

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: P#

Luminaire Tested: **FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H**

Issue Date: 12/13/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P#
 Test Lab: INNOVATION CENTER
 Issue Date: 12/13/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: FAIL-SAFE
 Catalog Number: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 5000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

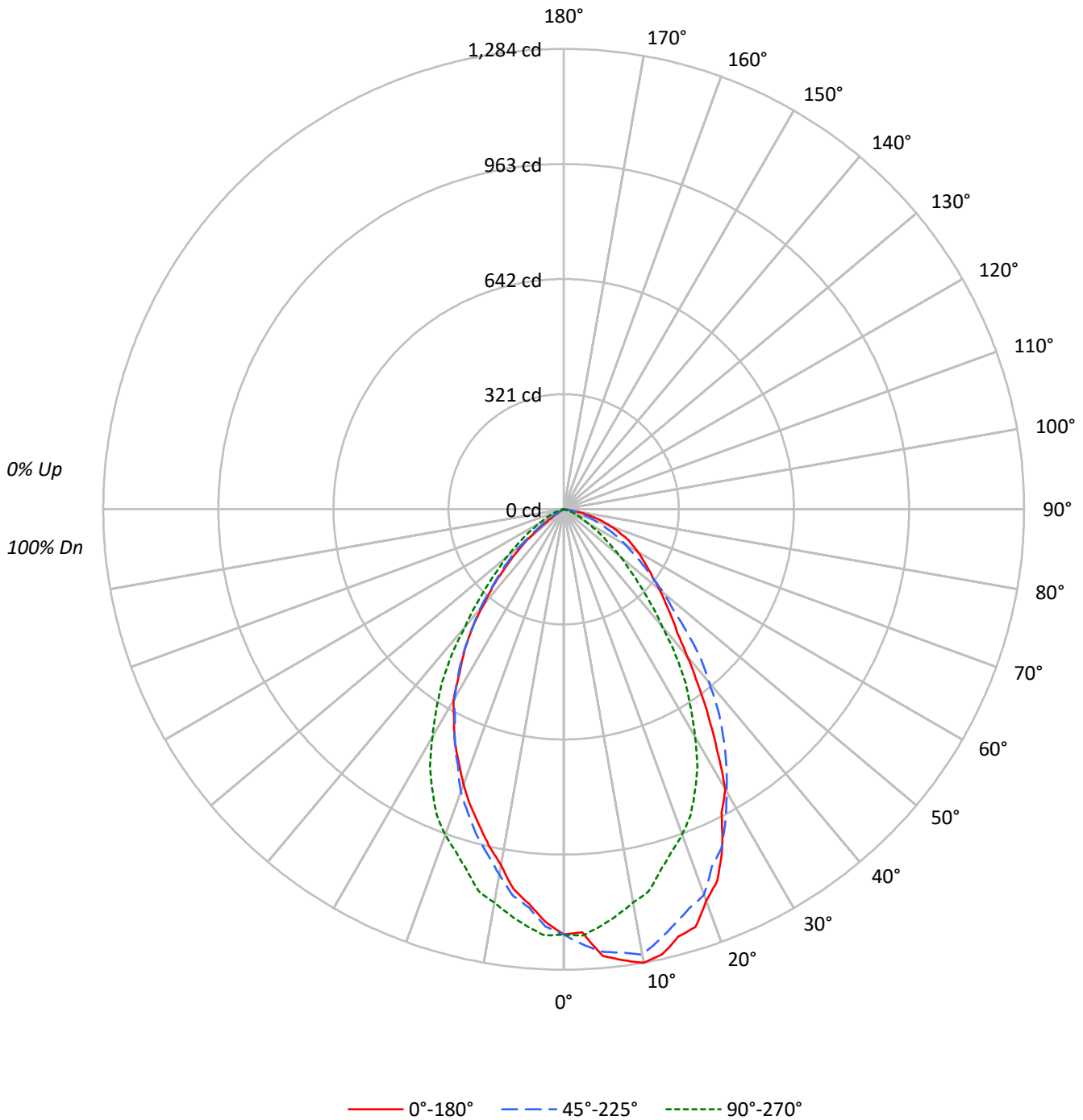
Lumens per Lamp: N/A
 Luminaire Lumens: 1700.0 lumens
 Efficiency: N/A
 Efficacy: 54.0 lumens/watt
 Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 31.5
 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

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

TEST NUMBER: P#
CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	114436	114436	114436
5°	121072	113081	107027
10°	125813	109098	98644
15°	123298	104118	91052
20°	119295	99149	83809
25°	111276	92198	76452
30°	100452	81590	68443
35°	82748	69850	56787
40°	67526	53910	43707
45°	58021	40950	31439
50°	52509	31163	19860
55°	48331	22491	7183
60°	46373	15361	1100
65°	44795	10388	320
70°	40117	7222	395
75°	32881	3728	0
80°	20559	1556	0
85°	0	0	0

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 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.1	6.5
10°-20°	299.4	17.6
20°-30°	399.8	23.5
30°-40°	379.5	22.3
40°-50°	262.3	15.4
50°-60°	144.9	8.5
60°-70°	72.0	4.2
70°-80°	28.4	1.7
80°-90°	2.7	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°	810.2	47.7
0°-40°	1189.7	70.0
0°-60°	1597.0	93.9
0°-90°	1700.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1700.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1186	1186	1186	1186	1186	
5°	1250	1239	1168	1115	1105	120
15°	1234	1197	1042	940	912	349
25°	1045	1041	866	718	718	477
35°	702	776	593	488	482	440
45°	425	488	300	246	230	332
55°	287	270	134	68	43	259
65°	196	142	46	1	1	190
75°	88	54	10	0	0	94
85°	0	1	0	0	0	8
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0
2.5°	1180.3	1213.0	1215.8	1213.0	1217.3	1215.8	1223.0	1215.8	1224.4	1211.6	1214.4
5°	1250.0	1237.2	1264.2	1250.0	1250.0	1248.6	1244.3	1242.8	1248.6	1230.1	1238.6
7.5°	1268.5	1287.0	1311.1	1281.3	1282.7	1282.7	1274.2	1271.3	1271.3	1237.2	1247.1
10°	1284.1	1272.7	1285.5	1274.2	1284.1	1282.7	1288.4	1269.9	1282.7	1262.8	1261.3
12.5°	1271.3	1267.0	1284.1	1265.6	1259.9	1261.3	1254.3	1250.0	1254.3	1231.5	1230.1
15°	1234.3	1238.6	1264.2	1244.3	1241.4	1238.6	1230.1	1215.8	1227.2	1195.9	1197.4
17.5°	1221.6	1214.4	1218.7	1201.6	1205.9	1203.1	1201.6	1188.9	1186.0	1166.1	1166.1
20°	1161.8	1177.4	1177.4	1166.1	1166.1	1164.7	1146.2	1157.5	1144.7	1139.0	1144.7
22.5°	1120.6	1122.0	1122.0	1112.0	1113.5	1107.8	1097.8	1090.7	1097.8	1090.7	1079.3
25°	1045.2	1048.1	1065.1	1046.6	1043.8	1049.5	1040.9	1036.6	1035.3	1018.2	1040.9
27.5°	954.2	982.6	981.2	974.1	982.6	971.2	967.0	968.4	972.7	971.2	976.9
30°	901.6	905.8	910.1	904.4	905.8	901.6	901.6	903.0	914.4	910.1	908.7
32.5°	794.9	809.1	820.5	820.5	821.9	826.2	824.8	854.6	861.8	847.6	844.7
35°	702.5	712.5	722.4	723.8	742.3	743.7	745.2	753.7	773.6	777.9	776.4
37.5°	614.3	624.3	627.1	639.9	649.9	659.8	671.2	682.6	699.6	713.8	706.8
40°	536.1	540.4	547.5	553.2	573.1	573.1	578.7	601.5	620.0	631.4	629.9
42.5°	470.7	472.1	477.8	487.8	506.3	502.0	506.3	521.9	548.9	550.3	566.0
45°	425.2	423.8	428.0	429.4	440.9	446.5	449.4	460.7	483.5	486.3	487.8
47.5°	384.0	382.5	389.7	392.5	396.7	402.4	402.4	403.9	412.4	419.5	413.8
50°	349.8	349.8	349.8	352.7	359.8	358.3	359.8	365.5	369.7	366.9	365.5
52.5°	312.8	318.5	322.8	324.2	325.6	325.6	327.1	324.2	322.8	318.5	310.0
55°	287.3	292.9	292.9	292.9	292.9	298.6	291.5	292.9	292.9	281.6	270.2
57.5°	261.7	267.4	271.6	265.9	271.6	265.9	263.1	261.7	258.8	247.4	230.4
60°	240.3	243.2	241.7	240.3	243.2	238.9	236.1	230.4	227.5	211.9	200.5
62.5°	216.2	217.6	219.0	216.2	213.3	211.9	206.2	197.7	192.0	179.2	169.2
65°	196.2	192.0	190.5	189.1	186.3	182.0	177.8	167.8	163.5	152.2	142.2
67.5°	166.4	165.0	167.8	163.5	156.4	156.4	152.2	143.6	133.7	126.6	116.6
70°	142.2	140.8	137.9	133.7	132.3	126.6	126.6	116.6	113.8	101.0	92.4
72.5°	116.6	116.6	112.3	108.1	103.8	101.0	99.6	92.4	88.2	81.1	73.9
75°	88.2	88.2	86.7	82.5	79.6	76.8	75.4	69.7	65.4	58.3	54.0
77.5°	62.6	62.6	56.9	54.0	55.4	52.6	49.8	48.4	46.9	42.7	37.0
80°	37.0	35.5	31.3	32.7	31.3	31.3	29.9	28.4	25.6	22.7	19.9
82.5°	10.0	11.4	11.4	11.4	12.8	10.0	10.0	10.0	11.4	11.4	7.1
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4
87.5°	1.4	2.8	5.7	5.7	5.7	5.7	5.7	4.3	4.3	4.3	2.8
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: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0
2.5°	1200.2	1198.8	1200.2	1190.2	1213.0	1195.9	1193.1	1190.2	1200.2	1190.2	1176.0
5°	1225.8	1211.6	1207.3	1203.1	1215.8	1195.9	1191.7	1193.1	1186.0	1167.5	1168.9
7.5°	1234.3	1221.6	1208.7	1181.7	1193.1	1188.9	1177.4	1168.9	1157.5	1141.9	1139.0
10°	1237.2	1223.0	1204.5	1195.9	1178.9	1173.2	1168.9	1154.7	1140.5	1113.5	1106.3
12.5°	1228.6	1211.6	1188.9	1181.7	1168.9	1150.4	1140.5	1126.2	1113.5	1092.1	1076.5
15°	1191.7	1177.4	1170.4	1146.2	1140.5	1129.1	1109.2	1089.3	1070.8	1042.3	1033.8
17.5°	1149.0	1143.3	1136.2	1117.7	1116.3	1105.0	1086.5	1069.4	1045.2	1001.1	986.9
20°	1105.0	1105.0	1082.2	1075.1	1089.3	1066.5	1052.3	1036.6	986.9	965.6	940.0
22.5°	1072.2	1056.6	1043.8	1032.4	1033.8	1019.6	999.7	968.4	949.9	924.3	894.5
25°	1008.2	1013.9	985.5	981.2	985.5	952.7	942.8	917.2	890.2	866.0	843.3
27.5°	968.4	952.7	934.3	918.6	918.6	905.8	877.4	871.7	830.5	807.7	779.3
30°	908.7	897.3	881.7	858.9	856.1	846.1	823.4	809.1	766.5	732.3	716.7
32.5°	833.3	829.1	816.2	790.7	782.2	770.7	742.3	718.1	698.2	659.8	641.4
35°	779.3	763.7	736.6	715.3	708.2	688.3	665.5	648.4	627.1	593.0	568.8
37.5°	698.2	682.6	657.0	631.4	631.4	611.5	580.2	563.1	533.3	513.3	493.4
40°	627.1	607.2	581.6	551.8	547.5	519.0	506.3	477.8	459.3	428.0	425.2
42.5°	547.5	529.0	506.3	483.5	466.4	452.2	419.5	398.2	378.3	362.6	358.3
45°	475.0	450.8	430.9	402.4	385.4	368.3	347.0	332.8	317.1	300.1	290.1
47.5°	412.4	392.5	364.0	338.5	321.4	312.8	288.6	273.0	260.2	248.9	241.7
50°	348.4	324.2	308.6	280.1	277.3	257.4	237.5	224.7	217.6	207.6	197.7
52.5°	300.1	277.3	255.9	234.7	223.2	216.2	197.7	184.9	174.9	167.8	162.1
55°	253.1	233.2	216.2	194.8	187.7	177.8	156.4	153.6	143.6	133.7	126.6
57.5°	217.6	199.1	179.2	165.0	152.2	145.1	128.0	116.6	110.9	102.4	95.3
60°	184.9	165.0	149.3	132.3	126.6	116.6	103.8	93.9	86.7	79.6	72.5
62.5°	155.0	137.9	120.9	106.6	98.1	92.4	82.5	73.9	66.9	61.2	55.4
65°	128.0	112.3	98.1	83.9	79.6	72.5	65.4	58.3	52.6	45.5	39.8
67.5°	105.2	91.0	76.8	66.9	62.6	59.7	51.2	44.1	39.8	35.5	29.9
70°	82.5	72.5	61.2	52.6	48.4	44.1	38.4	34.2	28.4	25.6	21.3
72.5°	64.0	55.4	45.5	38.4	35.5	32.7	27.0	22.7	19.9	17.0	14.2
75°	45.5	38.4	32.7	25.6	24.2	22.7	18.5	15.7	12.8	10.0	8.5
77.5°	31.3	25.6	19.9	17.0	15.7	12.8	11.4	8.5	7.1	5.7	4.3
80°	17.0	12.8	10.0	8.5	7.1	5.7	5.7	4.3	2.8	2.8	1.4
82.5°	5.7	4.3	2.8	1.4	1.4	1.4	1.4	1.4	1.4	0.0	1.4
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°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0
2.5°	1184.6	1168.9	1173.2	1173.2	1170.4	1170.4	1167.5	1163.2	1164.7	1156.1	1137.7
5°	1171.8	1151.9	1149.0	1151.9	1140.5	1137.7	1132.0	1140.5	1114.9	1124.8	1113.5
7.5°	1134.8	1116.3	1112.0	1122.0	1107.8	1099.2	1097.8	1109.2	1086.5	1075.1	1062.3
10°	1093.5	1086.5	1073.6	1066.5	1062.3	1063.7	1052.3	1038.1	1033.8	1031.0	1019.6
12.5°	1056.6	1040.9	1029.6	1021.0	1018.2	1018.2	999.7	996.9	984.1	981.2	964.2
15°	1012.5	994.0	986.9	975.5	965.6	971.2	949.9	944.2	940.0	921.5	924.3
17.5°	974.1	954.2	937.1	930.0	921.5	913.0	893.0	897.3	887.3	887.3	861.8
20°	924.3	903.0	890.2	876.0	876.0	864.6	850.4	851.8	839.0	826.2	803.4
22.5°	871.7	849.0	833.3	827.6	813.4	810.6	793.5	789.2	772.2	773.6	753.7
25°	816.2	793.5	772.2	773.6	760.8	755.1	745.2	725.3	718.1	709.6	703.9
27.5°	750.8	735.2	716.7	715.3	691.1	692.5	679.8	674.1	657.0	661.3	648.4
30°	691.1	668.4	651.3	647.0	637.1	634.2	614.3	605.8	608.7	597.2	590.2
32.5°	629.9	595.8	588.7	580.2	574.5	567.4	553.2	558.9	546.0	548.9	537.5
35°	548.9	534.7	516.2	516.2	510.5	504.8	494.9	500.6	487.8	482.1	470.7
37.5°	480.6	467.9	449.4	455.1	445.1	436.6	428.0	429.4	418.1	416.7	405.3
40°	406.7	399.6	386.8	386.8	379.7	379.7	375.4	371.2	364.0	355.5	342.7
42.5°	337.0	331.3	325.6	327.1	317.1	325.6	314.3	321.4	298.6	297.2	288.6
45°	285.8	273.0	274.4	268.8	263.1	265.9	255.9	258.8	246.0	243.2	234.7
47.5°	231.8	227.5	219.0	216.2	216.2	211.9	207.6	206.2	200.5	193.4	182.0
50°	190.5	174.9	172.0	167.8	165.0	165.0	159.3	150.8	152.2	145.1	133.7
52.5°	149.3	136.5	130.8	129.4	123.7	120.9	113.8	108.1	103.8	101.0	93.9
55°	115.2	103.8	96.7	96.7	88.2	88.2	78.2	73.9	68.2	62.6	58.3
57.5°	86.7	81.1	73.9	68.2	65.4	58.3	52.6	45.5	41.2	32.7	27.0
60°	65.4	59.7	52.6	48.4	45.5	38.4	31.3	25.6	15.7	12.8	11.4
62.5°	48.4	42.7	35.5	32.7	29.9	24.2	17.0	8.5	4.3	4.3	4.3
65°	35.5	28.4	22.7	19.9	17.0	12.8	5.7	2.8	1.4	1.4	1.4
67.5°	24.2	18.5	12.8	11.4	8.5	4.3	1.4	1.4	1.4	1.4	1.4
70°	15.7	11.4	5.7	4.3	2.8	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	10.0	5.7	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	5.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.4	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	1.4	1.4	1.4
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: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259050 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0	1186.0
2.5°	1157.5	1147.6	1153.3	1140.5	1146.2	1156.1	1149.0	1151.9
5°	1117.7	1112.0	1105.0	1086.5	1100.7	1112.0	1106.3	1105.0
7.5°	1075.1	1055.1	1065.1	1059.4	1056.6	1068.0	1055.1	1069.4
10°	1031.0	1016.8	1015.4	1005.4	1005.4	1013.9	1015.4	1006.8
12.5°	965.6	958.5	958.5	957.0	955.6	964.2	965.6	961.3
15°	918.6	915.8	908.7	907.3	898.8	911.5	913.0	911.5
17.5°	861.8	863.2	856.1	856.1	861.8	866.0	854.6	866.0
20°	823.4	816.2	813.4	800.6	807.7	814.9	814.9	816.2
22.5°	767.9	756.5	760.8	753.7	749.4	759.4	759.4	763.7
25°	705.3	705.3	708.2	703.9	706.8	712.5	708.2	718.1
27.5°	645.6	651.3	651.3	645.6	648.4	665.5	672.6	661.3
30°	590.2	591.6	595.8	593.0	601.5	607.2	605.8	614.3
32.5°	527.6	534.7	537.5	533.3	536.1	548.9	541.8	540.4
35°	479.2	466.4	465.0	466.4	472.1	475.0	472.1	482.1
37.5°	409.5	405.3	399.6	401.0	405.3	411.0	413.8	420.9
40°	342.7	337.0	337.0	335.6	331.3	347.0	347.0	347.0
42.5°	284.4	283.0	275.9	275.9	281.6	285.8	283.0	292.9
45°	233.2	227.5	223.2	223.2	227.5	227.5	231.8	230.4
47.5°	183.5	177.8	179.2	174.9	179.2	184.9	177.8	179.2
50°	137.9	137.9	135.1	137.9	136.5	137.9	135.1	132.3
52.5°	93.9	106.6	108.1	102.4	89.6	78.2	71.1	76.8
55°	54.0	48.4	48.4	46.9	44.1	42.7	38.4	42.7
57.5°	27.0	24.2	24.2	24.2	22.7	21.3	18.5	18.5
60°	11.4	10.0	10.0	8.5	7.1	5.7	4.3	5.7
62.5°	4.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8
65°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)