

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: P236129

Luminaire Tested: **CFA-4-LD4-UNV-LO-50-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P236129  
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-LO-50-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
4ft  
Light Source: (112) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

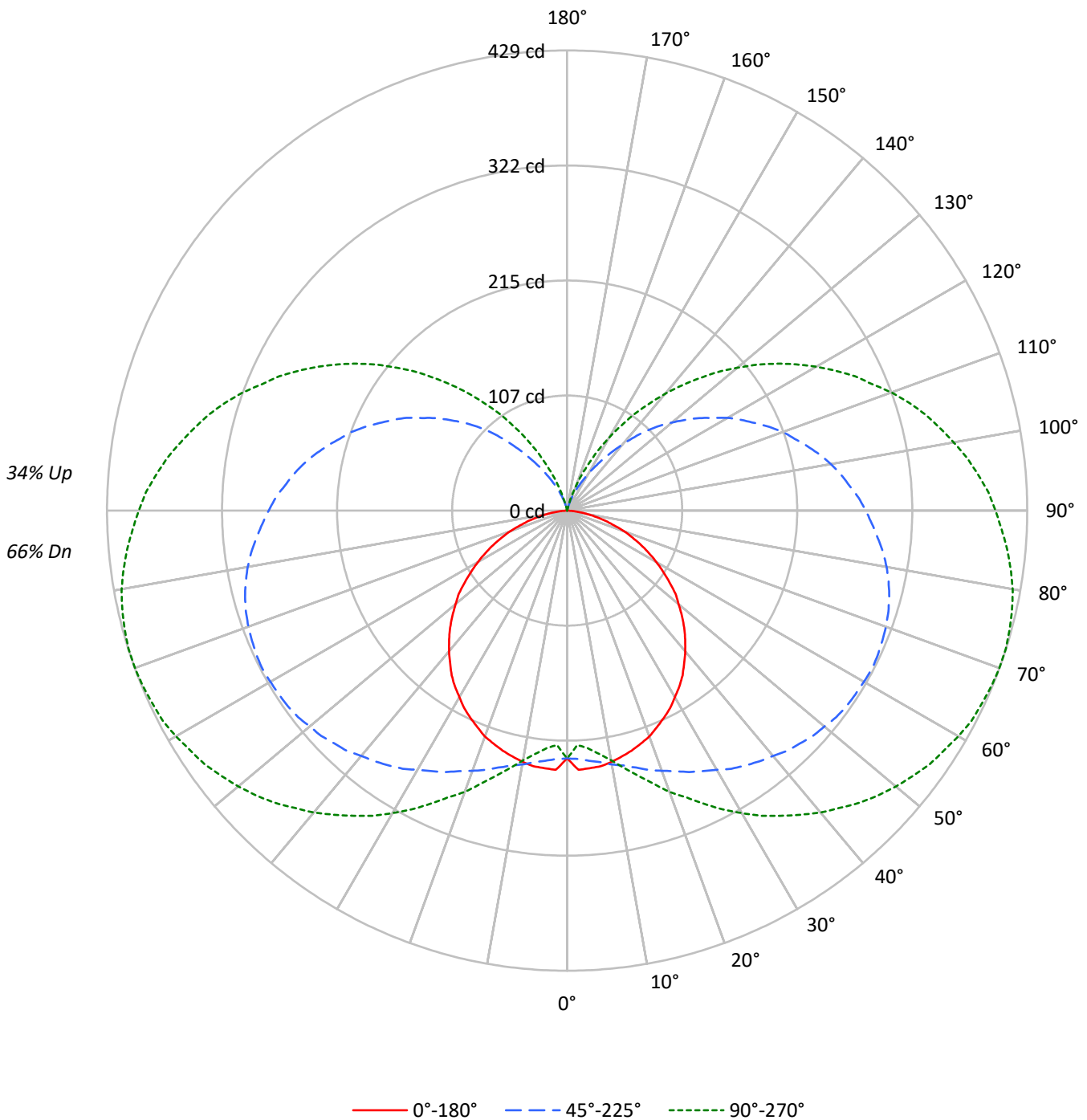
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2635.4 lumens  
Efficiency: N/A  
Efficacy: 112.6 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 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): 23.4  
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-4-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	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°	3730	3730	3730
5°	3885	3435	3157
10°	3856	3254	3014
15°	3806	3140	2980
20°	3758	3090	3013
25°	3682	3076	3057
30°	3603	3077	3132
35°	3530	3110	3202
40°	3416	3139	3277
45°	3300	3191	3352
50°	3154	3242	3422
55°	2985	3303	3497
60°	2778	3356	3564
65°	2535	3421	3632
70°	2253	3482	3704
75°	1853	3548	3772
80°	1303	3610	3839
85°	647	3668	3896



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	22.5	0.9
10°-20°	70.4	2.7
20°-30°	122.7	4.7
30°-40°	176.0	6.7
40°-50°	225.0	8.5
50°-60°	264.1	10.0
60°-70°	288.4	10.9
70°-80°	294.4	11.2
80°-90°	281.7	10.7
90°-100°	254.9	9.7
100°-110°	216.9	8.2
110°-120°	170.6	6.5
120°-130°	121.6	4.6
130°-140°	75.2	2.9
140°-150°	37.1	1.4
150°-160°	12.4	0.5
160°-170°	1.4	0.1
170°-180°	0.0	0.0
0°-30°	215.6	8.2
0°-40°	391.6	14.9
0°-60°	880.6	33.4
0°-90°	1745.1	66.2
90°-120°	642.5	24.4
90°-150°	876.4	33.3
90°-180°	890.0	33.8
0°-180°	2635.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	231	231	231	231	231	
5°	241	239	234	230	222	23
15°	232	238	248	257	256	65
25°	213	234	269	297	302	98
35°	188	226	290	337	347	117
45°	154	216	307	368	385	119
55°	116	205	318	392	412	104
65°	76	189	319	402	426	75
75°	37	169	311	400	427	39
85°	6	146	291	383	412	8
90°	0	133	278	371	399	0
95°	0	121	264	357	385	0
105°	0	97	232	319	346	0
115°	0	74	193	273	296	0
125°	0	53	150	219	239	0
135°	0	33	105	160	174	0
145°	1	18	58	101	110	0
155°	1	8	25	42	50	0
165°	1	2	5	4	5	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236129

CATALOG NUMBER: CFA-4-LD4-UNV-LO-50-OP-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0
2.5°	241.9	241.1	240.4	240.4	239.6	239.6	238.8	238.0	236.5	234.1	231.8
5°	241.1	240.4	239.6	239.6	239.6	238.8	238.8	238.8	237.2	235.7	234.1
7.5°	240.4	239.6	238.8	238.8	239.6	239.6	239.6	239.6	238.8	238.0	236.5
10°	238.0	237.2	236.5	238.0	238.0	238.8	239.6	240.4	240.4	240.4	240.4
12.5°	234.9	234.9	234.9	236.5	238.0	238.8	239.6	241.9	242.7	243.5	243.5
15°	231.8	231.8	232.6	234.1	237.2	238.0	238.8	243.5	245.8	247.3	248.1
17.5°	227.9	227.9	228.7	231.8	234.9	237.2	238.8	244.2	247.3	250.4	253.5
20°	224.1	224.1	225.6	229.5	233.4	236.5	238.8	245.0	249.7	254.3	258.2
22.5°	218.6	219.4	221.7	226.4	231.8	235.7	238.8	245.0	252.0	258.2	262.8
25°	213.2	214.0	217.1	223.3	229.5	234.1	238.0	245.8	253.5	262.1	269.0
27.5°	207.8	208.6	212.4	219.4	227.2	231.8	236.5	246.6	256.6	265.9	273.7
30°	200.8	202.4	207.8	215.5	224.8	230.3	235.7	247.3	258.2	269.0	279.1
32.5°	194.6	196.2	202.4	210.9	222.5	228.7	234.9	248.9	260.5	272.9	285.3
35°	187.6	189.2	196.2	206.2	219.4	226.4	233.4	248.1	262.8	276.0	290.0
37.5°	179.1	182.2	190.0	201.6	215.5	224.1	231.8	248.1	264.4	279.1	294.6
40°	171.3	174.4	183.8	196.9	212.4	221.7	230.3	248.9	265.9	282.2	298.5
42.5°	162.8	165.9	176.8	191.5	209.3	218.6	228.7	248.9	267.5	285.3	303.9
45°	154.3	158.2	169.8	186.1	206.2	216.3	227.2	248.9	269.0	288.4	307.0
47.5°	145.0	149.6	162.8	180.7	202.4	214.0	225.6	248.1	269.8	290.7	310.9
50°	135.7	141.1	155.1	175.2	198.5	210.9	223.3	247.3	270.6	292.3	313.2
52.5°	127.2	132.6	148.1	169.8	194.6	208.6	221.0	246.6	271.4	293.8	316.3
55°	116.3	123.3	140.3	163.6	190.7	204.7	217.9	245.0	270.6	294.6	317.9
57.5°	106.2	114.0	133.4	157.4	186.1	200.8	215.5	243.5	269.8	294.6	318.7
60°	96.1	104.7	125.6	152.0	182.2	197.7	212.4	241.1	269.0	294.6	319.4
62.5°	86.1	95.4	117.1	145.8	177.5	193.8	208.6	238.8	268.3	294.6	320.2
65°	76.0	86.8	110.1	139.6	172.1	189.2	204.7	235.7	265.2	293.1	319.4
67.5°	65.9	77.5	101.6	133.4	167.5	184.5	200.8	232.6	263.6	291.5	317.9
70°	56.6	67.5	94.6	127.2	161.3	179.9	196.2	229.5	260.5	289.2	316.3
72.5°	45.7	58.9	87.6	121.0	156.6	174.4	192.3	224.8	257.4	286.1	314.0
75°	37.2	50.4	79.9	114.7	150.4	169.0	186.9	220.2	253.5	283.0	310.9
77.5°	27.9	42.6	72.9	107.8	144.2	162.8	181.4	215.5	248.9	279.1	307.0
80°	19.4	34.9	65.9	101.6	138.8	157.4	175.2	210.1	243.5	273.7	302.4
82.5°	12.4	28.7	59.7	95.4	132.6	152.0	169.8	205.5	238.0	269.0	297.0
85°	6.2	22.5	53.5	89.2	126.4	145.8	163.6	199.3	231.8	262.8	290.7
87.5°	1.6	17.8	48.1	83.0	120.2	138.8	157.4	193.1	226.4	256.6	284.5
90°	0.0	14.0	43.4	77.5	114.0	132.6	150.4	186.1	219.4	249.7	278.3
92.5°	0.0	11.6	38.8	72.1	108.5	126.4	145.0	179.9	213.2	243.5	272.1
95°	0.0	9.3	34.9	66.7	102.3	121.0	138.0	172.9	206.2	236.5	264.4
97.5°	0.0	7.8	31.0	62.8	96.9	114.7	131.8	166.7	199.3	229.5	257.4
100°	0.0	7.0	27.9	58.1	91.5	108.5	125.6	159.7	192.3	221.7	249.7
102.5°	0.0	6.2	25.6	53.5	86.1	103.1	119.4	152.7	184.5	214.0	241.1
105°	0.0	5.4	23.3	49.6	80.6	96.9	113.2	145.8	176.8	205.5	231.8
107.5°	0.0	4.7	20.9	45.7	75.2	90.7	106.2	138.0	168.2	196.9	222.5
110°	0.0	4.7	18.6	41.9	69.8	85.3	100.0	130.3	160.5	187.6	214.0



TEST NUMBER: P236129

CATALOG NUMBER: CFA-4-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	3.9	17.1	38.0	65.1	79.1	93.8	122.5	151.2	178.3	203.9
115°	0.0	3.9	15.5	34.9	59.7	73.7	87.6	114.7	142.7	168.2	193.1
117.5°	0.0	3.9	14.7	31.8	55.0	68.2	81.4	107.8	134.1	158.9	183.0
120°	0.0	3.1	13.2	29.5	50.4	62.8	75.2	100.0	124.8	149.6	172.9
122.5°	0.0	3.1	12.4	27.1	46.5	57.4	69.0	93.0	116.3	139.6	160.5
125°	0.0	3.1	11.6	24.8	41.9	52.7	62.8	85.3	107.8	129.5	150.4
127.5°	0.0	3.1	10.1	22.5	38.0	47.3	57.4	78.3	99.2	119.4	138.8
130°	0.0	2.3	9.3	20.2	34.1	42.6	51.9	70.6	89.9	109.3	127.9
132.5°	0.0	2.3	8.5	17.8	30.2	38.0	45.7	62.8	81.4	100.0	117.1
135°	0.0	1.6	7.0	15.5	26.4	33.3	40.3	55.0	72.1	88.4	105.4
137.5°	0.0	1.6	6.2	13.2	23.3	28.7	34.9	48.1	62.8	77.5	93.0
140°	0.0	1.6	5.4	11.6	20.2	24.8	30.2	41.9	54.3	67.5	80.6
142.5°	0.0	1.6	4.7	10.1	17.1	21.7	25.6	35.7	45.7	57.4	69.0
145°	0.8	1.6	3.9	8.5	14.7	17.8	21.7	30.2	39.5	48.8	58.1
147.5°	0.8	0.8	3.1	7.0	11.6	15.5	18.6	25.6	32.6	40.3	48.8
150°	0.8	0.8	3.1	6.2	10.1	12.4	15.5	20.9	27.1	33.3	39.5
152.5°	0.8	0.8	2.3	4.7	8.5	10.1	12.4	17.1	21.7	26.4	31.8
155°	0.8	0.8	2.3	3.9	7.0	8.5	10.1	14.0	17.1	20.9	24.8
157.5°	0.8	0.8	1.6	3.1	5.4	6.2	7.8	10.1	13.2	15.5	18.6
160°	0.8	0.8	1.6	2.3	3.9	4.7	5.4	7.8	10.1	11.6	13.2
162.5°	0.8	0.8	0.8	1.6	2.3	3.1	3.9	4.7	6.2	7.8	8.5
165°	0.8	0.8	0.8	0.8	1.6	1.6	2.3	3.1	3.1	4.7	4.7
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: P236129

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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0	231.0
2.5°	230.3	229.5	227.9	226.4	225.6	224.8	223.3	221.0	219.4	218.6
5°	233.4	232.6	231.8	230.3	229.5	228.7	227.2	225.6	224.1	222.5
7.5°	236.5	237.2	236.5	235.7	234.9	234.1	232.6	231.8	230.3	228.7
10°	241.1	241.9	241.9	241.9	241.9	241.1	239.6	239.6	238.0	236.5
12.5°	245.8	248.1	248.9	248.9	248.9	249.7	248.1	247.3	245.8	245.8
15°	252.0	253.5	255.9	258.2	257.4	258.2	258.2	257.4	255.9	255.9
17.5°	257.4	261.3	264.4	265.9	267.5	267.5	268.3	268.3	266.7	266.7
20°	263.6	269.0	272.9	275.2	277.6	278.3	278.3	279.9	279.1	279.1
22.5°	270.6	276.0	281.4	285.3	287.6	288.4	290.7	291.5	290.7	289.2
25°	276.8	284.5	290.0	294.6	297.0	298.5	301.6	303.2	303.2	301.6
27.5°	283.8	291.5	299.3	305.5	307.0	309.4	313.2	314.0	314.8	314.0
30°	290.0	300.1	308.6	314.8	317.1	319.4	324.1	325.6	325.6	325.6
32.5°	296.2	307.8	317.1	324.9	328.0	330.3	334.2	336.5	336.5	337.3
35°	303.2	314.8	324.9	333.4	337.3	339.6	345.0	347.3	348.1	347.3
37.5°	309.4	321.8	332.6	341.1	345.0	348.1	353.5	356.7	357.4	357.4
40°	315.6	328.0	339.6	349.7	353.5	357.4	362.9	366.0	367.5	367.5
42.5°	320.2	334.2	347.3	357.4	361.3	365.2	371.4	374.5	376.0	376.0
45°	324.9	340.4	353.5	364.4	368.3	372.9	379.9	383.0	384.6	385.3
47.5°	328.7	345.0	359.0	370.6	376.0	379.9	386.9	390.8	393.1	393.1
50°	332.6	349.7	363.6	376.0	381.5	386.1	393.1	397.7	400.1	400.1
52.5°	335.7	353.5	369.1	382.2	387.7	392.3	399.3	403.9	406.3	406.3
55°	338.8	356.7	372.2	386.1	391.5	397.0	403.9	409.4	411.7	412.5
57.5°	340.4	359.0	375.3	390.0	395.4	400.8	408.6	414.0	416.4	416.4
60°	341.9	361.3	378.4	393.1	399.3	403.9	412.5	417.9	420.2	421.0
62.5°	342.7	362.9	379.9	395.4	401.6	407.0	415.6	421.0	424.1	424.9
65°	342.7	362.9	380.7	396.2	402.4	408.6	417.1	422.6	425.7	426.4
67.5°	341.9	362.9	381.5	397.0	403.9	409.4	418.7	424.1	427.2	428.0
70°	340.4	362.1	380.7	396.2	403.2	408.6	418.7	424.9	428.0	428.8
72.5°	338.8	359.8	379.1	395.4	402.4	408.6	417.9	424.1	428.0	428.8
75°	335.7	358.2	377.6	393.9	400.1	406.3	416.4	422.6	426.4	427.2
77.5°	332.6	354.3	373.7	390.8	397.7	403.9	414.0	420.2	424.1	424.9
80°	328.0	350.4	369.8	386.9	393.9	400.1	410.1	416.4	420.2	421.8
82.5°	323.3	345.8	365.2	382.2	389.2	395.4	405.5	412.5	416.4	417.1
85°	317.1	339.6	359.8	376.0	383.0	390.0	400.1	407.0	410.9	411.7
87.5°	310.9	333.4	353.5	369.8	377.6	383.8	394.6	401.6	404.7	405.5
90°	303.9	326.4	346.6	363.6	370.6	376.8	387.7	394.6	398.5	399.3
92.5°	297.0	320.2	339.6	356.7	363.6	370.6	380.7	387.7	391.5	393.1
95°	290.7	312.5	332.6	348.9	356.7	362.1	372.9	379.1	383.8	384.6
97.5°	283.0	305.5	324.9	341.1	348.1	354.3	364.4	371.4	375.3	376.0
100°	275.2	296.2	316.3	332.6	338.8	345.0	355.1	361.3	365.2	366.0
102.5°	265.9	287.6	306.3	322.5	328.7	335.7	345.0	351.2	355.1	355.9
105°	256.6	277.6	297.0	312.5	319.4	324.9	334.9	341.1	344.2	345.8
107.5°	246.6	268.3	286.1	301.6	307.8	314.0	324.1	329.5	332.6	334.2
110°	236.5	258.2	276.0	290.7	297.7	303.2	312.5	317.9	321.8	321.8





TEST NUMBER: P236129

CATALOG NUMBER: CFA-4-LD4-UNV-LO-50-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	225.6	246.6	264.4	279.1	284.5	290.7	300.1	304.7	307.8	307.8
115°	215.5	234.9	252.0	266.7	272.9	278.3	286.9	292.3	295.4	296.2
117.5°	203.9	223.3	239.6	254.3	259.7	265.2	273.7	278.3	282.2	282.2
120°	193.1	211.7	227.2	241.1	247.3	252.0	259.7	265.2	267.5	268.3
122.5°	181.4	199.3	214.8	227.2	233.4	238.0	245.0	250.4	252.8	253.5
125°	169.0	186.9	200.8	214.0	218.6	224.1	231.0	235.7	238.0	238.8
127.5°	157.4	173.7	187.6	199.3	204.7	209.3	216.3	221.0	222.5	223.3
130°	145.8	160.5	174.4	185.3	190.0	193.8	200.8	204.7	207.0	207.0
132.5°	133.4	147.3	159.7	170.6	175.2	179.1	185.3	189.2	190.7	191.5
135°	121.0	134.1	146.5	155.8	159.7	163.6	169.8	172.1	175.2	174.4
137.5°	108.5	121.0	132.6	141.1	145.0	148.1	153.5	157.4	158.2	158.2
140°	94.6	107.8	117.8	126.4	130.3	133.4	138.0	141.1	142.7	141.9
142.5°	81.4	93.8	104.7	112.4	114.7	118.6	123.3	125.6	125.6	125.6
145°	69.0	79.1	89.9	97.7	100.8	103.1	107.0	108.5	110.1	110.1
147.5°	57.4	65.9	74.4	83.0	86.1	88.4	92.3	93.8	93.8	93.8
150°	46.5	52.7	60.5	66.7	71.3	73.7	76.8	78.3	79.1	79.1
152.5°	37.2	42.6	47.3	52.7	55.8	58.9	63.6	63.6	64.4	64.4
155°	28.7	32.6	36.4	40.3	41.9	44.2	48.8	50.4	50.4	49.6
157.5°	20.9	24.0	26.4	29.5	30.2	31.8	34.9	38.0	38.0	37.2
160°	14.7	16.3	17.8	19.4	20.2	20.2	23.3	26.4	26.4	25.6
162.5°	9.3	10.1	10.1	10.9	10.9	11.6	11.6	13.2	15.5	14.7
165°	4.7	4.7	4.7	3.9	3.9	3.9	4.7	3.9	5.4	5.4
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)