

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: P236122

Luminaire Tested: **CFA-4-LD4-UNV-STD-30-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236122
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-STD-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
4ft
Light Source: (112) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

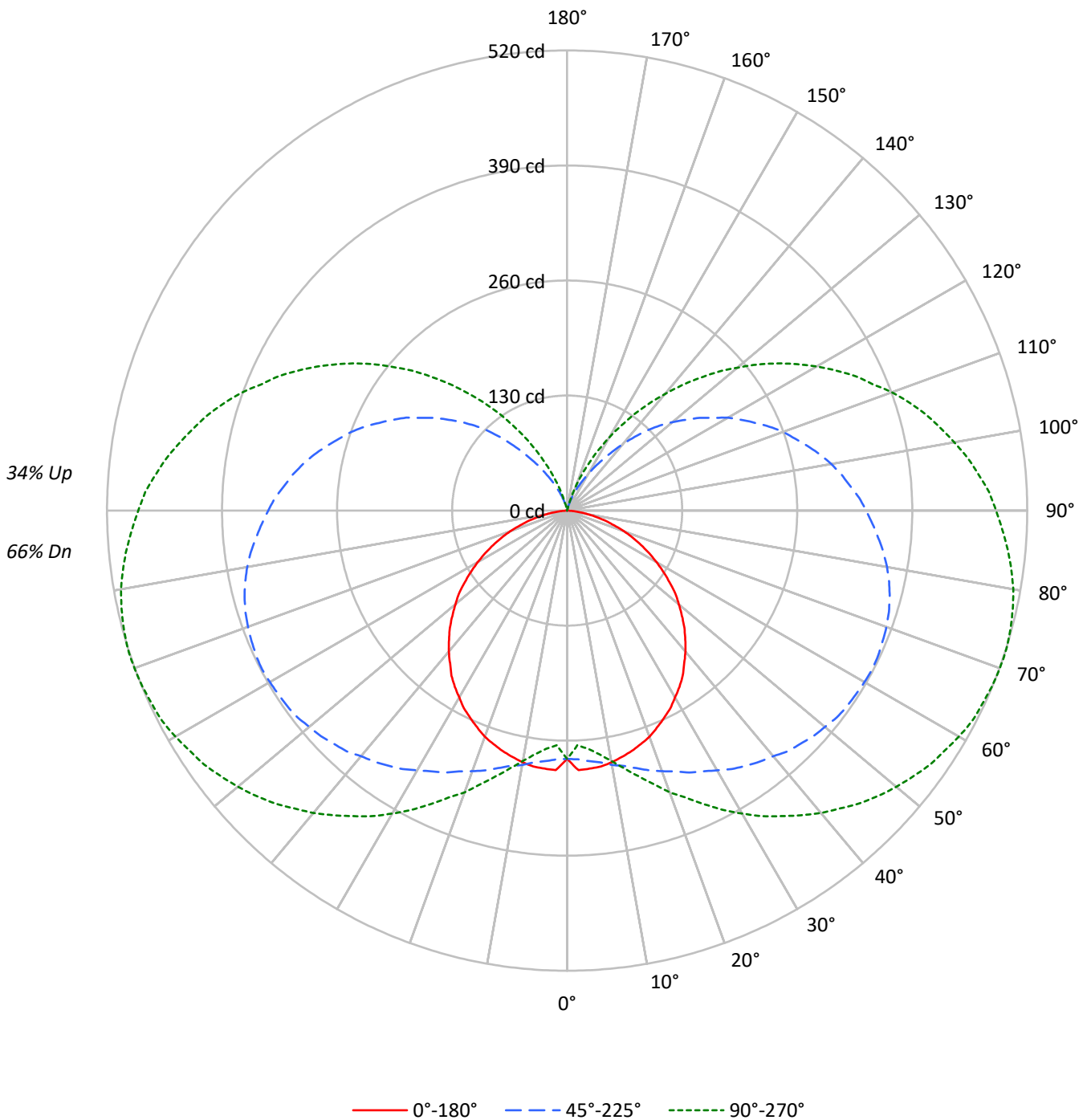
Lumens per Lamp: N/A
Luminaire Lumens: 3199.1 lumens
Efficiency: N/A
Efficacy: 96.5 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 2.26 / 2.09
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.27')
CIE Type: Semi-Direct

Input Watts (W): 33.16
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°	4529	4529	4529
5°	4716	4170	3833
10°	4681	3950	3659
15°	4620	3812	3617
20°	4561	3751	3658
25°	4469	3734	3710
30°	4374	3735	3802
35°	4287	3775	3887
40°	4148	3810	3978
45°	4006	3874	4069
50°	3828	3936	4154
55°	3624	4009	4244
60°	3373	4075	4327
65°	3076	4154	4409
70°	2734	4227	4496
75°	2251	4306	4579
80°	1579	4383	4660
85°	783	4453	4730



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.3	0.9
10°-20°	85.4	2.7
20°-30°	148.9	4.7
30°-40°	213.7	6.7
40°-50°	273.1	8.5
50°-60°	320.6	10.0
60°-70°	350.0	10.9
70°-80°	357.4	11.2
80°-90°	341.9	10.7
90°-100°	309.5	9.7
100°-110°	263.4	8.2
110°-120°	207.1	6.5
120°-130°	147.7	4.6
130°-140°	91.3	2.9
140°-150°	45.1	1.4
150°-160°	15.0	0.5
160°-170°	1.7	0.1
170°-180°	0.0	0.0
0°-30°	261.7	8.2
0°-40°	475.3	14.9
0°-60°	1069.0	33.4
0°-90°	2118.4	66.2
90°-120°	779.9	24.4
90°-150°	1063.9	33.3
90°-180°	1081.0	33.8
0°-180°	3199.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	280	280	280	280	280	
5°	293	290	284	279	270	28
15°	281	289	301	312	311	79
25°	259	284	327	360	366	119
35°	228	275	352	409	422	142
45°	187	263	373	447	468	144
55°	141	248	386	475	501	126
65°	92	230	388	488	518	91
75°	45	205	377	486	519	48
85°	8	177	353	465	500	10
90°	0	161	338	450	485	0
95°	0	147	321	433	467	0
105°	0	118	281	388	420	0
115°	0	89	234	331	360	0
125°	0	64	183	265	290	0
135°	0	40	128	194	212	0
145°	1	22	71	122	134	0
155°	1	10	30	51	60	0
165°	1	2	6	5	7	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°	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5
2.5°	293.6	292.7	291.8	291.8	290.8	290.8	289.9	288.9	287.1	284.2	281.4
5°	292.7	291.8	290.8	290.8	290.8	289.9	289.9	289.9	288.0	286.1	284.2
7.5°	291.8	290.8	289.9	289.9	290.8	290.8	290.8	290.8	289.9	288.9	287.1
10°	288.9	288.0	287.1	288.9	288.9	289.9	290.8	291.8	291.8	291.8	291.8
12.5°	285.2	285.2	285.2	287.1	288.9	289.9	290.8	293.6	294.6	295.5	295.5
15°	281.4	281.4	282.4	284.2	288.0	288.9	289.9	295.5	298.4	300.2	301.2
17.5°	276.7	276.7	277.6	281.4	285.2	288.0	289.9	296.5	300.2	304.0	307.8
20°	272.0	272.0	273.9	278.6	283.3	287.1	289.9	297.4	303.1	308.7	313.4
22.5°	265.4	266.4	269.2	274.8	281.4	286.1	289.9	297.4	305.9	313.4	319.1
25°	258.8	259.8	263.5	271.1	278.6	284.2	288.9	298.4	307.8	318.1	326.6
27.5°	252.2	253.2	257.9	266.4	275.8	281.4	287.1	299.3	311.5	322.8	332.2
30°	243.8	245.6	252.2	261.6	272.9	279.5	286.1	300.2	313.4	326.6	338.8
32.5°	236.2	238.1	245.6	256.0	270.1	277.6	285.2	302.1	316.2	331.3	346.3
35°	227.8	229.6	238.1	250.4	266.4	274.8	283.3	301.2	319.1	335.1	352.0
37.5°	217.4	221.2	230.6	244.7	261.6	272.0	281.4	301.2	320.9	338.8	357.6
40°	208.0	211.8	223.1	239.1	257.9	269.2	279.5	302.1	322.8	342.6	362.3
42.5°	197.6	201.4	214.6	232.5	254.1	265.4	277.6	302.1	324.7	346.3	368.9
45°	187.3	192.0	206.1	225.9	250.4	262.6	275.8	302.1	326.6	350.1	372.7
47.5°	176.0	181.6	197.6	219.3	245.6	259.8	273.9	301.2	327.5	352.9	377.4
50°	164.7	171.3	188.2	212.7	240.9	256.0	271.1	300.2	328.5	354.8	380.2
52.5°	154.4	160.9	179.8	206.1	236.2	253.2	268.2	299.3	329.4	356.7	384.0
55°	141.2	149.6	170.4	198.6	231.5	248.5	264.5	297.4	328.5	357.6	385.9
57.5°	128.9	138.4	161.9	191.1	225.9	243.8	261.6	295.5	327.5	357.6	386.8
60°	116.7	127.1	152.5	184.5	221.2	240.0	257.9	292.7	326.6	357.6	387.8
62.5°	104.5	115.8	142.1	176.9	215.5	235.3	253.2	289.9	325.6	357.6	388.7
65°	92.2	105.4	133.6	169.4	208.9	229.6	248.5	286.1	321.9	355.8	387.8
67.5°	80.0	94.1	123.3	161.9	203.3	224.0	243.8	282.4	320.0	353.9	385.9
70°	68.7	81.9	114.8	154.4	195.8	218.4	238.1	278.6	316.2	351.1	384.0
72.5°	55.5	71.5	106.4	146.8	190.1	211.8	233.4	272.9	312.5	347.3	381.2
75°	45.2	61.2	96.9	139.3	182.6	205.2	226.8	267.3	307.8	343.5	377.4
77.5°	33.9	51.8	88.5	130.8	175.1	197.6	220.2	261.6	302.1	338.8	372.7
80°	23.5	42.4	80.0	123.3	168.5	191.1	212.7	255.1	295.5	332.2	367.1
82.5°	15.1	34.8	72.5	115.8	160.9	184.5	206.1	249.4	288.9	326.6	360.5
85°	7.5	27.3	64.9	108.2	153.4	176.9	198.6	241.9	281.4	319.1	352.9
87.5°	1.9	21.6	58.4	100.7	145.9	168.5	191.1	234.4	274.8	311.5	345.4
90°	0.0	16.9	52.7	94.1	138.4	160.9	182.6	225.9	266.4	303.1	337.9
92.5°	0.0	14.1	47.1	87.5	131.8	153.4	176.0	218.4	258.8	295.5	330.3
95°	0.0	11.3	42.4	80.9	124.2	146.8	167.5	209.9	250.4	287.1	320.9
97.5°	0.0	9.4	37.6	76.2	117.6	139.3	160.0	202.4	241.9	278.6	312.5
100°	0.0	8.5	33.9	70.6	111.1	131.8	152.5	193.9	233.4	269.2	303.1
102.5°	0.0	7.5	31.1	64.9	104.5	125.2	144.9	185.4	224.0	259.8	292.7
105°	0.0	6.6	28.2	60.2	97.9	117.6	137.4	176.9	214.6	249.4	281.4
107.5°	0.0	5.6	25.4	55.5	91.3	110.1	128.9	167.5	204.2	239.1	270.1
110°	0.0	5.6	22.6	50.8	84.7	103.5	121.4	158.1	194.8	227.8	259.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	4.7	20.7	46.1	79.1	96.0	113.9	148.7	183.5	216.5	247.5
115°	0.0	4.7	18.8	42.4	72.5	89.4	106.4	139.3	173.2	204.2	234.4
117.5°	0.0	4.7	17.9	38.6	66.8	82.8	98.8	130.8	162.8	192.9	222.1
120°	0.0	3.8	16.0	35.8	61.2	76.2	91.3	121.4	151.5	181.6	209.9
122.5°	0.0	3.8	15.1	32.9	56.5	69.6	83.8	112.9	141.2	169.4	194.8
125°	0.0	3.8	14.1	30.1	50.8	64.0	76.2	103.5	130.8	157.2	182.6
127.5°	0.0	3.8	12.2	27.3	46.1	57.4	69.6	95.1	120.5	144.9	168.5
130°	0.0	2.8	11.3	24.5	41.4	51.8	63.1	85.6	109.2	132.7	155.3
132.5°	0.0	2.8	10.4	21.6	36.7	46.1	55.5	76.2	98.8	121.4	142.1
135°	0.0	1.9	8.5	18.8	32.0	40.5	48.9	66.8	87.5	107.3	128.0
137.5°	0.0	1.9	7.5	16.0	28.2	34.8	42.4	58.4	76.2	94.1	112.9
140°	0.0	1.9	6.6	14.1	24.5	30.1	36.7	50.8	65.9	81.9	97.9
142.5°	0.0	1.9	5.6	12.2	20.7	26.4	31.1	43.3	55.5	69.6	83.8
145°	0.9	1.9	4.7	10.4	17.9	21.6	26.4	36.7	48.0	59.3	70.6
147.5°	0.9	0.9	3.8	8.5	14.1	18.8	22.6	31.1	39.5	48.9	59.3
150°	0.9	0.9	3.8	7.5	12.2	15.1	18.8	25.4	32.9	40.5	48.0
152.5°	0.9	0.9	2.8	5.6	10.4	12.2	15.1	20.7	26.4	32.0	38.6
155°	0.9	0.9	2.8	4.7	8.5	10.4	12.2	16.9	20.7	25.4	30.1
157.5°	0.9	0.9	1.9	3.8	6.6	7.5	9.4	12.2	16.0	18.8	22.6
160°	0.9	0.9	1.9	2.8	4.7	5.6	6.6	9.4	12.2	14.1	16.0
162.5°	0.9	0.9	0.9	1.9	2.8	3.8	4.7	5.6	7.5	9.4	10.4
165°	0.9	0.9	0.9	0.9	1.9	1.9	2.8	3.8	3.8	5.6	5.6
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°	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5
2.5°	279.5	278.6	276.7	274.8	273.9	272.9	271.1	268.2	266.4	265.4
5°	283.3	282.4	281.4	279.5	278.6	277.6	275.8	273.9	272.0	270.1
7.5°	287.1	288.0	287.1	286.1	285.2	284.2	282.4	281.4	279.5	277.6
10°	292.7	293.6	293.6	293.6	293.6	292.7	290.8	290.8	288.9	287.1
12.5°	298.4	301.2	302.1	302.1	302.1	303.1	301.2	300.2	298.4	298.4
15°	305.9	307.8	310.6	313.4	312.5	313.4	313.4	312.5	310.6	310.6
17.5°	312.5	317.2	320.9	322.8	324.7	324.7	325.6	325.6	323.8	323.8
20°	320.0	326.6	331.3	334.1	336.9	337.9	337.9	339.8	338.8	338.8
22.5°	328.5	335.1	341.6	346.3	349.2	350.1	352.9	353.9	352.9	351.1
25°	336.0	345.4	352.0	357.6	360.5	362.3	366.1	368.0	368.0	366.1
27.5°	344.5	353.9	363.3	370.8	372.7	375.5	380.2	381.2	382.1	381.2
30°	352.0	364.2	374.6	382.1	384.9	387.8	393.4	395.3	395.3	395.3
32.5°	359.5	373.6	384.9	394.3	398.1	400.9	405.6	408.5	408.5	409.4
35°	368.0	382.1	394.3	404.7	409.4	412.2	418.8	421.6	422.6	421.6
37.5°	375.5	390.6	403.8	414.1	418.8	422.6	429.2	432.9	433.9	433.9
40°	383.1	398.1	412.2	424.5	429.2	433.9	440.5	444.2	446.1	446.1
42.5°	388.7	405.6	421.6	433.9	438.6	443.3	450.8	454.6	456.5	456.5
45°	394.3	413.2	429.2	442.3	447.1	452.7	461.2	464.9	466.8	467.8
47.5°	399.1	418.8	435.8	449.9	456.5	461.2	469.6	474.3	477.2	477.2
50°	403.8	424.5	441.4	456.5	463.1	468.7	477.2	482.8	485.6	485.6
52.5°	407.5	429.2	448.0	464.0	470.6	476.2	484.7	490.3	493.2	493.2
55°	411.3	432.9	451.8	468.7	475.3	481.9	490.3	496.9	499.8	500.7
57.5°	413.2	435.8	455.5	473.4	480.0	486.6	496.0	502.6	505.4	505.4
60°	415.1	438.6	459.3	477.2	484.7	490.3	500.7	507.3	510.1	511.1
62.5°	416.0	440.5	461.2	480.0	487.5	494.1	504.5	511.1	514.8	515.8
65°	416.0	440.5	462.1	480.9	488.5	496.0	506.3	512.9	516.7	517.6
67.5°	415.1	440.5	463.1	481.9	490.3	496.9	508.2	514.8	518.6	519.5
70°	413.2	439.5	462.1	480.9	489.4	496.0	508.2	515.8	519.5	520.5
72.5°	411.3	436.7	460.2	480.0	488.5	496.0	507.3	514.8	519.5	520.5
75°	407.5	434.8	458.3	478.1	485.6	493.2	505.4	512.9	517.6	518.6
77.5°	403.8	430.1	453.6	474.3	482.8	490.3	502.6	510.1	514.8	515.8
80°	398.1	425.4	448.9	469.6	478.1	485.6	497.9	505.4	510.1	512.0
82.5°	392.5	419.8	443.3	464.0	472.5	480.0	492.2	500.7	505.4	506.3
85°	384.9	412.2	436.7	456.5	464.9	473.4	485.6	494.1	498.8	499.8
87.5°	377.4	404.7	429.2	448.9	458.3	465.9	479.1	487.5	491.3	492.2
90°	368.9	396.2	420.7	441.4	449.9	457.4	470.6	479.1	483.8	484.7
92.5°	360.5	388.7	412.2	432.9	441.4	449.9	462.1	470.6	475.3	477.2
95°	352.9	379.3	403.8	423.5	432.9	439.5	452.7	460.2	465.9	466.8
97.5°	343.5	370.8	394.3	414.1	422.6	430.1	442.3	450.8	455.5	456.5
100°	334.1	359.5	384.0	403.8	411.3	418.8	431.1	438.6	443.3	444.2
102.5°	322.8	349.2	371.8	391.5	399.1	407.5	418.8	426.3	431.1	432.0
105°	311.5	336.9	360.5	379.3	387.8	394.3	406.6	414.1	417.9	419.8
107.5°	299.3	325.6	347.3	366.1	373.6	381.2	393.4	400.0	403.8	405.6
110°	287.1	313.4	335.1	352.9	361.4	368.0	379.3	385.9	390.6	390.6



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CATALOG NUMBER: CFA-4-LD4-UNV-STD-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	273.9	299.3	320.9	338.8	345.4	352.9	364.2	369.9	373.6	373.6
115°	261.6	285.2	305.9	323.8	331.3	337.9	348.2	354.8	358.6	359.5
117.5°	247.5	271.1	290.8	308.7	315.3	321.9	332.2	337.9	342.6	342.6
120°	234.4	256.9	275.8	292.7	300.2	305.9	315.3	321.9	324.7	325.6
122.5°	220.2	241.9	260.7	275.8	283.3	288.9	297.4	304.0	306.8	307.8
125°	205.2	226.8	243.8	259.8	265.4	272.0	280.5	286.1	288.9	289.9
127.5°	191.1	210.8	227.8	241.9	248.5	254.1	262.6	268.2	270.1	271.1
130°	176.9	194.8	211.8	224.9	230.6	235.3	243.8	248.5	251.3	251.3
132.5°	161.9	178.8	193.9	207.1	212.7	217.4	224.9	229.6	231.5	232.5
135°	146.8	162.8	177.9	189.2	193.9	198.6	206.1	208.9	212.7	211.8
137.5°	131.8	146.8	160.9	171.3	176.0	179.8	186.4	191.1	192.0	192.0
140°	114.8	130.8	143.1	153.4	158.1	161.9	167.5	171.3	173.2	172.2
142.5°	98.8	113.9	127.1	136.5	139.3	144.0	149.6	152.5	152.5	152.5
145°	83.8	96.0	109.2	118.6	122.4	125.2	129.9	131.8	133.6	133.6
147.5°	69.6	80.0	90.4	100.7	104.5	107.3	112.0	113.9	113.9	113.9
150°	56.5	64.0	73.4	80.9	86.6	89.4	93.2	95.1	96.0	96.0
152.5°	45.2	51.8	57.4	64.0	67.8	71.5	77.2	77.2	78.1	78.1
155°	34.8	39.5	44.2	48.9	50.8	53.6	59.3	61.2	61.2	60.2
157.5°	25.4	29.2	32.0	35.8	36.7	38.6	42.4	46.1	46.1	45.2
160°	17.9	19.8	21.6	23.5	24.5	24.5	28.2	32.0	32.0	31.1
162.5°	11.3	12.2	12.2	13.2	13.2	14.1	14.1	16.0	18.8	17.9
165°	5.6	5.6	5.6	4.7	4.7	4.7	5.6	4.7	6.6	6.6
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)