

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 FEU4C259040 F4LC-SQLWW-H**

Issue Date: 12/13/2022

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

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 FEU4C259040 F4LC-SQLWW-H
 Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 4000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

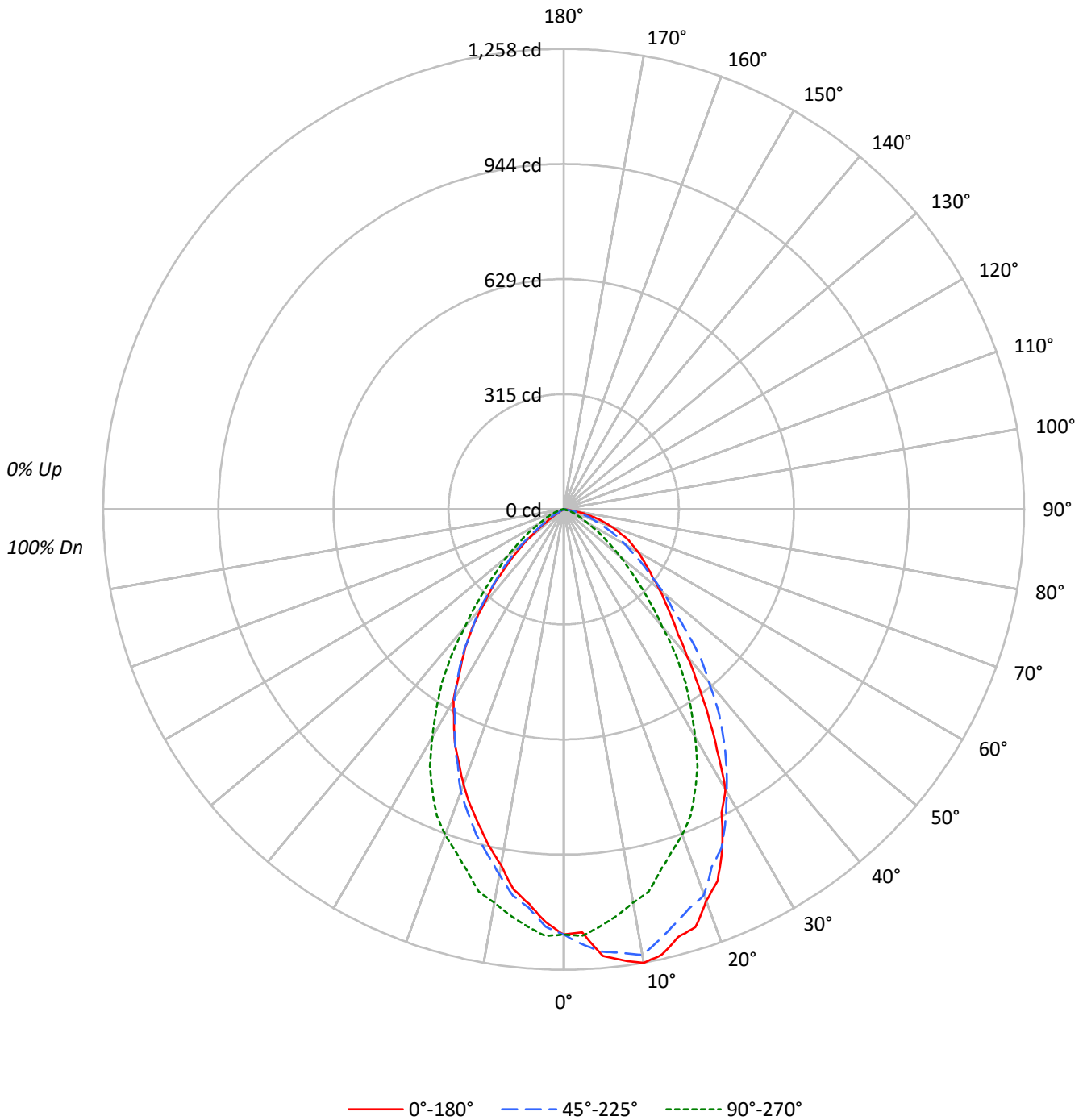
Lumens per Lamp: N/A
 Luminaire Lumens: 1666.0 lumens
 Efficiency: N/A
 Efficacy: 52.9 lumens/watt
 Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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 FEU4C259040 F4LC-SQLWW-H

Luminous Intensity Polar Plot



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C25D010 FEU4C259040 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	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°	112139	112139	112139
5°	118650	110824	104887
10°	123295	106913	96674
15°	120830	102040	89234
20°	116913	97157	82135
25°	109051	90356	74929
30°	98447	79963	67083
35°	81087	68448	55645
40°	66178	52839	42825
45°	56861	40132	30812
50°	51458	30547	19454
55°	47355	22037	7032
60°	45446	15052	1081
65°	43904	10183	320
70°	39299	7081	395
75°	32210	3653	0
80°	20170	1556	0
85°	0	0	0

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259040 F4LC-SQLWW-H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.9	6.5
10°-20°	293.4	17.6
20°-30°	391.8	23.5
30°-40°	371.9	22.3
40°-50°	257.1	15.4
50°-60°	142.0	8.5
60°-70°	70.5	4.2
70°-80°	27.8	1.7
80°-90°	2.6	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°	794.0	47.7
0°-40°	1165.9	70.0
0°-60°	1565.0	93.9
0°-90°	1666.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1666.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1162	1162	1162	1162	1162	
5°	1225	1214	1144	1093	1083	117
15°	1210	1173	1022	921	893	342
25°	1024	1020	849	704	704	467
35°	688	761	581	478	472	431
45°	417	478	294	241	226	325
55°	282	265	131	67	42	253
65°	192	139	45	1	1	187
75°	86	53	10	0	0	92
85°	0	1	0	0	0	8
90°	0	0	0	0	0	

TEST NUMBER: P#
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259040 F4LC-SQLWW-H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2
2.5°	1156.7	1188.7	1191.5	1188.7	1192.9	1191.5	1198.5	1191.5	1199.9	1187.4	1190.1
5°	1225.0	1212.4	1238.9	1225.0	1225.0	1223.6	1219.4	1218.0	1223.6	1205.5	1213.8
7.5°	1243.1	1261.2	1284.9	1255.7	1257.0	1257.0	1248.7	1245.9	1245.9	1212.4	1222.2
10°	1258.4	1247.2	1259.8	1248.7	1258.4	1257.0	1262.6	1244.5	1257.0	1237.5	1236.1
12.5°	1245.9	1241.7	1258.4	1240.3	1234.7	1236.1	1229.2	1225.0	1229.2	1206.8	1205.5
15°	1209.6	1213.8	1238.9	1219.4	1216.6	1213.8	1205.5	1191.5	1202.7	1172.0	1173.4
17.5°	1197.1	1190.1	1194.3	1177.6	1181.8	1179.0	1177.6	1165.1	1162.2	1142.7	1142.7
20°	1138.6	1153.9	1153.9	1142.7	1142.7	1141.4	1123.3	1134.4	1121.8	1116.3	1121.8
22.5°	1098.1	1099.6	1099.6	1089.8	1091.2	1085.6	1075.9	1068.9	1075.9	1068.9	1057.7
25°	1024.3	1027.1	1043.8	1025.7	1022.9	1028.5	1020.1	1015.9	1014.6	997.8	1020.1
27.5°	935.1	963.0	961.6	954.6	963.0	951.8	947.7	949.0	953.2	951.8	957.4
30°	883.6	887.7	891.9	886.4	887.7	883.6	883.6	884.9	896.1	891.9	890.5
32.5°	779.0	792.9	804.1	804.1	805.5	809.7	808.3	837.5	844.5	830.6	827.8
35°	688.4	698.2	707.9	709.3	727.5	728.8	730.3	738.6	758.1	762.3	760.9
37.5°	602.1	611.8	614.6	627.1	636.9	646.6	657.8	668.9	685.6	699.6	692.6
40°	525.4	529.6	536.5	542.1	561.6	561.6	567.2	589.5	607.6	618.8	617.3
42.5°	461.3	462.7	468.2	478.0	496.1	491.9	496.1	511.5	537.9	539.3	554.7
45°	416.7	415.3	419.5	420.8	432.0	437.6	440.4	451.5	473.8	476.6	478.0
47.5°	376.3	374.9	381.9	384.6	388.8	394.4	394.4	395.8	404.1	411.1	405.6
50°	342.8	342.8	342.8	345.6	352.6	351.2	352.6	358.2	362.3	359.5	358.2
52.5°	306.6	312.1	316.3	317.8	319.1	319.1	320.5	317.8	316.3	312.1	303.8
55°	281.5	287.1	287.1	287.1	287.1	292.6	285.7	287.1	287.1	275.9	264.8
57.5°	256.4	262.0	266.2	260.6	266.2	260.6	257.8	256.4	253.6	242.5	225.8
60°	235.5	238.3	236.9	235.5	238.3	234.1	231.3	225.8	223.0	207.6	196.5
62.5°	211.8	213.2	214.6	211.8	209.1	207.6	202.1	193.7	188.1	175.6	165.8
65°	192.3	188.1	186.7	185.4	182.6	178.4	174.2	164.5	160.2	149.1	139.3
67.5°	163.0	161.7	164.5	160.2	153.3	153.3	149.1	140.8	131.0	124.0	114.3
70°	139.3	138.0	135.2	131.0	129.6	124.0	124.0	114.3	111.5	98.9	90.6
72.5°	114.3	114.3	110.1	105.9	101.7	98.9	97.6	90.6	86.4	79.4	72.5
75°	86.4	86.4	85.0	80.8	78.0	75.2	73.9	68.3	64.1	57.2	53.0
77.5°	61.3	61.3	55.7	53.0	54.3	51.5	48.8	47.4	46.0	41.8	36.3
80°	36.3	34.8	30.7	32.0	30.7	30.7	29.3	27.8	25.1	22.3	19.5
82.5°	9.8	11.1	11.1	11.1	12.6	9.8	9.8	9.8	11.1	11.1	7.0
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	5.6	5.6	5.6	5.6	5.6	4.2	4.2	4.2	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 FEU4C259040 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2
2.5°	1176.2	1174.8	1176.2	1166.4	1188.7	1172.0	1169.2	1166.4	1176.2	1166.4	1152.5
5°	1201.3	1187.4	1183.2	1179.0	1191.5	1172.0	1167.9	1169.2	1162.2	1144.2	1145.5
7.5°	1209.6	1197.1	1184.6	1158.1	1169.2	1165.1	1153.9	1145.5	1134.4	1119.1	1116.3
10°	1212.4	1198.5	1180.4	1172.0	1155.3	1149.7	1145.5	1131.6	1117.7	1091.2	1084.2
12.5°	1204.1	1187.4	1165.1	1158.1	1145.5	1127.4	1117.7	1103.7	1091.2	1070.3	1055.0
15°	1167.9	1153.9	1147.0	1123.3	1117.7	1106.5	1087.0	1067.5	1049.4	1021.5	1013.1
17.5°	1126.0	1120.5	1113.5	1095.4	1094.0	1082.9	1064.7	1048.0	1024.3	981.1	967.2
20°	1082.9	1082.9	1060.5	1053.6	1067.5	1045.2	1031.3	1015.9	967.2	946.2	921.2
22.5°	1050.8	1035.5	1022.9	1011.8	1013.1	999.2	979.7	949.0	930.9	905.8	876.6
25°	988.1	993.6	965.8	961.6	965.8	933.7	924.0	898.9	872.4	848.7	826.4
27.5°	949.0	933.7	915.6	900.3	900.3	887.7	859.9	854.3	813.8	791.6	763.7
30°	890.5	879.4	864.0	841.7	839.0	829.2	806.9	792.9	751.2	717.7	702.4
32.5°	816.6	812.5	799.9	774.9	766.5	755.3	727.5	703.8	684.3	646.6	628.5
35°	763.7	748.4	721.9	701.0	694.0	674.5	652.2	635.5	614.6	581.1	557.5
37.5°	684.3	668.9	643.8	618.8	618.8	599.3	568.6	551.9	522.6	503.1	483.6
40°	614.6	595.1	570.0	540.7	536.5	508.6	496.1	468.2	450.1	419.5	416.7
42.5°	536.5	518.4	496.1	473.8	457.1	443.2	411.1	390.2	370.7	355.4	351.2
45°	465.5	441.8	422.3	394.4	377.7	361.0	340.0	326.1	310.8	294.1	284.3
47.5°	404.1	384.6	356.7	331.7	315.0	306.6	282.9	267.6	255.0	243.9	236.9
50°	341.5	317.8	302.4	274.5	271.7	252.2	232.8	220.2	213.2	203.5	193.7
52.5°	294.1	271.7	250.8	230.0	218.8	211.8	193.7	181.2	171.4	164.5	158.9
55°	248.0	228.5	211.8	190.9	183.9	174.2	153.3	150.5	140.8	131.0	124.0
57.5°	213.2	195.1	175.6	161.7	149.1	142.2	125.4	114.3	108.7	100.4	93.4
60°	181.2	161.7	146.3	129.6	124.0	114.3	101.7	92.0	85.0	78.0	71.1
62.5°	151.9	135.2	118.5	104.5	96.1	90.6	80.8	72.5	65.5	59.9	54.3
65°	125.4	110.1	96.1	82.2	78.0	71.1	64.1	57.2	51.5	44.6	39.0
67.5°	103.1	89.2	75.2	65.5	61.3	58.5	50.2	43.2	39.0	34.8	29.3
70°	80.8	71.1	59.9	51.5	47.4	43.2	37.6	33.5	27.8	25.1	20.9
72.5°	62.7	54.3	44.6	37.6	34.8	32.0	26.5	22.3	19.5	16.7	13.9
75°	44.6	37.6	32.0	25.1	23.7	22.3	18.1	15.3	12.6	9.8	8.4
77.5°	30.7	25.1	19.5	16.7	15.3	12.6	11.1	8.4	7.0	5.6	4.2
80°	16.7	12.6	9.8	8.4	7.0	5.6	5.6	4.2	2.8	2.8	1.4
82.5°	5.6	4.2	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 FEU4C259040 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2
2.5°	1160.9	1145.5	1149.7	1149.7	1147.0	1147.0	1144.2	1140.0	1141.4	1133.0	1114.9
5°	1148.3	1128.8	1126.0	1128.8	1117.7	1114.9	1109.3	1117.7	1092.6	1102.3	1091.2
7.5°	1112.1	1094.0	1089.8	1099.6	1085.6	1077.2	1075.9	1087.0	1064.7	1053.6	1041.0
10°	1071.7	1064.7	1052.2	1045.2	1041.0	1042.4	1031.3	1017.3	1013.1	1010.3	999.2
12.5°	1035.5	1020.1	1009.0	1000.6	997.8	997.8	979.7	976.9	964.4	961.6	944.9
15°	992.2	974.1	967.2	956.0	946.2	951.8	930.9	925.3	921.2	903.1	905.8
17.5°	954.6	935.1	918.4	911.4	903.1	894.7	875.2	879.4	869.6	869.6	844.5
20°	905.8	884.9	872.4	858.5	858.5	847.3	833.4	834.8	822.2	809.7	787.4
22.5°	854.3	832.0	816.6	811.1	797.1	794.4	777.6	773.4	756.7	758.1	738.6
25°	799.9	777.6	756.7	758.1	745.6	740.0	730.3	710.8	703.8	695.4	689.9
27.5°	735.8	720.5	702.4	701.0	677.3	678.7	666.2	660.6	643.8	648.0	635.5
30°	677.3	655.0	638.3	634.1	624.3	621.6	602.1	593.7	596.5	585.3	578.4
32.5°	617.3	583.9	576.9	568.6	563.0	556.0	542.1	547.7	535.1	537.9	526.8
35°	537.9	524.0	505.9	505.9	500.3	494.7	485.0	490.6	478.0	472.4	461.3
37.5°	471.0	458.5	440.4	446.0	436.2	427.8	419.5	420.8	409.7	408.3	397.1
40°	398.6	391.6	379.1	379.1	372.1	372.1	367.9	363.7	356.7	348.4	335.8
42.5°	330.3	324.7	319.1	320.5	310.8	319.1	308.0	315.0	292.6	291.3	282.9
45°	280.1	267.6	269.0	263.4	257.8	260.6	250.8	253.6	241.1	238.3	230.0
47.5°	227.2	223.0	214.6	211.8	211.8	207.6	203.5	202.1	196.5	189.5	178.4
50°	186.7	171.4	168.6	164.5	161.7	161.7	156.1	147.7	149.1	142.2	131.0
52.5°	146.3	133.8	128.2	126.8	121.3	118.5	111.5	105.9	101.7	98.9	92.0
55°	112.9	101.7	94.8	94.8	86.4	86.4	76.7	72.5	66.9	61.3	57.2
57.5°	85.0	79.4	72.5	66.9	64.1	57.2	51.5	44.6	40.4	32.0	26.5
60°	64.1	58.5	51.5	47.4	44.6	37.6	30.7	25.1	15.3	12.6	11.1
62.5°	47.4	41.8	34.8	32.0	29.3	23.7	16.7	8.4	4.2	4.2	4.2
65°	34.8	27.8	22.3	19.5	16.7	12.6	5.6	2.8	1.4	1.4	1.4
67.5°	23.7	18.1	12.6	11.1	8.4	4.2	1.4	1.4	1.4	1.4	1.4
70°	15.3	11.1	5.6	4.2	2.8	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	9.8	5.6	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	5.6	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 FEU4C259040 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2	1162.2
2.5°	1134.4	1124.6	1130.2	1117.7	1123.3	1133.0	1126.0	1128.8
5°	1095.4	1089.8	1082.9	1064.7	1078.6	1089.8	1084.2	1082.9
7.5°	1053.6	1034.0	1043.8	1038.2	1035.5	1046.6	1034.0	1048.0
10°	1010.3	996.4	995.1	985.3	985.3	993.6	995.1	986.7
12.5°	946.2	939.3	939.3	937.9	936.5	944.9	946.2	942.1
15°	900.3	897.5	890.5	889.1	880.8	893.3	894.7	893.3
17.5°	844.5	845.9	839.0	839.0	844.5	848.7	837.5	848.7
20°	806.9	799.9	797.1	784.6	791.6	798.6	798.6	799.9
22.5°	752.5	741.4	745.6	738.6	734.4	744.2	744.2	748.4
25°	691.2	691.2	694.0	689.9	692.6	698.2	694.0	703.8
27.5°	632.7	638.3	638.3	632.7	635.5	652.2	659.2	648.0
30°	578.4	579.7	583.9	581.1	589.5	595.1	593.7	602.1
32.5°	517.0	524.0	526.8	522.6	525.4	537.9	531.0	529.6
35°	469.7	457.1	455.7	457.1	462.7	465.5	462.7	472.4
37.5°	401.4	397.1	391.6	393.0	397.1	402.8	405.6	412.5
40°	335.8	330.3	330.3	328.9	324.7	340.0	340.0	340.0
42.5°	278.7	277.3	270.4	270.4	275.9	280.1	277.3	287.1
45°	228.5	223.0	218.8	218.8	223.0	223.0	227.2	225.8
47.5°	179.8	174.2	175.6	171.4	175.6	181.2	174.2	175.6
50°	135.2	135.2	132.4	135.2	133.8	135.2	132.4	129.6
52.5°	92.0	104.5	105.9	100.4	87.8	76.7	69.7	75.2
55°	53.0	47.4	47.4	46.0	43.2	41.8	37.6	41.8
57.5°	26.5	23.7	23.7	23.7	22.3	20.9	18.1	18.1
60°	11.1	9.8	9.8	8.4	7.0	5.6	4.2	5.6
62.5°	4.2	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)