

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: P236119

Luminaire Tested: **CFA-4-LD4-UNV-HI-35-OP-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236119
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-35-OP-EDC1
Description: FAILSAFE CFA LED FIXTURE
4ft
Light Source: (112) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

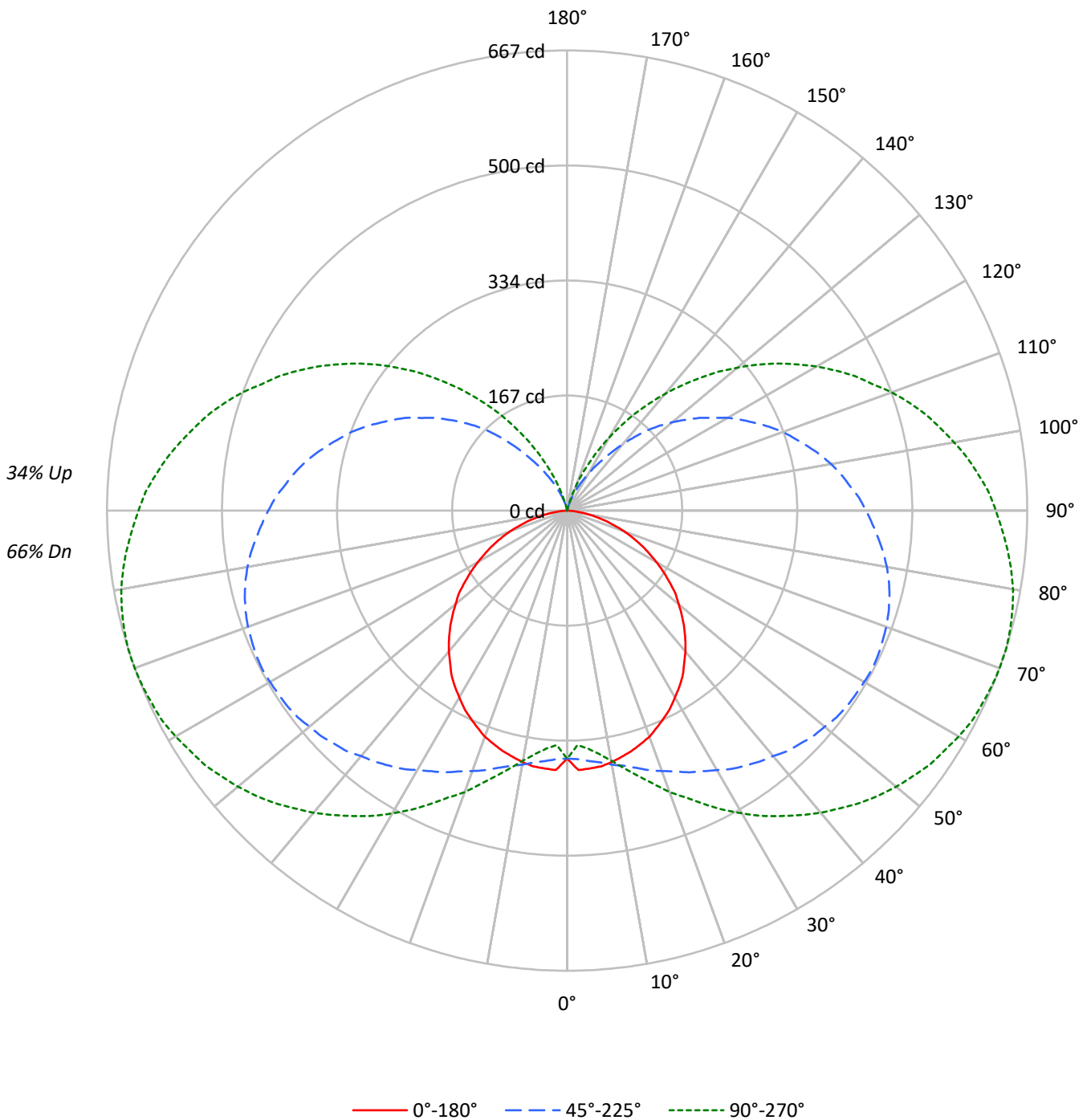
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4101.0 lumens
Efficiency: N/A
Efficacy: 94.1 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

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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°	5804	5804	5804
5°	6045	5346	4914
10°	6001	5063	4690
15°	5922	4887	4636
20°	5847	4809	4689
25°	5730	4787	4756
30°	5607	4788	4874
35°	5495	4838	4983
40°	5317	4885	5100
45°	5135	4966	5216
50°	4907	5046	5325
55°	4646	5140	5441
60°	4324	5223	5546
65°	3943	5324	5653
70°	3507	5419	5764
75°	2883	5521	5870
80°	2029	5617	5973
85°	1013	5709	6064



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.0	0.9
10°-20°	109.5	2.7
20°-30°	190.9	4.7
30°-40°	273.9	6.7
40°-50°	350.1	8.5
50°-60°	410.9	10.0
60°-70°	448.7	10.9
70°-80°	458.2	11.2
80°-90°	438.3	10.7
90°-100°	396.7	9.7
100°-110°	337.6	8.2
110°-120°	265.4	6.5
120°-130°	189.3	4.6
130°-140°	117.0	2.9
140°-150°	57.8	1.4
150°-160°	19.3	0.5
160°-170°	2.2	0.1
170°-180°	0.0	0.0
0°-30°	335.4	8.2
0°-40°	609.3	14.9
0°-60°	1370.4	33.4
0°-90°	2715.6	66.2
90°-120°	999.8	24.4
90°-150°	1363.9	33.3
90°-180°	1385.0	33.8
0°-180°	4101.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	360	360	360	360	360	
5°	375	372	364	357	346	36
15°	361	370	386	401	398	102
25°	332	364	419	462	469	153
35°	292	352	451	525	540	182
45°	240	337	478	573	600	185
55°	181	318	495	609	642	162
65°	118	294	497	626	664	117
75°	58	263	484	623	665	61
85°	10	227	452	596	641	12
90°	0	206	433	577	621	0
95°	0	188	411	555	598	0
105°	0	151	361	497	538	0
115°	0	115	300	425	461	0
125°	0	82	234	340	372	0
135°	0	52	164	248	272	0
145°	1	28	90	157	171	0
155°	1	13	39	65	77	1
165°	1	2	7	6	8	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°	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5
2.5°	376.4	375.2	374.0	374.0	372.8	372.8	371.6	370.4	368.0	364.4	360.7
5°	375.2	374.0	372.8	372.8	372.8	371.6	371.6	371.6	369.2	366.8	364.4
7.5°	374.0	372.8	371.6	371.6	372.8	372.8	372.8	372.8	371.6	370.4	368.0
10°	370.4	369.2	368.0	370.4	370.4	371.6	372.8	374.0	374.0	374.0	374.0
12.5°	365.6	365.6	365.6	368.0	370.4	371.6	372.8	376.4	377.6	378.8	378.8
15°	360.7	360.7	362.0	364.4	369.2	370.4	371.6	378.8	382.5	384.9	386.1
17.5°	354.7	354.7	355.9	360.7	365.6	369.2	371.6	380.1	384.9	389.7	394.5
20°	348.7	348.7	351.1	357.1	363.2	368.0	371.6	381.3	388.5	395.7	401.8
22.5°	340.2	341.4	345.1	352.3	360.7	366.8	371.6	381.3	392.1	401.8	409.0
25°	331.8	333.0	337.8	347.5	357.1	364.4	370.4	382.5	394.5	407.8	418.7
27.5°	323.3	324.6	330.6	341.4	353.5	360.7	368.0	383.7	399.4	413.8	425.9
30°	312.5	314.9	323.3	335.4	349.9	358.3	366.8	384.9	401.8	418.7	434.3
32.5°	302.8	305.2	314.9	328.2	346.3	355.9	365.6	387.3	405.4	424.7	444.0
35°	292.0	294.4	305.2	320.9	341.4	352.3	363.2	386.1	409.0	429.5	451.2
37.5°	278.7	283.5	295.6	313.7	335.4	348.7	360.7	386.1	411.4	434.3	458.5
40°	266.6	271.5	285.9	306.5	330.6	345.1	358.3	387.3	413.8	439.2	464.5
42.5°	253.4	258.2	275.1	298.0	325.8	340.2	355.9	387.3	416.2	444.0	473.0
45°	240.1	246.1	264.2	289.6	320.9	336.6	353.5	387.3	418.7	448.8	477.8
47.5°	225.6	232.9	253.4	281.1	314.9	333.0	351.1	386.1	419.9	452.4	483.8
50°	211.1	219.6	241.3	272.7	308.9	328.2	347.5	384.9	421.1	454.9	487.4
52.5°	197.9	206.3	230.4	264.2	302.8	324.6	343.9	383.7	422.3	457.3	492.3
55°	181.0	191.8	218.4	254.6	296.8	318.5	339.0	381.3	421.1	458.5	494.7
57.5°	165.3	177.4	207.5	244.9	289.6	312.5	335.4	378.8	419.9	458.5	495.9
60°	149.6	162.9	195.5	236.5	283.5	307.7	330.6	375.2	418.7	458.5	497.1
62.5°	133.9	148.4	182.2	226.8	276.3	301.6	324.6	371.6	417.5	458.5	498.3
65°	118.2	135.1	171.3	217.2	267.8	294.4	318.5	366.8	412.6	456.1	497.1
67.5°	102.6	120.7	158.1	207.5	260.6	287.2	312.5	362.0	410.2	453.6	494.7
70°	88.1	105.0	147.2	197.9	251.0	279.9	305.2	357.1	405.4	450.0	492.3
72.5°	71.2	91.7	136.3	188.2	243.7	271.5	299.2	349.9	400.6	445.2	488.6
75°	57.9	78.4	124.3	178.6	234.1	263.0	290.8	342.7	394.5	440.4	483.8
77.5°	43.4	66.4	113.4	167.7	224.4	253.4	282.3	335.4	387.3	434.3	477.8
80°	30.2	54.3	102.6	158.1	216.0	244.9	272.7	327.0	378.8	425.9	470.5
82.5°	19.3	44.6	92.9	148.4	206.3	236.5	264.2	319.7	370.4	418.7	462.1
85°	9.7	35.0	83.2	138.7	196.7	226.8	254.6	310.1	360.7	409.0	452.4
87.5°	2.4	27.7	74.8	129.1	187.0	216.0	244.9	300.4	352.3	399.4	442.8
90°	0.0	21.7	67.6	120.7	177.4	206.3	234.1	289.6	341.4	388.5	433.1
92.5°	0.0	18.1	60.3	112.2	168.9	196.7	225.6	279.9	331.8	378.8	423.5
95°	0.0	14.5	54.3	103.8	159.3	188.2	214.8	269.1	320.9	368.0	411.4
97.5°	0.0	12.1	48.3	97.7	150.8	178.6	205.1	259.4	310.1	357.1	400.6
100°	0.0	10.9	43.4	90.5	142.4	168.9	195.5	248.5	299.2	345.1	388.5
102.5°	0.0	9.7	39.8	83.2	133.9	160.5	185.8	237.7	287.2	333.0	375.2
105°	0.0	8.4	36.2	77.2	125.5	150.8	176.2	226.8	275.1	319.7	360.7
107.5°	0.0	7.2	32.6	71.2	117.0	141.2	165.3	214.8	261.8	306.5	346.3
110°	0.0	7.2	29.0	65.2	108.6	132.7	155.6	202.7	249.7	292.0	333.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	6.0	26.5	59.1	101.3	123.1	146.0	190.6	235.3	277.5	317.3
115°	0.0	6.0	24.1	54.3	92.9	114.6	136.3	178.6	222.0	261.8	300.4
117.5°	0.0	6.0	22.9	49.5	85.7	106.2	126.7	167.7	208.7	247.3	284.7
120°	0.0	4.8	20.5	45.8	78.4	97.7	117.0	155.6	194.2	232.9	269.1
122.5°	0.0	4.8	19.3	42.2	72.4	89.3	107.4	144.8	181.0	217.2	249.7
125°	0.0	4.8	18.1	38.6	65.2	82.0	97.7	132.7	167.7	201.5	234.1
127.5°	0.0	4.8	15.7	35.0	59.1	73.6	89.3	121.9	154.4	185.8	216.0
130°	0.0	3.6	14.5	31.4	53.1	66.4	80.8	109.8	140.0	170.1	199.1
132.5°	0.0	3.6	13.3	27.7	47.1	59.1	71.2	97.7	126.7	155.6	182.2
135°	0.0	2.4	10.9	24.1	41.0	51.9	62.7	85.7	112.2	137.5	164.1
137.5°	0.0	2.4	9.7	20.5	36.2	44.6	54.3	74.8	97.7	120.7	144.8
140°	0.0	2.4	8.4	18.1	31.4	38.6	47.1	65.2	84.5	105.0	125.5
142.5°	0.0	2.4	7.2	15.7	26.5	33.8	39.8	55.5	71.2	89.3	107.4
145°	1.2	2.4	6.0	13.3	22.9	27.7	33.8	47.1	61.5	76.0	90.5
147.5°	1.2	1.2	4.8	10.9	18.1	24.1	29.0	39.8	50.7	62.7	76.0
150°	1.2	1.2	4.8	9.7	15.7	19.3	24.1	32.6	42.2	51.9	61.5
152.5°	1.2	1.2	3.6	7.2	13.3	15.7	19.3	26.5	33.8	41.0	49.5
155°	1.2	1.2	3.6	6.0	10.9	13.3	15.7	21.7	26.5	32.6	38.6
157.5°	1.2	1.2	2.4	4.8	8.4	9.7	12.1	15.7	20.5	24.1	29.0
160°	1.2	1.2	2.4	3.6	6.0	7.2	8.4	12.1	15.7	18.1	20.5
162.5°	1.2	1.2	1.2	2.4	3.6	4.8	6.0	7.2	9.7	12.1	13.3
165°	1.2	1.2	1.2	1.2	2.4	2.4	3.6	4.8	4.8	7.2	7.2
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°	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5	359.5
2.5°	358.3	357.1	354.7	352.3	351.1	349.9	347.5	343.9	341.4	340.2
5°	363.2	362.0	360.7	358.3	357.1	355.9	353.5	351.1	348.7	346.3
7.5°	368.0	369.2	368.0	366.8	365.6	364.4	362.0	360.7	358.3	355.9
10°	375.2	376.4	376.4	376.4	376.4	375.2	372.8	372.8	370.4	368.0
12.5°	382.5	386.1	387.3	387.3	387.3	388.5	386.1	384.9	382.5	382.5
15°	392.1	394.5	398.1	401.8	400.6	401.8	401.8	400.6	398.1	398.1
17.5°	400.6	406.6	411.4	413.8	416.2	416.2	417.5	417.5	415.0	415.0
20°	410.2	418.7	424.7	428.3	431.9	433.1	433.1	435.6	434.3	434.3
22.5°	421.1	429.5	438.0	444.0	447.6	448.8	452.4	453.6	452.4	450.0
25°	430.7	442.8	451.2	458.5	462.1	464.5	469.3	471.7	471.7	469.3
27.5°	441.6	453.6	465.7	475.4	477.8	481.4	487.4	488.6	489.8	488.6
30°	451.2	466.9	480.2	489.8	493.5	497.1	504.3	506.7	506.7	506.7
32.5°	460.9	479.0	493.5	505.5	510.4	514.0	520.0	523.6	523.6	524.8
35°	471.7	489.8	505.5	518.8	524.8	528.5	536.9	540.5	541.7	540.5
37.5°	481.4	500.7	517.6	530.9	536.9	541.7	550.2	555.0	556.2	556.2
40°	491.1	510.4	528.5	544.1	550.2	556.2	564.6	569.5	571.9	571.9
42.5°	498.3	520.0	540.5	556.2	562.2	568.3	577.9	582.7	585.2	585.2
45°	505.5	529.7	550.2	567.1	573.1	580.3	591.2	596.0	598.4	599.6
47.5°	511.6	536.9	558.6	576.7	585.2	591.2	602.1	608.1	611.7	611.7
50°	517.6	544.1	565.9	585.2	593.6	600.8	611.7	618.9	622.6	622.6
52.5°	522.4	550.2	574.3	594.8	603.3	610.5	621.4	628.6	632.2	632.2
55°	527.2	555.0	579.1	600.8	609.3	617.7	628.6	637.0	640.7	641.9
57.5°	529.7	558.6	584.0	606.9	615.3	623.8	635.8	644.3	647.9	647.9
60°	532.1	562.2	588.8	611.7	621.4	628.6	641.9	650.3	653.9	655.1
62.5°	533.3	564.6	591.2	615.3	625.0	633.4	646.7	655.1	660.0	661.2
65°	533.3	564.6	592.4	616.5	626.2	635.8	649.1	657.6	662.4	663.6
67.5°	532.1	564.6	593.6	617.7	628.6	637.0	651.5	660.0	664.8	666.0
70°	529.7	563.4	592.4	616.5	627.4	635.8	651.5	661.2	666.0	667.2
72.5°	527.2	559.8	590.0	615.3	626.2	635.8	650.3	660.0	666.0	667.2
75°	522.4	557.4	587.6	612.9	622.6	632.2	647.9	657.6	663.6	664.8
77.5°	517.6	551.4	581.5	608.1	618.9	628.6	644.3	653.9	660.0	661.2
80°	510.4	545.3	575.5	602.1	612.9	622.6	638.2	647.9	653.9	656.3
82.5°	503.1	538.1	568.3	594.8	605.7	615.3	631.0	641.9	647.9	649.1
85°	493.5	528.5	559.8	585.2	596.0	606.9	622.6	633.4	639.5	640.7
87.5°	483.8	518.8	550.2	575.5	587.6	597.2	614.1	625.0	629.8	631.0
90°	473.0	507.9	539.3	565.9	576.7	586.4	603.3	614.1	620.1	621.4
92.5°	462.1	498.3	528.5	555.0	565.9	576.7	592.4	603.3	609.3	611.7
95°	452.4	486.2	517.6	542.9	555.0	563.4	580.3	590.0	597.2	598.4
97.5°	440.4	475.4	505.5	530.9	541.7	551.4	567.1	577.9	584.0	585.2
100°	428.3	460.9	492.3	517.6	527.2	536.9	552.6	562.2	568.3	569.5
102.5°	413.8	447.6	476.6	501.9	511.6	522.4	536.9	546.6	552.6	553.8
105°	399.4	431.9	462.1	486.2	497.1	505.5	521.2	530.9	535.7	538.1
107.5°	383.7	417.5	445.2	469.3	479.0	488.6	504.3	512.8	517.6	520.0
110°	368.0	401.8	429.5	452.4	463.3	471.7	486.2	494.7	500.7	500.7



TEST NUMBER: P236119

CATALOG NUMBER: CFA-4-LD4-UNV-HI-35-OP-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	351.1	383.7	411.4	434.3	442.8	452.4	466.9	474.2	479.0	479.0
115°	335.4	365.6	392.1	415.0	424.7	433.1	446.4	454.9	459.7	460.9
117.5°	317.3	347.5	372.8	395.7	404.2	412.6	425.9	433.1	439.2	439.2
120°	300.4	329.4	353.5	375.2	384.9	392.1	404.2	412.6	416.2	417.5
122.5°	282.3	310.1	334.2	353.5	363.2	370.4	381.3	389.7	393.3	394.5
125°	263.0	290.8	312.5	333.0	340.2	348.7	359.5	366.8	370.4	371.6
127.5°	244.9	270.3	292.0	310.1	318.5	325.8	336.6	343.9	346.3	347.5
130°	226.8	249.7	271.5	288.4	295.6	301.6	312.5	318.5	322.1	322.1
132.5°	207.5	229.2	248.5	265.4	272.7	278.7	288.4	294.4	296.8	298.0
135°	188.2	208.7	228.0	242.5	248.5	254.6	264.2	267.8	272.7	271.5
137.5°	168.9	188.2	206.3	219.6	225.6	230.4	238.9	244.9	246.1	246.1
140°	147.2	167.7	183.4	196.7	202.7	207.5	214.8	219.6	222.0	220.8
142.5°	126.7	146.0	162.9	174.9	178.6	184.6	191.8	195.5	195.5	195.5
145°	107.4	123.1	140.0	152.0	156.8	160.5	166.5	168.9	171.3	171.3
147.5°	89.3	102.6	115.8	129.1	133.9	137.5	143.6	146.0	146.0	146.0
150°	72.4	82.0	94.1	103.8	111.0	114.6	119.4	121.9	123.1	123.1
152.5°	57.9	66.4	73.6	82.0	86.9	91.7	98.9	98.9	100.1	100.1
155°	44.6	50.7	56.7	62.7	65.2	68.8	76.0	78.4	78.4	77.2
157.5°	32.6	37.4	41.0	45.8	47.1	49.5	54.3	59.1	59.1	57.9
160°	22.9	25.3	27.7	30.2	31.4	31.4	36.2	41.0	41.0	39.8
162.5°	14.5	15.7	15.7	16.9	16.9	18.1	18.1	20.5	24.1	22.9
165°	7.2	7.2	7.2	6.0	6.0	6.0	7.2	6.0	8.4	8.4
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)