

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: P236120

Luminaire Tested: **CFA-4-LD4-UNV-HI-40-OP-EDC1**

Issue Date: 3/3/2020



**Test Information**

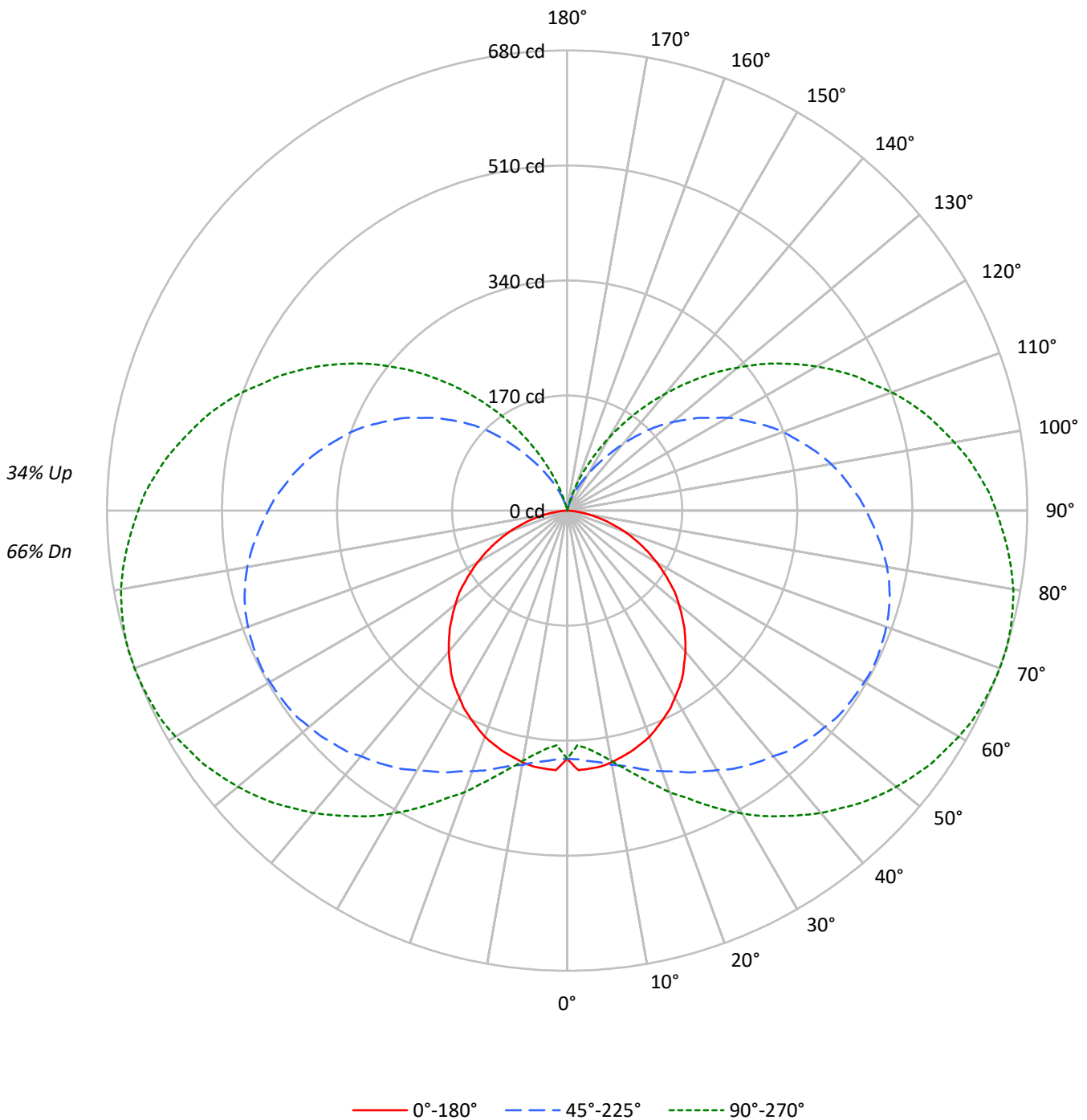
Test Method: LM-79-08  
Report Number: P236120  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1708-243-2)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CFA-4-LD4-UNV-HI-40-OP-EDC1  
Description: FAILSAFE CFA LED FIXTURE  
4ft  
Light Source: (112) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4183.0 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 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

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CATALOG NUMBER: CFA-4-LD4-UNV-HI-40-OP-EDC1

### Luminous Intensity Polar Plot





TEST NUMBER: P236120

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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°	5921	5921	5921
5°	6166	5453	5012
10°	6121	5165	4783
15°	6042	4984	4729
20°	5965	4905	4783
25°	5844	4882	4852
30°	5718	4884	4972
35°	5604	4936	5083
40°	5425	4982	5202
45°	5237	5065	5320
50°	5007	5147	5432
55°	4738	5243	5550
60°	4410	5327	5657
65°	4023	5431	5766
70°	3574	5527	5879
75°	2943	5631	5988
80°	2069	5731	6094
85°	1023	5824	6185



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.7	0.9
10°-20°	111.7	2.7
20°-30°	194.7	4.7
30°-40°	279.4	6.7
40°-50°	357.1	8.5
50°-60°	419.2	10.0
60°-70°	457.7	10.9
70°-80°	467.4	11.2
80°-90°	447.1	10.7
90°-100°	404.6	9.7
100°-110°	344.4	8.2
110°-120°	270.8	6.5
120°-130°	193.1	4.6
130°-140°	119.4	2.9
140°-150°	58.9	1.4
150°-160°	19.6	0.5
160°-170°	2.3	0.1
170°-180°	0.0	0.0
0°-30°	342.1	8.2
0°-40°	621.5	14.9
0°-60°	1397.8	33.4
0°-90°	2769.9	66.2
90°-120°	1019.8	24.4
90°-150°	1391.1	33.3
90°-180°	1413.0	33.8
0°-180°	4183.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	367	367	367	367	367	
5°	383	379	372	364	353	36
15°	368	378	394	409	406	104
25°	338	372	427	471	479	156
35°	298	359	460	535	551	186
45°	245	343	487	585	612	189
55°	185	325	505	622	655	165
65°	121	300	507	639	677	119
75°	59	268	494	635	678	62
85°	10	231	462	608	654	13
90°	0	210	442	588	634	0
95°	0	192	420	566	610	0
105°	0	154	368	507	549	0
115°	0	117	306	433	470	0
125°	0	84	239	347	379	0
135°	0	53	167	254	277	0
145°	1	28	92	160	175	0
155°	1	14	39	66	79	1
165°	1	2	7	6	9	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P236120

CATALOG NUMBER: CFA-4-LD4-UNV-HI-40-OP-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	384.0	382.7	381.5	381.5	380.3	380.3	379.0	377.8	375.3	371.7	368.0
5°	382.7	381.5	380.3	380.3	380.3	379.0	379.0	379.0	376.6	374.1	371.7
7.5°	381.5	380.3	379.0	379.0	380.3	380.3	380.3	380.3	379.0	377.8	375.3
10°	377.8	376.6	375.3	377.8	377.8	379.0	380.3	381.5	381.5	381.5	381.5
12.5°	372.9	372.9	372.9	375.3	377.8	379.0	380.3	384.0	385.2	386.4	386.4
15°	368.0	368.0	369.2	371.7	376.6	377.8	379.0	386.4	390.1	392.6	393.8
17.5°	361.8	361.8	363.0	368.0	372.9	376.6	379.0	387.7	392.6	397.5	402.4
20°	355.7	355.7	358.1	364.3	370.4	375.3	379.0	388.9	396.3	403.7	409.8
22.5°	347.0	348.3	352.0	359.3	368.0	374.1	379.0	388.9	400.0	409.8	417.2
25°	338.4	339.7	344.6	354.4	364.3	371.7	377.8	390.1	402.4	416.0	427.0
27.5°	329.8	331.0	337.2	348.3	360.6	368.0	375.3	391.3	407.3	422.1	434.4
30°	318.7	321.2	329.8	342.1	356.9	365.5	374.1	392.6	409.8	427.0	443.0
32.5°	308.9	311.4	321.2	334.7	353.2	363.0	372.9	395.0	413.5	433.2	452.9
35°	297.8	300.3	311.4	327.4	348.3	359.3	370.4	393.8	417.2	438.1	460.3
37.5°	284.3	289.2	301.5	320.0	342.1	355.7	368.0	393.8	419.6	443.0	467.6
40°	272.0	276.9	291.7	312.6	337.2	352.0	365.5	395.0	422.1	448.0	473.8
42.5°	258.4	263.4	280.6	304.0	332.3	347.0	363.0	395.0	424.6	452.9	482.4
45°	244.9	251.1	269.5	295.4	327.4	343.3	360.6	395.0	427.0	457.8	487.3
47.5°	230.1	237.5	258.4	286.7	321.2	339.7	358.1	393.8	428.3	461.5	493.5
50°	215.4	224.0	246.1	278.1	315.0	334.7	354.4	392.6	429.5	464.0	497.2
52.5°	201.8	210.4	235.1	269.5	308.9	331.0	350.7	391.3	430.7	466.4	502.1
55°	184.6	195.7	222.7	259.7	302.7	324.9	345.8	388.9	429.5	467.6	504.6
57.5°	168.6	180.9	211.7	249.8	295.4	318.7	342.1	386.4	428.3	467.6	505.8
60°	152.6	166.1	199.4	241.2	289.2	313.8	337.2	382.7	427.0	467.6	507.0
62.5°	136.6	151.4	185.8	231.4	281.8	307.7	331.0	379.0	425.8	467.6	508.3
65°	120.6	137.8	174.8	221.5	273.2	300.3	324.9	374.1	420.9	465.2	507.0
67.5°	104.6	123.1	161.2	211.7	265.8	292.9	318.7	369.2	418.4	462.7	504.6
70°	89.8	107.1	150.1	201.8	256.0	285.5	311.4	364.3	413.5	459.0	502.1
72.5°	72.6	93.5	139.1	192.0	248.6	276.9	305.2	356.9	408.6	454.1	498.4
75°	59.1	80.0	126.8	182.1	238.7	268.3	296.6	349.5	402.4	449.2	493.5
77.5°	44.3	67.7	115.7	171.1	228.9	258.4	288.0	342.1	395.0	443.0	487.3
80°	30.8	55.4	104.6	161.2	220.3	249.8	278.1	333.5	386.4	434.4	480.0
82.5°	19.7	45.5	94.8	151.4	210.4	241.2	269.5	326.1	377.8	427.0	471.3
85°	9.8	35.7	84.9	141.5	200.6	231.4	259.7	316.3	368.0	417.2	461.5
87.5°	2.5	28.3	76.3	131.7	190.7	220.3	249.8	306.4	359.3	407.3	451.6
90°	0.0	22.2	68.9	123.1	180.9	210.4	238.7	295.4	348.3	396.3	441.8
92.5°	0.0	18.5	61.5	114.4	172.3	200.6	230.1	285.5	338.4	386.4	432.0
95°	0.0	14.8	55.4	105.8	162.4	192.0	219.1	274.4	327.4	375.3	419.6
97.5°	0.0	12.3	49.2	99.7	153.8	182.1	209.2	264.6	316.3	364.3	408.6
100°	0.0	11.1	44.3	92.3	145.2	172.3	199.4	253.5	305.2	352.0	396.3
102.5°	0.0	9.8	40.6	84.9	136.6	163.7	189.5	242.4	292.9	339.7	382.7
105°	0.0	8.6	36.9	78.8	128.0	153.8	179.7	231.4	280.6	326.1	368.0
107.5°	0.0	7.4	33.2	72.6	119.4	144.0	168.6	219.1	267.0	312.6	353.2
110°	0.0	7.4	29.5	66.5	110.8	135.4	158.8	206.7	254.7	297.8	339.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	6.2	27.1	60.3	103.4	125.5	148.9	194.4	240.0	283.0	323.7
115°	0.0	6.2	24.6	55.4	94.8	116.9	139.1	182.1	226.4	267.0	306.4
117.5°	0.0	6.2	23.4	50.5	87.4	108.3	129.2	171.1	212.9	252.3	290.4
120°	0.0	4.9	20.9	46.8	80.0	99.7	119.4	158.8	198.1	237.5	274.4
122.5°	0.0	4.9	19.7	43.1	73.8	91.1	109.5	147.7	184.6	221.5	254.7
125°	0.0	4.9	18.5	39.4	66.5	83.7	99.7	135.4	171.1	205.5	238.7
127.5°	0.0	4.9	16.0	35.7	60.3	75.1	91.1	124.3	157.5	189.5	220.3
130°	0.0	3.7	14.8	32.0	54.1	67.7	82.5	112.0	142.8	173.5	203.1
132.5°	0.0	3.7	13.5	28.3	48.0	60.3	72.6	99.7	129.2	158.8	185.8
135°	0.0	2.5	11.1	24.6	41.8	52.9	64.0	87.4	114.4	140.3	167.4
137.5°	0.0	2.5	9.8	20.9	36.9	45.5	55.4	76.3	99.7	123.1	147.7
140°	0.0	2.5	8.6	18.5	32.0	39.4	48.0	66.5	86.1	107.1	128.0
142.5°	0.0	2.5	7.4	16.0	27.1	34.5	40.6	56.6	72.6	91.1	109.5
145°	1.2	2.5	6.2	13.5	23.4	28.3	34.5	48.0	62.8	77.5	92.3
147.5°	1.2	1.2	4.9	11.1	18.5	24.6	29.5	40.6	51.7	64.0	77.5
150°	1.2	1.2	4.9	9.8	16.0	19.7	24.6	33.2	43.1	52.9	62.8
152.5°	1.2	1.2	3.7	7.4	13.5	16.0	19.7	27.1	34.5	41.8	50.5
155°	1.2	1.2	3.7	6.2	11.1	13.5	16.0	22.2	27.1	33.2	39.4
157.5°	1.2	1.2	2.5	4.9	8.6	9.8	12.3	16.0	20.9	24.6	29.5
160°	1.2	1.2	2.5	3.7	6.2	7.4	8.6	12.3	16.0	18.5	20.9
162.5°	1.2	1.2	1.2	2.5	3.7	4.9	6.2	7.4	9.8	12.3	13.5
165°	1.2	1.2	1.2	1.2	2.5	2.5	3.7	4.9	4.9	7.4	7.4
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°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	365.5	364.3	361.8	359.3	358.1	356.9	354.4	350.7	348.3	347.0
5°	370.4	369.2	368.0	365.5	364.3	363.0	360.6	358.1	355.7	353.2
7.5°	375.3	376.6	375.3	374.1	372.9	371.7	369.2	368.0	365.5	363.0
10°	382.7	384.0	384.0	384.0	384.0	382.7	380.3	380.3	377.8	375.3
12.5°	390.1	393.8	395.0	395.0	395.0	396.3	393.8	392.6	390.1	390.1
15°	400.0	402.4	406.1	409.8	408.6	409.8	409.8	408.6	406.1	406.1
17.5°	408.6	414.7	419.6	422.1	424.6	424.6	425.8	425.8	423.3	423.3
20°	418.4	427.0	433.2	436.9	440.6	441.8	441.8	444.3	443.0	443.0
22.5°	429.5	438.1	446.7	452.9	456.6	457.8	461.5	462.7	461.5	459.0
25°	439.3	451.6	460.3	467.6	471.3	473.8	478.7	481.2	481.2	478.7
27.5°	450.4	462.7	475.0	484.9	487.3	491.0	497.2	498.4	499.6	498.4
30°	460.3	476.3	489.8	499.6	503.3	507.0	514.4	516.9	516.9	516.9
32.5°	470.1	488.6	503.3	515.6	520.6	524.3	530.4	534.1	534.1	535.3
35°	481.2	499.6	515.6	529.2	535.3	539.0	547.6	551.3	552.6	551.3
37.5°	491.0	510.7	527.9	541.5	547.6	552.6	561.2	566.1	567.3	567.3
40°	500.9	520.6	539.0	555.0	561.2	567.3	575.9	580.9	583.3	583.3
42.5°	508.3	530.4	551.3	567.3	573.5	579.6	589.5	594.4	596.9	596.9
45°	515.6	540.3	561.2	578.4	584.6	591.9	603.0	607.9	610.4	611.6
47.5°	521.8	547.6	569.8	588.2	596.9	603.0	614.1	620.2	623.9	623.9
50°	527.9	555.0	577.2	596.9	605.5	612.9	623.9	631.3	635.0	635.0
52.5°	532.9	561.2	585.8	606.7	615.3	622.7	633.8	641.2	644.9	644.9
55°	537.8	566.1	590.7	612.9	621.5	630.1	641.2	649.8	653.5	654.7
57.5°	540.3	569.8	595.6	619.0	627.6	636.2	648.5	657.2	660.9	660.9
60°	542.7	573.5	600.6	623.9	633.8	641.2	654.7	663.3	667.0	668.2
62.5°	543.9	575.9	603.0	627.6	637.5	646.1	659.6	668.2	673.2	674.4
65°	543.9	575.9	604.2	628.9	638.7	648.5	662.1	670.7	675.6	676.9
67.5°	542.7	575.9	605.5	630.1	641.2	649.8	664.5	673.2	678.1	679.3
70°	540.3	574.7	604.2	628.9	639.9	648.5	664.5	674.4	679.3	680.5
72.5°	537.8	571.0	601.8	627.6	638.7	648.5	663.3	673.2	679.3	680.5
75°	532.9	568.6	599.3	625.2	635.0	644.9	660.9	670.7	676.9	678.1
77.5°	527.9	562.4	593.2	620.2	631.3	641.2	657.2	667.0	673.2	674.4
80°	520.6	556.3	587.0	614.1	625.2	635.0	651.0	660.9	667.0	669.5
82.5°	513.2	548.9	579.6	606.7	617.8	627.6	643.6	654.7	660.9	662.1
85°	503.3	539.0	571.0	596.9	607.9	619.0	635.0	646.1	652.2	653.5
87.5°	493.5	529.2	561.2	587.0	599.3	609.2	626.4	637.5	642.4	643.6
90°	482.4	518.1	550.1	577.2	588.2	598.1	615.3	626.4	632.6	633.8
92.5°	471.3	508.3	539.0	566.1	577.2	588.2	604.2	615.3	621.5	623.9
95°	461.5	495.9	527.9	553.8	566.1	574.7	591.9	601.8	609.2	610.4
97.5°	449.2	484.9	515.6	541.5	552.6	562.4	578.4	589.5	595.6	596.9
100°	436.9	470.1	502.1	527.9	537.8	547.6	563.6	573.5	579.6	580.9
102.5°	422.1	456.6	486.1	511.9	521.8	532.9	547.6	557.5	563.6	564.9
105°	407.3	440.6	471.3	495.9	507.0	515.6	531.6	541.5	546.4	548.9
107.5°	391.3	425.8	454.1	478.7	488.6	498.4	514.4	523.0	527.9	530.4
110°	375.3	409.8	438.1	461.5	472.6	481.2	495.9	504.6	510.7	510.7





TEST NUMBER: P236120

CATALOG NUMBER: CFA-4-LD4-UNV-HI-40-OP-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	358.1	391.3	419.6	443.0	451.6	461.5	476.3	483.6	488.6	488.6
115°	342.1	372.9	400.0	423.3	433.2	441.8	455.3	464.0	468.9	470.1
117.5°	323.7	354.4	380.3	403.7	412.3	420.9	434.4	441.8	448.0	448.0
120°	306.4	336.0	360.6	382.7	392.6	400.0	412.3	420.9	424.6	425.8
122.5°	288.0	316.3	340.9	360.6	370.4	377.8	388.9	397.5	401.2	402.4
125°	268.3	296.6	318.7	339.7	347.0	355.7	366.7	374.1	377.8	379.0
127.5°	249.8	275.7	297.8	316.3	324.9	332.3	343.3	350.7	353.2	354.4
130°	231.4	254.7	276.9	294.1	301.5	307.7	318.7	324.9	328.6	328.6
132.5°	211.7	233.8	253.5	270.7	278.1	284.3	294.1	300.3	302.7	304.0
135°	192.0	212.9	232.6	247.4	253.5	259.7	269.5	273.2	278.1	276.9
137.5°	172.3	192.0	210.4	224.0	230.1	235.1	243.7	249.8	251.1	251.1
140°	150.1	171.1	187.1	200.6	206.7	211.7	219.1	224.0	226.4	225.2
142.5°	129.2	148.9	166.1	178.4	182.1	188.3	195.7	199.4	199.4	199.4
145°	109.5	125.5	142.8	155.1	160.0	163.7	169.8	172.3	174.8	174.8
147.5°	91.1	104.6	118.1	131.7	136.6	140.3	146.4	148.9	148.9	148.9
150°	73.8	83.7	96.0	105.8	113.2	116.9	121.8	124.3	125.5	125.5
152.5°	59.1	67.7	75.1	83.7	88.6	93.5	100.9	100.9	102.1	102.1
155°	45.5	51.7	57.8	64.0	66.5	70.1	77.5	80.0	80.0	78.8
157.5°	33.2	38.1	41.8	46.8	48.0	50.5	55.4	60.3	60.3	59.1
160°	23.4	25.8	28.3	30.8	32.0	32.0	36.9	41.8	41.8	40.6
162.5°	14.8	16.0	16.0	17.2	17.2	18.5	18.5	20.9	24.6	23.4
165°	7.4	7.4	7.4	6.2	6.2	6.2	7.4	6.2	8.6	8.6
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)