75	67	59	79	70	62	56	61	55	50	53	48	43	45	41	38	33
3	77	64	55	47	71	60	51	44	52	45	39	45	39	34	38	33	30	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	25	20	26	21	17	14
7	53	39	30	23	50	37	28	22	32	25	20	28	22	17	24	19	15	12
8	49	35	26	20	46	33	25	19	29	22	17	25	19	15	21	17	13	11
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	14	10	8

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4718	4718	4718
5°	4913	4344	3993
10°	4877	4114	3810
15°	4812	3970	3767
20°	4751	3908	3810
25°	4656	3890	3866
30°	4556	3891	3961
35°	4466	3932	4049
40°	4322	3969	4144
45°	4172	4035	4239
50°	3988	4100	4327
55°	3776	4177	4422
60°	3515	4244	4506
65°	3206	4326	4593
70°	2850	4403	4684
75°	2346	4486	4770
80°	1646	4564	4854
85°	815	4639	4927



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.5	0.9
10°-20°	89.0	2.7
20°-30°	155.1	4.7
30°-40°	222.6	6.7
40°-50°	284.5	8.5
50°-60°	333.9	10.0
60°-70°	364.6	10.9
70°-80°	372.3	11.2
80°-90°	356.2	10.7
90°-100°	322.4	9.7
100°-110°	274.3	8.2
110°-120°	215.7	6.5
120°-130°	153.8	4.6
130°-140°	95.1	2.9
140°-150°	47.0	1.4
150°-160°	15.6	0.5
160°-170°	1.8	0.1
170°-180°	0.0	0.0
0°-30°	272.6	8.2
0°-40°	495.1	14.9
0°-60°	1113.5	33.4
0°-90°	2206.6	66.2
90°-120°	812.4	24.4
90°-150°	1108.2	33.3
90°-180°	1126.0	33.8
0°-180°	3332.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	292	292	292	292	292	
5°	305	302	296	290	281	29
15°	293	301	314	326	324	83
25°	270	296	340	376	381	124
35°	237	286	367	426	439	148
45°	195	274	388	466	487	150
55°	147	259	402	495	522	132
65°	96	239	404	509	539	95
75°	47	214	393	506	540	50
85°	8	184	368	484	521	10
90°	0	168	352	469	505	0
95°	0	153	334	451	486	0
105°	0	122	293	404	437	0
115°	0	93	244	345	374	0
125°	0	67	190	276	302	0
135°	0	42	133	202	221	0
145°	1	22	74	127	139	0
155°	1	11	31	53	63	0
165°	1	2	6	5	7	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°	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2
2.5°	305.9	304.9	303.9	303.9	302.9	302.9	302.0	301.0	299.0	296.1	293.1
5°	304.9	303.9	302.9	302.9	302.9	302.0	302.0	302.0	300.0	298.0	296.1
7.5°	303.9	302.9	302.0	302.0	302.9	302.9	302.9	302.9	302.0	301.0	299.0
10°	301.0	300.0	299.0	301.0	301.0	302.0	302.9	303.9	303.9	303.9	303.9
12.5°	297.1	297.1	297.1	299.0	301.0	302.0	302.9	305.9	306.9	307.8	307.8
15°	293.1	293.1	294.1	296.1	300.0	301.0	302.0	307.8	310.8	312.7	313.7
17.5°	288.2	288.2	289.2	293.1	297.1	300.0	302.0	308.8	312.7	316.7	320.6
20°	283.3	283.3	285.3	290.2	295.1	299.0	302.0	309.8	315.7	321.6	326.5
22.5°	276.5	277.4	280.4	286.3	293.1	298.0	302.0	309.8	318.6	326.5	332.3
25°	269.6	270.6	274.5	282.4	290.2	296.1	301.0	310.8	320.6	331.4	340.2
27.5°	262.7	263.7	268.6	277.4	287.3	293.1	299.0	311.8	324.5	336.3	346.1
30°	253.9	255.9	262.7	272.5	284.3	291.2	298.0	312.7	326.5	340.2	352.9
32.5°	246.1	248.0	255.9	266.7	281.4	289.2	297.1	314.7	329.4	345.1	360.8
35°	237.3	239.2	248.0	260.8	277.4	286.3	295.1	313.7	332.3	349.0	366.7
37.5°	226.5	230.4	240.2	254.9	272.5	283.3	293.1	313.7	334.3	352.9	372.5
40°	216.7	220.6	232.4	249.0	268.6	280.4	291.2	314.7	336.3	356.9	377.4
42.5°	205.9	209.8	223.5	242.2	264.7	276.5	289.2	314.7	338.2	360.8	384.3
45°	195.1	200.0	214.7	235.3	260.8	273.5	287.3	314.7	340.2	364.7	388.2
47.5°	183.3	189.2	205.9	228.4	255.9	270.6	285.3	313.7	341.2	367.6	393.1
50°	171.6	178.4	196.1	221.6	251.0	266.7	282.4	312.7	342.2	369.6	396.1
52.5°	160.8	167.6	187.3	214.7	246.1	263.7	279.4	311.8	343.1	371.6	400.0
55°	147.1	155.9	177.4	206.9	241.2	258.8	275.5	309.8	342.2	372.5	402.0
57.5°	134.3	144.1	168.6	199.0	235.3	253.9	272.5	307.8	341.2	372.5	402.9
60°	121.6	132.4	158.8	192.2	230.4	250.0	268.6	304.9	340.2	372.5	403.9
62.5°	108.8	120.6	148.0	184.3	224.5	245.1	263.7	302.0	339.2	372.5	404.9
65°	96.1	109.8	139.2	176.5	217.6	239.2	258.8	298.0	335.3	370.6	403.9
67.5°	83.3	98.0	128.4	168.6	211.8	233.3	253.9	294.1	333.3	368.6	402.0
70°	71.6	85.3	119.6	160.8	203.9	227.4	248.0	290.2	329.4	365.7	400.0
72.5°	57.8	74.5	110.8	152.9	198.0	220.6	243.1	284.3	325.5	361.8	397.1
75°	47.1	63.7	101.0	145.1	190.2	213.7	236.3	278.4	320.6	357.8	393.1
77.5°	35.3	53.9	92.2	136.3	182.4	205.9	229.4	272.5	314.7	352.9	388.2
80°	24.5	44.1	83.3	128.4	175.5	199.0	221.6	265.7	307.8	346.1	382.3
82.5°	15.7	36.3	75.5	120.6	167.6	192.2	214.7	259.8	301.0	340.2	375.5
85°	7.8	28.4	67.6	112.7	159.8	184.3	206.9	252.0	293.1	332.3	367.6
87.5°	2.0	22.5	60.8	104.9	152.0	175.5	199.0	244.1	286.3	324.5	359.8
90°	0.0	17.6	54.9	98.0	144.1	167.6	190.2	235.3	277.4	315.7	352.0
92.5°	0.0	14.7	49.0	91.2	137.3	159.8	183.3	227.4	269.6	307.8	344.1
95°	0.0	11.8	44.1	84.3	129.4	152.9	174.5	218.6	260.8	299.0	334.3
97.5°	0.0	9.8	39.2	79.4	122.5	145.1	166.7	210.8	252.0	290.2	325.5
100°	0.0	8.8	35.3	73.5	115.7	137.3	158.8	202.0	243.1	280.4	315.7
102.5°	0.0	7.8	32.4	67.6	108.8	130.4	151.0	193.1	233.3	270.6	304.9
105°	0.0	6.9	29.4	62.7	102.0	122.5	143.1	184.3	223.5	259.8	293.1
107.5°	0.0	5.9	26.5	57.8	95.1	114.7	134.3	174.5	212.7	249.0	281.4
110°	0.0	5.9	23.5	52.9	88.2	107.8	126.5	164.7	202.9	237.3	270.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	4.9	21.6	48.0	82.4	100.0	118.6	154.9	191.2	225.5	257.8
115°	0.0	4.9	19.6	44.1	75.5	93.1	110.8	145.1	180.4	212.7	244.1
117.5°	0.0	4.9	18.6	40.2	69.6	86.3	102.9	136.3	169.6	201.0	231.4
120°	0.0	3.9	16.7	37.3	63.7	79.4	95.1	126.5	157.8	189.2	218.6
122.5°	0.0	3.9	15.7	34.3	58.8	72.5	87.3	117.6	147.1	176.5	202.9
125°	0.0	3.9	14.7	31.4	52.9	66.7	79.4	107.8	136.3	163.7	190.2
127.5°	0.0	3.9	12.7	28.4	48.0	59.8	72.5	99.0	125.5	151.0	175.5
130°	0.0	2.9	11.8	25.5	43.1	53.9	65.7	89.2	113.7	138.2	161.8
132.5°	0.0	2.9	10.8	22.5	38.2	48.0	57.8	79.4	102.9	126.5	148.0
135°	0.0	2.0	8.8	19.6	33.3	42.2	51.0	69.6	91.2	111.8	133.3
137.5°	0.0	2.0	7.8	16.7	29.4	36.3	44.1	60.8	79.4	98.0	117.6
140°	0.0	2.0	6.9	14.7	25.5	31.4	38.2	52.9	68.6	85.3	102.0
142.5°	0.0	2.0	5.9	12.7	21.6	27.5	32.4	45.1	57.8	72.5	87.3
145°	1.0	2.0	4.9	10.8	18.6	22.5	27.5	38.2	50.0	61.8	73.5
147.5°	1.0	1.0	3.9	8.8	14.7	19.6	23.5	32.4	41.2	51.0	61.8
150°	1.0	1.0	3.9	7.8	12.7	15.7	19.6	26.5	34.3	42.2	50.0
152.5°	1.0	1.0	2.9	5.9	10.8	12.7	15.7	21.6	27.5	33.3	40.2
155°	1.0	1.0	2.9	4.9	8.8	10.8	12.7	17.6	21.6	26.5	31.4
157.5°	1.0	1.0	2.0	3.9	6.9	7.8	9.8	12.7	16.7	19.6	23.5
160°	1.0	1.0	2.0	2.9	4.9	5.9	6.9	9.8	12.7	14.7	16.7
162.5°	1.0	1.0	1.0	2.0	2.9	3.9	4.9	5.9	7.8	9.8	10.8
165°	1.0	1.0	1.0	1.0	2.0	2.0	2.9	3.9	3.9	5.9	5.9
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°	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2	292.2
2.5°	291.2	290.2	288.2	286.3	285.3	284.3	282.4	279.4	277.4	276.5
5°	295.1	294.1	293.1	291.2	290.2	289.2	287.3	285.3	283.3	281.4
7.5°	299.0	300.0	299.0	298.0	297.1	296.1	294.1	293.1	291.2	289.2
10°	304.9	305.9	305.9	305.9	305.9	304.9	302.9	302.9	301.0	299.0
12.5°	310.8	313.7	314.7	314.7	314.7	315.7	313.7	312.7	310.8	310.8
15°	318.6	320.6	323.5	326.5	325.5	326.5	326.5	325.5	323.5	323.5
17.5°	325.5	330.4	334.3	336.3	338.2	338.2	339.2	339.2	337.3	337.3
20°	333.3	340.2	345.1	348.0	351.0	352.0	352.0	353.9	352.9	352.9
22.5°	342.2	349.0	355.9	360.8	363.7	364.7	367.6	368.6	367.6	365.7
25°	350.0	359.8	366.7	372.5	375.5	377.4	381.4	383.3	383.3	381.4
27.5°	358.8	368.6	378.4	386.3	388.2	391.2	396.1	397.1	398.0	397.1
30°	366.7	379.4	390.2	398.0	401.0	403.9	409.8	411.8	411.8	411.8
32.5°	374.5	389.2	401.0	410.8	414.7	417.6	422.5	425.5	425.5	426.5
35°	383.3	398.0	410.8	421.6	426.5	429.4	436.3	439.2	440.2	439.2
37.5°	391.2	406.9	420.6	431.4	436.3	440.2	447.1	451.0	452.0	452.0
40°	399.0	414.7	429.4	442.2	447.1	452.0	458.8	462.7	464.7	464.7
42.5°	404.9	422.5	439.2	452.0	456.9	461.8	469.6	473.5	475.5	475.5
45°	410.8	430.4	447.1	460.8	465.7	471.6	480.4	484.3	486.3	487.3
47.5°	415.7	436.3	453.9	468.6	475.5	480.4	489.2	494.1	497.1	497.1
50°	420.6	442.2	459.8	475.5	482.3	488.2	497.1	502.9	505.9	505.9
52.5°	424.5	447.1	466.7	483.3	490.2	496.1	504.9	510.8	513.7	513.7
55°	428.4	451.0	470.6	488.2	495.1	502.0	510.8	517.6	520.6	521.6
57.5°	430.4	453.9	474.5	493.1	500.0	506.9	516.7	523.5	526.5	526.5
60°	432.3	456.9	478.4	497.1	504.9	510.8	521.6	528.4	531.4	532.3
62.5°	433.3	458.8	480.4	500.0	507.8	514.7	525.5	532.3	536.3	537.2
65°	433.3	458.8	481.4	501.0	508.8	516.7	527.4	534.3	538.2	539.2
67.5°	432.3	458.8	482.3	502.0	510.8	517.6	529.4	536.3	540.2	541.2
70°	430.4	457.8	481.4	501.0	509.8	516.7	529.4	537.2	541.2	542.2
72.5°	428.4	454.9	479.4	500.0	508.8	516.7	528.4	536.3	541.2	542.2
75°	424.5	452.9	477.4	498.0	505.9	513.7	526.5	534.3	539.2	540.2
77.5°	420.6	448.0	472.5	494.1	502.9	510.8	523.5	531.4	536.3	537.2
80°	414.7	443.1	467.6	489.2	498.0	505.9	518.6	526.5	531.4	533.3
82.5°	408.8	437.3	461.8	483.3	492.2	500.0	512.7	521.6	526.5	527.4
85°	401.0	429.4	454.9	475.5	484.3	493.1	505.9	514.7	519.6	520.6
87.5°	393.1	421.6	447.1	467.6	477.4	485.3	499.0	507.8	511.8	512.7
90°	384.3	412.7	438.2	459.8	468.6	476.5	490.2	499.0	503.9	504.9
92.5°	375.5	404.9	429.4	451.0	459.8	468.6	481.4	490.2	495.1	497.1
95°	367.6	395.1	420.6	441.2	451.0	457.8	471.6	479.4	485.3	486.3
97.5°	357.8	386.3	410.8	431.4	440.2	448.0	460.8	469.6	474.5	475.5
100°	348.0	374.5	400.0	420.6	428.4	436.3	449.0	456.9	461.8	462.7
102.5°	336.3	363.7	387.3	407.8	415.7	424.5	436.3	444.1	449.0	450.0
105°	324.5	351.0	375.5	395.1	403.9	410.8	423.5	431.4	435.3	437.3
107.5°	311.8	339.2	361.8	381.4	389.2	397.1	409.8	416.7	420.6	422.5
110°	299.0	326.5	349.0	367.6	376.5	383.3	395.1	402.0	406.9	406.9





TEST NUMBER: P236123

CATALOG NUMBER: CFA-4-LD4-UNV-STD-35-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	285.3	311.8	334.3	352.9	359.8	367.6	379.4	385.3	389.2	389.2
115°	272.5	297.1	318.6	337.3	345.1	352.0	362.7	369.6	373.5	374.5
117.5°	257.8	282.4	302.9	321.6	328.4	335.3	346.1	352.0	356.9	356.9
120°	244.1	267.6	287.3	304.9	312.7	318.6	328.4	335.3	338.2	339.2
122.5°	229.4	252.0	271.6	287.3	295.1	301.0	309.8	316.7	319.6	320.6
125°	213.7	236.3	253.9	270.6	276.5	283.3	292.2	298.0	301.0	302.0
127.5°	199.0	219.6	237.3	252.0	258.8	264.7	273.5	279.4	281.4	282.4
130°	184.3	202.9	220.6	234.3	240.2	245.1	253.9	258.8	261.8	261.8
132.5°	168.6	186.3	202.0	215.7	221.6	226.5	234.3	239.2	241.2	242.2
135°	152.9	169.6	185.3	197.1	202.0	206.9	214.7	217.6	221.6	220.6
137.5°	137.3	152.9	167.6	178.4	183.3	187.3	194.1	199.0	200.0	200.0
140°	119.6	136.3	149.0	159.8	164.7	168.6	174.5	178.4	180.4	179.4
142.5°	102.9	118.6	132.4	142.2	145.1	150.0	155.9	158.8	158.8	158.8
145°	87.3	100.0	113.7	123.5	127.4	130.4	135.3	137.3	139.2	139.2
147.5°	72.5	83.3	94.1	104.9	108.8	111.8	116.7	118.6	118.6	118.6
150°	58.8	66.7	76.5	84.3	90.2	93.1	97.1	99.0	100.0	100.0
152.5°	47.1	53.9	59.8	66.7	70.6	74.5	80.4	80.4	81.4	81.4
155°	36.3	41.2	46.1	51.0	52.9	55.9	61.8	63.7	63.7	62.7
157.5°	26.5	30.4	33.3	37.3	38.2	40.2	44.1	48.0	48.0	47.1
160°	18.6	20.6	22.5	24.5	25.5	25.5	29.4	33.3	33.3	32.4
162.5°	11.8	12.7	12.7	13.7	13.7	14.7	14.7	16.7	19.6	18.6
165°	5.9	5.9	5.9	4.9	4.9	4.9	5.9	4.9	6.9	6.9
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)