

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: P236128

Luminaire Tested: **CFA-4-LD4-UNV-LO-40-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236128
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-40-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
4ft
Light Source: (112) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

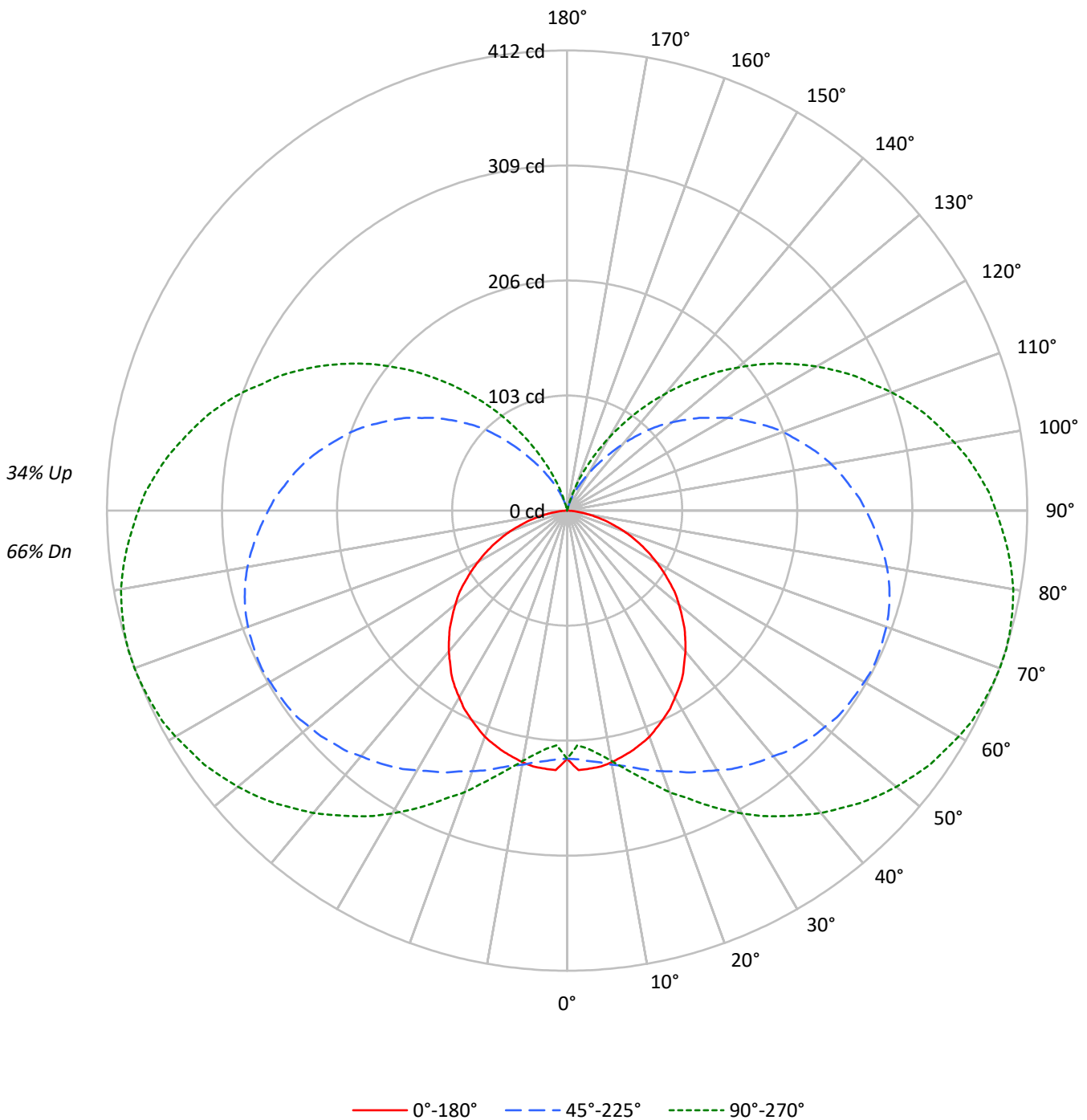
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2534.0 lumens
Efficiency: N/A
Efficacy: 108.3 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): 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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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°	3588	3588	3588
5°	3736	3302	3037
10°	3709	3129	2898
15°	3659	3020	2865
20°	3614	2972	2898
25°	3540	2958	2939
30°	3465	2959	3012
35°	3395	2990	3079
40°	3287	3018	3151
45°	3174	3068	3223
50°	3033	3118	3291
55°	2870	3176	3362
60°	2671	3227	3427
65°	2439	3289	3493
70°	2165	3349	3562
75°	1783	3411	3628
80°	1250	3471	3692
85°	627	3528	3747



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.6	0.9
10°-20°	67.7	2.7
20°-30°	118.0	4.7
30°-40°	169.3	6.7
40°-50°	216.3	8.5
50°-60°	253.9	10.0
60°-70°	277.3	10.9
70°-80°	283.1	11.2
80°-90°	270.8	10.7
90°-100°	245.1	9.7
100°-110°	208.6	8.2
110°-120°	164.0	6.5
120°-130°	117.0	4.6
130°-140°	72.3	2.9
140°-150°	35.7	1.4
150°-160°	11.9	0.5
160°-170°	1.4	0.1
170°-180°	0.0	0.0
0°-30°	207.3	8.2
0°-40°	376.5	14.9
0°-60°	846.8	33.4
0°-90°	1678.0	66.2
90°-120°	617.8	24.4
90°-150°	842.7	33.3
90°-180°	856.0	33.8
0°-180°	2534.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	222	222	222	222	222	
5°	232	230	225	221	214	22
15°	223	229	239	248	246	63
25°	205	225	259	286	290	95
35°	180	218	279	324	334	113
45°	148	208	295	354	370	114
55°	112	197	306	376	397	100
65°	73	182	307	387	410	72
75°	36	162	299	385	411	38
85°	6	140	280	368	396	8
90°	0	128	268	356	384	0
95°	0	116	254	343	370	0
105°	0	93	223	307	332	0
115°	0	71	186	262	285	0
125°	0	51	145	210	230	0
135°	0	32	101	154	168	0
145°	1	17	56	97	106	0
155°	1	8	24	40	48	0
165°	1	2	4	4	5	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°	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2
2.5°	232.6	231.9	231.1	231.1	230.4	230.4	229.6	228.9	227.4	225.1	222.9
5°	231.9	231.1	230.4	230.4	230.4	229.6	229.6	229.6	228.1	226.6	225.1
7.5°	231.1	230.4	229.6	229.6	230.4	230.4	230.4	230.4	229.6	228.9	227.4
10°	228.9	228.1	227.4	228.9	228.9	229.6	230.4	231.1	231.1	231.1	231.1
12.5°	225.9	225.9	225.9	227.4	228.9	229.6	230.4	232.6	233.3	234.1	234.1
15°	222.9	222.9	223.7	225.1	228.1	228.9	229.6	234.1	236.3	237.8	238.6
17.5°	219.2	219.2	219.9	222.9	225.9	228.1	229.6	234.8	237.8	240.8	243.8
20°	215.5	215.5	216.9	220.7	224.4	227.4	229.6	235.6	240.1	244.5	248.3
22.5°	210.2	211.0	213.2	217.7	222.9	226.6	229.6	235.6	242.3	248.3	252.7
25°	205.0	205.8	208.7	214.7	220.7	225.1	228.9	236.3	243.8	252.0	258.7
27.5°	199.8	200.5	204.3	211.0	218.4	222.9	227.4	237.1	246.8	255.7	263.2
30°	193.1	194.6	199.8	207.3	216.2	221.4	226.6	237.8	248.3	258.7	268.4
32.5°	187.1	188.6	194.6	202.8	214.0	219.9	225.9	239.3	250.5	262.4	274.3
35°	180.4	181.9	188.6	198.3	211.0	217.7	224.4	238.6	252.7	265.4	278.8
37.5°	172.2	175.2	182.6	193.8	207.3	215.5	222.9	238.6	254.2	268.4	283.3
40°	164.8	167.7	176.7	189.4	204.3	213.2	221.4	239.3	255.7	271.4	287.0
42.5°	156.6	159.5	170.0	184.1	201.3	210.2	219.9	239.3	257.2	274.3	292.2
45°	148.4	152.1	163.3	178.9	198.3	208.0	218.4	239.3	258.7	277.3	295.2
47.5°	139.4	143.9	156.6	173.7	194.6	205.8	216.9	238.6	259.4	279.6	298.9
50°	130.5	135.7	149.1	168.5	190.8	202.8	214.7	237.8	260.2	281.1	301.2
52.5°	122.3	127.5	142.4	163.3	187.1	200.5	212.5	237.1	260.9	282.5	304.2
55°	111.8	118.5	134.9	157.3	183.4	196.8	209.5	235.6	260.2	283.3	305.7
57.5°	102.1	109.6	128.2	151.3	178.9	193.1	207.3	234.1	259.4	283.3	306.4
60°	92.4	100.6	120.8	146.1	175.2	190.1	204.3	231.9	258.7	283.3	307.1
62.5°	82.8	91.7	112.6	140.2	170.7	186.4	200.5	229.6	257.9	283.3	307.9
65°	73.1	83.5	105.9	134.2	165.5	181.9	196.8	226.6	255.0	281.8	307.1
67.5°	63.4	74.6	97.7	128.2	161.0	177.4	193.1	223.7	253.5	280.3	305.7
70°	54.4	64.9	91.0	122.3	155.1	173.0	188.6	220.7	250.5	278.1	304.2
72.5°	44.0	56.7	84.2	116.3	150.6	167.7	184.9	216.2	247.5	275.1	301.9
75°	35.8	48.5	76.8	110.3	144.6	162.5	179.7	211.7	243.8	272.1	298.9
77.5°	26.8	41.0	70.1	103.6	138.7	156.6	174.4	207.3	239.3	268.4	295.2
80°	18.6	33.5	63.4	97.7	133.4	151.3	168.5	202.0	234.1	263.2	290.7
82.5°	11.9	27.6	57.4	91.7	127.5	146.1	163.3	197.6	228.9	258.7	285.5
85°	6.0	21.6	51.4	85.7	121.5	140.2	157.3	191.6	222.9	252.7	279.6
87.5°	1.5	17.1	46.2	79.8	115.6	133.4	151.3	185.6	217.7	246.8	273.6
90°	0.0	13.4	41.7	74.6	109.6	127.5	144.6	178.9	211.0	240.1	267.6
92.5°	0.0	11.2	37.3	69.3	104.4	121.5	139.4	173.0	205.0	234.1	261.7
95°	0.0	8.9	33.5	64.1	98.4	116.3	132.7	166.2	198.3	227.4	254.2
97.5°	0.0	7.5	29.8	60.4	93.2	110.3	126.7	160.3	191.6	220.7	247.5
100°	0.0	6.7	26.8	55.9	88.0	104.4	120.8	153.6	184.9	213.2	240.1
102.5°	0.0	6.0	24.6	51.4	82.8	99.2	114.8	146.9	177.4	205.8	231.9
105°	0.0	5.2	22.4	47.7	77.5	93.2	108.8	140.2	170.0	197.6	222.9
107.5°	0.0	4.5	20.1	44.0	72.3	87.2	102.1	132.7	161.8	189.4	214.0
110°	0.0	4.5	17.9	40.3	67.1	82.0	96.2	125.2	154.3	180.4	205.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	3.7	16.4	36.5	62.6	76.0	90.2	117.8	145.4	171.5	196.1
115°	0.0	3.7	14.9	33.5	57.4	70.8	84.2	110.3	137.2	161.8	185.6
117.5°	0.0	3.7	14.2	30.6	52.9	65.6	78.3	103.6	129.0	152.8	175.9
120°	0.0	3.0	12.7	28.3	48.5	60.4	72.3	96.2	120.0	143.9	166.2
122.5°	0.0	3.0	11.9	26.1	44.7	55.2	66.4	89.5	111.8	134.2	154.3
125°	0.0	3.0	11.2	23.9	40.3	50.7	60.4	82.0	103.6	124.5	144.6
127.5°	0.0	3.0	9.7	21.6	36.5	45.5	55.2	75.3	95.4	114.8	133.4
130°	0.0	2.2	8.9	19.4	32.8	41.0	49.9	67.8	86.5	105.1	123.0
132.5°	0.0	2.2	8.2	17.1	29.1	36.5	44.0	60.4	78.3	96.2	112.6
135°	0.0	1.5	6.7	14.9	25.3	32.1	38.8	52.9	69.3	85.0	101.4
137.5°	0.0	1.5	6.0	12.7	22.4	27.6	33.5	46.2	60.4	74.6	89.5
140°	0.0	1.5	5.2	11.2	19.4	23.9	29.1	40.3	52.2	64.9	77.5
142.5°	0.0	1.5	4.5	9.7	16.4	20.9	24.6	34.3	44.0	55.2	66.4
145°	0.7	1.5	3.7	8.2	14.2	17.1	20.9	29.1	38.0	47.0	55.9
147.5°	0.7	0.7	3.0	6.7	11.2	14.9	17.9	24.6	31.3	38.8	47.0
150°	0.7	0.7	3.0	6.0	9.7	11.9	14.9	20.1	26.1	32.1	38.0
152.5°	0.7	0.7	2.2	4.5	8.2	9.7	11.9	16.4	20.9	25.3	30.6
155°	0.7	0.7	2.2	3.7	6.7	8.2	9.7	13.4	16.4	20.1	23.9
157.5°	0.7	0.7	1.5	3.0	5.2	6.0	7.5	9.7	12.7	14.9	17.9
160°	0.7	0.7	1.5	2.2	3.7	4.5	5.2	7.5	9.7	11.2	12.7
162.5°	0.7	0.7	0.7	1.5	2.2	3.0	3.7	4.5	6.0	7.5	8.2
165°	0.7	0.7	0.7	0.7	1.5	1.5	2.2	3.0	3.0	4.5	4.5
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2
2.5°	221.4	220.7	219.2	217.7	216.9	216.2	214.7	212.5	211.0	210.2
5°	224.4	223.7	222.9	221.4	220.7	219.9	218.4	216.9	215.5	214.0
7.5°	227.4	228.1	227.4	226.6	225.9	225.1	223.7	222.9	221.4	219.9
10°	231.9	232.6	232.6	232.6	232.6	231.9	230.4	230.4	228.9	227.4
12.5°	236.3	238.6	239.3	239.3	239.3	240.1	238.6	237.8	236.3	236.3
15°	242.3	243.8	246.0	248.3	247.5	248.3	248.3	247.5	246.0	246.0
17.5°	247.5	251.2	254.2	255.7	257.2	257.2	257.9	257.9	256.5	256.5
20°	253.5	258.7	262.4	264.7	266.9	267.6	267.6	269.1	268.4	268.4
22.5°	260.2	265.4	270.6	274.3	276.6	277.3	279.6	280.3	279.6	278.1
25°	266.1	273.6	278.8	283.3	285.5	287.0	290.0	291.5	291.5	290.0
27.5°	272.9	280.3	287.8	293.7	295.2	297.5	301.2	301.9	302.7	301.9
30°	278.8	288.5	296.7	302.7	304.9	307.1	311.6	313.1	313.1	313.1
32.5°	284.8	296.0	304.9	312.4	315.3	317.6	321.3	323.5	323.5	324.3
35°	291.5	302.7	312.4	320.6	324.3	326.5	331.8	334.0	334.7	334.0
37.5°	297.5	309.4	319.8	328.0	331.8	334.7	340.0	342.9	343.7	343.7
40°	303.4	315.3	326.5	336.2	340.0	343.7	348.9	351.9	353.4	353.4
42.5°	307.9	321.3	334.0	343.7	347.4	351.1	357.1	360.1	361.6	361.6
45°	312.4	327.3	340.0	350.4	354.1	358.6	365.3	368.3	369.8	370.5
47.5°	316.1	331.8	345.2	356.4	361.6	365.3	372.0	375.7	378.0	378.0
50°	319.8	336.2	349.6	361.6	366.8	371.3	378.0	382.4	384.7	384.7
52.5°	322.8	340.0	354.9	367.5	372.8	377.2	383.9	388.4	390.6	390.6
55°	325.8	342.9	357.8	371.3	376.5	381.7	388.4	393.6	395.9	396.6
57.5°	327.3	345.2	360.8	375.0	380.2	385.4	392.9	398.1	400.3	400.3
60°	328.8	347.4	363.8	378.0	383.9	388.4	396.6	401.8	404.1	404.8
62.5°	329.5	348.9	365.3	380.2	386.2	391.4	399.6	404.8	407.8	408.5
65°	329.5	348.9	366.0	381.0	386.9	392.9	401.1	406.3	409.3	410.0
67.5°	328.8	348.9	366.8	381.7	388.4	393.6	402.6	407.8	410.8	411.5
70°	327.3	348.2	366.0	381.0	387.7	392.9	402.6	408.5	411.5	412.3
72.5°	325.8	345.9	364.6	380.2	386.9	392.9	401.8	407.8	411.5	412.3
75°	322.8	344.4	363.1	378.7	384.7	390.6	400.3	406.3	410.0	410.8
77.5°	319.8	340.7	359.3	375.7	382.4	388.4	398.1	404.1	407.8	408.5
80°	315.3	337.0	355.6	372.0	378.7	384.7	394.4	400.3	404.1	405.6
82.5°	310.9	332.5	351.1	367.5	374.2	380.2	389.9	396.6	400.3	401.1
85°	304.9	326.5	345.9	361.6	368.3	375.0	384.7	391.4	395.1	395.9
87.5°	298.9	320.6	340.0	355.6	363.1	369.0	379.5	386.2	389.2	389.9
90°	292.2	313.9	333.2	349.6	356.4	362.3	372.8	379.5	383.2	383.9
92.5°	285.5	307.9	326.5	342.9	349.6	356.4	366.0	372.8	376.5	378.0
95°	279.6	300.4	319.8	335.5	342.9	348.2	358.6	364.6	369.0	369.8
97.5°	272.1	293.7	312.4	328.0	334.7	340.7	350.4	357.1	360.8	361.6
100°	264.7	284.8	304.2	319.8	325.8	331.8	341.4	347.4	351.1	351.9
102.5°	255.7	276.6	294.5	310.1	316.1	322.8	331.8	337.7	341.4	342.2
105°	246.8	266.9	285.5	300.4	307.1	312.4	322.1	328.0	331.0	332.5
107.5°	237.1	257.9	275.1	290.0	296.0	301.9	311.6	316.8	319.8	321.3
110°	227.4	248.3	265.4	279.6	286.3	291.5	300.4	305.7	309.4	309.4



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CATALOG NUMBER: CFA-4-LD4-UNV-LO-40-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	216.9	237.1	254.2	268.4	273.6	279.6	288.5	293.0	296.0	296.0
115°	207.3	225.9	242.3	256.5	262.4	267.6	275.8	281.1	284.0	284.8
117.5°	196.1	214.7	230.4	244.5	249.7	255.0	263.2	267.6	271.4	271.4
120°	185.6	203.5	218.4	231.9	237.8	242.3	249.7	255.0	257.2	257.9
122.5°	174.4	191.6	206.5	218.4	224.4	228.9	235.6	240.8	243.0	243.8
125°	162.5	179.7	193.1	205.8	210.2	215.5	222.2	226.6	228.9	229.6
127.5°	151.3	167.0	180.4	191.6	196.8	201.3	208.0	212.5	214.0	214.7
130°	140.2	154.3	167.7	178.2	182.6	186.4	193.1	196.8	199.1	199.1
132.5°	128.2	141.6	153.6	164.0	168.5	172.2	178.2	181.9	183.4	184.1
135°	116.3	129.0	140.9	149.8	153.6	157.3	163.3	165.5	168.5	167.7
137.5°	104.4	116.3	127.5	135.7	139.4	142.4	147.6	151.3	152.1	152.1
140°	91.0	103.6	113.3	121.5	125.2	128.2	132.7	135.7	137.2	136.4
142.5°	78.3	90.2	100.6	108.1	110.3	114.1	118.5	120.8	120.8	120.8
145°	66.4	76.0	86.5	93.9	96.9	99.2	102.9	104.4	105.9	105.9
147.5°	55.2	63.4	71.6	79.8	82.8	85.0	88.7	90.2	90.2	90.2
150°	44.7	50.7	58.1	64.1	68.6	70.8	73.8	75.3	76.0	76.0
152.5°	35.8	41.0	45.5	50.7	53.7	56.7	61.1	61.1	61.9	61.9
155°	27.6	31.3	35.0	38.8	40.3	42.5	47.0	48.5	48.5	47.7
157.5°	20.1	23.1	25.3	28.3	29.1	30.6	33.5	36.5	36.5	35.8
160°	14.2	15.7	17.1	18.6	19.4	19.4	22.4	25.3	25.3	24.6
162.5°	8.9	9.7	9.7	10.4	10.4	11.2	11.2	12.7	14.9	14.2
165°	4.5	4.5	4.5	3.7	3.7	3.7	4.5	3.7	5.2	5.2
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)