

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: P236094

Luminaire Tested: **CFA-2-LD4-UNV-HI-30-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

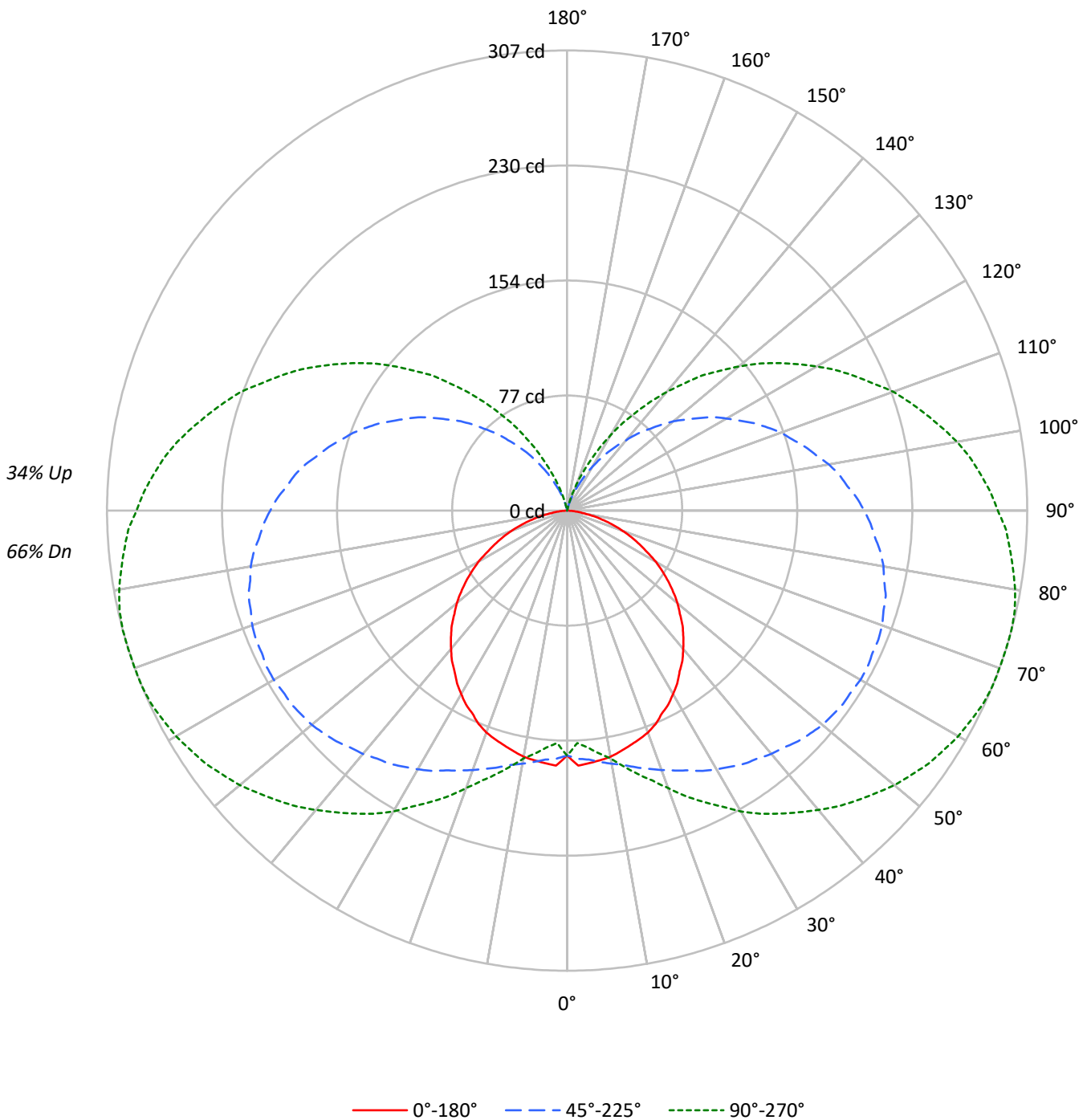
Test Method: LM-79-08  
Report Number: P236094  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-8)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CFA-2-LD4-UNV-HI-30-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
2ft  
Light Source: (42) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1878.6 lumens  
Efficiency: N/A  
Efficacy: 84.6 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

TEST NUMBER: P236094  
CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

### Luminous Intensity Polar Plot





TEST NUMBER: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-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	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°	5276	5276	5276
5°	5417	4876	4504
10°	5342	4611	4282
15°	5233	4445	4236
20°	5161	4356	4254
25°	5010	4310	4344
30°	4887	4324	4457
35°	4713	4343	4551
40°	4561	4371	4650
45°	4380	4431	4756
50°	4161	4499	4876
55°	3883	4556	4989
60°	3578	4623	5100
65°	3156	4681	5212
70°	2711	4776	5304
75°	2113	4864	5422
80°	1336	4945	5525
85°	669	5017	5614



TEST NUMBER: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	16.0	0.8
10°-20°	49.9	2.7
20°-30°	86.9	4.6
30°-40°	124.6	6.6
40°-50°	159.1	8.5
50°-60°	187.1	10.0
60°-70°	204.4	10.9
70°-80°	209.3	11.1
80°-90°	200.9	10.7
90°-100°	182.1	9.7
100°-110°	154.7	8.2
110°-120°	121.9	6.5
120°-130°	87.4	4.7
130°-140°	54.8	2.9
140°-150°	28.2	1.5
150°-160°	10.0	0.5
160°-170°	1.3	0.1
170°-180°	0.0	0.0
0°-30°	152.7	8.1
0°-40°	277.3	14.8
0°-60°	623.5	33.2
0°-90°	1238.1	65.9
90°-120°	458.8	24.4
90°-150°	629.1	33.5
90°-180°	640.0	34.1
0°-180°	1878.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	163	163	163	163	163	
5°	169	169	167	163	159	16
15°	162	168	177	183	182	46
25°	150	164	191	211	214	69
35°	131	160	206	239	247	82
45°	109	152	218	261	273	84
55°	82	144	225	278	294	74
65°	53	132	225	286	306	53
75°	26	118	220	286	307	27
85°	5	102	206	276	297	5
90°	0	94	198	265	287	0
95°	0	85	188	256	277	0
105°	0	68	164	228	248	0
115°	0	52	138	195	212	0
125°	0	38	108	156	172	0
135°	0	26	76	115	127	0
145°	0	16	48	73	80	0
155°	0	7	21	35	37	0
165°	0	1	4	5	5	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4
2.5°	170.3	170.3	170.3	170.3	169.1	169.1	169.1	168.0	168.0	166.8	165.7
5°	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	168.0	168.0	166.8
7.5°	168.0	168.0	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1	169.1
10°	166.8	166.8	166.8	168.0	168.0	169.1	169.1	170.3	170.3	171.5	171.5
12.5°	164.5	165.7	165.7	166.8	168.0	168.0	169.1	170.3	171.5	172.6	173.8
15°	162.2	163.4	164.5	165.7	166.8	168.0	169.1	171.5	173.8	174.9	177.3
17.5°	159.9	161.0	162.2	163.4	166.8	168.0	169.1	171.5	174.9	178.4	180.7
20°	157.6	157.6	159.9	162.2	165.7	166.8	169.1	172.6	176.1	180.7	184.2
22.5°	154.1	154.1	156.4	159.9	163.4	165.7	168.0	173.8	178.4	183.1	187.7
25°	149.5	151.8	154.1	157.6	162.2	164.5	168.0	173.8	179.6	185.4	191.2
27.5°	146.0	147.1	150.6	155.2	161.0	164.5	166.8	173.8	181.9	188.8	195.8
30°	141.3	142.5	147.1	151.8	158.7	162.2	166.8	174.9	183.1	191.2	199.3
32.5°	136.7	137.9	142.5	149.5	156.4	161.0	165.7	174.9	184.2	193.5	202.7
35°	130.9	133.2	139.0	146.0	155.2	159.9	164.5	174.9	185.4	195.8	206.2
37.5°	126.3	128.6	134.4	142.5	151.8	157.6	163.4	174.9	186.5	198.1	208.5
40°	120.5	122.8	129.8	139.0	149.5	156.4	162.2	174.9	187.7	200.4	212.0
42.5°	114.7	117.0	125.1	135.6	147.1	154.1	161.0	174.9	188.8	202.7	214.3
45°	108.9	111.2	120.5	130.9	144.8	151.8	159.9	174.9	190.0	203.9	217.8
47.5°	102.0	105.4	114.7	127.4	142.5	150.6	158.7	174.9	190.0	205.1	220.1
50°	96.2	99.6	110.1	124.0	140.2	148.3	156.4	173.8	191.2	207.4	222.4
52.5°	89.2	93.8	104.3	119.3	136.7	146.0	155.2	173.8	191.2	207.4	223.6
55°	82.3	86.9	99.6	115.9	134.4	143.7	152.9	172.6	191.2	208.5	224.8
57.5°	75.3	81.1	93.8	111.2	130.9	141.3	150.6	171.5	190.0	208.5	224.8
60°	68.4	74.1	88.0	106.6	127.4	137.9	148.3	169.1	190.0	208.5	225.9
62.5°	60.2	67.2	83.4	103.1	124.0	135.6	146.0	168.0	187.7	207.4	225.9
65°	53.3	60.2	77.6	98.5	120.5	132.1	143.7	165.7	186.5	206.2	224.8
67.5°	46.3	54.5	71.8	93.8	117.0	128.6	140.2	163.4	185.4	205.1	224.8
70°	39.4	47.5	66.0	89.2	113.5	125.1	136.7	161.0	183.1	203.9	223.6
72.5°	32.4	41.7	61.4	84.6	108.9	121.6	134.4	157.6	180.7	201.6	221.3
75°	25.5	35.9	55.6	79.9	105.4	118.2	130.9	155.2	177.3	199.3	220.1
77.5°	19.7	30.1	51.0	75.3	102.0	114.7	126.3	151.8	174.9	197.0	216.6
80°	12.7	24.3	46.3	70.7	97.3	110.1	122.8	148.3	171.5	193.5	214.3
82.5°	8.1	19.7	41.7	67.2	92.7	106.6	119.3	143.7	168.0	190.0	210.9
85°	4.6	16.2	37.1	62.6	89.2	102.0	114.7	140.2	163.4	185.4	206.2
87.5°	1.2	12.7	33.6	57.9	84.6	97.3	110.1	135.6	159.9	181.9	202.7
90°	0.0	10.4	30.1	54.5	81.1	93.8	106.6	130.9	155.2	177.3	198.1
92.5°	0.0	8.1	27.8	51.0	76.5	89.2	102.0	127.4	150.6	172.6	193.5
95°	0.0	7.0	24.3	47.5	73.0	84.6	97.3	122.8	146.0	168.0	187.7
97.5°	0.0	5.8	22.0	44.0	68.4	81.1	92.7	117.0	140.2	162.2	183.1
100°	0.0	4.6	19.7	40.5	64.9	76.5	89.2	112.4	135.6	156.4	177.3
102.5°	0.0	4.6	18.5	38.2	60.2	73.0	84.6	107.7	129.8	150.6	170.3
105°	0.0	4.6	16.2	34.8	56.8	68.4	79.9	103.1	125.1	144.8	164.5
107.5°	0.0	3.5	15.1	32.4	53.3	64.9	75.3	97.3	119.3	139.0	157.6
110°	0.0	3.5	13.9	30.1	49.8	60.2	70.7	92.7	113.5	133.2	151.8



TEST NUMBER: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	3.5	12.7	27.8	46.3	56.8	67.2	86.9	107.7	126.3	144.8
115°	0.0	3.5	11.6	25.5	42.9	52.1	62.6	82.3	102.0	120.5	137.9
117.5°	0.0	3.5	10.4	23.2	39.4	48.7	57.9	76.5	96.2	113.5	129.8
120°	0.0	3.5	10.4	22.0	37.1	45.2	53.3	71.8	89.2	106.6	122.8
122.5°	0.0	2.3	9.3	19.7	33.6	41.7	49.8	67.2	83.4	99.6	115.9
125°	0.0	2.3	9.3	18.5	31.3	38.2	45.2	61.4	77.6	92.7	107.7
127.5°	0.0	2.3	8.1	16.2	27.8	34.8	41.7	56.8	70.7	85.7	99.6
130°	0.0	2.3	7.0	15.1	25.5	31.3	38.2	51.0	64.9	78.8	92.7
132.5°	0.0	2.3	7.0	13.9	23.2	29.0	33.6	46.3	59.1	71.8	84.6
135°	0.0	2.3	5.8	12.7	20.9	25.5	31.3	41.7	53.3	64.9	76.5
137.5°	0.0	2.3	5.8	11.6	18.5	23.2	27.8	37.1	47.5	59.1	69.5
140°	0.0	2.3	4.6	10.4	17.4	20.9	24.3	33.6	42.9	52.1	61.4
142.5°	0.0	1.2	4.6	9.3	15.1	18.5	22.0	30.1	37.1	46.3	54.5
145°	0.0	1.2	4.6	8.1	12.7	16.2	18.5	25.5	32.4	40.5	47.5
147.5°	0.0	1.2	3.5	7.0	10.4	12.7	16.2	22.0	27.8	34.8	40.5
150°	0.0	1.2	3.5	5.8	9.3	11.6	12.7	17.4	23.2	29.0	33.6
152.5°	0.0	1.2	2.3	4.6	7.0	9.3	10.4	13.9	18.5	23.2	27.8
155°	0.0	1.2	2.3	3.5	5.8	7.0	8.1	11.6	13.9	17.4	20.9
157.5°	0.0	1.2	1.2	2.3	4.6	5.8	7.0	9.3	11.6	13.9	16.2
160°	0.0	1.2	1.2	2.3	3.5	3.5	4.6	7.0	8.1	9.3	11.6
162.5°	0.0	1.2	1.2	1.2	2.3	2.3	2.3	4.6	5.8	5.8	7.0
165°	0.0	1.2	1.2	1.2	1.2	1.2	1.2	2.3	2.3	3.5	3.5
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: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4	163.4
2.5°	164.5	163.4	162.2	161.0	159.9	159.9	157.6	156.4	155.2	155.2
5°	166.8	165.7	164.5	163.4	163.4	162.2	161.0	159.9	158.7	158.7
7.5°	169.1	168.0	168.0	166.8	166.8	166.8	164.5	164.5	163.4	163.4
10°	171.5	171.5	171.5	171.5	171.5	171.5	170.3	169.1	168.0	168.0
12.5°	174.9	176.1	176.1	177.3	177.3	177.3	176.1	176.1	174.9	174.9
15°	179.6	180.7	181.9	183.1	183.1	183.1	183.1	183.1	181.9	181.9
17.5°	183.1	185.4	187.7	188.8	190.0	190.0	190.0	190.0	190.0	188.8
20°	187.7	191.2	193.5	195.8	195.8	197.0	198.1	198.1	198.1	197.0
22.5°	192.3	195.8	199.3	202.7	203.9	203.9	205.1	206.2	206.2	206.2
25°	197.0	201.6	206.2	209.7	210.9	212.0	213.2	214.3	214.3	214.3
27.5°	201.6	207.4	212.0	216.6	217.8	219.0	221.3	222.4	222.4	222.4
30°	206.2	213.2	219.0	222.4	224.8	227.1	229.4	230.6	230.6	231.7
32.5°	210.9	217.8	224.8	229.4	231.7	234.0	236.3	238.7	239.8	239.8
35°	215.5	223.6	230.6	236.3	238.7	241.0	243.3	245.6	246.8	246.8
37.5°	219.0	228.2	235.2	242.1	244.5	246.8	250.2	252.6	253.7	253.7
40°	222.4	231.7	241.0	247.9	250.2	252.6	257.2	259.5	260.7	260.7
42.5°	225.9	236.3	245.6	252.6	256.0	258.4	263.0	265.3	266.5	267.6
45°	229.4	241.0	250.2	257.2	260.7	264.1	267.6	271.1	273.4	273.4
47.5°	232.9	244.5	253.7	261.8	266.5	268.8	273.4	276.9	279.2	279.2
50°	235.2	247.9	258.4	266.5	271.1	273.4	279.2	282.7	285.0	285.0
52.5°	237.5	250.2	261.8	269.9	274.6	278.1	283.8	287.3	289.6	289.6
55°	239.8	252.6	264.1	273.4	278.1	281.5	287.3	292.0	293.1	294.3
57.5°	241.0	254.9	266.5	276.9	280.4	285.0	290.8	295.4	296.6	297.7
60°	242.1	256.0	267.6	279.2	283.8	287.3	293.1	297.7	300.1	301.2
62.5°	242.1	257.2	268.8	280.4	285.0	289.6	295.4	300.1	302.4	303.5
65°	242.1	257.2	269.9	281.5	286.2	290.8	297.7	302.4	304.7	305.9
67.5°	242.1	257.2	271.1	282.7	288.5	292.0	298.9	303.5	307.0	307.0
70°	241.0	256.0	269.9	282.7	287.3	292.0	298.9	304.7	307.0	307.0
72.5°	239.8	256.0	269.9	281.5	287.3	292.0	298.9	304.7	307.0	307.0
75°	237.5	253.7	268.8	280.4	286.2	290.8	298.9	303.5	307.0	307.0
77.5°	236.3	252.6	267.6	279.2	285.0	289.6	297.7	302.4	304.7	305.9
80°	232.9	249.1	264.1	276.9	281.5	287.3	294.3	300.1	302.4	303.5
82.5°	229.4	246.8	260.7	273.4	279.2	283.8	290.8	296.6	300.1	300.1
85°	225.9	242.1	257.2	269.9	275.7	280.4	287.3	293.1	296.6	296.6
87.5°	221.3	237.5	252.6	265.3	269.9	275.7	283.8	288.5	292.0	293.1
90°	216.6	232.9	247.9	260.7	265.3	271.1	279.2	283.8	286.2	287.3
92.5°	212.0	228.2	243.3	256.0	260.7	265.3	273.4	279.2	281.5	282.7
95°	206.2	223.6	237.5	250.2	256.0	260.7	268.8	273.4	275.7	276.9
97.5°	201.6	217.8	231.7	244.5	250.2	254.9	261.8	267.6	269.9	271.1
100°	194.6	210.9	225.9	237.5	243.3	247.9	254.9	260.7	263.0	264.1
102.5°	188.8	205.1	219.0	230.6	236.3	239.8	247.9	252.6	254.9	256.0
105°	181.9	198.1	212.0	223.6	228.2	232.9	239.8	244.5	247.9	247.9
107.5°	174.9	191.2	203.9	215.5	220.1	224.8	231.7	236.3	238.7	239.8
110°	168.0	183.1	197.0	208.5	212.0	216.6	223.6	228.2	230.6	231.7





TEST NUMBER: P236094

CATALOG NUMBER: CFA-2-LD4-UNV-HI-30-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	161.0	174.9	187.7	199.3	203.9	207.4	214.3	219.0	221.3	221.3
115°	152.9	166.8	179.6	190.0	194.6	199.3	205.1	208.5	212.0	212.0
117.5°	146.0	158.7	171.5	180.7	185.4	188.8	195.8	199.3	201.6	202.7
120°	137.9	151.8	162.2	172.6	176.1	180.7	186.5	190.0	192.3	192.3
122.5°	129.8	142.5	154.1	162.2	166.8	170.3	176.1	179.6	181.9	181.9
125°	121.6	133.2	143.7	152.9	156.4	161.0	165.7	169.1	171.5	171.5
127.5°	112.4	124.0	134.4	143.7	146.0	150.6	155.2	158.7	159.9	161.0
130°	104.3	115.9	125.1	133.2	136.7	139.0	144.8	147.1	148.3	149.5
132.5°	96.2	106.6	114.7	122.8	126.3	128.6	133.2	136.7	137.9	137.9
135°	88.0	97.3	105.4	112.4	114.7	118.2	121.6	125.1	126.3	127.4
137.5°	78.8	88.0	95.0	102.0	104.3	107.7	111.2	113.5	114.7	114.7
140°	70.7	78.8	85.7	91.5	93.8	96.2	99.6	102.0	103.1	103.1
142.5°	62.6	69.5	76.5	81.1	83.4	85.7	89.2	90.4	91.5	91.5
145°	54.5	60.2	66.0	71.8	73.0	75.3	77.6	79.9	79.9	79.9
147.5°	47.5	52.1	56.8	61.4	63.7	64.9	67.2	68.4	69.5	69.5
150°	39.4	44.0	48.7	52.1	54.5	54.5	56.8	57.9	57.9	57.9
152.5°	32.4	37.1	40.5	42.9	45.2	45.2	46.3	47.5	47.5	47.5
155°	24.3	27.8	32.4	34.8	34.8	35.9	37.1	37.1	38.2	37.1
157.5°	18.5	20.9	23.2	26.6	27.8	27.8	27.8	29.0	29.0	27.8
160°	12.7	15.1	16.2	18.5	18.5	19.7	20.9	20.9	20.9	19.7
162.5°	8.1	9.3	10.4	10.4	11.6	11.6	12.7	12.7	12.7	12.7
165°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	5.8	5.8	4.6
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)