

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: P236121

Luminaire Tested: **CFA-4-LD4-UNV-HI-50-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

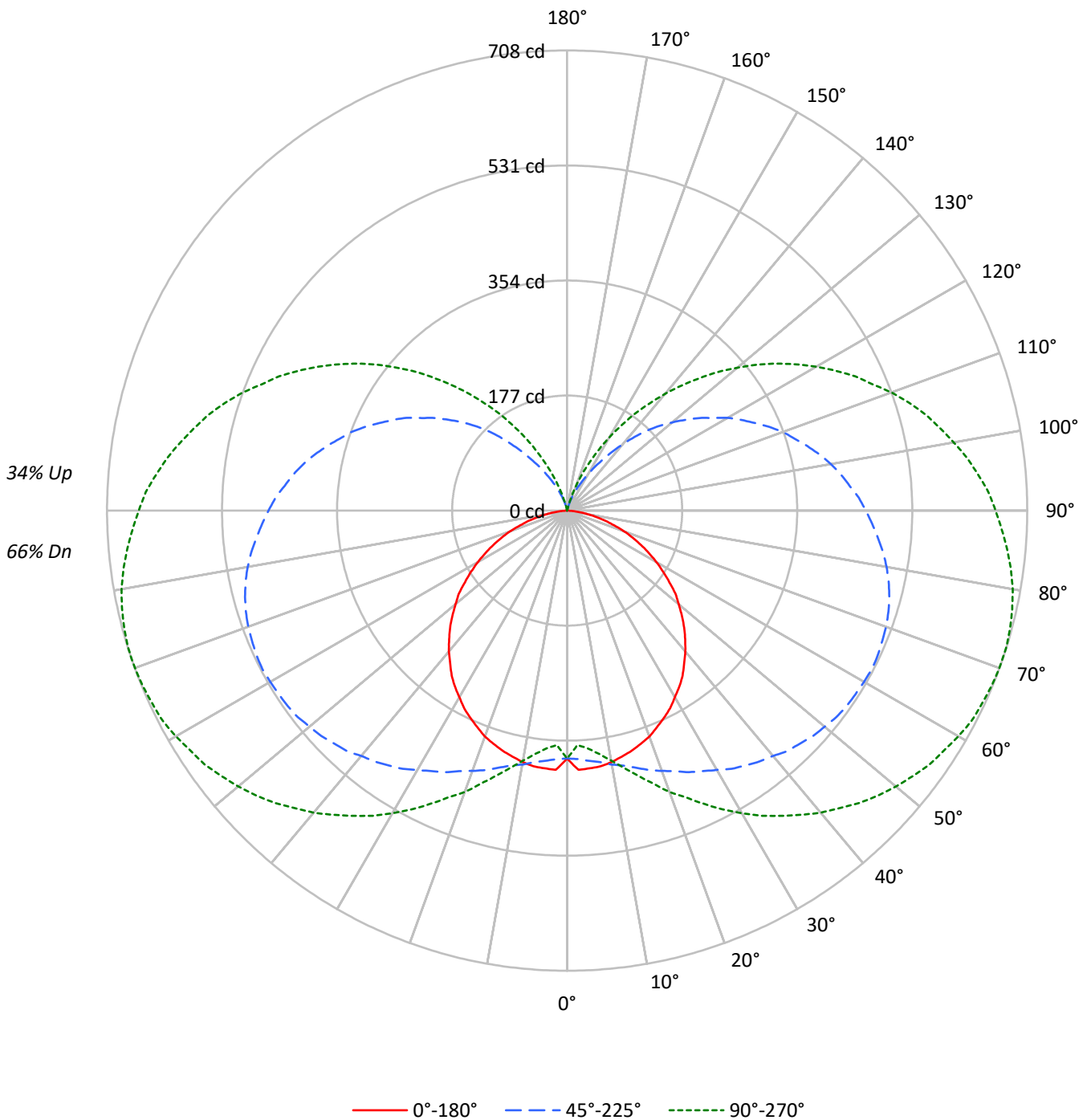
Test Method: LM-79-08  
Report Number: P236121  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-2)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CFA-4-LD4-UNV-HI-50-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
4ft  
Light Source: (112) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4350.3 lumens  
Efficiency: N/A  
Efficacy: 99.8 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: P236121  
CATALOG NUMBER: CFA-4-LD4-UNV-HI-50-OP-EDC1

### 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°	6158	6158	6158
5°	6413	5670	5212
10°	6366	5372	4975
15°	6283	5184	4919
20°	6203	5101	4975
25°	6079	5078	5046
30°	5948	5080	5170
35°	5828	5133	5287
40°	5642	5182	5410
45°	5447	5267	5533
50°	5206	5353	5649
55°	4928	5451	5772
60°	4587	5541	5883
65°	4183	5648	5996
70°	3718	5748	6114
75°	3058	5856	6227
80°	2150	5959	6337
85°	1065	6057	6432



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.2	0.9
10°-20°	116.2	2.7
20°-30°	202.5	4.7
30°-40°	290.6	6.7
40°-50°	371.4	8.5
50°-60°	435.9	10.0
60°-70°	476.0	10.9
70°-80°	486.1	11.2
80°-90°	465.0	10.7
90°-100°	420.8	9.7
100°-110°	358.1	8.2
110°-120°	281.6	6.5
120°-130°	200.8	4.6
130°-140°	124.1	2.9
140°-150°	61.3	1.4
150°-160°	20.4	0.5
160°-170°	2.4	0.1
170°-180°	0.0	0.0
0°-30°	355.8	8.2
0°-40°	646.4	14.9
0°-60°	1453.7	33.4
0°-90°	2880.7	66.2
90°-120°	1060.5	24.4
90°-150°	1446.8	33.3
90°-180°	1470.0	33.8
0°-180°	4350.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	381	381	381	381	381	
5°	398	394	386	379	367	38
15°	383	393	410	425	422	108
25°	352	386	444	490	498	162
35°	310	374	479	557	573	193
45°	255	357	507	608	636	196
55°	192	338	525	646	681	172
65°	125	312	527	664	704	124
75°	61	279	513	660	705	65
85°	10	241	480	632	680	13
90°	0	219	460	612	659	0
95°	0	200	436	589	635	0
105°	0	160	383	527	571	0
115°	0	122	319	450	489	0
125°	0	87	248	361	394	0
135°	0	55	174	264	288	0
145°	1	29	96	166	182	0
155°	1	14	41	69	82	1
165°	1	3	8	6	9	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236121

CATALOG NUMBER: CFA-4-LD4-UNV-HI-50-OP-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	399.3	398.0	396.8	396.8	395.5	395.5	394.2	392.9	390.4	386.5	382.7
5°	398.0	396.8	395.5	395.5	395.5	394.2	394.2	394.2	391.6	389.1	386.5
7.5°	396.8	395.5	394.2	394.2	395.5	395.5	395.5	395.5	394.2	392.9	390.4
10°	392.9	391.6	390.4	392.9	392.9	394.2	395.5	396.8	396.8	396.8	396.8
12.5°	387.8	387.8	387.8	390.4	392.9	394.2	395.5	399.3	400.6	401.9	401.9
15°	382.7	382.7	384.0	386.5	391.6	392.9	394.2	401.9	405.7	408.3	409.6
17.5°	376.3	376.3	377.6	382.7	387.8	391.6	394.2	403.2	408.3	413.4	418.5
20°	369.9	369.9	372.4	378.8	385.2	390.4	394.2	404.4	412.1	419.8	426.2
22.5°	360.9	362.2	366.0	373.7	382.7	389.1	394.2	404.4	416.0	426.2	433.9
25°	352.0	353.2	358.4	368.6	378.8	386.5	392.9	405.7	418.5	432.6	444.1
27.5°	343.0	344.3	350.7	362.2	375.0	382.7	390.4	407.0	423.6	439.0	451.8
30°	331.5	334.0	343.0	355.8	371.2	380.1	389.1	408.3	426.2	444.1	460.8
32.5°	321.2	323.8	334.0	348.1	367.3	377.6	387.8	410.8	430.0	450.5	471.0
35°	309.7	312.3	323.8	340.4	362.2	373.7	385.2	409.6	433.9	455.6	478.7
37.5°	295.7	300.8	313.6	332.8	355.8	369.9	382.7	409.6	436.4	460.8	486.4
40°	282.9	288.0	303.3	325.1	350.7	366.0	380.1	410.8	439.0	465.9	492.8
42.5°	268.8	273.9	291.8	316.1	345.6	360.9	377.6	410.8	441.6	471.0	501.7
45°	254.7	261.1	280.3	307.2	340.4	357.1	375.0	410.8	444.1	476.1	506.8
47.5°	239.3	247.0	268.8	298.2	334.0	353.2	372.4	409.6	445.4	480.0	513.2
50°	224.0	232.9	256.0	289.3	327.6	348.1	368.6	408.3	446.7	482.5	517.1
52.5°	209.9	218.9	244.5	280.3	321.2	344.3	364.8	407.0	448.0	485.1	522.2
55°	192.0	203.5	231.7	270.1	314.8	337.9	359.6	404.4	446.7	486.4	524.7
57.5°	175.3	188.1	220.1	259.8	307.2	331.5	355.8	401.9	445.4	486.4	526.0
60°	158.7	172.8	207.3	250.9	300.8	326.4	350.7	398.0	444.1	486.4	527.3
62.5°	142.1	157.4	193.3	240.6	293.1	320.0	344.3	394.2	442.8	486.4	528.6
65°	125.4	143.3	181.7	230.4	284.1	312.3	337.9	389.1	437.7	483.8	527.3
67.5°	108.8	128.0	167.7	220.1	276.5	304.6	331.5	384.0	435.2	481.2	524.7
70°	93.4	111.3	156.1	209.9	266.2	296.9	323.8	378.8	430.0	477.4	522.2
72.5°	75.5	97.3	144.6	199.7	258.5	288.0	317.4	371.2	424.9	472.3	518.3
75°	61.4	83.2	131.8	189.4	248.3	279.0	308.4	363.5	418.5	467.2	513.2
77.5°	46.1	70.4	120.3	177.9	238.1	268.8	299.5	355.8	410.8	460.8	506.8
80°	32.0	57.6	108.8	167.7	229.1	259.8	289.3	346.8	401.9	451.8	499.1
82.5°	20.5	47.4	98.6	157.4	218.9	250.9	280.3	339.2	392.9	444.1	490.2
85°	10.2	37.1	88.3	147.2	208.6	240.6	270.1	328.9	382.7	433.9	480.0
87.5°	2.6	29.4	79.4	136.9	198.4	229.1	259.8	318.7	373.7	423.6	469.7
90°	0.0	23.0	71.7	128.0	188.1	218.9	248.3	307.2	362.2	412.1	459.5
92.5°	0.0	19.2	64.0	119.0	179.2	208.6	239.3	296.9	352.0	401.9	449.2
95°	0.0	15.4	57.6	110.1	168.9	199.7	227.8	285.4	340.4	390.4	436.4
97.5°	0.0	12.8	51.2	103.7	160.0	189.4	217.6	275.2	328.9	378.8	424.9
100°	0.0	11.5	46.1	96.0	151.0	179.2	207.3	263.7	317.4	366.0	412.1
102.5°	0.0	10.2	42.2	88.3	142.1	170.2	197.1	252.1	304.6	353.2	398.0
105°	0.0	9.0	38.4	81.9	133.1	160.0	186.9	240.6	291.8	339.2	382.7
107.5°	0.0	7.7	34.6	75.5	124.1	149.7	175.3	227.8	277.7	325.1	367.3
110°	0.0	7.7	30.7	69.1	115.2	140.8	165.1	215.0	264.9	309.7	353.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	6.4	28.2	62.7	107.5	130.5	154.9	202.2	249.6	294.4	336.6
115°	0.0	6.4	25.6	57.6	98.6	121.6	144.6	189.4	235.5	277.7	318.7
117.5°	0.0	6.4	24.3	52.5	90.9	112.6	134.4	177.9	221.4	262.4	302.0
120°	0.0	5.1	21.8	48.6	83.2	103.7	124.1	165.1	206.1	247.0	285.4
122.5°	0.0	5.1	20.5	44.8	76.8	94.7	113.9	153.6	192.0	230.4	264.9
125°	0.0	5.1	19.2	41.0	69.1	87.0	103.7	140.8	177.9	213.7	248.3
127.5°	0.0	5.1	16.6	37.1	62.7	78.1	94.7	129.3	163.8	197.1	229.1
130°	0.0	3.8	15.4	33.3	56.3	70.4	85.8	116.5	148.5	180.5	211.2
132.5°	0.0	3.8	14.1	29.4	49.9	62.7	75.5	103.7	134.4	165.1	193.3
135°	0.0	2.6	11.5	25.6	43.5	55.0	66.6	90.9	119.0	145.9	174.1
137.5°	0.0	2.6	10.2	21.8	38.4	47.4	57.6	79.4	103.7	128.0	153.6
140°	0.0	2.6	9.0	19.2	33.3	41.0	49.9	69.1	89.6	111.3	133.1
142.5°	0.0	2.6	7.7	16.6	28.2	35.8	42.2	58.9	75.5	94.7	113.9
145°	1.3	2.6	6.4	14.1	24.3	29.4	35.8	49.9	65.3	80.6	96.0
147.5°	1.3	1.3	5.1	11.5	19.2	25.6	30.7	42.2	53.8	66.6	80.6
150°	1.3	1.3	5.1	10.2	16.6	20.5	25.6	34.6	44.8	55.0	65.3
152.5°	1.3	1.3	3.8	7.7	14.1	16.6	20.5	28.2	35.8	43.5	52.5
155°	1.3	1.3	3.8	6.4	11.5	14.1	16.6	23.0	28.2	34.6	41.0
157.5°	1.3	1.3	2.6	5.1	9.0	10.2	12.8	16.6	21.8	25.6	30.7
160°	1.3	1.3	2.6	3.8	6.4	7.7	9.0	12.8	16.6	19.2	21.8
162.5°	1.3	1.3	1.3	2.6	3.8	5.1	6.4	7.7	10.2	12.8	14.1
165°	1.3	1.3	1.3	1.3	2.6	2.6	3.8	5.1	5.1	7.7	7.7
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°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	380.1	378.8	376.3	373.7	372.4	371.2	368.6	364.8	362.2	360.9
5°	385.2	384.0	382.7	380.1	378.8	377.6	375.0	372.4	369.9	367.3
7.5°	390.4	391.6	390.4	389.1	387.8	386.5	384.0	382.7	380.1	377.6
10°	398.0	399.3	399.3	399.3	399.3	398.0	395.5	395.5	392.9	390.4
12.5°	405.7	409.6	410.8	410.8	410.8	412.1	409.6	408.3	405.7	405.7
15°	416.0	418.5	422.4	426.2	424.9	426.2	426.2	424.9	422.4	422.4
17.5°	424.9	431.3	436.4	439.0	441.6	441.6	442.8	442.8	440.3	440.3
20°	435.2	444.1	450.5	454.4	458.2	459.5	459.5	462.0	460.8	460.8
22.5°	446.7	455.6	464.6	471.0	474.8	476.1	480.0	481.2	480.0	477.4
25°	456.9	469.7	478.7	486.4	490.2	492.8	497.9	500.4	500.4	497.9
27.5°	468.4	481.2	494.0	504.3	506.8	510.7	517.1	518.3	519.6	518.3
30°	478.7	495.3	509.4	519.6	523.5	527.3	535.0	537.5	537.5	537.5
32.5°	488.9	508.1	523.5	536.3	541.4	545.2	551.6	555.5	555.5	556.7
35°	500.4	519.6	536.3	550.3	556.7	560.6	569.5	573.4	574.7	573.4
37.5°	510.7	531.1	549.1	563.1	569.5	574.7	583.6	588.7	590.0	590.0
40°	520.9	541.4	560.6	577.2	583.6	590.0	599.0	604.1	606.7	606.7
42.5°	528.6	551.6	573.4	590.0	596.4	602.8	613.1	618.2	620.7	620.7
45°	536.3	561.9	583.6	601.5	607.9	615.6	627.1	632.3	634.8	636.1
47.5°	542.7	569.5	592.6	611.8	620.7	627.1	638.7	645.1	648.9	648.9
50°	549.1	577.2	600.3	620.7	629.7	637.4	648.9	656.6	660.4	660.4
52.5°	554.2	583.6	609.2	631.0	639.9	647.6	659.1	666.8	670.7	670.7
55°	559.3	588.7	614.3	637.4	646.3	655.3	666.8	675.8	679.6	680.9
57.5°	561.9	592.6	619.5	643.8	652.7	661.7	674.5	683.5	687.3	687.3
60°	564.4	596.4	624.6	648.9	659.1	666.8	680.9	689.9	693.7	695.0
62.5°	565.7	599.0	627.1	652.7	663.0	671.9	686.0	695.0	700.1	701.4
65°	565.7	599.0	628.4	654.0	664.3	674.5	688.6	697.5	702.6	703.9
67.5°	564.4	599.0	629.7	655.3	666.8	675.8	691.1	700.1	705.2	706.5
70°	561.9	597.7	628.4	654.0	665.5	674.5	691.1	701.4	706.5	707.8
72.5°	559.3	593.9	625.9	652.7	664.3	674.5	689.9	700.1	706.5	707.8
75°	554.2	591.3	623.3	650.2	660.4	670.7	687.3	697.5	703.9	705.2
77.5°	549.1	584.9	616.9	645.1	656.6	666.8	683.5	693.7	700.1	701.4
80°	541.4	578.5	610.5	638.7	650.2	660.4	677.1	687.3	693.7	696.2
82.5°	533.7	570.8	602.8	631.0	642.5	652.7	669.4	680.9	687.3	688.6
85°	523.5	560.6	593.9	620.7	632.3	643.8	660.4	671.9	678.3	679.6
87.5°	513.2	550.3	583.6	610.5	623.3	633.5	651.5	663.0	668.1	669.4
90°	501.7	538.8	572.1	600.3	611.8	622.0	639.9	651.5	657.9	659.1
92.5°	490.2	528.6	560.6	588.7	600.3	611.8	628.4	639.9	646.3	648.9
95°	480.0	515.8	549.1	575.9	588.7	597.7	615.6	625.9	633.5	634.8
97.5°	467.2	504.3	536.3	563.1	574.7	584.9	601.5	613.1	619.5	620.7
100°	454.4	488.9	522.2	549.1	559.3	569.5	586.2	596.4	602.8	604.1
102.5°	439.0	474.8	505.5	532.4	542.7	554.2	569.5	579.8	586.2	587.5
105°	423.6	458.2	490.2	515.8	527.3	536.3	552.9	563.1	568.3	570.8
107.5°	407.0	442.8	472.3	497.9	508.1	518.3	535.0	543.9	549.1	551.6
110°	390.4	426.2	455.6	480.0	491.5	500.4	515.8	524.7	531.1	531.1





TEST NUMBER: P236121

CATALOG NUMBER: CFA-4-LD4-UNV-HI-50-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	372.4	407.0	436.4	460.8	469.7	480.0	495.3	503.0	508.1	508.1
115°	355.8	387.8	416.0	440.3	450.5	459.5	473.6	482.5	487.6	488.9
117.5°	336.6	368.6	395.5	419.8	428.8	437.7	451.8	459.5	465.9	465.9
120°	318.7	349.4	375.0	398.0	408.3	416.0	428.8	437.7	441.6	442.8
122.5°	299.5	328.9	354.5	375.0	385.2	392.9	404.4	413.4	417.2	418.5
125°	279.0	308.4	331.5	353.2	360.9	369.9	381.4	389.1	392.9	394.2
127.5°	259.8	286.7	309.7	328.9	337.9	345.6	357.1	364.8	367.3	368.6
130°	240.6	264.9	288.0	305.9	313.6	320.0	331.5	337.9	341.7	341.7
132.5°	220.1	243.2	263.7	281.6	289.3	295.7	305.9	312.3	314.8	316.1
135°	199.7	221.4	241.9	257.3	263.7	270.1	280.3	284.1	289.3	288.0
137.5°	179.2	199.7	218.9	232.9	239.3	244.5	253.4	259.8	261.1	261.1
140°	156.1	177.9	194.5	208.6	215.0	220.1	227.8	232.9	235.5	234.2
142.5°	134.4	154.9	172.8	185.6	189.4	195.8	203.5	207.3	207.3	207.3
145°	113.9	130.5	148.5	161.3	166.4	170.2	176.6	179.2	181.7	181.7
147.5°	94.7	108.8	122.9	136.9	142.1	145.9	152.3	154.9	154.9	154.9
150°	76.8	87.0	99.8	110.1	117.7	121.6	126.7	129.3	130.5	130.5
152.5°	61.4	70.4	78.1	87.0	92.2	97.3	104.9	104.9	106.2	106.2
155°	47.4	53.8	60.2	66.6	69.1	73.0	80.6	83.2	83.2	81.9
157.5°	34.6	39.7	43.5	48.6	49.9	52.5	57.6	62.7	62.7	61.4
160°	24.3	26.9	29.4	32.0	33.3	33.3	38.4	43.5	43.5	42.2
162.5°	15.4	16.6	16.6	17.9	17.9	19.2	19.2	21.8	25.6	24.3
165°	7.7	7.7	7.7	6.4	6.4	6.4	7.7	6.4	9.0	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)