

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: P236118

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236118
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-HI-30-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
4ft
Light Source: (112) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

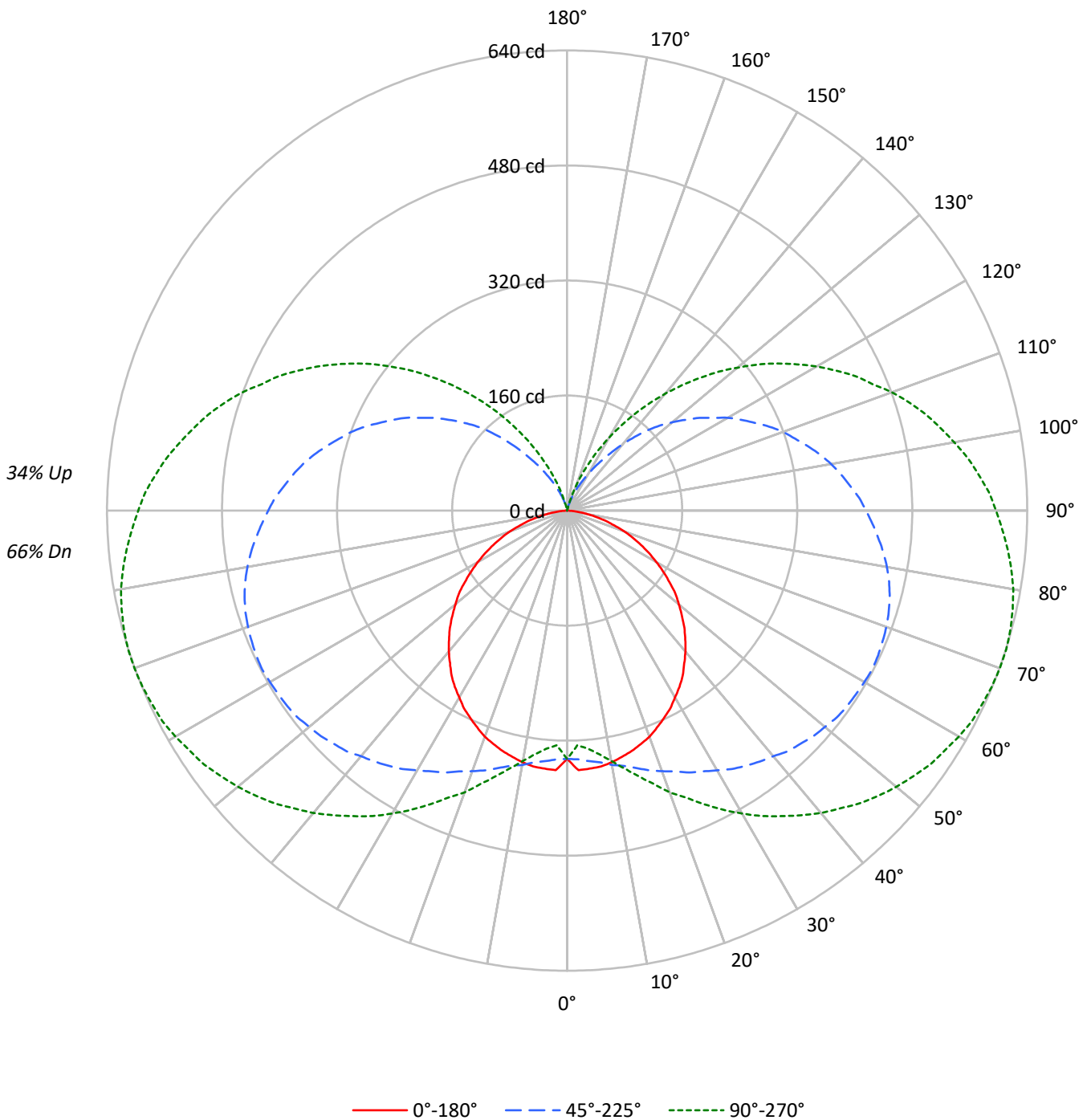
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3937.0 lumens
Efficiency: N/A
Efficacy: 90.3 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): 43.6
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

TEST NUMBER: P236118
CATALOG NUMBER: CFA-4-LD4-UNV-HI-30-OP-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: P236118

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

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°	5574	5574	5574
5°	5804	5132	4717
10°	5761	4861	4502
15°	5685	4690	4451
20°	5613	4616	4502
25°	5500	4595	4567
30°	5383	4597	4680
35°	5275	4645	4784
40°	5106	4689	4896
45°	4929	4767	5008
50°	4711	4844	5112
55°	4458	4934	5223
60°	4150	5014	5324
65°	3786	5111	5426
70°	3367	5202	5533
75°	2769	5300	5636
80°	1948	5393	5735
85°	971	5480	5821



TEST NUMBER: P236118

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.6	0.9
10°-20°	105.1	2.7
20°-30°	183.3	4.7
30°-40°	263.0	6.7
40°-50°	336.1	8.5
50°-60°	394.5	10.0
60°-70°	430.8	10.9
70°-80°	439.9	11.2
80°-90°	420.8	10.7
90°-100°	380.8	9.7
100°-110°	324.1	8.2
110°-120°	254.8	6.5
120°-130°	181.7	4.6
130°-140°	112.3	2.9
140°-150°	55.5	1.4
150°-160°	18.5	0.5
160°-170°	2.1	0.1
170°-180°	0.0	0.0
0°-30°	322.0	8.2
0°-40°	585.0	14.9
0°-60°	1315.6	33.4
0°-90°	2607.0	66.2
90°-120°	959.8	24.4
90°-150°	1309.3	33.3
90°-180°	1330.0	33.8
0°-180°	3937.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	360	357	350	343	332	34
15°	346	356	371	384	382	98
25°	318	350	402	444	451	147
35°	280	338	433	504	519	175
45°	230	323	459	550	576	177
55°	174	306	475	585	616	155
65°	114	283	477	601	637	112
75°	56	252	464	598	638	59
85°	9	218	434	572	615	12
90°	0	198	416	554	596	0
95°	0	181	395	533	574	0
105°	0	145	346	477	517	0
115°	0	110	288	408	442	0
125°	0	79	225	327	357	0
135°	0	50	158	239	261	0
145°	1	27	87	151	164	0
155°	1	13	37	62	74	1
165°	1	2	7	6	8	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236118

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2
2.5°	361.4	360.2	359.1	359.1	357.9	357.9	356.7	355.6	353.3	349.8	346.3
5°	360.2	359.1	357.9	357.9	357.9	356.7	356.7	356.7	354.4	352.1	349.8
7.5°	359.1	357.9	356.7	356.7	357.9	357.9	357.9	357.9	356.7	355.6	353.3
10°	355.6	354.4	353.3	355.6	355.6	356.7	357.9	359.1	359.1	359.1	359.1
12.5°	351.0	351.0	351.0	353.3	355.6	356.7	357.9	361.4	362.5	363.7	363.7
15°	346.3	346.3	347.5	349.8	354.4	355.6	356.7	363.7	367.2	369.5	370.6
17.5°	340.5	340.5	341.7	346.3	351.0	354.4	356.7	364.8	369.5	374.1	378.7
20°	334.7	334.7	337.1	342.8	348.6	353.3	356.7	366.0	373.0	379.9	385.7
22.5°	326.6	327.8	331.3	338.2	346.3	352.1	356.7	366.0	376.4	385.7	392.6
25°	318.5	319.7	324.3	333.6	342.8	349.8	355.6	367.2	378.7	391.5	401.9
27.5°	310.4	311.6	317.4	327.8	339.4	346.3	353.3	368.3	383.4	397.3	408.9
30°	300.0	302.3	310.4	322.0	335.9	344.0	352.1	369.5	385.7	401.9	417.0
32.5°	290.7	293.0	302.3	315.0	332.4	341.7	351.0	371.8	389.2	407.7	426.2
35°	280.3	282.6	293.0	308.1	327.8	338.2	348.6	370.6	392.6	412.3	433.2
37.5°	267.6	272.2	283.8	301.1	322.0	334.7	346.3	370.6	395.0	417.0	440.1
40°	256.0	260.6	274.5	294.2	317.4	331.3	344.0	371.8	397.3	421.6	445.9
42.5°	243.2	247.9	264.1	286.1	312.7	326.6	341.7	371.8	399.6	426.2	454.0
45°	230.5	236.3	253.7	278.0	308.1	323.2	339.4	371.8	401.9	430.9	458.7
47.5°	216.6	223.5	243.2	269.9	302.3	319.7	337.1	370.6	403.1	434.3	464.5
50°	202.7	210.8	231.7	261.8	296.5	315.0	333.6	369.5	404.2	436.7	467.9
52.5°	190.0	198.1	221.2	253.7	290.7	311.6	330.1	368.3	405.4	439.0	472.6
55°	173.7	184.2	209.6	244.4	284.9	305.8	325.5	366.0	404.2	440.1	474.9
57.5°	158.7	170.3	199.2	235.1	278.0	300.0	322.0	363.7	403.1	440.1	476.0
60°	143.6	156.4	187.6	227.0	272.2	295.4	317.4	360.2	401.9	440.1	477.2
62.5°	128.6	142.5	174.9	217.8	265.2	289.6	311.6	356.7	400.8	440.1	478.4
65°	113.5	129.7	164.5	208.5	257.1	282.6	305.8	352.1	396.1	437.8	477.2
67.5°	98.5	115.8	151.7	199.2	250.2	275.7	300.0	347.5	393.8	435.5	474.9
70°	84.6	100.8	141.3	190.0	240.9	268.7	293.0	342.8	389.2	432.0	472.6
72.5°	68.3	88.0	130.9	180.7	234.0	260.6	287.2	335.9	384.5	427.4	469.1
75°	55.6	75.3	119.3	171.4	224.7	252.5	279.1	328.9	378.7	422.8	464.5
77.5°	41.7	63.7	108.9	161.0	215.4	243.2	271.0	322.0	371.8	417.0	458.7
80°	29.0	52.1	98.5	151.7	207.3	235.1	261.8	313.9	363.7	408.9	451.7
82.5°	18.5	42.9	89.2	142.5	198.1	227.0	253.7	306.9	355.6	401.9	443.6
85°	9.3	33.6	79.9	133.2	188.8	217.8	244.4	297.7	346.3	392.6	434.3
87.5°	2.3	26.6	71.8	123.9	179.5	207.3	235.1	288.4	338.2	383.4	425.1
90°	0.0	20.8	64.9	115.8	170.3	198.1	224.7	278.0	327.8	373.0	415.8
92.5°	0.0	17.4	57.9	107.7	162.2	188.8	216.6	268.7	318.5	363.7	406.5
95°	0.0	13.9	52.1	99.6	152.9	180.7	206.2	258.3	308.1	353.3	395.0
97.5°	0.0	11.6	46.3	93.8	144.8	171.4	196.9	249.0	297.7	342.8	384.5
100°	0.0	10.4	41.7	86.9	136.7	162.2	187.6	238.6	287.2	331.3	373.0
102.5°	0.0	9.3	38.2	79.9	128.6	154.0	178.4	228.2	275.7	319.7	360.2
105°	0.0	8.1	34.7	74.1	120.5	144.8	169.1	217.8	264.1	306.9	346.3
107.5°	0.0	6.9	31.3	68.3	112.4	135.5	158.7	206.2	251.3	294.2	332.4
110°	0.0	6.9	27.8	62.5	104.2	127.4	149.4	194.6	239.8	280.3	319.7



TEST NUMBER: P236118

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	5.8	25.5	56.8	97.3	118.1	140.1	183.0	225.9	266.4	304.6
115°	0.0	5.8	23.2	52.1	89.2	110.0	130.9	171.4	213.1	251.3	288.4
117.5°	0.0	5.8	22.0	47.5	82.2	101.9	121.6	161.0	200.4	237.4	273.3
120°	0.0	4.6	19.7	44.0	75.3	93.8	112.4	149.4	186.5	223.5	258.3
122.5°	0.0	4.6	18.5	40.5	69.5	85.7	103.1	139.0	173.7	208.5	239.8
125°	0.0	4.6	17.4	37.1	62.5	78.8	93.8	127.4	161.0	193.4	224.7
127.5°	0.0	4.6	15.1	33.6	56.8	70.7	85.7	117.0	148.3	178.4	207.3
130°	0.0	3.5	13.9	30.1	51.0	63.7	77.6	105.4	134.4	163.3	191.1
132.5°	0.0	3.5	12.7	26.6	45.2	56.8	68.3	93.8	121.6	149.4	174.9
135°	0.0	2.3	10.4	23.2	39.4	49.8	60.2	82.2	107.7	132.0	157.5
137.5°	0.0	2.3	9.3	19.7	34.7	42.9	52.1	71.8	93.8	115.8	139.0
140°	0.0	2.3	8.1	17.4	30.1	37.1	45.2	62.5	81.1	100.8	120.5
142.5°	0.0	2.3	6.9	15.1	25.5	32.4	38.2	53.3	68.3	85.7	103.1
145°	1.2	2.3	5.8	12.7	22.0	26.6	32.4	45.2	59.1	73.0	86.9
147.5°	1.2	1.2	4.6	10.4	17.4	23.2	27.8	38.2	48.6	60.2	73.0
150°	1.2	1.2	4.6	9.3	15.1	18.5	23.2	31.3	40.5	49.8	59.1
152.5°	1.2	1.2	3.5	6.9	12.7	15.1	18.5	25.5	32.4	39.4	47.5
155°	1.2	1.2	3.5	5.8	10.4	12.7	15.1	20.8	25.5	31.3	37.1
157.5°	1.2	1.2	2.3	4.6	8.1	9.3	11.6	15.1	19.7	23.2	27.8
160°	1.2	1.2	2.3	3.5	5.8	6.9	8.1	11.6	15.1	17.4	19.7
162.5°	1.2	1.2	1.2	2.3	3.5	4.6	5.8	6.9	9.3	11.6	12.7
165°	1.2	1.2	1.2	1.2	2.3	2.3	3.5	4.6	4.6	6.9	6.9
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



TEST NUMBER: P236118

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2
2.5°	344.0	342.8	340.5	338.2	337.1	335.9	333.6	330.1	327.8	326.6
5°	348.6	347.5	346.3	344.0	342.8	341.7	339.4	337.1	334.7	332.4
7.5°	353.3	354.4	353.3	352.1	351.0	349.8	347.5	346.3	344.0	341.7
10°	360.2	361.4	361.4	361.4	361.4	360.2	357.9	357.9	355.6	353.3
12.5°	367.2	370.6	371.8	371.8	371.8	373.0	370.6	369.5	367.2	367.2
15°	376.4	378.7	382.2	385.7	384.5	385.7	385.7	384.5	382.2	382.2
17.5°	384.5	390.3	395.0	397.3	399.6	399.6	400.8	400.8	398.4	398.4
20°	393.8	401.9	407.7	411.2	414.7	415.8	415.8	418.1	417.0	417.0
22.5°	404.2	412.3	420.4	426.2	429.7	430.9	434.3	435.5	434.3	432.0
25°	413.5	425.1	433.2	440.1	443.6	445.9	450.6	452.9	452.9	450.6
27.5°	423.9	435.5	447.1	456.4	458.7	462.1	467.9	469.1	470.3	469.1
30°	433.2	448.2	461.0	470.3	473.7	477.2	484.2	486.5	486.5	486.5
32.5°	442.5	459.8	473.7	485.3	489.9	493.4	499.2	502.7	502.7	503.8
35°	452.9	470.3	485.3	498.0	503.8	507.3	515.4	518.9	520.1	518.9
37.5°	462.1	480.7	496.9	509.6	515.4	520.1	528.2	532.8	534.0	534.0
40°	471.4	489.9	507.3	522.4	528.2	534.0	542.1	546.7	549.0	549.0
42.5°	478.4	499.2	518.9	534.0	539.7	545.5	554.8	559.4	561.8	561.8
45°	485.3	508.5	528.2	544.4	550.2	557.1	567.5	572.2	574.5	575.7
47.5°	491.1	515.4	536.3	553.6	561.8	567.5	578.0	583.8	587.2	587.2
50°	496.9	522.4	543.2	561.8	569.9	576.8	587.2	594.2	597.7	597.7
52.5°	501.5	528.2	551.3	571.0	579.1	586.1	596.5	603.5	606.9	606.9
55°	506.2	532.8	556.0	576.8	584.9	593.0	603.5	611.6	615.0	616.2
57.5°	508.5	536.3	560.6	582.6	590.7	598.8	610.4	618.5	622.0	622.0
60°	510.8	539.7	565.2	587.2	596.5	603.5	616.2	624.3	627.8	628.9
62.5°	511.9	542.1	567.5	590.7	600.0	608.1	620.8	628.9	633.6	634.7
65°	511.9	542.1	568.7	591.9	601.1	610.4	623.1	631.2	635.9	637.0
67.5°	510.8	542.1	569.9	593.0	603.5	611.6	625.5	633.6	638.2	639.4
70°	508.5	540.9	568.7	591.9	602.3	610.4	625.5	634.7	639.4	640.5
72.5°	506.2	537.4	566.4	590.7	601.1	610.4	624.3	633.6	639.4	640.5
75°	501.5	535.1	564.1	588.4	597.7	606.9	622.0	631.2	637.0	638.2
77.5°	496.9	529.3	558.3	583.8	594.2	603.5	618.5	627.8	633.6	634.7
80°	489.9	523.5	552.5	578.0	588.4	597.7	612.7	622.0	627.8	630.1
82.5°	483.0	516.6	545.5	571.0	581.4	590.7	605.8	616.2	622.0	623.1
85°	473.7	507.3	537.4	561.8	572.2	582.6	597.7	608.1	613.9	615.0
87.5°	464.5	498.0	528.2	552.5	564.1	573.3	589.6	600.0	604.6	605.8
90°	454.0	487.6	517.7	543.2	553.6	562.9	579.1	589.6	595.3	596.5
92.5°	443.6	478.4	507.3	532.8	543.2	553.6	568.7	579.1	584.9	587.2
95°	434.3	466.8	496.9	521.2	532.8	540.9	557.1	566.4	573.3	574.5
97.5°	422.8	456.4	485.3	509.6	520.1	529.3	544.4	554.8	560.6	561.8
100°	411.2	442.5	472.6	496.9	506.2	515.4	530.5	539.7	545.5	546.7
102.5°	397.3	429.7	457.5	481.8	491.1	501.5	515.4	524.7	530.5	531.6
105°	383.4	414.7	443.6	466.8	477.2	485.3	500.4	509.6	514.3	516.6
107.5°	368.3	400.8	427.4	450.6	459.8	469.1	484.2	492.3	496.9	499.2
110°	353.3	385.7	412.3	434.3	444.8	452.9	466.8	474.9	480.7	480.7



TEST NUMBER: P236118

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	337.1	368.3	395.0	417.0	425.1	434.3	448.2	455.2	459.8	459.8
115°	322.0	351.0	376.4	398.4	407.7	415.8	428.6	436.7	441.3	442.5
117.5°	304.6	333.6	357.9	379.9	388.0	396.1	408.9	415.8	421.6	421.6
120°	288.4	316.2	339.4	360.2	369.5	376.4	388.0	396.1	399.6	400.8
122.5°	271.0	297.7	320.8	339.4	348.6	355.6	366.0	374.1	377.6	378.7
125°	252.5	279.1	300.0	319.7	326.6	334.7	345.2	352.1	355.6	356.7
127.5°	235.1	259.4	280.3	297.7	305.8	312.7	323.2	330.1	332.4	333.6
130°	217.8	239.8	260.6	276.8	283.8	289.6	300.0	305.8	309.3	309.3
132.5°	199.2	220.1	238.6	254.8	261.8	267.6	276.8	282.6	284.9	286.1
135°	180.7	200.4	218.9	232.8	238.6	244.4	253.7	257.1	261.8	260.6
137.5°	162.2	180.7	198.1	210.8	216.6	221.2	229.3	235.1	236.3	236.3
140°	141.3	161.0	176.1	188.8	194.6	199.2	206.2	210.8	213.1	212.0
142.5°	121.6	140.1	156.4	167.9	171.4	177.2	184.2	187.6	187.6	187.6
145°	103.1	118.1	134.4	145.9	150.6	154.0	159.8	162.2	164.5	164.5
147.5°	85.7	98.5	111.2	123.9	128.6	132.0	137.8	140.1	140.1	140.1
150°	69.5	78.8	90.3	99.6	106.6	110.0	114.7	117.0	118.1	118.1
152.5°	55.6	63.7	70.7	78.8	83.4	88.0	95.0	95.0	96.1	96.1
155°	42.9	48.6	54.4	60.2	62.5	66.0	73.0	75.3	75.3	74.1
157.5°	31.3	35.9	39.4	44.0	45.2	47.5	52.1	56.8	56.8	55.6
160°	22.0	24.3	26.6	29.0	30.1	30.1	34.7	39.4	39.4	38.2
162.5°	13.9	15.1	15.1	16.2	16.2	17.4	17.4	19.7	23.2	22.0
165°	6.9	6.9	6.9	5.8	5.8	5.8	6.9	5.8	8.1	8.1
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)