

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: P236113

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236113
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-STD-50-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
3ft
Light Source: (84) 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

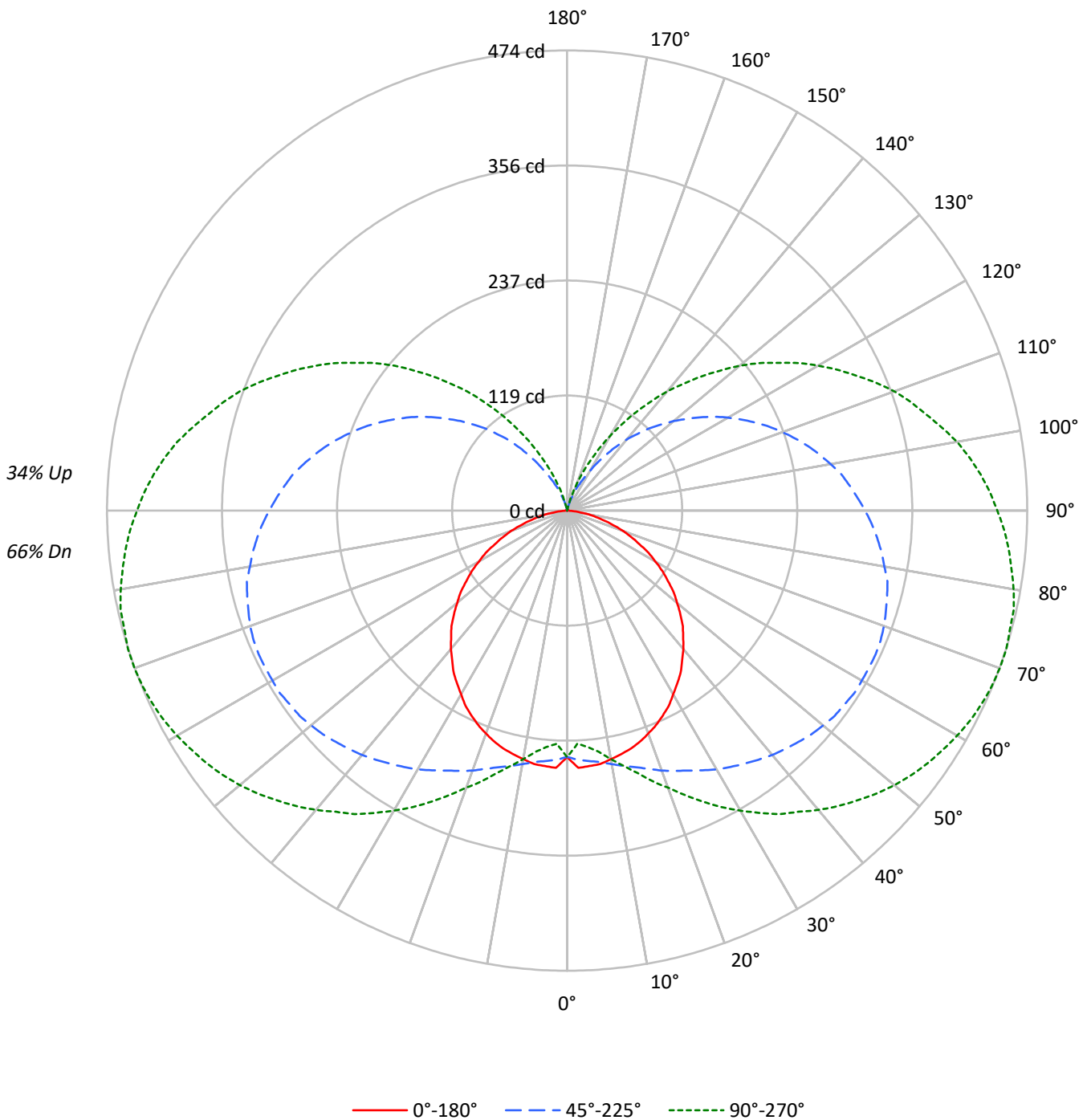
Lumens per Lamp: N/A
Luminaire Lumens: 2908.9 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 2.26 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 3' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 28.48
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°	5464	5464	5464
5°	5665	5060	4624
10°	5595	4776	4418
15°	5523	4602	4344
20°	5421	4530	4372
25°	5311	4482	4470
30°	5160	4502	4576
35°	5040	4523	4692
40°	4864	4578	4786
45°	4705	4636	4898
50°	4466	4715	5018
55°	4219	4786	5126
60°	3913	4867	5236
65°	3508	4958	5352
70°	3097	5047	5463
75°	2458	5135	5560
80°	1787	5221	5667
85°	754	5325	5762



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.7	0.8
10°-20°	77.1	2.7
20°-30°	134.3	4.6
30°-40°	192.7	6.6
40°-50°	246.4	8.5
50°-60°	289.8	10.0
60°-70°	316.7	10.9
70°-80°	324.1	11.1
80°-90°	310.6	10.7
90°-100°	282.1	9.7
100°-110°	240.3	8.3
110°-120°	189.5	6.5
120°-130°	135.8	4.7
130°-140°	84.9	2.9
140°-150°	43.0	1.5
150°-160°	14.8	0.5
160°-170°	1.9	0.1
170°-180°	0.0	0.0
0°-30°	236.1	8.1
0°-40°	428.8	14.7
0°-60°	965.1	33.2
0°-90°	1916.5	65.9
90°-120°	712.0	24.5
90°-150°	975.6	33.5
90°-180°	992.0	34.1
0°-180°	2908.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	254	254	254	254	254	
5°	264	262	259	252	244	25
15°	254	260	274	283	280	72
25°	233	256	295	326	331	107
35°	204	246	318	369	382	127
45°	168	235	337	406	422	129
55°	127	223	348	432	454	114
65°	82	205	350	444	471	82
75°	40	184	341	442	472	42
85°	6	158	320	424	457	8
90°	0	146	307	411	443	0
95°	0	132	292	395	428	0
105°	0	107	257	354	383	0
115°	0	81	214	303	329	0
125°	1	58	168	244	265	1
135°	1	40	120	179	196	1
145°	1	22	71	113	124	1
155°	1	10	30	52	57	0
165°	1	3	6	7	8	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°	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8
2.5°	265.2	264.2	263.2	263.2	263.2	262.1	262.1	261.1	260.0	259.0	256.9
5°	264.2	263.2	262.1	263.2	262.1	262.1	262.1	262.1	262.1	260.0	259.0
7.5°	263.2	262.1	261.1	262.1	262.1	262.1	262.1	262.1	263.2	262.1	261.1
10°	260.0	260.0	259.0	260.0	261.1	261.1	262.1	263.2	264.2	264.2	265.2
12.5°	256.9	256.9	256.9	258.0	260.0	261.1	262.1	264.2	266.3	267.3	269.4
15°	253.8	252.8	253.8	255.9	259.0	260.0	262.1	265.2	268.4	270.4	273.6
17.5°	249.6	249.6	249.6	253.8	256.9	259.0	262.1	266.3	271.5	275.6	278.8
20°	244.4	244.4	246.5	250.7	255.9	258.0	261.1	267.3	273.6	278.8	285.0
22.5°	239.2	239.2	242.4	247.6	253.8	256.9	260.0	268.4	275.6	282.9	290.2
25°	233.0	234.0	237.2	243.4	250.7	255.9	260.0	269.4	278.8	287.1	295.4
27.5°	226.7	227.8	230.9	239.2	248.6	253.8	259.0	270.4	280.8	292.3	301.6
30°	218.4	220.5	225.7	235.1	245.5	251.7	258.0	270.4	282.9	295.4	307.9
32.5°	211.1	213.2	219.5	229.9	242.4	249.6	256.9	271.5	286.0	299.6	313.1
35°	203.9	205.9	213.2	224.7	239.2	246.5	254.8	271.5	288.1	303.7	318.3
37.5°	194.5	197.6	207.0	219.5	235.1	243.4	252.8	271.5	289.2	306.8	323.5
40°	186.2	190.3	199.7	214.3	232.0	241.3	251.7	271.5	291.2	311.0	328.7
42.5°	176.8	181.0	192.4	209.1	227.8	238.2	249.6	271.5	293.3	314.1	332.8
45°	168.5	172.7	185.1	202.8	223.6	235.1	247.6	271.5	294.4	316.2	337.0
47.5°	158.1	163.3	176.8	196.6	219.5	233.0	245.5	271.5	295.4	319.3	341.2
50°	147.7	153.9	169.5	190.3	216.3	228.8	243.4	270.4	296.4	321.4	344.3
52.5°	138.3	144.6	161.2	185.1	212.2	226.7	241.3	269.4	297.5	322.4	347.4
55°	126.9	134.2	152.9	178.9	207.0	222.6	238.2	268.4	296.4	323.5	348.4
57.5°	116.5	124.8	144.6	171.6	202.8	218.4	235.1	266.3	296.4	324.5	350.5
60°	105.1	114.4	136.3	165.4	197.6	214.3	230.9	264.2	294.4	323.5	350.5
62.5°	94.7	104.0	127.9	159.1	192.4	210.1	226.7	261.1	293.3	322.4	350.5
65°	82.2	93.6	119.6	151.9	187.2	204.9	222.6	258.0	291.2	321.4	350.5
67.5°	71.8	83.2	110.3	145.6	182.0	200.7	218.4	254.8	288.1	319.3	349.5
70°	61.4	73.8	103.0	138.3	176.8	195.5	214.3	250.7	285.0	317.2	347.4
72.5°	49.9	64.5	94.7	131.1	170.6	189.3	209.1	246.5	280.8	314.1	344.3
75°	39.5	55.1	87.4	124.8	164.3	184.1	203.9	241.3	277.7	311.0	341.2
77.5°	30.2	45.8	79.1	117.5	158.1	177.9	197.6	236.1	272.5	306.8	338.0
80°	21.8	37.4	70.7	110.3	150.8	171.6	191.4	229.9	267.3	301.6	331.8
82.5°	12.5	31.2	64.5	104.0	144.6	165.4	185.1	223.6	261.1	295.4	326.6
85°	6.2	25.0	58.2	96.7	138.3	158.1	178.9	217.4	254.8	289.2	320.4
87.5°	2.1	19.8	52.0	90.5	132.1	151.9	171.6	211.1	248.6	282.9	314.1
90°	0.0	15.6	46.8	85.3	124.8	145.6	165.4	203.9	241.3	275.6	306.8
92.5°	0.0	12.5	42.6	79.1	118.6	139.4	158.1	197.6	234.0	269.4	299.6
95°	0.0	10.4	38.5	73.8	112.3	132.1	151.9	190.3	226.7	261.1	292.3
97.5°	0.0	8.3	34.3	68.6	106.1	125.9	145.6	183.1	219.5	253.8	285.0
100°	0.0	7.3	31.2	63.4	100.9	119.6	138.3	175.8	211.1	245.5	275.6
102.5°	0.0	7.3	28.1	59.3	94.7	113.4	131.1	168.5	202.8	236.1	266.3
105°	0.0	6.2	26.0	55.1	89.5	107.1	124.8	160.2	194.5	226.7	256.9
107.5°	0.0	6.2	22.9	51.0	83.2	100.9	117.5	152.9	186.2	217.4	246.5
110°	0.0	5.2	20.8	46.8	78.0	93.6	111.3	144.6	176.8	208.0	236.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	5.2	19.8	42.6	71.8	87.4	104.0	136.3	167.5	197.6	225.7
115°	0.0	5.2	17.7	39.5	66.6	81.1	96.7	127.9	158.1	187.2	214.3
117.5°	0.0	5.2	16.6	36.4	61.4	74.9	90.5	119.6	148.7	177.9	202.8
120°	0.0	4.2	15.6	33.3	56.2	69.7	83.2	111.3	139.4	166.4	191.4
122.5°	0.0	4.2	14.6	31.2	52.0	63.4	77.0	103.0	130.0	156.0	179.9
125°	1.0	4.2	13.5	28.1	47.8	58.2	70.7	95.7	120.7	144.6	167.5
127.5°	1.0	4.2	12.5	26.0	43.7	54.1	64.5	87.4	110.3	133.1	155.0
130°	1.0	4.2	11.4	23.9	39.5	48.9	58.2	79.1	100.9	122.7	143.5
132.5°	1.0	3.1	10.4	21.8	35.4	43.7	53.0	71.8	91.5	112.3	131.1
135°	1.0	3.1	9.4	18.7	32.2	39.5	47.8	64.5	83.2	100.9	119.6
137.5°	1.0	3.1	8.3	16.6	28.1	35.4	41.6	57.2	73.8	90.5	107.1
140°	1.0	3.1	7.3	14.6	25.0	30.2	36.4	49.9	64.5	80.1	95.7
142.5°	1.0	2.1	6.2	13.5	20.8	26.0	31.2	42.6	56.2	69.7	83.2
145°	1.0	2.1	6.2	11.4	18.7	21.8	27.0	36.4	46.8	58.2	70.7
147.5°	1.0	2.1	5.2	9.4	15.6	18.7	22.9	31.2	39.5	48.9	59.3
150°	1.0	2.1	4.2	8.3	12.5	15.6	18.7	25.0	32.2	40.6	47.8
152.5°	1.0	2.1	3.1	6.2	10.4	12.5	14.6	20.8	26.0	32.2	38.5
155°	1.0	2.1	3.1	5.2	8.3	10.4	11.4	16.6	20.8	26.0	30.2
157.5°	1.0	1.0	3.1	4.2	6.2	7.3	9.4	12.5	15.6	19.8	22.9
160°	1.0	1.0	2.1	3.1	5.2	6.2	7.3	9.4	11.4	13.5	15.6
162.5°	1.0	1.0	2.1	3.1	4.2	4.2	5.2	6.2	7.3	9.4	10.4
165°	1.0	1.0	2.1	2.1	3.1	3.1	3.1	4.2	4.2	5.2	6.2
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°	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8	253.8
2.5°	254.8	252.8	251.7	249.6	248.6	247.6	245.5	243.4	241.3	240.3
5°	258.0	255.9	254.8	252.8	251.7	250.7	249.6	247.6	245.5	244.4
7.5°	261.1	260.0	259.0	258.0	258.0	256.9	255.9	253.8	251.7	250.7
10°	265.2	266.3	265.2	265.2	265.2	264.2	263.2	262.1	260.0	260.0
12.5°	270.4	271.5	272.5	272.5	273.6	273.6	272.5	271.5	270.4	269.4
15°	276.7	279.8	280.8	281.9	282.9	282.9	282.9	280.8	280.8	279.8
17.5°	282.9	286.0	289.2	291.2	293.3	292.3	293.3	293.3	292.3	292.3
20°	290.2	294.4	298.5	302.7	302.7	303.7	305.8	305.8	305.8	303.7
22.5°	296.4	302.7	307.9	313.1	315.2	315.2	318.3	318.3	317.2	317.2
25°	303.7	311.0	317.2	323.5	325.6	327.6	329.7	331.8	331.8	330.8
27.5°	311.0	320.4	327.6	333.9	337.0	339.1	343.2	345.3	344.3	344.3
30°	318.3	328.7	338.0	345.3	348.4	351.6	355.7	356.8	357.8	356.8
32.5°	325.6	337.0	347.4	355.7	358.8	362.0	366.1	369.2	369.2	369.2
35°	332.8	345.3	355.7	365.1	369.2	372.4	377.6	380.7	380.7	381.7
37.5°	339.1	352.6	364.0	374.4	378.6	381.7	386.9	390.1	391.1	391.1
40°	345.3	359.9	372.4	383.8	388.0	392.1	398.4	400.5	402.5	402.5
42.5°	350.5	366.1	380.7	392.1	396.3	401.5	407.7	410.9	412.9	412.9
45°	355.7	372.4	386.9	399.4	405.7	408.8	416.1	420.2	422.3	422.3
47.5°	360.9	378.6	394.2	406.7	412.9	417.1	424.4	429.6	431.7	431.7
50°	365.1	383.8	399.4	412.9	419.2	424.4	432.7	436.9	440.0	440.0
52.5°	368.2	388.0	405.7	419.2	425.4	430.6	440.0	444.1	447.3	447.3
55°	371.3	392.1	409.8	424.4	431.7	435.8	445.2	450.4	453.5	453.5
57.5°	373.4	395.3	412.9	428.5	435.8	441.0	450.4	455.6	458.7	458.7
60°	375.5	397.3	416.1	432.7	438.9	445.2	454.5	460.8	463.9	463.9
62.5°	375.5	398.4	418.1	434.8	442.1	447.3	457.7	463.9	467.0	468.1
65°	376.5	399.4	419.2	435.8	444.1	450.4	459.7	466.0	470.1	471.2
67.5°	375.5	399.4	419.2	436.9	444.1	450.4	460.8	468.1	472.2	473.3
70°	374.4	398.4	419.2	436.9	445.2	451.4	461.8	469.1	473.3	474.3
72.5°	372.4	396.3	418.1	435.8	444.1	450.4	461.8	469.1	472.2	474.3
75°	369.2	394.2	416.1	434.8	442.1	449.3	459.7	468.1	472.2	472.2
77.5°	366.1	391.1	412.9	431.7	440.0	446.2	457.7	466.0	470.1	471.2
80°	360.9	385.9	407.7	426.5	434.8	442.1	453.5	461.8	466.0	467.0
82.5°	355.7	380.7	402.5	421.3	430.6	436.9	448.3	456.6	460.8	461.8
85°	349.5	374.4	397.3	416.1	424.4	431.7	443.1	451.4	455.6	456.6
87.5°	342.2	368.2	390.1	409.8	417.1	424.4	436.9	444.1	449.3	450.4
90°	336.0	360.9	382.8	402.5	410.9	418.1	429.6	437.9	442.1	443.1
92.5°	328.7	353.6	376.5	395.3	403.6	410.9	422.3	430.6	434.8	435.8
95°	320.4	346.4	368.2	386.9	395.3	402.5	414.0	421.3	426.5	427.5
97.5°	313.1	338.0	359.9	378.6	386.9	394.2	404.6	412.9	416.1	418.1
100°	302.7	327.6	350.5	368.2	376.5	383.8	395.3	401.5	405.7	407.7
102.5°	293.3	318.3	340.1	356.8	365.1	371.3	382.8	390.1	395.3	395.3
105°	282.9	307.9	328.7	346.4	353.6	359.9	371.3	377.6	382.8	382.8
107.5°	273.6	296.4	317.2	334.9	342.2	349.5	358.8	366.1	370.3	371.3
110°	262.1	285.0	305.8	322.4	329.7	337.0	346.4	353.6	356.8	358.8



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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	250.7	273.6	293.3	310.0	316.2	322.4	332.8	339.1	343.2	344.3
115°	238.2	261.1	279.8	296.4	302.7	307.9	318.3	324.5	327.6	328.7
117.5°	226.7	248.6	267.3	281.9	289.2	294.4	303.7	310.0	313.1	314.1
120°	214.3	235.1	252.8	267.3	274.6	279.8	289.2	294.4	297.5	298.5
122.5°	201.8	221.5	239.2	253.8	260.0	265.2	273.6	279.8	281.9	282.9
125°	188.3	208.0	223.6	238.2	244.4	249.6	258.0	263.2	264.2	265.2
127.5°	175.8	193.5	209.1	222.6	227.8	233.0	241.3	246.5	248.6	249.6
130°	162.3	179.9	194.5	207.0	212.2	216.3	223.6	228.8	230.9	232.0
132.5°	148.7	164.3	178.9	191.4	195.5	200.7	207.0	211.1	213.2	213.2
135°	135.2	149.8	163.3	173.7	178.9	183.1	189.3	193.5	195.5	195.5
137.5°	122.7	136.3	148.7	158.1	162.3	165.4	172.7	175.8	176.8	176.8
140°	109.2	121.7	133.1	142.5	145.6	149.8	155.0	158.1	159.1	160.2
142.5°	96.7	107.1	117.5	125.9	129.0	133.1	138.3	140.4	142.5	141.5
145°	82.2	93.6	103.0	111.3	113.4	115.5	120.7	122.7	123.8	123.8
147.5°	69.7	79.1	88.4	95.7	97.8	100.9	104.0	106.1	107.1	106.1
150°	56.2	64.5	72.8	80.1	83.2	84.3	87.4	88.4	89.5	89.5
152.5°	44.7	52.0	59.3	64.5	68.6	69.7	71.8	72.8	73.8	72.8
155°	35.4	39.5	44.7	49.9	52.0	56.2	58.2	58.2	58.2	57.2
157.5°	26.0	29.1	33.3	36.4	38.5	40.6	43.7	44.7	43.7	43.7
160°	18.7	20.8	21.8	25.0	25.0	27.0	29.1	32.2	31.2	30.2
162.5°	11.4	12.5	13.5	14.6	14.6	15.6	16.6	19.8	19.8	18.7
165°	6.2	6.2	7.3	7.3	7.3	7.3	6.2	7.3	9.4	8.3
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)