

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: P236116

Luminaire Tested: **CFA-3-LD4-UNV-LO-40-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236116
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-LO-40-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
3ft
Light Source: (84) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

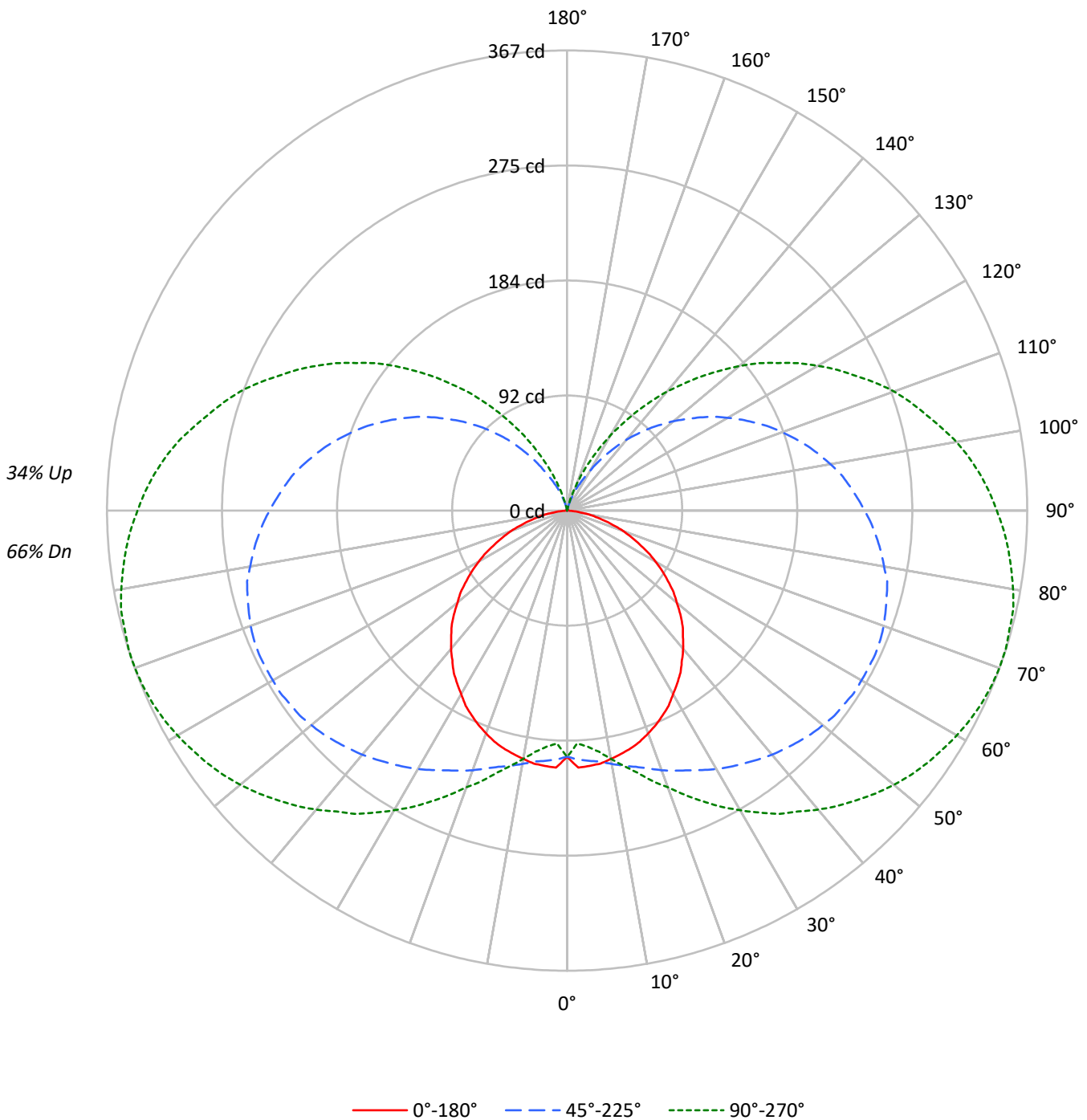
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2250.0 lumens
Efficiency: N/A
Efficacy: 106.6 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): 21.1
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°	4226	4226	4226
5°	4382	3913	3578
10°	4327	3695	3417
15°	4272	3559	3360
20°	4194	3503	3381
25°	4107	3467	3457
30°	3993	3481	3540
35°	3898	3499	3630
40°	3762	3540	3703
45°	3638	3587	3788
50°	3453	3647	3881
55°	3265	3702	3965
60°	3027	3764	4050
65°	2714	3835	4140
70°	2396	3904	4226
75°	1904	3972	4301
80°	1386	4038	4383
85°	584	4118	4457



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.1	0.8
10°-20°	59.6	2.7
20°-30°	103.9	4.6
30°-40°	149.0	6.6
40°-50°	190.6	8.5
50°-60°	224.2	10.0
60°-70°	244.9	10.9
70°-80°	250.7	11.1
80°-90°	240.3	10.7
90°-100°	218.2	9.7
100°-110°	185.9	8.3
110°-120°	146.6	6.5
120°-130°	105.0	4.7
130°-140°	65.7	2.9
140°-150°	33.3	1.5
150°-160°	11.5	0.5
160°-170°	1.5	0.1
170°-180°	0.0	0.0
0°-30°	182.6	8.1
0°-40°	331.7	14.7
0°-60°	746.5	33.2
0°-90°	1482.4	65.9
90°-120°	550.7	24.5
90°-150°	754.6	33.5
90°-180°	768.0	34.1
0°-180°	2250.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	196	196	196	196	196	
5°	204	203	200	195	189	19
15°	196	201	212	219	216	55
25°	180	198	228	252	256	83
35°	158	191	246	286	295	98
45°	130	182	261	314	327	100
55°	98	172	270	334	351	88
65°	64	158	271	344	364	63
75°	31	142	264	342	365	33
85°	5	122	248	328	353	6
90°	0	113	237	318	343	0
95°	0	102	226	306	331	0
105°	0	83	199	274	296	0
115°	0	63	166	234	254	0
125°	1	45	130	189	205	0
135°	1	31	92	138	151	1
145°	1	17	55	88	96	1
155°	1	8	23	40	44	0
165°	1	2	5	6	6	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°	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3
2.5°	205.2	204.4	203.5	203.5	203.5	202.7	202.7	201.9	201.1	200.3	198.7
5°	204.4	203.5	202.7	203.5	202.7	202.7	202.7	202.7	202.7	201.1	200.3
7.5°	203.5	202.7	201.9	202.7	202.7	202.7	202.7	202.7	203.5	202.7	201.9
10°	201.1	201.1	200.3	201.1	201.9	201.9	202.7	203.5	204.4	204.4	205.2
12.5°	198.7	198.7	198.7	199.5	201.1	201.9	202.7	204.4	206.0	206.8	208.4
15°	196.3	195.5	196.3	197.9	200.3	201.1	202.7	205.2	207.6	209.2	211.6
17.5°	193.1	193.1	193.1	196.3	198.7	200.3	202.7	206.0	210.0	213.2	215.6
20°	189.1	189.1	190.7	193.9	197.9	199.5	201.9	206.8	211.6	215.6	220.4
22.5°	185.0	185.0	187.5	191.5	196.3	198.7	201.1	207.6	213.2	218.8	224.5
25°	180.2	181.0	183.4	188.3	193.9	197.9	201.1	208.4	215.6	222.1	228.5
27.5°	175.4	176.2	178.6	185.0	192.3	196.3	200.3	209.2	217.2	226.1	233.3
30°	169.0	170.6	174.6	181.8	189.9	194.7	199.5	209.2	218.8	228.5	238.1
32.5°	163.3	164.9	169.8	177.8	187.5	193.1	198.7	210.0	221.2	231.7	242.2
35°	157.7	159.3	164.9	173.8	185.0	190.7	197.1	210.0	222.9	234.9	246.2
37.5°	150.4	152.9	160.1	169.8	181.8	188.3	195.5	210.0	223.7	237.3	250.2
40°	144.0	147.2	154.5	165.7	179.4	186.7	194.7	210.0	225.3	240.6	254.2
42.5°	136.8	140.0	148.8	161.7	176.2	184.2	193.1	210.0	226.9	243.0	257.5
45°	130.3	133.6	143.2	156.9	173.0	181.8	191.5	210.0	227.7	244.6	260.7
47.5°	122.3	126.3	136.8	152.1	169.8	180.2	189.9	210.0	228.5	247.0	263.9
50°	114.2	119.1	131.1	147.2	167.3	177.0	188.3	209.2	229.3	248.6	266.3
52.5°	107.0	111.8	124.7	143.2	164.1	175.4	186.7	208.4	230.1	249.4	268.7
55°	98.2	103.8	118.3	138.4	160.1	172.2	184.2	207.6	229.3	250.2	269.5
57.5°	90.1	96.5	111.8	132.7	156.9	169.0	181.8	206.0	229.3	251.0	271.1
60°	81.3	88.5	105.4	127.9	152.9	165.7	178.6	204.4	227.7	250.2	271.1
62.5°	73.2	80.5	99.0	123.1	148.8	162.5	175.4	201.9	226.9	249.4	271.1
65°	63.6	72.4	92.5	117.5	144.8	158.5	172.2	199.5	225.3	248.6	271.1
67.5°	55.5	64.4	85.3	112.6	140.8	155.3	169.0	197.1	222.9	247.0	270.3
70°	47.5	57.1	79.6	107.0	136.8	151.3	165.7	193.9	220.4	245.4	268.7
72.5°	38.6	49.9	73.2	101.4	131.9	146.4	161.7	190.7	217.2	243.0	266.3
75°	30.6	42.6	67.6	96.5	127.1	142.4	157.7	186.7	214.8	240.6	263.9
77.5°	23.3	35.4	61.1	90.9	122.3	137.6	152.9	182.6	210.8	237.3	261.5
80°	16.9	29.0	54.7	85.3	116.7	132.7	148.0	177.8	206.8	233.3	256.6
82.5°	9.7	24.1	49.9	80.5	111.8	127.9	143.2	173.0	201.9	228.5	252.6
85°	4.8	19.3	45.1	74.8	107.0	122.3	138.4	168.1	197.1	223.7	247.8
87.5°	1.6	15.3	40.2	70.0	102.2	117.5	132.7	163.3	192.3	218.8	243.0
90°	0.0	12.1	36.2	66.0	96.5	112.6	127.9	157.7	186.7	213.2	237.3
92.5°	0.0	9.7	33.0	61.1	91.7	107.8	122.3	152.9	181.0	208.4	231.7
95°	0.0	8.0	29.8	57.1	86.9	102.2	117.5	147.2	175.4	201.9	226.1
97.5°	0.0	6.4	26.5	53.1	82.1	97.3	112.6	141.6	169.8	196.3	220.4
100°	0.0	5.6	24.1	49.1	78.0	92.5	107.0	136.0	163.3	189.9	213.2
102.5°	0.0	5.6	21.7	45.9	73.2	87.7	101.4	130.3	156.9	182.6	206.0
105°	0.0	4.8	20.1	42.6	69.2	82.9	96.5	123.9	150.4	175.4	198.7
107.5°	0.0	4.8	17.7	39.4	64.4	78.0	90.9	118.3	144.0	168.1	190.7
110°	0.0	4.0	16.1	36.2	60.3	72.4	86.1	111.8	136.8	160.9	182.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	4.0	15.3	33.0	55.5	67.6	80.5	105.4	129.5	152.9	174.6
115°	0.0	4.0	13.7	30.6	51.5	62.8	74.8	99.0	122.3	144.8	165.7
117.5°	0.0	4.0	12.9	28.2	47.5	57.9	70.0	92.5	115.0	137.6	156.9
120°	0.0	3.2	12.1	25.7	43.4	53.9	64.4	86.1	107.8	128.7	148.0
122.5°	0.0	3.2	11.3	24.1	40.2	49.1	59.5	79.6	100.6	120.7	139.2
125°	0.8	3.2	10.5	21.7	37.0	45.1	54.7	74.0	93.3	111.8	129.5
127.5°	0.8	3.2	9.7	20.1	33.8	41.8	49.9	67.6	85.3	103.0	119.9
130°	0.8	3.2	8.8	18.5	30.6	37.8	45.1	61.1	78.0	94.9	111.0
132.5°	0.8	2.4	8.0	16.9	27.4	33.8	41.0	55.5	70.8	86.9	101.4
135°	0.8	2.4	7.2	14.5	24.9	30.6	37.0	49.9	64.4	78.0	92.5
137.5°	0.8	2.4	6.4	12.9	21.7	27.4	32.2	44.2	57.1	70.0	82.9
140°	0.8	2.4	5.6	11.3	19.3	23.3	28.2	38.6	49.9	61.9	74.0
142.5°	0.8	1.6	4.8	10.5	16.1	20.1	24.1	33.0	43.4	53.9	64.4
145°	0.8	1.6	4.8	8.8	14.5	16.9	20.9	28.2	36.2	45.1	54.7
147.5°	0.8	1.6	4.0	7.2	12.1	14.5	17.7	24.1	30.6	37.8	45.9
150°	0.8	1.6	3.2	6.4	9.7	12.1	14.5	19.3	24.9	31.4	37.0
152.5°	0.8	1.6	2.4	4.8	8.0	9.7	11.3	16.1	20.1	24.9	29.8
155°	0.8	1.6	2.4	4.0	6.4	8.0	8.8	12.9	16.1	20.1	23.3
157.5°	0.8	0.8	2.4	3.2	4.8	5.6	7.2	9.7	12.1	15.3	17.7
160°	0.8	0.8	1.6	2.4	4.0	4.8	5.6	7.2	8.8	10.5	12.1
162.5°	0.8	0.8	1.6	2.4	3.2	3.2	4.0	4.8	5.6	7.2	8.0
165°	0.8	0.8	1.6	1.6	2.4	2.4	2.4	3.2	3.2	4.0	4.8
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°	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3
2.5°	197.1	195.5	194.7	193.1	192.3	191.5	189.9	188.3	186.7	185.8
5°	199.5	197.9	197.1	195.5	194.7	193.9	193.1	191.5	189.9	189.1
7.5°	201.9	201.1	200.3	199.5	199.5	198.7	197.9	196.3	194.7	193.9
10°	205.2	206.0	205.2	205.2	205.2	204.4	203.5	202.7	201.1	201.1
12.5°	209.2	210.0	210.8	210.8	211.6	211.6	210.8	210.0	209.2	208.4
15°	214.0	216.4	217.2	218.0	218.8	218.8	218.8	217.2	217.2	216.4
17.5°	218.8	221.2	223.7	225.3	226.9	226.1	226.9	226.9	226.1	226.1
20°	224.5	227.7	230.9	234.1	234.1	234.9	236.5	236.5	236.5	234.9
22.5°	229.3	234.1	238.1	242.2	243.8	243.8	246.2	246.2	245.4	245.4
25°	234.9	240.6	245.4	250.2	251.8	253.4	255.0	256.6	256.6	255.8
27.5°	240.6	247.8	253.4	258.3	260.7	262.3	265.5	267.1	266.3	266.3
30°	246.2	254.2	261.5	267.1	269.5	271.9	275.2	276.0	276.8	276.0
32.5°	251.8	260.7	268.7	275.2	277.6	280.0	283.2	285.6	285.6	285.6
35°	257.5	267.1	275.2	282.4	285.6	288.0	292.0	294.5	294.5	295.3
37.5°	262.3	272.7	281.6	289.6	292.9	295.3	299.3	301.7	302.5	302.5
40°	267.1	278.4	288.0	296.9	300.1	303.3	308.1	309.7	311.4	311.4
42.5°	271.1	283.2	294.5	303.3	306.5	310.6	315.4	317.8	319.4	319.4
45°	275.2	288.0	299.3	308.9	313.8	316.2	321.8	325.0	326.6	326.6
47.5°	279.2	292.9	304.9	314.6	319.4	322.6	328.3	332.3	333.9	333.9
50°	282.4	296.9	308.9	319.4	324.2	328.3	334.7	337.9	340.3	340.3
52.5°	284.8	300.1	313.8	324.2	329.1	333.1	340.3	343.5	346.0	346.0
55°	287.2	303.3	317.0	328.3	333.9	337.1	344.3	348.4	350.8	350.8
57.5°	288.8	305.7	319.4	331.5	337.1	341.1	348.4	352.4	354.8	354.8
60°	290.4	307.3	321.8	334.7	339.5	344.3	351.6	356.4	358.8	358.8
62.5°	290.4	308.1	323.4	336.3	341.9	346.0	354.0	358.8	361.2	362.0
65°	291.2	308.9	324.2	337.1	343.5	348.4	355.6	360.4	363.7	364.5
67.5°	290.4	308.9	324.2	337.9	343.5	348.4	356.4	362.0	365.3	366.1
70°	289.6	308.1	324.2	337.9	344.3	349.2	357.2	362.8	366.1	366.9
72.5°	288.0	306.5	323.4	337.1	343.5	348.4	357.2	362.8	365.3	366.9
75°	285.6	304.9	321.8	336.3	341.9	347.6	355.6	362.0	365.3	365.3
77.5°	283.2	302.5	319.4	333.9	340.3	345.1	354.0	360.4	363.7	364.5
80°	279.2	298.5	315.4	329.9	336.3	341.9	350.8	357.2	360.4	361.2
82.5°	275.2	294.5	311.4	325.8	333.1	337.9	346.8	353.2	356.4	357.2
85°	270.3	289.6	307.3	321.8	328.3	333.9	342.7	349.2	352.4	353.2
87.5°	264.7	284.8	301.7	317.0	322.6	328.3	337.9	343.5	347.6	348.4
90°	259.9	279.2	296.1	311.4	317.8	323.4	332.3	338.7	341.9	342.7
92.5°	254.2	273.5	291.2	305.7	312.2	317.8	326.6	333.1	336.3	337.1
95°	247.8	267.9	284.8	299.3	305.7	311.4	320.2	325.8	329.9	330.7
97.5°	242.2	261.5	278.4	292.9	299.3	304.9	313.0	319.4	321.8	323.4
100°	234.1	253.4	271.1	284.8	291.2	296.9	305.7	310.6	313.8	315.4
102.5°	226.9	246.2	263.1	276.0	282.4	287.2	296.1	301.7	305.7	305.7
105°	218.8	238.1	254.2	267.9	273.5	278.4	287.2	292.0	296.1	296.1
107.5°	211.6	229.3	245.4	259.1	264.7	270.3	277.6	283.2	286.4	287.2
110°	202.7	220.4	236.5	249.4	255.0	260.7	267.9	273.5	276.0	277.6



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CATALOG NUMBER: CFA-3-LD4-UNV-LO-40-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	193.9	211.6	226.9	239.8	244.6	249.4	257.5	262.3	265.5	266.3
115°	184.2	201.9	216.4	229.3	234.1	238.1	246.2	251.0	253.4	254.2
117.5°	175.4	192.3	206.8	218.0	223.7	227.7	234.9	239.8	242.2	243.0
120°	165.7	181.8	195.5	206.8	212.4	216.4	223.7	227.7	230.1	230.9
122.5°	156.1	171.4	185.0	196.3	201.1	205.2	211.6	216.4	218.0	218.8
125°	145.6	160.9	173.0	184.2	189.1	193.1	199.5	203.5	204.4	205.2
127.5°	136.0	149.6	161.7	172.2	176.2	180.2	186.7	190.7	192.3	193.1
130°	125.5	139.2	150.4	160.1	164.1	167.3	173.0	177.0	178.6	179.4
132.5°	115.0	127.1	138.4	148.0	151.3	155.3	160.1	163.3	164.9	164.9
135°	104.6	115.9	126.3	134.4	138.4	141.6	146.4	149.6	151.3	151.3
137.5°	94.9	105.4	115.0	122.3	125.5	127.9	133.6	136.0	136.8	136.8
140°	84.5	94.1	103.0	110.2	112.6	115.9	119.9	122.3	123.1	123.9
142.5°	74.8	82.9	90.9	97.3	99.8	103.0	107.0	108.6	110.2	109.4
145°	63.6	72.4	79.6	86.1	87.7	89.3	93.3	94.9	95.7	95.7
147.5°	53.9	61.1	68.4	74.0	75.6	78.0	80.5	82.1	82.9	82.1
150°	43.4	49.9	56.3	61.9	64.4	65.2	67.6	68.4	69.2	69.2
152.5°	34.6	40.2	45.9	49.9	53.1	53.9	55.5	56.3	57.1	56.3
155°	27.4	30.6	34.6	38.6	40.2	43.4	45.1	45.1	45.1	44.2
157.5°	20.1	22.5	25.7	28.2	29.8	31.4	33.8	34.6	33.8	33.8
160°	14.5	16.1	16.9	19.3	19.3	20.9	22.5	24.9	24.1	23.3
162.5°	8.8	9.7	10.5	11.3	11.3	12.1	12.9	15.3	15.3	14.5
165°	4.8	4.8	5.6	5.6	5.6	5.6	4.8	5.6	7.2	6.4
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)