

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: P645738

Luminaire Tested: **FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W**

Issue Date: 12/13/2022

Test Information

Test Method: LM-79-08
Report Number: P645738
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P219529)
Test Lab: INNOVATION CENTER
Issue Date: 12/13/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W
Description: 4 INCH 1000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH H FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

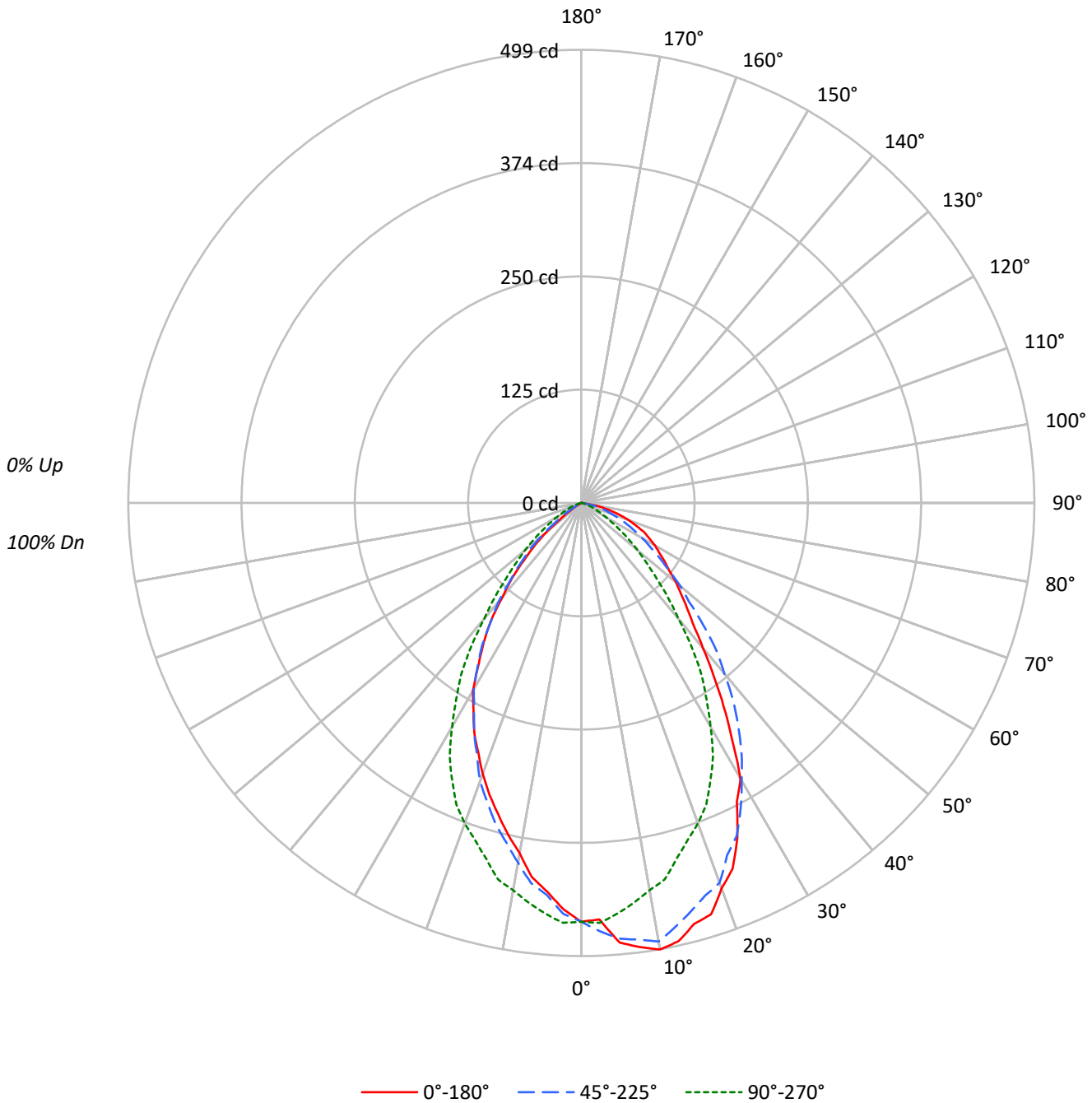
Lumens per Lamp: N/A
Luminaire Lumens: 661.0 lumens
Efficiency: N/A
Efficacy: 67.4 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 9.8
Input Voltage (V):
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: P645738
CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

Luminous Intensity Polar Plot





TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	44491	44491	44491
5°	47073	43973	41610
10°	48920	42414	38358
15°	47938	40486	35402
20°	46381	38547	32591
25°	43267	35846	29725
30°	39062	31731	26617
35°	32169	27163	22074
40°	26262	20959	16992
45°	22556	15924	12226
50°	20415	12114	7716
55°	18791	8748	2793
60°	18043	5982	425
65°	17420	4041	137
70°	15601	2793	169
75°	12787	1454	0
80°	8001	611	0
85°	0	0	0



TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.2	6.5
10°-20°	116.4	17.6
20°-30°	155.4	23.5
30°-40°	147.6	22.3
40°-50°	102.0	15.4
50°-60°	56.4	8.5
60°-70°	28.0	4.2
70°-80°	11.0	1.7
80°-90°	1.1	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	315.0	47.7
0°-40°	462.6	70.0
0°-60°	620.9	93.9
0°-90°	661.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	661.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	461	461	461	461	461	
5°	486	482	454	434	430	47
15°	480	466	405	366	354	136
25°	406	405	337	279	279	185
35°	273	302	231	190	187	171
45°	165	190	117	96	90	129
55°	112	105	52	26	17	101
65°	76	55	18	1	1	74
75°	34	21	4	0	0	37
85°	0	1	0	0	0	3
90°	0	0	0	0	0	



TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1
2.5°	458.9	471.6	472.7	471.6	473.3	472.7	475.5	472.7	476.1	471.1	472.2
5°	486.0	481.0	491.5	486.0	486.0	485.5	483.8	483.2	485.5	478.3	481.6
7.5°	493.2	500.4	509.8	498.2	498.7	498.7	495.4	494.3	494.3	481.0	484.9
10°	499.3	494.9	499.8	495.4	499.3	498.7	500.9	493.8	498.7	491.0	490.4
12.5°	494.3	492.6	499.3	492.1	489.9	490.4	487.7	486.0	487.7	478.8	478.3
15°	479.9	481.6	491.5	483.8	482.7	481.6	478.3	472.7	477.2	465.0	465.6
17.5°	475.0	472.2	473.9	467.2	468.9	467.8	467.2	462.3	461.1	453.4	453.4
20°	451.7	457.8	457.8	453.4	453.4	452.9	445.7	450.1	445.1	442.9	445.1
22.5°	435.7	436.3	436.3	432.4	432.9	430.7	426.9	424.1	426.9	424.1	419.7
25°	406.4	407.5	414.1	407.0	405.8	408.1	404.7	403.1	402.5	395.9	404.7
27.5°	371.0	382.1	381.5	378.7	382.1	377.6	376.0	376.5	378.2	377.6	379.9
30°	350.6	352.2	353.9	351.7	352.2	350.6	350.6	351.1	355.5	353.9	353.3
32.5°	309.1	314.6	319.0	319.0	319.6	321.3	320.7	332.3	335.1	329.6	328.4
35°	273.1	277.0	280.9	281.4	288.6	289.2	289.7	293.0	300.8	302.5	301.9
37.5°	238.9	242.7	243.8	248.8	252.7	256.5	261.0	265.4	272.0	277.6	274.8
40°	208.5	210.1	212.9	215.1	222.8	222.8	225.0	233.9	241.1	245.5	244.9
42.5°	183.0	183.6	185.8	189.7	196.8	195.2	196.8	202.9	213.4	214.0	220.1
45°	165.3	164.8	166.4	167.0	171.4	173.6	174.7	179.1	188.0	189.1	189.7
47.5°	149.3	148.7	151.5	152.6	154.3	156.5	156.5	157.0	160.3	163.1	160.9
50°	136.0	136.0	136.0	137.1	139.9	139.3	139.9	142.1	143.8	142.6	142.1
52.5°	121.6	123.8	125.5	126.1	126.6	126.6	127.2	126.1	125.5	123.8	120.5
55°	111.7	113.9	113.9	113.9	113.9	116.1	113.4	113.9	113.9	109.5	105.1
57.5°	101.7	104.0	105.6	103.4	105.6	103.4	102.3	101.7	100.6	96.2	89.6
60°	93.5	94.6	94.0	93.5	94.6	92.9	91.8	89.6	88.5	82.4	78.0
62.5°	84.1	84.6	85.2	84.1	82.9	82.4	80.2	76.9	74.6	69.7	65.8
65°	76.3	74.6	74.1	73.5	72.4	70.8	69.1	65.2	63.6	59.2	55.3
67.5°	64.7	64.1	65.2	63.6	60.8	60.8	59.2	55.8	52.0	49.2	45.3
70°	55.3	54.7	53.6	52.0	51.4	49.2	49.2	45.3	44.2	39.3	35.9
72.5°	45.3	45.3	43.7	42.0	40.4	39.3	38.7	35.9	34.3	31.5	28.7
75°	34.3	34.3	33.7	32.1	31.0	29.9	29.3	27.1	25.4	22.7	21.0
77.5°	24.3	24.3	22.1	21.0	21.6	20.4	19.3	18.8	18.2	16.6	14.4
80°	14.4	13.8	12.2	12.7	12.2	12.2	11.6	11.0	9.9	8.8	7.7
82.5°	3.9	4.4	4.4	4.4	5.0	3.9	3.9	3.9	4.4	4.4	2.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
87.5°	0.6	1.1	2.2	2.2	2.2	2.2	2.2	1.7	1.7	1.7	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1
2.5°	466.7	466.1	466.7	462.8	471.6	465.0	463.9	462.8	466.7	462.8	457.3
5°	476.6	471.1	469.4	467.8	472.7	465.0	463.4	463.9	461.1	454.0	454.5
7.5°	479.9	475.0	470.0	459.5	463.9	462.3	457.8	454.5	450.1	444.0	442.9
10°	481.0	475.5	468.3	465.0	458.4	456.2	454.5	449.0	443.5	432.9	430.2
12.5°	477.7	471.1	462.3	459.5	454.5	447.3	443.5	437.9	432.9	424.6	418.6
15°	463.4	457.8	455.1	445.7	443.5	439.0	431.3	423.5	416.4	405.3	402.0
17.5°	446.8	444.6	441.8	434.6	434.1	429.6	422.4	415.8	406.4	389.3	383.7
20°	429.6	429.6	420.8	418.0	423.5	414.7	409.2	403.1	383.7	375.4	365.5
22.5°	416.9	410.8	405.8	401.4	402.0	396.4	388.7	376.5	369.3	359.4	347.8
25°	392.0	394.2	383.2	381.5	383.2	370.4	366.6	356.6	346.1	336.7	327.9
27.5°	376.5	370.4	363.3	357.2	357.2	352.2	341.2	339.0	322.9	314.1	303.0
30°	353.3	348.9	342.8	334.0	332.9	329.0	320.1	314.6	298.0	284.8	278.7
32.5°	324.0	322.4	317.4	307.4	304.1	299.7	288.6	279.2	271.5	256.5	249.4
35°	303.0	296.9	286.4	278.1	275.4	267.6	258.8	252.1	243.8	230.6	221.2
37.5°	271.5	265.4	255.4	245.5	245.5	237.8	225.6	219.0	207.4	199.6	191.9
40°	243.8	236.1	226.2	214.5	212.9	201.8	196.8	185.8	178.6	166.4	165.3
42.5°	212.9	205.7	196.8	188.0	181.4	175.8	163.1	154.8	147.1	141.0	139.3
45°	184.7	175.3	167.5	156.5	149.8	143.2	134.9	129.4	123.3	116.7	112.8
47.5°	160.3	152.6	141.5	131.6	125.0	121.6	112.2	106.2	101.2	96.8	94.0
50°	135.5	126.1	120.0	108.9	107.8	100.1	92.3	87.4	84.6	80.7	76.9
52.5°	116.7	107.8	99.5	91.2	86.8	84.1	76.9	71.9	68.0	65.2	63.0
55°	98.4	90.7	84.1	75.8	73.0	69.1	60.8	59.7	55.8	52.0	49.2
57.5°	84.6	77.4	69.7	64.1	59.2	56.4	49.8	45.3	43.1	39.8	37.0
60°	71.9	64.1	58.1	51.4	49.2	45.3	40.4	36.5	33.7	31.0	28.2
62.5°	60.3	53.6	47.0	41.5	38.1	35.9	32.1	28.7	26.0	23.8	21.6
65°	49.8	43.7	38.1	32.6	31.0	28.2	25.4	22.7	20.4	17.7	15.5
67.5°	40.9	35.4	29.9	26.0	24.3	23.2	19.9	17.1	15.5	13.8	11.6
70°	32.1	28.2	23.8	20.4	18.8	17.1	14.9	13.3	11.0	9.9	8.3
72.5°	24.9	21.6	17.7	14.9	13.8	12.7	10.5	8.8	7.7	6.6	5.5
75°	17.7	14.9	12.7	9.9	9.4	8.8	7.2	6.1	5.0	3.9	3.3
77.5°	12.2	9.9	7.7	6.6	6.1	5.0	4.4	3.3	2.8	2.2	1.7
80°	6.6	5.0	3.9	3.3	2.8	2.2	2.2	1.7	1.1	1.1	0.6
82.5°	2.2	1.7	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1
2.5°	460.6	454.5	456.2	456.2	455.1	455.1	454.0	452.3	452.9	449.5	442.3
5°	455.6	447.9	446.8	447.9	443.5	442.3	440.1	443.5	433.5	437.4	432.9
7.5°	441.2	434.1	432.4	436.3	430.7	427.4	426.9	431.3	422.4	418.0	413.0
10°	425.2	422.4	417.5	414.7	413.0	413.6	409.2	403.6	402.0	400.9	396.4
12.5°	410.8	404.7	400.3	397.0	395.9	395.9	388.7	387.6	382.6	381.5	374.9
15°	393.7	386.5	383.7	379.3	375.4	377.6	369.3	367.1	365.5	358.3	359.4
17.5°	378.7	371.0	364.4	361.6	358.3	355.0	347.2	348.9	345.0	345.0	335.1
20°	359.4	351.1	346.1	340.6	340.6	336.2	330.7	331.2	326.2	321.3	312.4
22.5°	339.0	330.1	324.0	321.8	316.3	315.2	308.5	306.9	300.2	300.8	293.0
25°	317.4	308.5	300.2	300.8	295.8	293.6	289.7	282.0	279.2	275.9	273.7
27.5°	291.9	285.9	278.7	278.1	268.7	269.3	264.3	262.1	255.4	257.1	252.1
30°	268.7	259.9	253.2	251.6	247.7	246.6	238.9	235.5	236.7	232.2	229.5
32.5°	244.9	231.7	228.9	225.6	223.4	220.6	215.1	217.3	212.3	213.4	209.0
35°	213.4	207.9	200.7	200.7	198.5	196.3	192.4	194.6	189.7	187.4	183.0
37.5°	186.9	181.9	174.7	176.9	173.1	169.7	166.4	167.0	162.6	162.0	157.6
40°	158.1	155.4	150.4	150.4	147.6	147.6	146.0	144.3	141.5	138.2	133.2
42.5°	131.0	128.8	126.6	127.2	123.3	126.6	122.2	125.0	116.1	115.6	112.2
45°	111.1	106.2	106.7	104.5	102.3	103.4	99.5	100.6	95.7	94.6	91.2
47.5°	90.1	88.5	85.2	84.1	84.1	82.4	80.7	80.2	78.0	75.2	70.8
50°	74.1	68.0	66.9	65.2	64.1	64.1	61.9	58.6	59.2	56.4	52.0
52.5°	58.1	53.1	50.9	50.3	48.1	47.0	44.2	42.0	40.4	39.3	36.5
55°	44.8	40.4	37.6	37.6	34.3	34.3	30.4	28.7	26.5	24.3	22.7
57.5°	33.7	31.5	28.7	26.5	25.4	22.7	20.4	17.7	16.0	12.7	10.5
60°	25.4	23.2	20.4	18.8	17.7	14.9	12.2	9.9	6.1	5.0	4.4
62.5°	18.8	16.6	13.8	12.7	11.6	9.4	6.6	3.3	1.7	1.7	1.7
65°	13.8	11.0	8.8	7.7	6.6	5.0	2.2	1.1	0.6	0.6	0.6
67.5°	9.4	7.2	5.0	4.4	3.3	1.7	0.6	0.6	0.6	0.6	0.6
70°	6.1	4.4	2.2	1.7	1.1	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	3.9	2.2	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P645738
 CATALOG NUMBER: FLDSQ4C10D010 FEU4C109030 F4LC-SQLWW-H-D2W

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1
2.5°	450.1	446.2	448.4	443.5	445.7	449.5	446.8	447.9
5°	434.6	432.4	429.6	422.4	428.0	432.4	430.2	429.6
7.5°	418.0	410.3	414.1	411.9	410.8	415.2	410.3	415.8
10°	400.9	395.3	394.8	390.9	390.9	394.2	394.8	391.5
12.5°	375.4	372.7	372.7	372.1	371.6	374.9	375.4	373.8
15°	357.2	356.1	353.3	352.8	349.5	354.4	355.0	354.4
17.5°	335.1	335.6	332.9	332.9	335.1	336.7	332.3	336.7
20°	320.1	317.4	316.3	311.3	314.1	316.8	316.8	317.4
22.5°	298.6	294.2	295.8	293.0	291.4	295.3	295.3	296.9
25°	274.2	274.2	275.4	273.7	274.8	277.0	275.4	279.2
27.5°	251.0	253.2	253.2	251.0	252.1	258.8	261.5	257.1
30°	229.5	230.0	231.7	230.6	233.9	236.1	235.5	238.9
32.5°	205.1	207.9	209.0	207.4	208.5	213.4	210.7	210.1
35°	186.3	181.4	180.8	181.4	183.6	184.7	183.6	187.4
37.5°	159.2	157.6	155.4	155.9	157.6	159.8	160.9	163.7
40°	133.2	131.0	131.0	130.5	128.8	134.9	134.9	134.9
42.5°	110.6	110.0	107.3	107.3	109.5	111.1	110.0	113.9
45°	90.7	88.5	86.8	86.8	88.5	88.5	90.1	89.6
47.5°	71.3	69.1	69.7	68.0	69.7	71.9	69.1	69.7
50°	53.6	53.6	52.5	53.6	53.1	53.6	52.5	51.4
52.5°	36.5	41.5	42.0	39.8	34.8	30.4	27.6	29.9
55°	21.0	18.8	18.8	18.2	17.1	16.6	14.9	16.6
57.5°	10.5	9.4	9.4	9.4	8.8	8.3	7.2	7.2
60°	4.4	3.9	3.9	3.3	2.8	2.2	1.7	2.2
62.5°	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1
65°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
67.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)