

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: **FLDSQ4C35D010 FEU4C359027 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: FLDSQ4C35D010 FEU4C359027 F4LC-SQLWW-H
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS
AND F4LC-SQLWW TRIM WITH H FINISH
Light Source: -
Ballast/Driver: -

Summary

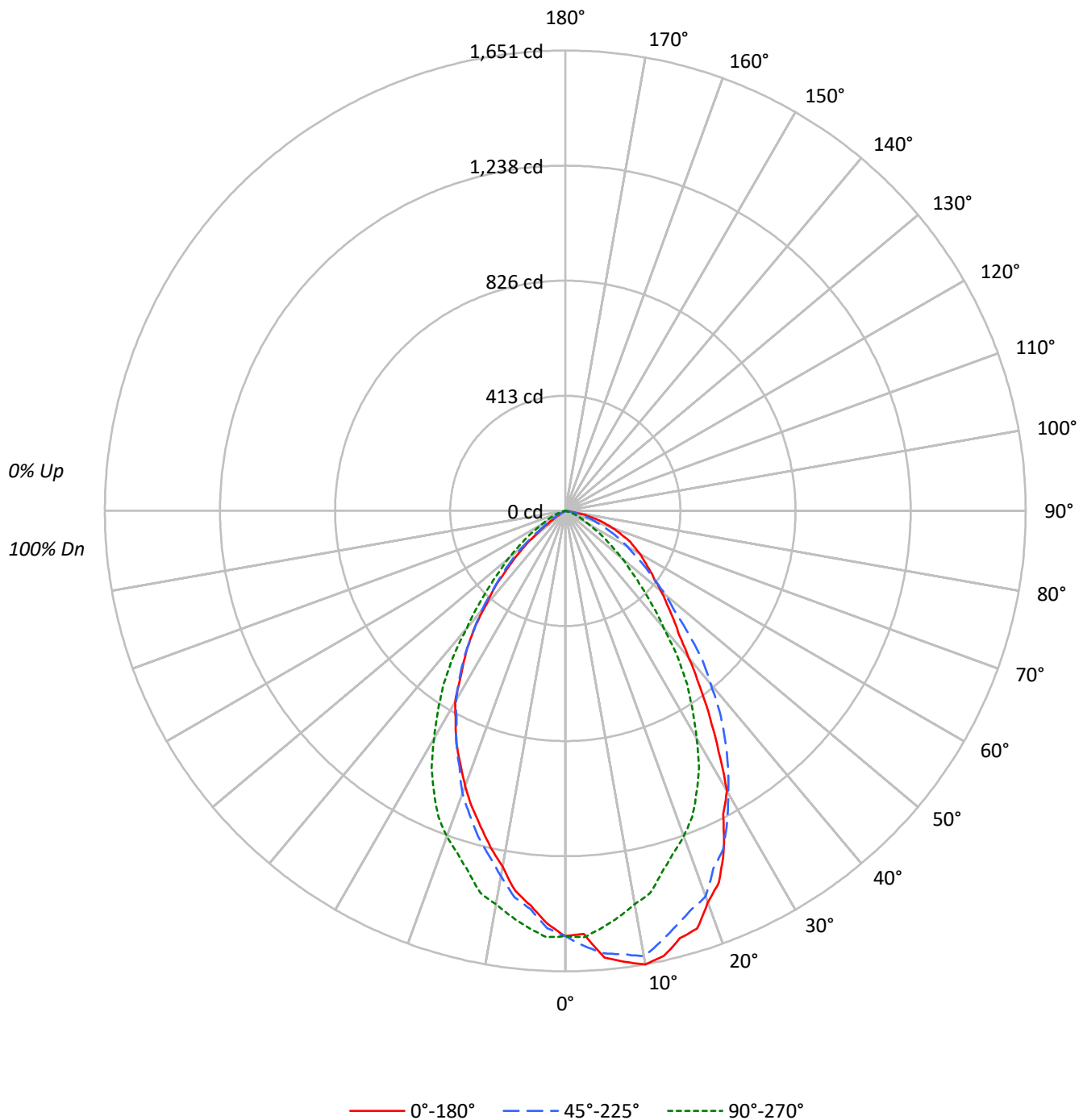
Lumens per Lamp: N/A
Luminaire Lumens: 2186.0 lumens
Efficiency: N/A
Efficacy: 54.1 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 40.4
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

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	147146	147146	147146
5°	155679	145412	137615
10°	161780	140284	126842
15°	158550	133886	117084
20°	153406	127489	107774
25°	143087	118558	98309
30°	129175	104920	88018
35°	106401	89816	73019
40°	86835	69327	56202
45°	74614	52658	40418
50°	67520	40079	25534
55°	62142	28918	9235
60°	59649	19761	1409
65°	57603	13356	434
70°	51571	9282	536
75°	42276	4772	0
80°	26449	2056	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.9	6.5
10°-20°	385.0	17.6
20°-30°	514.0	23.5
30°-40°	488.0	22.3
40°-50°	337.3	15.4
50°-60°	186.4	8.5
60°-70°	92.6	4.2
70°-80°	36.5	1.7
80°-90°	3.5	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°	1041.9	47.7
0°-40°	1529.8	70.0
0°-60°	2053.5	93.9
0°-90°	2186.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2186.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1525	1525	1525	1525	1525	
5°	1607	1593	1501	1434	1421	154
15°	1587	1540	1340	1209	1172	449
25°	1344	1338	1114	923	923	613
35°	903	998	762	627	620	566
45°	547	627	386	316	296	426
55°	369	348	172	88	55	332
65°	252	183	58	2	2	245
75°	113	70	13	0	0	121
85°	0	2	0	0	0	10
90°	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°	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0
2.5°	1517.7	1559.7	1563.4	1559.7	1565.3	1563.4	1572.6	1563.4	1574.4	1558.0	1561.6
5°	1607.3	1590.8	1625.6	1607.3	1607.3	1605.5	1600.0	1598.1	1605.5	1581.7	1592.7
7.5°	1631.1	1654.9	1686.0	1647.6	1649.4	1649.4	1638.4	1634.8	1634.8	1590.8	1603.7
10°	1651.2	1636.5	1653.0	1638.4	1651.2	1649.4	1656.7	1632.9	1649.4	1623.8	1621.9
12.5°	1634.8	1629.2	1651.2	1627.4	1620.1	1621.9	1612.8	1607.3	1612.8	1583.5	1581.7
15°	1587.2	1592.7	1625.6	1600.0	1596.4	1592.7	1581.7	1563.4	1578.1	1537.8	1539.7
17.5°	1570.8	1561.6	1567.1	1545.1	1550.7	1547.0	1545.1	1528.7	1525.0	1499.4	1499.4
20°	1494.0	1514.0	1514.0	1499.4	1499.4	1497.6	1473.9	1488.5	1472.0	1464.7	1472.0
22.5°	1440.9	1442.8	1442.8	1429.9	1431.8	1424.5	1411.7	1402.5	1411.7	1402.5	1387.9
25°	1344.0	1347.7	1369.6	1345.8	1342.2	1349.5	1338.5	1333.0	1331.2	1309.3	1338.5
27.5°	1227.0	1263.5	1261.7	1252.6	1263.5	1248.9	1243.5	1245.2	1250.8	1248.9	1256.2
30°	1159.4	1164.8	1170.3	1163.0	1164.8	1159.4	1159.4	1161.1	1175.8	1170.3	1168.5
32.5°	1022.2	1040.4	1055.1	1055.1	1056.9	1062.4	1060.6	1099.0	1108.1	1089.9	1086.2
35°	903.3	916.1	928.9	930.7	954.5	956.3	958.2	969.1	994.7	1000.2	998.4
37.5°	790.0	802.7	806.4	822.9	835.7	848.4	863.1	877.7	899.7	917.9	908.8
40°	689.4	694.8	704.0	711.3	736.9	736.9	744.2	773.5	797.3	811.9	810.0
42.5°	605.3	607.1	614.4	627.2	651.0	645.5	651.0	671.1	705.8	707.7	727.8
45°	546.8	544.9	550.4	552.2	566.9	574.2	577.8	592.5	621.7	625.3	627.2
47.5°	493.7	491.9	501.1	504.7	510.1	517.5	517.5	519.3	530.3	539.5	532.1
50°	449.8	449.8	449.8	453.5	462.7	460.8	462.7	470.0	475.4	471.8	470.0
52.5°	402.3	409.6	415.1	416.9	418.7	418.7	420.6	416.9	415.1	409.6	398.6
55°	369.4	376.7	376.7	376.7	376.7	384.0	374.9	376.7	376.7	362.1	347.5
57.5°	336.5	343.8	349.2	341.9	349.2	341.9	338.3	336.5	332.8	318.2	296.2
60°	309.1	312.7	310.8	309.1	312.7	307.2	303.5	296.2	292.6	272.4	257.8
62.5°	278.0	279.8	281.6	278.0	274.3	272.4	265.1	254.2	246.9	230.4	217.6
65°	252.3	246.9	245.0	243.2	239.6	234.0	228.6	215.8	210.3	195.6	182.8
67.5°	213.9	212.1	215.8	210.3	201.2	201.2	195.6	184.7	171.9	162.8	149.9
70°	182.8	181.0	177.4	171.9	170.1	162.8	162.8	149.9	146.3	129.8	118.9
72.5°	149.9	149.9	144.4	139.0	133.5	129.8	128.0	118.9	113.4	104.2	95.1
75°	113.4	113.4	111.5	106.0	102.4	98.7	96.9	89.6	84.1	75.0	69.5
77.5°	80.5	80.5	73.1	69.5	71.3	67.6	64.0	62.2	60.3	54.9	47.6
80°	47.6	45.7	40.3	42.1	40.3	40.3	38.4	36.5	32.9	29.2	25.6
82.5°	12.8	14.6	14.6	14.6	16.5	12.8	12.8	12.8	14.6	14.6	9.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	1.9
87.5°	1.9	3.7	7.3	7.3	7.3	7.3	7.3	5.5	5.5	5.5	3.7
90°	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°	95°
0°	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0
2.5°	1543.3	1541.5	1543.3	1530.5	1559.7	1537.8	1534.2	1530.5	1543.3	1530.5	1512.3
5°	1576.2	1558.0	1552.4	1547.0	1563.4	1537.8	1532.4	1534.2	1525.0	1501.3	1503.1
7.5°	1587.2	1570.8	1554.3	1519.6	1534.2	1528.7	1514.0	1503.1	1488.5	1468.3	1464.7
10°	1590.8	1572.6	1548.8	1537.8	1515.9	1508.6	1503.1	1484.8	1466.5	1431.8	1422.6
12.5°	1579.9	1558.0	1528.7	1519.6	1503.1	1479.3	1466.5	1448.2	1431.8	1404.4	1384.2
15°	1532.4	1514.0	1504.9	1473.9	1466.5	1451.9	1426.3	1400.7	1376.9	1340.3	1329.4
17.5°	1477.5	1470.2	1461.0	1437.2	1435.5	1420.8	1397.1	1375.1	1344.0	1287.3	1269.0
20°	1420.8	1420.8	1391.5	1382.4	1400.7	1371.4	1353.1	1333.0	1269.0	1241.6	1208.7
22.5°	1378.8	1358.7	1342.2	1327.6	1329.4	1311.1	1285.5	1245.2	1221.5	1188.6	1150.2
25°	1296.5	1303.8	1267.2	1261.7	1267.2	1225.1	1212.4	1179.4	1144.7	1113.6	1084.3
27.5°	1245.2	1225.1	1201.4	1181.3	1181.3	1164.8	1128.3	1121.0	1067.9	1038.6	1002.0
30°	1168.5	1153.8	1133.7	1104.5	1100.8	1088.0	1058.8	1040.4	985.6	941.7	921.6
32.5°	1071.5	1066.1	1049.6	1016.7	1005.8	991.1	954.5	923.4	897.9	848.4	824.7
35°	1002.0	982.0	947.2	919.8	910.6	885.0	855.7	833.8	806.4	762.5	731.4
37.5°	897.9	877.7	844.8	811.9	811.9	786.3	746.1	724.1	685.7	660.1	634.5
40°	806.4	780.8	747.9	709.5	704.0	667.4	651.0	614.4	590.6	550.4	546.8
42.5°	704.0	680.2	651.0	621.7	599.8	581.5	539.5	512.0	486.4	466.3	460.8
45°	610.7	579.6	554.1	517.5	495.5	473.6	446.2	427.9	407.8	385.9	373.0
47.5°	530.3	504.7	468.1	435.2	413.3	402.3	371.2	351.1	334.6	320.0	310.8
50°	448.0	416.9	396.8	360.2	356.6	331.0	305.4	288.9	279.8	267.0	254.2
52.5°	385.9	356.6	329.1	301.7	287.1	278.0	254.2	237.7	225.0	215.8	208.5
55°	325.5	299.9	278.0	250.5	241.4	228.6	201.2	197.5	184.7	171.9	162.8
57.5°	279.8	256.0	230.4	212.1	195.6	186.6	164.6	149.9	142.6	131.7	122.5
60°	237.7	212.1	192.0	170.1	162.8	149.9	133.5	120.7	111.5	102.4	93.3
62.5°	199.3	177.4	155.5	137.1	126.2	118.9	106.0	95.1	86.0	78.7	71.3
65°	164.6	144.4	126.2	107.9	102.4	93.3	84.1	75.0	67.6	58.5	51.2
67.5°	135.3	117.1	98.7	86.0	80.5	76.8	65.8	56.7	51.2	45.7	38.4
70°	106.0	93.3	78.7	67.6	62.2	56.7	49.4	43.9	36.5	32.9	27.4
72.5°	82.3	71.3	58.5	49.4	45.7	42.1	34.7	29.2	25.6	21.9	18.3
75°	58.5	49.4	42.1	32.9	31.1	29.2	23.8	20.1	16.5	12.8	11.0
77.5°	40.3	32.9	25.6	21.9	20.1	16.5	14.6	11.0	9.2	7.3	5.5
80°	21.9	16.5	12.8	11.0	9.2	7.3	7.3	5.5	3.7	3.7	1.9
82.5°	7.3	5.5	3.7	1.9	1.9	1.9	1.9	1.9	1.9	0.0	1.9
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°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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

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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0
2.5°	1523.2	1503.1	1508.6	1508.6	1504.9	1504.9	1501.3	1495.8	1497.6	1486.6	1462.9
5°	1506.7	1481.2	1477.5	1481.2	1466.5	1462.9	1455.6	1466.5	1433.6	1446.4	1431.8
7.5°	1459.2	1435.5	1429.9	1442.8	1424.5	1413.5	1411.7	1426.3	1397.1	1382.4	1366.0
10°	1406.2	1397.1	1380.6	1371.4	1366.0	1367.8	1353.1	1334.9	1329.4	1325.7	1311.1
12.5°	1358.7	1338.5	1323.9	1312.9	1309.3	1309.3	1285.5	1281.9	1265.4	1261.7	1239.8
15°	1301.9	1278.2	1269.0	1254.4	1241.6	1248.9	1221.5	1214.2	1208.7	1184.9	1188.6
17.5°	1252.6	1227.0	1205.1	1195.9	1184.9	1174.0	1148.3	1153.8	1141.0	1141.0	1108.1
20°	1188.6	1161.1	1144.7	1126.4	1126.4	1111.8	1093.5	1095.3	1078.8	1062.4	1033.1
22.5°	1121.0	1091.7	1071.5	1064.2	1045.9	1042.3	1020.4	1014.9	992.9	994.7	969.1
25°	1049.6	1020.4	992.9	994.7	978.3	971.0	958.2	932.6	923.4	912.5	905.2
27.5°	965.5	945.4	921.6	919.8	888.7	890.5	874.1	866.8	844.8	850.3	833.8
30°	888.7	859.5	837.5	832.0	819.2	815.6	790.0	778.9	782.7	768.0	758.9
32.5°	810.0	766.2	757.0	746.1	738.8	729.6	711.3	718.6	702.1	705.8	691.2
35°	705.8	687.5	663.7	663.7	656.4	649.1	636.4	643.7	627.2	619.9	605.3
37.5°	618.0	601.6	577.8	585.2	572.3	561.4	550.4	552.2	537.6	535.8	521.1
40°	523.0	513.8	497.4	497.4	488.2	488.2	482.7	477.3	468.1	457.1	440.7
42.5°	433.4	426.0	418.7	420.6	407.8	418.7	404.1	413.3	384.0	382.2	371.2
45°	367.5	351.1	352.9	345.6	338.3	341.9	329.1	332.8	316.4	312.7	301.7
47.5°	298.1	292.6	281.6	278.0	278.0	272.4	267.0	265.1	257.8	248.7	234.0
50°	245.0	225.0	221.2	215.8	212.1	212.1	204.8	193.9	195.6	186.6	171.9
52.5°	192.0	175.5	168.2	166.4	159.1	155.5	146.3	139.0	133.5	129.8	120.7
55°	148.1	133.5	124.4	124.4	113.4	113.4	100.6	95.1	87.8	80.5	75.0
57.5°	111.5	104.2	95.1	87.8	84.1	75.0	67.6	58.5	53.0	42.1	34.7
60°	84.1	76.8	67.6	62.2	58.5	49.4	40.3	32.9	20.1	16.5	14.6
62.5°	62.2	54.9	45.7	42.1	38.4	31.1	21.9	11.0	5.5	5.5	5.5
65°	45.7	36.5	29.2	25.6	21.9	16.5	7.3	3.7	1.9	1.9	1.9
67.5°	31.1	23.8	16.5	14.6	11.0	5.5	1.9	1.9	1.9	1.9	1.9
70°	20.1	14.6	7.3	5.5	3.7	1.9	1.9	1.9	1.9	1.9	1.9
72.5°	12.8	7.3	3.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.3	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.9	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	1.9	1.9	1.9
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: FLDSQ4C35D010 FEU4C359027 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0	1525.0
2.5°	1488.5	1475.6	1483.0	1466.5	1473.9	1486.6	1477.5	1481.2
5°	1437.2	1429.9	1420.8	1397.1	1415.3	1429.9	1422.6	1420.8
7.5°	1382.4	1356.8	1369.6	1362.3	1358.7	1373.3	1356.8	1375.1
10°	1325.7	1307.4	1305.6	1292.8	1292.8	1303.8	1305.6	1294.6
12.5°	1241.6	1232.5	1232.5	1230.6	1228.8	1239.8	1241.6	1236.2
15°	1181.3	1177.6	1168.5	1166.7	1155.7	1172.1	1174.0	1172.1
17.5°	1108.1	1109.9	1100.8	1100.8	1108.1	1113.6	1099.0	1113.6
20°	1058.8	1049.6	1045.9	1029.5	1038.6	1047.8	1047.8	1049.6
22.5°	987.4	972.8	978.3	969.1	963.6	976.5	976.5	982.0
25°	907.0	907.0	910.6	905.2	908.8	916.1	910.6	923.4
27.5°	830.2	837.5	837.5	830.2	833.8	855.7	864.9	850.3
30°	758.9	760.7	766.2	762.5	773.5	780.8	778.9	790.0
32.5°	678.4	687.5	691.2	685.7	689.4	705.8	696.7	694.8
35°	616.2	599.8	598.0	599.8	607.1	610.7	607.1	619.9
37.5°	526.6	521.1	513.8	515.7	521.1	528.5	532.1	541.2
40°	440.7	433.4	433.4	431.6	426.0	446.2	446.2	446.2
42.5°	365.7	363.9	354.8	354.8	362.1	367.5	363.9	376.7
45°	299.9	292.6	287.1	287.1	292.6	292.6	298.1	296.2
47.5°	235.9	228.6	230.4	225.0	230.4	237.7	228.6	230.4
50°	177.4	177.4	173.7	177.4	175.5	177.4	173.7	170.1
52.5°	120.7	137.1	139.0	131.7	115.2	100.6	91.4	98.7
55°	69.5	62.2	62.2	60.3	56.7	54.9	49.4	54.9
57.5°	34.7	31.1	31.1	31.1	29.2	27.4	23.8	23.8
60°	14.6	12.8	12.8	11.0	9.2	7.3	5.5	7.3
62.5°	5.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)