

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: **FLDSQ4C30D010 FEU4C309035 F4LC-SQLWW-LI**

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: FLDSQ4C30D010 FEU4C309035 F4LC-SQLWW-LI  
 Description: 4 INCH 3000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH LI FINISH  
 Light Source: -  
 Ballast/Driver: -

**Summary**

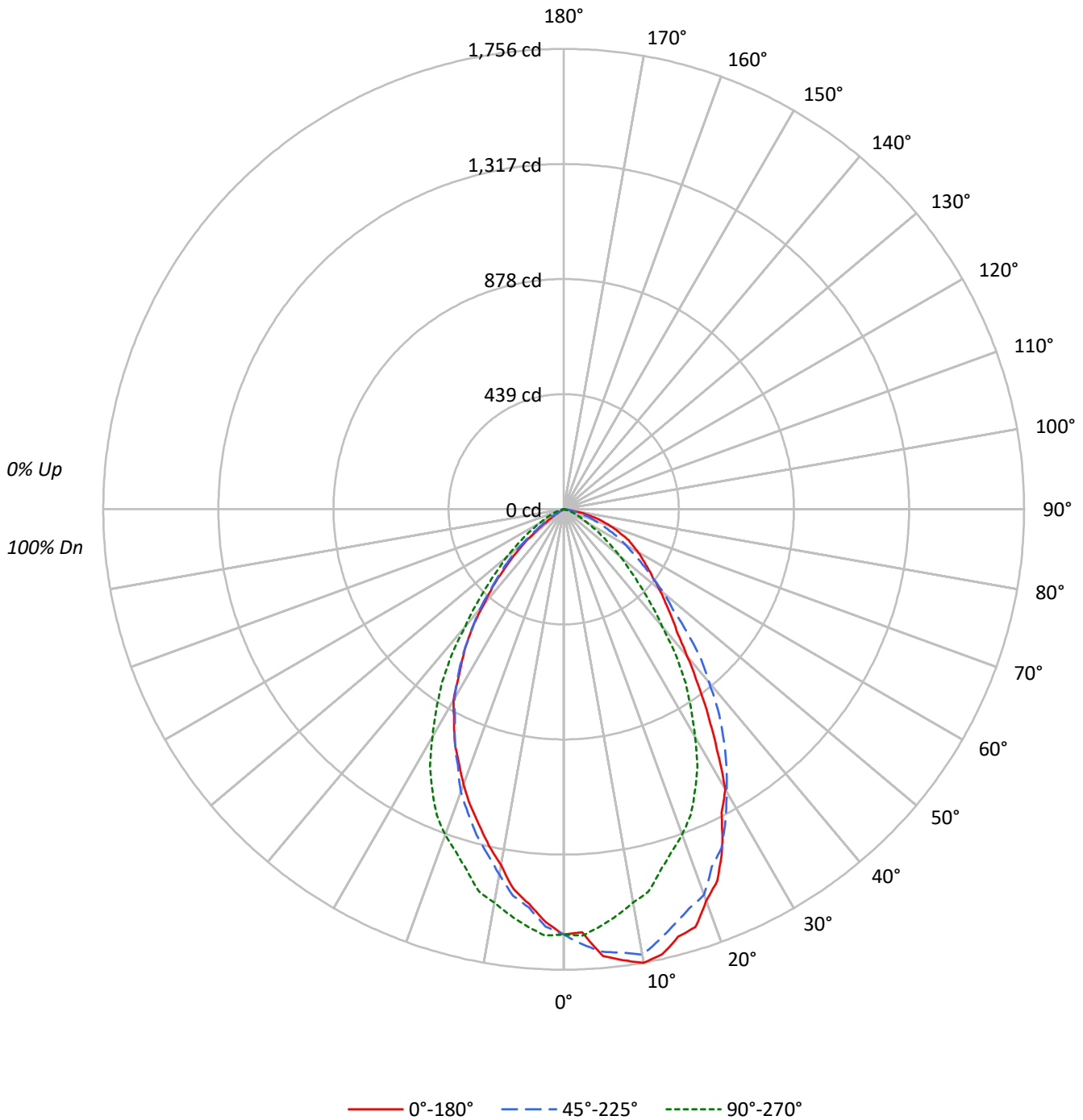
Lumens per Lamp: N/A  
 Luminaire Lumens: 2325.0 lumens  
 Efficiency: N/A  
 Efficacy: 73.6 lumens/watt  
 Spacing Criteria (0/90/45): 1.01 / 1 / 1.06  
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 31.6  
 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



TEST NUMBER: P#  
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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	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°	156505	156505	156505
5°	165578	154662	146371
10°	172068	149200	134905
15°	168629	142397	124526
20°	163161	135591	114623
25°	152190	126096	104569
30°	137387	111594	93612
35°	113162	95529	77660
40°	92352	73735	59767
45°	79349	56002	42997
50°	71813	42631	27155
55°	66095	30751	9824
60°	63432	21015	1505
65°	61279	14224	457
70°	54871	9874	564
75°	44960	5070	0
80°	28116	2167	0
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.0	6.5
10°-20°	409.4	17.6
20°-30°	546.7	23.5
30°-40°	519.0	22.3
40°-50°	358.8	15.4
50°-60°	198.2	8.5
60°-70°	98.4	4.2
70°-80°	38.8	1.7
80°-90°	3.7	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°	1108.1	47.7
0°-40°	1627.1	70.0
0°-60°	2184.1	93.9
0°-90°	2325.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2325.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1622	1622	1622	1622	1622	
5°	1710	1694	1597	1525	1511	164
15°	1688	1638	1426	1286	1247	478
25°	1430	1424	1184	982	982	652
35°	961	1062	811	667	659	602
45°	582	667	410	336	315	454
55°	393	370	183	93	58	354
65°	268	194	62	2	2	260
75°	121	74	14	0	0	129
85°	0	2	0	0	0	11
90°	0	0	0	0	0	

TEST NUMBER: P#  
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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0
2.5°	1614.2	1658.9	1662.8	1658.9	1664.8	1662.8	1672.6	1662.8	1674.5	1657.0	1660.9
5°	1709.5	1692.0	1729.0	1709.5	1709.5	1707.6	1701.7	1699.8	1707.6	1682.3	1694.0
7.5°	1734.8	1760.1	1793.2	1752.3	1754.2	1754.2	1742.6	1738.7	1738.7	1692.0	1705.6
10°	1756.2	1740.6	1758.1	1742.6	1756.2	1754.2	1762.0	1736.7	1754.2	1727.0	1725.1
12.5°	1738.7	1732.8	1756.2	1730.9	1723.2	1725.1	1715.4	1709.5	1715.4	1684.2	1682.3
15°	1688.1	1694.0	1729.0	1701.7	1697.9	1694.0	1682.3	1662.8	1678.4	1635.6	1637.6
17.5°	1670.7	1660.9	1666.8	1643.4	1649.3	1645.4	1643.4	1625.9	1622.0	1594.8	1594.8
20°	1589.0	1610.3	1610.3	1594.8	1594.8	1592.9	1567.6	1583.1	1565.6	1557.8	1565.6
22.5°	1532.5	1534.5	1534.5	1520.9	1522.8	1515.1	1501.4	1491.7	1501.4	1491.7	1476.1
25°	1429.5	1433.4	1456.7	1431.4	1427.5	1435.3	1423.6	1417.8	1415.9	1392.5	1423.6
27.5°	1305.0	1343.9	1342.0	1332.2	1343.9	1328.3	1322.5	1324.4	1330.3	1328.3	1336.1
30°	1233.1	1238.9	1244.7	1237.0	1238.9	1233.1	1233.1	1235.0	1250.5	1244.7	1242.7
32.5°	1087.2	1106.6	1122.2	1122.2	1124.1	1130.0	1128.0	1168.8	1178.6	1159.2	1155.3
35°	960.7	974.4	988.0	989.9	1015.2	1017.1	1019.1	1030.8	1058.0	1063.8	1061.9
37.5°	840.2	853.8	857.7	875.2	888.8	902.4	918.0	933.5	956.9	976.3	966.6
40°	733.2	739.0	748.8	756.5	783.7	783.7	791.5	822.7	848.0	863.5	861.5
42.5°	643.8	645.7	653.5	667.1	692.4	686.5	692.4	713.8	750.7	752.7	774.1
45°	581.5	579.5	585.4	587.3	602.9	610.7	614.6	630.1	661.2	665.1	667.1
47.5°	525.1	523.2	532.9	536.8	542.6	550.4	550.4	552.3	564.0	573.8	566.0
50°	478.4	478.4	478.4	482.3	492.1	490.1	492.1	499.8	505.6	501.7	499.8
52.5°	427.8	435.6	441.5	443.5	445.4	445.4	447.3	443.5	441.5	435.6	424.0
55°	392.9	400.6	400.6	400.6	400.6	408.4	398.7	400.6	400.6	385.1	369.5
57.5°	357.9	365.7	371.5	363.7	371.5	363.7	359.8	357.9	353.9	338.4	315.1
60°	328.7	332.6	330.6	328.7	332.6	326.7	322.8	315.1	311.2	289.8	274.2
62.5°	295.6	297.5	299.5	295.6	291.8	289.8	282.0	270.3	262.6	245.0	231.4
65°	268.4	262.6	260.6	258.7	254.8	248.9	243.1	229.5	223.6	208.1	194.5
67.5°	227.5	225.6	229.5	223.6	214.0	214.0	208.1	196.4	182.8	173.1	159.5
70°	194.5	192.5	188.7	182.8	180.9	173.1	173.1	159.5	155.6	138.1	126.4
72.5°	159.5	159.5	153.6	147.8	142.0	138.1	136.2	126.4	120.6	110.9	101.1
75°	120.6	120.6	118.6	112.8	108.9	105.0	103.1	95.3	89.5	79.8	73.9
77.5°	85.6	85.6	77.8	73.9	75.8	71.9	68.0	66.1	64.2	58.4	50.6
80°	50.6	48.6	42.8	44.7	42.8	42.8	40.8	38.9	35.0	31.1	27.2
82.5°	13.6	15.5	15.5	15.5	17.5	13.6	13.6	13.6	15.5	15.5	9.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0
87.5°	2.0	3.9	7.8	7.8	7.8	7.8	7.8	5.9	5.9	5.9	3.9
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°	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0
2.5°	1641.5	1639.5	1641.5	1627.8	1658.9	1635.6	1631.7	1627.8	1641.5	1627.8	1608.4
5°	1676.5	1657.0	1651.2	1645.4	1662.8	1635.6	1629.8	1631.7	1622.0	1596.8	1598.7
7.5°	1688.1	1670.7	1653.1	1616.2	1631.7	1625.9	1610.3	1598.7	1583.1	1561.7	1557.8
10°	1692.0	1672.6	1647.3	1635.6	1612.3	1604.5	1598.7	1579.2	1559.8	1522.8	1513.1
12.5°	1680.3	1657.0	1625.9	1616.2	1598.7	1573.4	1559.8	1540.3	1522.8	1493.7	1472.2
15°	1629.8	1610.3	1600.6	1567.6	1559.8	1544.2	1517.0	1489.8	1464.5	1425.5	1413.9
17.5°	1571.5	1563.7	1553.9	1528.6	1526.7	1511.2	1485.9	1462.5	1429.5	1369.2	1349.7
20°	1511.2	1511.2	1480.0	1470.3	1489.8	1458.6	1439.2	1417.8	1349.7	1320.5	1285.6
22.5°	1466.5	1445.0	1427.5	1412.0	1413.9	1394.5	1367.3	1324.4	1299.1	1264.2	1223.3
25°	1378.9	1386.7	1347.8	1342.0	1347.8	1303.0	1289.5	1254.4	1217.5	1184.4	1153.3
27.5°	1324.4	1303.0	1277.8	1256.4	1256.4	1238.9	1200.0	1192.2	1135.8	1104.7	1065.7
30°	1242.7	1227.2	1205.8	1174.7	1170.8	1157.2	1126.1	1106.6	1048.3	1001.6	980.2
32.5°	1139.7	1133.9	1116.3	1081.4	1069.7	1054.1	1015.2	982.2	955.0	902.4	877.2
35°	1065.7	1044.4	1007.5	978.3	968.5	941.3	910.2	886.8	857.7	811.0	778.0
37.5°	955.0	933.5	898.5	863.5	863.5	836.3	793.5	770.2	729.3	702.1	674.9
40°	857.7	830.5	795.5	754.6	748.8	709.8	692.4	653.5	628.2	585.4	581.5
42.5°	748.8	723.5	692.4	661.2	637.9	618.5	573.8	544.6	517.4	496.0	490.1
45°	649.6	616.5	589.3	550.4	527.0	503.7	474.5	455.1	433.7	410.4	396.7
47.5°	564.0	536.8	497.9	462.9	439.6	427.8	394.8	373.4	355.9	340.4	330.6
50°	476.5	443.5	422.0	383.1	379.2	352.0	324.8	307.3	297.5	284.0	270.3
52.5°	410.4	379.2	350.0	320.9	305.3	295.6	270.3	252.8	239.3	229.5	221.7
55°	346.2	319.0	295.6	266.5	256.7	243.1	214.0	210.1	196.4	182.8	173.1
57.5°	297.5	272.2	245.0	225.6	208.1	198.4	175.0	159.5	151.7	140.0	130.3
60°	252.8	225.6	204.2	180.9	173.1	159.5	142.0	128.4	118.6	108.9	99.2
62.5°	212.0	188.7	165.3	145.8	134.2	126.4	112.8	101.1	91.4	83.7	75.8
65°	175.0	153.6	134.2	114.8	108.9	99.2	89.5	79.8	71.9	62.3	54.5
67.5°	143.9	124.5	105.0	91.4	85.6	81.7	70.0	60.3	54.5	48.6	40.8
70°	112.8	99.2	83.7	71.9	66.1	60.3	52.5	46.7	38.9	35.0	29.2
72.5°	87.5	75.8	62.3	52.5	48.6	44.7	37.0	31.1	27.2	23.3	19.4
75°	62.3	52.5	44.7	35.0	33.1	31.1	25.3	21.4	17.5	13.6	11.7
77.5°	42.8	35.0	27.2	23.3	21.4	17.5	15.5	11.7	9.8	7.8	5.9
80°	23.3	17.5	13.6	11.7	9.8	7.8	7.8	5.9	3.9	3.9	2.0
82.5°	7.8	5.9	3.9	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0
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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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°	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0
2.5°	1620.1	1598.7	1604.5	1604.5	1600.6	1600.6	1596.8	1590.9	1592.9	1581.1	1555.9
5°	1602.5	1575.3	1571.5	1575.3	1559.8	1555.9	1548.1	1559.8	1524.7	1538.4	1522.8
7.5°	1552.0	1526.7	1520.9	1534.5	1515.1	1503.3	1501.4	1517.0	1485.9	1470.3	1452.8
10°	1495.6	1485.9	1468.4	1458.6	1452.8	1454.7	1439.2	1419.8	1413.9	1410.0	1394.5
12.5°	1445.0	1423.6	1408.1	1396.4	1392.5	1392.5	1367.3	1363.4	1345.8	1342.0	1318.6
15°	1384.7	1359.5	1349.7	1334.2	1320.5	1328.3	1299.1	1291.4	1285.6	1260.3	1264.2
17.5°	1332.2	1305.0	1281.7	1271.9	1260.3	1248.6	1221.3	1227.2	1213.6	1213.6	1178.6
20°	1264.2	1235.0	1217.5	1198.0	1198.0	1182.5	1163.0	1165.0	1147.4	1130.0	1098.8
22.5°	1192.2	1161.1	1139.7	1131.9	1112.5	1108.6	1085.3	1079.4	1056.1	1058.0	1030.8
25°	1116.3	1085.3	1056.1	1058.0	1040.5	1032.8	1019.1	991.9	982.2	970.5	962.7
27.5°	1026.9	1005.5	980.2	978.3	945.2	947.1	929.7	921.9	898.5	904.4	886.8
30°	945.2	914.1	890.7	884.9	871.3	867.4	840.2	828.5	832.4	816.8	807.1
32.5°	861.5	814.9	805.2	793.5	785.7	776.0	756.5	764.3	746.8	750.7	735.1
35°	750.7	731.2	706.0	706.0	698.2	690.4	676.8	684.6	667.1	659.3	643.8
37.5°	657.3	639.9	614.6	622.4	608.7	597.1	585.4	587.3	571.8	569.9	554.2
40°	556.2	546.5	529.0	529.0	519.3	519.3	513.4	507.6	497.9	486.2	468.7
42.5°	460.9	453.1	445.4	447.3	433.7	445.4	429.8	439.6	408.4	406.5	394.8
45°	390.9	373.4	375.3	367.6	359.8	363.7	350.0	353.9	336.5	332.6	320.9
47.5°	317.0	311.2	299.5	295.6	295.6	289.8	284.0	282.0	274.2	264.5	248.9
50°	260.6	239.3	235.3	229.5	225.6	225.6	217.8	206.2	208.1	198.4	182.8
52.5°	204.2	186.7	178.9	177.0	169.2	165.3	155.6	147.8	142.0	138.1	128.4
55°	157.5	142.0	132.3	132.3	120.6	120.6	107.0	101.1	93.3	85.6	79.8
57.5°	118.6	110.9	101.1	93.3	89.5	79.8	71.9	62.3	56.4	44.7	37.0
60°	89.5	81.7	71.9	66.1	62.3	52.5	42.8	35.0	21.4	17.5	15.5
62.5°	66.1	58.4	48.6	44.7	40.8	33.1	23.3	11.7	5.9	5.9	5.9
65°	48.6	38.9	31.1	27.2	23.3	17.5	7.8	3.9	2.0	2.0	2.0
67.5°	33.1	25.3	17.5	15.5	11.7	5.9	2.0	2.0	2.0	2.0	2.0
70°	21.4	15.5	7.8	5.9	3.9	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	13.6	7.8	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.8	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.0	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	2.0	2.0	2.0
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: FLDSQ4C30D010 FEU4C309035 F4LC-SQLWW-LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0	1622.0
2.5°	1583.1	1569.5	1577.2	1559.8	1567.6	1581.1	1571.5	1575.3
5°	1528.6	1520.9	1511.2	1485.9	1505.3	1520.9	1513.1	1511.2
7.5°	1470.3	1443.1	1456.7	1448.9	1445.0	1460.6	1443.1	1462.5
10°	1410.0	1390.6	1388.7	1375.0	1375.0	1386.7	1388.7	1376.9
12.5°	1320.5	1310.9	1310.9	1308.9	1306.9	1318.6	1320.5	1314.8
15°	1256.4	1252.5	1242.7	1240.8	1229.2	1246.6	1248.6	1246.6
17.5°	1178.6	1180.5	1170.8	1170.8	1178.6	1184.4	1168.8	1184.4
20°	1126.1	1116.3	1112.5	1094.9	1104.7	1114.4	1114.4	1116.3
22.5°	1050.2	1034.7	1040.5	1030.8	1024.9	1038.5	1038.5	1044.4
25°	964.6	964.6	968.5	962.7	966.6	974.4	968.5	982.2
27.5°	883.0	890.7	890.7	883.0	886.8	910.2	919.9	904.4
30°	807.1	809.0	814.9	811.0	822.7	830.5	828.5	840.2
32.5°	721.6	731.2	735.1	729.3	733.2	750.7	741.0	739.0
35°	655.4	637.9	636.0	637.9	645.7	649.6	645.7	659.3
37.5°	560.1	554.2	546.5	548.5	554.2	562.1	566.0	575.7
40°	468.7	460.9	460.9	459.0	453.1	474.5	474.5	474.5
42.5°	389.0	387.0	377.3	377.3	385.1	390.9	387.0	400.6
45°	319.0	311.2	305.3	305.3	311.2	311.2	317.0	315.1
47.5°	250.9	243.1	245.0	239.3	245.0	252.8	243.1	245.0
50°	188.7	188.7	184.8	188.7	186.7	188.7	184.8	180.9
52.5°	128.4	145.8	147.8	140.0	122.5	107.0	97.2	105.0
55°	73.9	66.1	66.1	64.2	60.3	58.4	52.5	58.4
57.5°	37.0	33.1	33.1	33.1	31.1	29.2	25.3	25.3
60°	15.5	13.6	13.6	11.7	9.8	7.8	5.9	7.8
62.5°	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)