

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: P236106

Luminaire Tested: **CFA-3-LD4-UNV-HI-30-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236106
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-HI-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
3ft
Light Source: (84) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

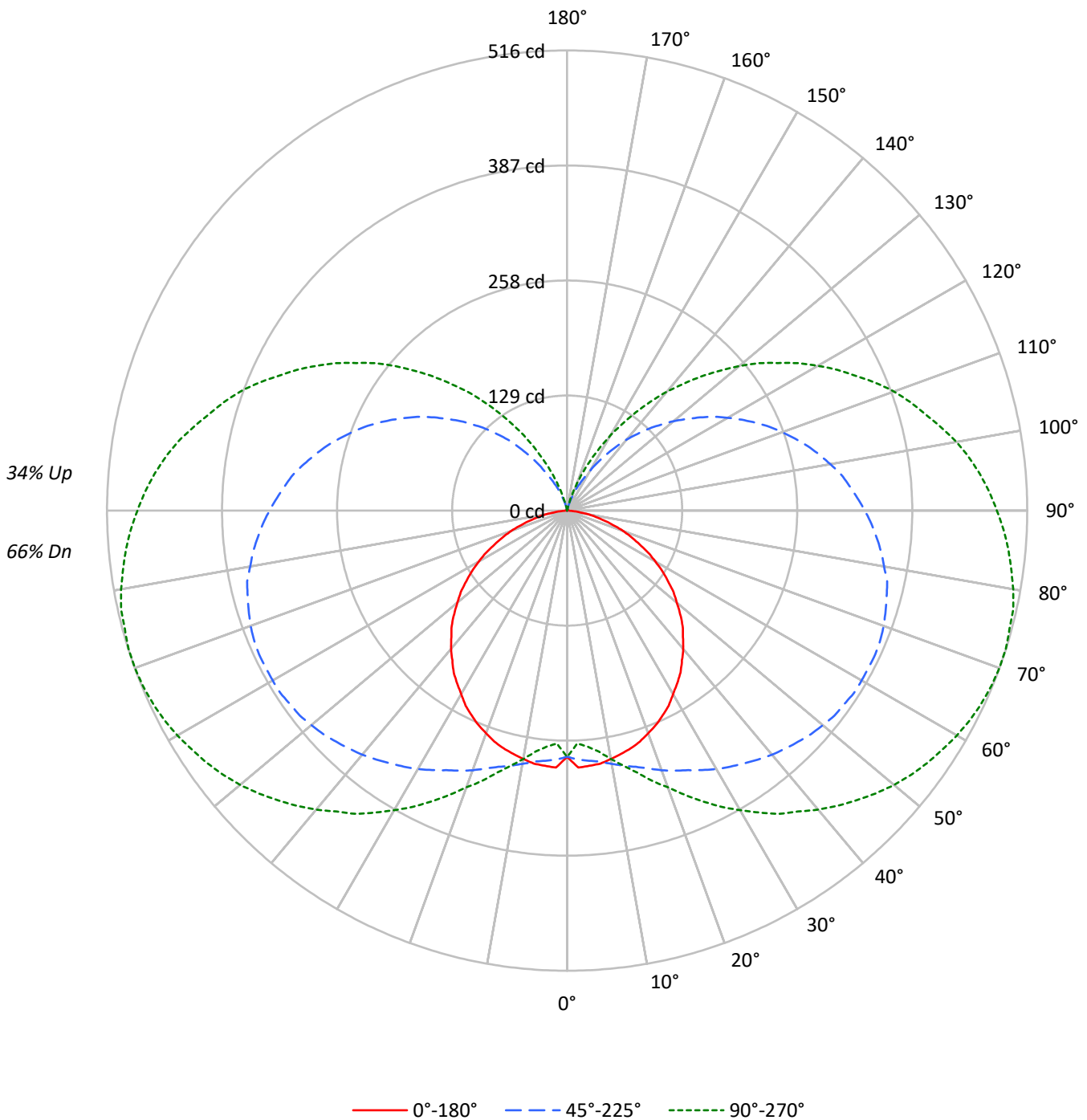
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3163.3 lumens
Efficiency: N/A
Efficacy: 86.4 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): 36.6
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°	5942	5942	5942
5°	6160	5502	5029
10°	6085	5194	4805
15°	6006	5004	4725
20°	5896	4925	4755
25°	5776	4873	4861
30°	5611	4895	4976
35°	5480	4919	5103
40°	5290	4978	5204
45°	5116	5042	5326
50°	4856	5128	5457
55°	4588	5205	5574
60°	4252	5293	5694
65°	3815	5392	5820
70°	3364	5489	5941
75°	2675	5584	6046
80°	1951	5677	6164
85°	827	5790	6267



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.9	0.8
10°-20°	83.8	2.7
20°-30°	146.1	4.6
30°-40°	209.5	6.6
40°-50°	268.0	8.5
50°-60°	315.2	10.0
60°-70°	344.4	10.9
70°-80°	352.5	11.1
80°-90°	337.8	10.7
90°-100°	306.8	9.7
100°-110°	261.4	8.3
110°-120°	206.1	6.5
120°-130°	147.7	4.7
130°-140°	92.3	2.9
140°-150°	46.8	1.5
150°-160°	16.1	0.5
160°-170°	2.1	0.1
170°-180°	0.0	0.0
0°-30°	256.8	8.1
0°-40°	466.3	14.7
0°-60°	1049.5	33.2
0°-90°	2084.1	65.9
90°-120°	774.2	24.5
90°-150°	1061.0	33.5
90°-180°	1079.0	34.1
0°-180°	3163.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	276	276	276	276	276	
5°	287	285	282	274	266	27
15°	276	283	298	308	304	78
25°	253	278	321	354	360	117
35°	222	268	346	402	415	138
45°	183	256	366	441	459	141
55°	138	242	379	469	493	124
65°	89	223	381	483	512	89
75°	43	200	371	481	514	46
85°	7	172	348	462	497	9
90°	0	158	334	447	482	0
95°	0	144	318	430	465	0
105°	0	116	279	385	416	0
115°	0	88	233	329	357	0
125°	1	63	182	266	288	1
135°	1	43	130	195	213	1
145°	1	24	77	123	135	1
155°	1	11	33	57	62	1
165°	1	3	7	8	9	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°	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0
2.5°	288.4	287.3	286.2	286.2	286.2	285.0	285.0	283.9	282.8	281.6	279.4
5°	287.3	286.2	285.0	286.2	285.0	285.0	285.0	285.0	285.0	282.8	281.6
7.5°	286.2	285.0	283.9	285.0	285.0	285.0	285.0	285.0	286.2	285.0	283.9
10°	282.8	282.8	281.6	282.8	283.9	283.9	285.0	286.2	287.3	287.3	288.4
12.5°	279.4	279.4	279.4	280.5	282.8	283.9	285.0	287.3	289.6	290.7	293.0
15°	276.0	274.9	276.0	278.3	281.6	282.8	285.0	288.4	291.8	294.1	297.5
17.5°	271.5	271.5	271.5	276.0	279.4	281.6	285.0	289.6	295.2	299.7	303.1
20°	265.8	265.8	268.1	272.6	278.3	280.5	283.9	290.7	297.5	303.1	309.9
22.5°	260.2	260.2	263.5	269.2	276.0	279.4	282.8	291.8	299.7	307.7	315.6
25°	253.4	254.5	257.9	264.7	272.6	278.3	282.8	293.0	303.1	312.2	321.2
27.5°	246.6	247.7	251.1	260.2	270.3	276.0	281.6	294.1	305.4	317.8	328.0
30°	237.5	239.8	245.5	255.6	266.9	273.7	280.5	294.1	307.7	321.2	334.8
32.5°	229.6	231.9	238.7	250.0	263.5	271.5	279.4	295.2	311.1	325.8	340.5
35°	221.7	224.0	231.9	244.3	260.2	268.1	277.1	295.2	313.3	330.3	346.1
37.5°	211.5	214.9	225.1	238.7	255.6	264.7	274.9	295.2	314.4	333.7	351.8
40°	202.5	207.0	217.2	233.0	252.2	262.4	273.7	295.2	316.7	338.2	357.4
42.5°	192.3	196.8	209.3	227.4	247.7	259.0	271.5	295.2	319.0	341.6	362.0
45°	183.2	187.8	201.3	220.6	243.2	255.6	269.2	295.2	320.1	343.9	366.5
47.5°	171.9	177.6	192.3	213.8	238.7	253.4	266.9	295.2	321.2	347.3	371.0
50°	160.6	167.4	184.4	207.0	235.3	248.8	264.7	294.1	322.4	349.5	374.4
52.5°	150.4	157.2	175.3	201.3	230.7	246.6	262.4	293.0	323.5	350.6	377.8
55°	138.0	145.9	166.3	194.6	225.1	242.1	259.0	291.8	322.4	351.8	378.9
57.5°	126.7	135.7	157.2	186.6	220.6	237.5	255.6	289.6	322.4	352.9	381.2
60°	114.2	124.4	148.2	179.8	214.9	233.0	251.1	287.3	320.1	351.8	381.2
62.5°	102.9	113.1	139.1	173.1	209.3	228.5	246.6	283.9	319.0	350.6	381.2
65°	89.4	101.8	130.1	165.1	203.6	222.8	242.1	280.5	316.7	349.5	381.2
67.5°	78.0	90.5	119.9	158.4	197.9	218.3	237.5	277.1	313.3	347.3	380.1
70°	66.7	80.3	112.0	150.4	192.3	212.6	233.0	272.6	309.9	345.0	377.8
72.5°	54.3	70.1	102.9	142.5	185.5	205.9	227.4	268.1	305.4	341.6	374.4
75°	43.0	59.9	95.0	135.7	178.7	200.2	221.7	262.4	302.0	338.2	371.0
77.5°	32.8	49.8	86.0	127.8	171.9	193.4	214.9	256.8	296.4	333.7	367.6
80°	23.8	40.7	76.9	119.9	164.0	186.6	208.1	250.0	290.7	328.0	360.8
82.5°	13.6	33.9	70.1	113.1	157.2	179.8	201.3	243.2	283.9	321.2	355.2
85°	6.8	27.1	63.3	105.2	150.4	171.9	194.6	236.4	277.1	314.4	348.4
87.5°	2.3	21.5	56.6	98.4	143.7	165.1	186.6	229.6	270.3	307.7	341.6
90°	0.0	17.0	50.9	92.8	135.7	158.4	179.8	221.7	262.4	299.7	333.7
92.5°	0.0	13.6	46.4	86.0	128.9	151.6	171.9	214.9	254.5	293.0	325.8
95°	0.0	11.3	41.9	80.3	122.2	143.7	165.1	207.0	246.6	283.9	317.8
97.5°	0.0	9.0	37.3	74.7	115.4	136.9	158.4	199.1	238.7	276.0	309.9
100°	0.0	7.9	33.9	69.0	109.7	130.1	150.4	191.2	229.6	266.9	299.7
102.5°	0.0	7.9	30.5	64.5	102.9	123.3	142.5	183.2	220.6	256.8	289.6
105°	0.0	6.8	28.3	59.9	97.3	116.5	135.7	174.2	211.5	246.6	279.4
107.5°	0.0	6.8	24.9	55.4	90.5	109.7	127.8	166.3	202.5	236.4	268.1
110°	0.0	5.7	22.6	50.9	84.8	101.8	121.0	157.2	192.3	226.2	256.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	5.7	21.5	46.4	78.0	95.0	113.1	148.2	182.1	214.9	245.5
115°	0.0	5.7	19.2	43.0	72.4	88.2	105.2	139.1	171.9	203.6	233.0
117.5°	0.0	5.7	18.1	39.6	66.7	81.4	98.4	130.1	161.7	193.4	220.6
120°	0.0	4.5	17.0	36.2	61.1	75.8	90.5	121.0	151.6	181.0	208.1
122.5°	0.0	4.5	15.8	33.9	56.6	69.0	83.7	112.0	141.4	169.7	195.7
125°	1.1	4.5	14.7	30.5	52.0	63.3	76.9	104.1	131.2	157.2	182.1
127.5°	1.1	4.5	13.6	28.3	47.5	58.8	70.1	95.0	119.9	144.8	168.5
130°	1.1	4.5	12.4	26.0	43.0	53.2	63.3	86.0	109.7	133.5	156.1
132.5°	1.1	3.4	11.3	23.8	38.5	47.5	57.7	78.0	99.5	122.2	142.5
135°	1.1	3.4	10.2	20.4	35.1	43.0	52.0	70.1	90.5	109.7	130.1
137.5°	1.1	3.4	9.0	18.1	30.5	38.5	45.2	62.2	80.3	98.4	116.5
140°	1.1	3.4	7.9	15.8	27.1	32.8	39.6	54.3	70.1	87.1	104.1
142.5°	1.1	2.3	6.8	14.7	22.6	28.3	33.9	46.4	61.1	75.8	90.5
145°	1.1	2.3	6.8	12.4	20.4	23.8	29.4	39.6	50.9	63.3	76.9
147.5°	1.1	2.3	5.7	10.2	17.0	20.4	24.9	33.9	43.0	53.2	64.5
150°	1.1	2.3	4.5	9.0	13.6	17.0	20.4	27.1	35.1	44.1	52.0
152.5°	1.1	2.3	3.4	6.8	11.3	13.6	15.8	22.6	28.3	35.1	41.9
155°	1.1	2.3	3.4	5.7	9.0	11.3	12.4	18.1	22.6	28.3	32.8
157.5°	1.1	1.1	3.4	4.5	6.8	7.9	10.2	13.6	17.0	21.5	24.9
160°	1.1	1.1	2.3	3.4	5.7	6.8	7.9	10.2	12.4	14.7	17.0
162.5°	1.1	1.1	2.3	3.4	4.5	4.5	5.7	6.8	7.9	10.2	11.3
165°	1.1	1.1	2.3	2.3	3.4	3.4	3.4	4.5	4.5	5.7	6.8
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°	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0
2.5°	277.1	274.9	273.7	271.5	270.3	269.2	266.9	264.7	262.4	261.3
5°	280.5	278.3	277.1	274.9	273.7	272.6	271.5	269.2	266.9	265.8
7.5°	283.9	282.8	281.6	280.5	280.5	279.4	278.3	276.0	273.7	272.6
10°	288.4	289.6	288.4	288.4	288.4	287.3	286.2	285.0	282.8	282.8
12.5°	294.1	295.2	296.4	296.4	297.5	297.5	296.4	295.2	294.1	293.0
15°	300.9	304.3	305.4	306.5	307.7	307.7	307.7	305.4	305.4	304.3
17.5°	307.7	311.1	314.4	316.7	319.0	317.8	319.0	319.0	317.8	317.8
20°	315.6	320.1	324.6	329.2	329.2	330.3	332.5	332.5	332.5	330.3
22.5°	322.4	329.2	334.8	340.5	342.7	342.7	346.1	346.1	345.0	345.0
25°	330.3	338.2	345.0	351.8	354.0	356.3	358.6	360.8	360.8	359.7
27.5°	338.2	348.4	356.3	363.1	366.5	368.7	373.3	375.5	374.4	374.4
30°	346.1	357.4	367.6	375.5	378.9	382.3	386.8	388.0	389.1	388.0
32.5°	354.0	366.5	377.8	386.8	390.2	393.6	398.2	401.5	401.5	401.5
35°	362.0	375.5	386.8	397.0	401.5	404.9	410.6	414.0	414.0	415.1
37.5°	368.7	383.4	395.9	407.2	411.7	415.1	420.8	424.2	425.3	425.3
40°	375.5	391.4	404.9	417.4	421.9	426.4	433.2	435.5	437.7	437.7
42.5°	381.2	398.2	414.0	426.4	431.0	436.6	443.4	446.8	449.0	449.0
45°	386.8	404.9	420.8	434.3	441.1	444.5	452.4	457.0	459.2	459.2
47.5°	392.5	411.7	428.7	442.3	449.0	453.6	461.5	467.1	469.4	469.4
50°	397.0	417.4	434.3	449.0	455.8	461.5	470.5	475.1	478.5	478.5
52.5°	400.4	421.9	441.1	455.8	462.6	468.3	478.5	483.0	486.4	486.4
55°	403.8	426.4	445.7	461.5	469.4	473.9	484.1	489.8	493.2	493.2
57.5°	406.1	429.8	449.0	466.0	473.9	479.6	489.8	495.4	498.8	498.8
60°	408.3	432.1	452.4	470.5	477.3	484.1	494.3	501.1	504.5	504.5
62.5°	408.3	433.2	454.7	472.8	480.7	486.4	497.7	504.5	507.9	509.0
65°	409.5	434.3	455.8	473.9	483.0	489.8	499.9	506.7	511.3	512.4
67.5°	408.3	434.3	455.8	475.1	483.0	489.8	501.1	509.0	513.5	514.7
70°	407.2	433.2	455.8	475.1	484.1	490.9	502.2	510.1	514.7	515.8
72.5°	404.9	431.0	454.7	473.9	483.0	489.8	502.2	510.1	513.5	515.8
75°	401.5	428.7	452.4	472.8	480.7	488.6	499.9	509.0	513.5	513.5
77.5°	398.2	425.3	449.0	469.4	478.5	485.2	497.7	506.7	511.3	512.4
80°	392.5	419.6	443.4	463.8	472.8	480.7	493.2	502.2	506.7	507.9
82.5°	386.8	414.0	437.7	458.1	468.3	475.1	487.5	496.6	501.1	502.2
85°	380.1	407.2	432.1	452.4	461.5	469.4	481.9	490.9	495.4	496.6
87.5°	372.1	400.4	424.2	445.7	453.6	461.5	475.1	483.0	488.6	489.8
90°	365.3	392.5	416.2	437.7	446.8	454.7	467.1	476.2	480.7	481.9
92.5°	357.4	384.6	409.5	429.8	438.9	446.8	459.2	468.3	472.8	473.9
95°	348.4	376.7	400.4	420.8	429.8	437.7	450.2	458.1	463.8	464.9
97.5°	340.5	367.6	391.4	411.7	420.8	428.7	440.0	449.0	452.4	454.7
100°	329.2	356.3	381.2	400.4	409.5	417.4	429.8	436.6	441.1	443.4
102.5°	319.0	346.1	369.9	388.0	397.0	403.8	416.2	424.2	429.8	429.8
105°	307.7	334.8	357.4	376.7	384.6	391.4	403.8	410.6	416.2	416.2
107.5°	297.5	322.4	345.0	364.2	372.1	380.1	390.2	398.2	402.7	403.8
110°	285.0	309.9	332.5	350.6	358.6	366.5	376.7	384.6	388.0	390.2



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CATALOG NUMBER: CFA-3-LD4-UNV-HI-30-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	272.6	297.5	319.0	337.1	343.9	350.6	362.0	368.7	373.3	374.4
115°	259.0	283.9	304.3	322.4	329.2	334.8	346.1	352.9	356.3	357.4
117.5°	246.6	270.3	290.7	306.5	314.4	320.1	330.3	337.1	340.5	341.6
120°	233.0	255.6	274.9	290.7	298.6	304.3	314.4	320.1	323.5	324.6
122.5°	219.4	240.9	260.2	276.0	282.8	288.4	297.5	304.3	306.5	307.7
125°	204.7	226.2	243.2	259.0	265.8	271.5	280.5	286.2	287.3	288.4
127.5°	191.2	210.4	227.4	242.1	247.7	253.4	262.4	268.1	270.3	271.5
130°	176.5	195.7	211.5	225.1	230.7	235.3	243.2	248.8	251.1	252.2
132.5°	161.7	178.7	194.6	208.1	212.6	218.3	225.1	229.6	231.9	231.9
135°	147.0	162.9	177.6	188.9	194.6	199.1	205.9	210.4	212.6	212.6
137.5°	133.5	148.2	161.7	171.9	176.5	179.8	187.8	191.2	192.3	192.3
140°	118.8	132.3	144.8	155.0	158.4	162.9	168.5	171.9	173.1	174.2
142.5°	105.2	116.5	127.8	136.9	140.3	144.8	150.4	152.7	155.0	153.8
145°	89.4	101.8	112.0	121.0	123.3	125.6	131.2	133.5	134.6	134.6
147.5°	75.8	86.0	96.1	104.1	106.3	109.7	113.1	115.4	116.5	115.4
150°	61.1	70.1	79.2	87.1	90.5	91.6	95.0	96.1	97.3	97.3
152.5°	48.6	56.6	64.5	70.1	74.7	75.8	78.0	79.2	80.3	79.2
155°	38.5	43.0	48.6	54.3	56.6	61.1	63.3	63.3	63.3	62.2
157.5°	28.3	31.7	36.2	39.6	41.9	44.1	47.5	48.6	47.5	47.5
160°	20.4	22.6	23.8	27.1	27.1	29.4	31.7	35.1	33.9	32.8
162.5°	12.4	13.6	14.7	15.8	15.8	17.0	18.1	21.5	21.5	20.4
165°	6.8	6.8	7.9	7.9	7.9	7.9	6.8	7.9	10.2	9.0
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)