

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 FEU4C359035 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: FLDSQ4C35D010 FEU4C359035 F4LC-SQLWW-LI
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS
AND F4LC-SQLWW TRIM WITH LI FINISH
Light Source: -
Ballast/Driver: -

Summary

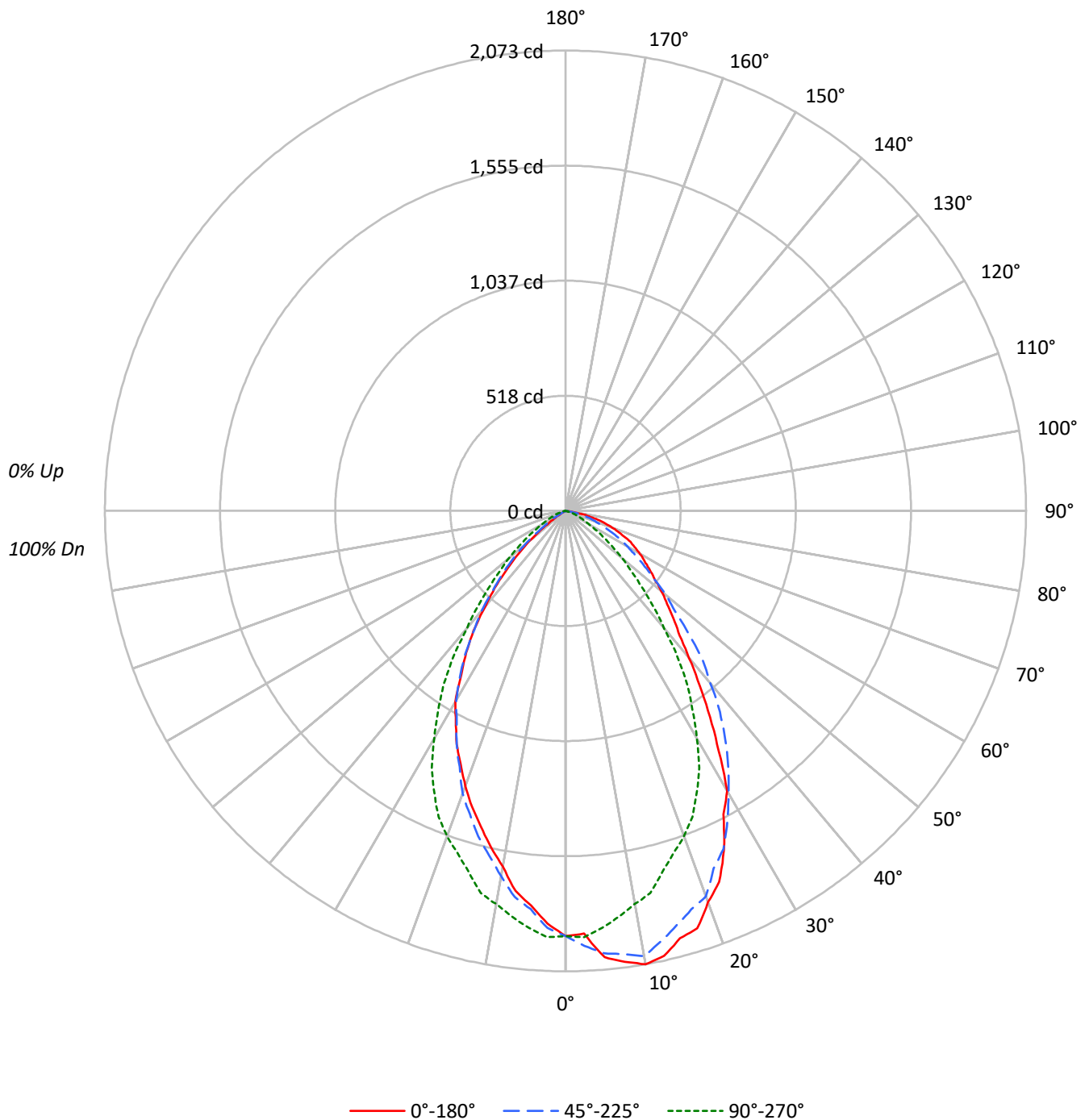
Lumens per Lamp: N/A
Luminaire Lumens: 2744.0 lumens
Efficiency: N/A
Efficacy: 67.9 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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



TEST NUMBER: P#

CATALOG NUMBER: FLDSQ4C35D010 FEU4C359035 F4LC-SQLWW-LI

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	184709	184709	184709
5°	195420	182528	172745
10°	203078	176095	159223
15°	199016	168059	146972
20°	192558	160029	135283
25°	179615	148815	123413
30°	162143	131705	110480
35°	133563	112750	91653
40°	109003	87024	70549
45°	93650	66086	50734
50°	84767	50317	32049
55°	78005	36286	11591
60°	74856	24798	1775
65°	72306	16781	525
70°	64745	11651	649
75°	53087	6002	0
80°	33173	2556	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.4	6.5
10°-20°	483.2	17.6
20°-30°	645.2	23.5
30°-40°	612.5	22.3
40°-50°	423.4	15.4
50°-60°	233.9	8.5
60°-70°	116.2	4.2
70°-80°	45.8	1.7
80°-90°	4.4	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°	1307.8	47.7
0°-40°	1920.4	70.0
0°-60°	2577.7	93.9
0°-90°	2744.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2744.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1914	1914	1914	1914	1914	
5°	2018	1999	1884	1800	1784	193
15°	1992	1933	1682	1517	1471	564
25°	1687	1680	1398	1159	1159	769
35°	1134	1253	957	787	778	710
45°	686	787	484	397	372	535
55°	464	436	216	110	69	417
65°	317	230	74	2	2	307
75°	142	87	16	0	0	152
85°	0	2	0	0	0	13
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°	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3
2.5°	1905.1	1957.9	1962.5	1957.9	1964.8	1962.5	1974.0	1962.5	1976.3	1955.6	1960.2
5°	2017.6	1996.9	2040.5	2017.6	2017.6	2015.4	2008.4	2006.1	2015.4	1985.5	1999.3
7.5°	2047.5	2077.3	2116.3	2068.1	2070.4	2070.4	2056.6	2052.0	2052.0	1996.9	2013.0
10°	2072.7	2054.3	2075.0	2056.6	2072.7	2070.4	2079.6	2049.7	2070.4	2038.3	2035.9
12.5°	2052.0	2045.1	2072.7	2042.9	2033.7	2035.9	2024.5	2017.6	2024.5	1987.7	1985.5
15°	1992.3	1999.3	2040.5	2008.4	2003.8	1999.3	1985.5	1962.5	1980.9	1930.4	1932.7
17.5°	1971.7	1960.2	1967.2	1939.5	1946.5	1941.9	1939.5	1919.0	1914.3	1882.2	1882.2
20°	1875.3	1900.5	1900.5	1882.2	1882.2	1879.9	1850.1	1868.4	1847.7	1838.6	1847.7
22.5°	1808.7	1811.0	1811.0	1794.9	1797.3	1788.1	1772.0	1760.5	1772.0	1760.5	1742.2
25°	1687.1	1691.7	1719.2	1689.4	1684.8	1694.0	1680.2	1673.3	1671.0	1643.5	1680.2
27.5°	1540.2	1586.0	1583.8	1572.3	1586.0	1567.7	1560.9	1563.1	1570.0	1567.7	1576.9
30°	1455.3	1462.1	1469.0	1459.9	1462.1	1455.3	1455.3	1457.5	1475.9	1469.0	1466.7
32.5°	1283.1	1306.0	1324.4	1324.4	1326.7	1333.6	1331.3	1379.5	1391.0	1368.1	1363.5
35°	1133.9	1150.0	1166.0	1168.3	1198.2	1200.4	1202.8	1216.5	1248.6	1255.6	1253.2
37.5°	991.6	1007.6	1012.2	1032.9	1049.0	1065.0	1083.4	1101.8	1129.3	1152.2	1140.8
40°	865.4	872.2	883.7	892.9	925.0	925.0	934.2	970.9	1000.8	1019.1	1016.8
42.5°	759.8	762.0	771.2	787.3	817.2	810.2	817.2	842.4	886.0	888.3	913.6
45°	686.3	684.0	690.9	693.2	711.6	720.8	725.4	743.7	780.4	785.0	787.3
47.5°	619.8	617.4	628.9	633.5	640.4	649.5	649.5	651.9	665.6	677.2	668.0
50°	564.7	564.7	564.7	569.2	580.7	578.4	580.7	589.9	596.8	592.2	589.9
52.5°	504.9	514.1	521.0	523.4	525.6	525.6	528.0	523.4	521.0	514.1	500.4
55°	463.7	472.8	472.8	472.8	472.8	482.0	470.6	472.8	472.8	454.5	436.1
57.5°	422.4	431.6	438.4	429.2	438.4	429.2	424.6	422.4	417.7	399.4	371.8
60°	387.9	392.5	390.2	387.9	392.5	385.6	381.0	371.8	367.3	342.0	323.6
62.5°	348.9	351.2	353.5	348.9	344.3	342.0	332.8	319.1	309.9	289.2	273.1
65°	316.7	309.9	307.6	305.3	300.7	293.8	287.0	270.9	263.9	245.6	229.5
67.5°	268.5	266.3	270.9	263.9	252.5	252.5	245.6	231.8	215.7	204.3	188.2
70°	229.5	227.2	222.7	215.7	213.5	204.3	204.3	188.2	183.6	162.9	149.2
72.5°	188.2	188.2	181.3	174.5	167.5	162.9	160.7	149.2	142.4	130.8	119.3
75°	142.4	142.4	140.0	133.1	128.5	123.9	121.7	112.5	105.6	94.2	87.2
77.5°	101.0	101.0	91.8	87.2	89.5	84.9	80.3	78.1	75.7	68.9	59.7
80°	59.7	57.4	50.5	52.8	50.5	50.5	48.2	45.9	41.3	36.7	32.1
82.5°	16.1	18.3	18.3	18.3	20.7	16.1	16.1	16.1	18.3	18.3	11.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3
87.5°	2.3	4.6	9.2	9.2	9.2	9.2	9.2	6.9	6.9	6.9	4.6
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°	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3
2.5°	1937.3	1935.0	1937.3	1921.2	1957.9	1930.4	1925.8	1921.2	1937.3	1921.2	1898.3
5°	1978.6	1955.6	1948.7	1941.9	1962.5	1930.4	1923.5	1925.8	1914.3	1884.5	1886.8
7.5°	1992.3	1971.7	1951.1	1907.4	1925.8	1919.0	1900.5	1886.8	1868.4	1843.1	1838.6
10°	1996.9	1974.0	1944.1	1930.4	1902.9	1893.7	1886.8	1863.8	1840.9	1797.3	1785.8
12.5°	1983.2	1955.6	1919.0	1907.4	1886.8	1856.9	1840.9	1817.9	1797.3	1762.8	1737.6
15°	1923.5	1900.5	1889.1	1850.1	1840.9	1822.5	1790.4	1758.3	1728.4	1682.4	1668.7
17.5°	1854.7	1845.5	1834.0	1804.1	1801.9	1783.5	1753.7	1726.1	1687.1	1615.9	1593.0
20°	1783.5	1783.5	1746.7	1735.3	1758.3	1721.5	1698.5	1673.3	1593.0	1558.5	1517.2
22.5°	1730.7	1705.5	1684.8	1666.4	1668.7	1645.8	1613.7	1563.1	1533.3	1492.0	1443.8
25°	1627.4	1636.6	1590.7	1583.8	1590.7	1537.8	1521.8	1480.5	1436.9	1397.8	1361.1
27.5°	1563.1	1537.8	1508.1	1482.8	1482.8	1462.1	1416.3	1407.1	1340.5	1303.8	1257.8
30°	1466.7	1448.4	1423.1	1386.4	1381.8	1365.7	1329.0	1306.0	1237.2	1182.1	1156.8
32.5°	1345.0	1338.2	1317.5	1276.2	1262.5	1244.1	1198.2	1159.2	1127.1	1065.0	1035.2
35°	1257.8	1232.6	1189.0	1154.6	1143.1	1111.0	1074.2	1046.7	1012.2	957.2	918.2
37.5°	1127.1	1101.8	1060.4	1019.1	1019.1	987.0	936.5	909.0	860.8	828.6	796.5
40°	1012.2	980.1	938.8	890.6	883.7	837.8	817.2	771.2	741.4	690.9	686.3
42.5°	883.7	853.9	817.2	780.4	752.9	729.9	677.2	642.7	610.6	585.3	578.4
45°	766.6	727.6	695.5	649.5	622.0	594.5	560.1	537.1	511.9	484.3	468.3
47.5°	665.6	633.5	587.6	546.3	518.8	504.9	465.9	440.7	420.0	401.7	390.2
50°	562.4	523.4	498.1	452.2	447.6	415.5	383.4	362.7	351.2	335.2	319.1
52.5°	484.3	447.6	413.1	378.8	360.3	348.9	319.1	298.4	282.4	270.9	261.7
55°	408.5	376.4	348.9	314.5	303.0	287.0	252.5	247.9	231.8	215.7	204.3
57.5°	351.2	321.3	289.2	266.3	245.6	234.2	206.6	188.2	179.0	165.3	153.8
60°	298.4	266.3	241.0	213.5	204.3	188.2	167.5	151.5	140.0	128.5	117.1
62.5°	250.2	222.7	195.1	172.1	158.4	149.2	133.1	119.3	107.9	98.7	89.5
65°	206.6	181.3	158.4	135.4	128.5	117.1	105.6	94.2	84.9	73.5	64.3
67.5°	169.9	146.9	123.9	107.9	101.0	96.4	82.6	71.1	64.3	57.4	48.2
70°	133.1	117.1	98.7	84.9	78.1	71.1	62.0	55.1	45.9	41.3	34.4
72.5°	103.3	89.5	73.5	62.0	57.4	52.8	43.6	36.7	32.1	27.5	22.9
75°	73.5	62.0	52.8	41.3	39.0	36.7	29.9	25.3	20.7	16.1	13.8
77.5°	50.5	41.3	32.1	27.5	25.3	20.7	18.3	13.8	11.5	9.2	6.9
80°	27.5	20.7	16.1	13.8	11.5	9.2	9.2	6.9	4.6	4.6	2.3
82.5°	9.2	6.9	4.6	2.3	2.3	2.3	2.3	2.3	2.3	0.0	2.3
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°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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°	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3
2.5°	1912.0	1886.8	1893.7	1893.7	1889.1	1889.1	1884.5	1877.6	1879.9	1866.1	1836.3
5°	1891.3	1859.2	1854.7	1859.2	1840.9	1836.3	1827.1	1840.9	1799.5	1815.6	1797.3
7.5°	1831.7	1801.9	1794.9	1811.0	1788.1	1774.3	1772.0	1790.4	1753.7	1735.3	1714.6
10°	1765.1	1753.7	1733.0	1721.5	1714.6	1716.9	1698.5	1675.6	1668.7	1664.1	1645.8
12.5°	1705.5	1680.2	1661.9	1648.1	1643.5	1643.5	1613.7	1609.1	1588.4	1583.8	1556.3
15°	1634.2	1604.5	1593.0	1574.6	1558.5	1567.7	1533.3	1524.1	1517.2	1487.4	1492.0
17.5°	1572.3	1540.2	1512.7	1501.2	1487.4	1473.6	1441.4	1448.4	1432.3	1432.3	1391.0
20°	1492.0	1457.5	1436.9	1413.9	1413.9	1395.6	1372.6	1374.9	1354.2	1333.6	1296.8
22.5°	1407.1	1370.3	1345.0	1335.9	1312.9	1308.3	1280.8	1273.9	1246.4	1248.6	1216.5
25°	1317.5	1280.8	1246.4	1248.6	1228.0	1218.9	1202.8	1170.7	1159.2	1145.4	1136.2
27.5°	1211.9	1186.7	1156.8	1154.6	1115.5	1117.8	1097.2	1088.0	1060.4	1067.3	1046.7
30°	1115.5	1078.9	1051.2	1044.4	1028.3	1023.7	991.6	977.8	982.5	964.0	952.6
32.5°	1016.8	961.8	950.3	936.5	927.3	915.8	892.9	902.1	881.4	886.0	867.6
35°	886.0	863.0	833.2	833.2	824.0	814.8	798.8	808.0	787.3	778.1	759.8
37.5°	775.8	755.2	725.4	734.5	718.4	704.7	690.9	693.2	674.8	672.6	654.1
40°	656.5	645.0	624.4	624.4	612.9	612.9	605.9	599.1	587.6	573.8	553.1
42.5°	544.0	534.8	525.6	528.0	511.9	525.6	507.3	518.8	482.0	479.8	465.9
45°	461.3	440.7	443.0	433.8	424.6	429.2	413.1	417.7	397.1	392.5	378.8
47.5°	374.2	367.3	353.5	348.9	348.9	342.0	335.2	332.8	323.6	312.1	293.8
50°	307.6	282.4	277.7	270.9	266.3	266.3	257.1	243.3	245.6	234.2	215.7
52.5°	241.0	220.3	211.1	208.9	199.7	195.1	183.6	174.5	167.5	162.9	151.5
55°	185.9	167.5	156.1	156.1	142.4	142.4	126.3	119.3	110.2	101.0	94.2
57.5°	140.0	130.8	119.3	110.2	105.6	94.2	84.9	73.5	66.5	52.8	43.6
60°	105.6	96.4	84.9	78.1	73.5	62.0	50.5	41.3	25.3	20.7	18.3
62.5°	78.1	68.9	57.4	52.8	48.2	39.0	27.5	13.8	6.9	6.9	6.9
65°	57.4	45.9	36.7	32.1	27.5	20.7	9.2	4.6	2.3	2.3	2.3
67.5°	39.0	29.9	20.7	18.3	13.8	6.9	2.3	2.3	2.3	2.3	2.3
70°	25.3	18.3	9.2	6.9	4.6	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	16.1	9.2	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	9.2	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.3	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	2.3	2.3	2.3
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 FEU4C359035 F4LC-SQLWW-LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3	1914.3
2.5°	1868.4	1852.3	1861.5	1840.9	1850.1	1866.1	1854.7	1859.2
5°	1804.1	1794.9	1783.5	1753.7	1776.6	1794.9	1785.8	1783.5
7.5°	1735.3	1703.1	1719.2	1710.1	1705.5	1723.8	1703.1	1726.1
10°	1664.1	1641.2	1638.9	1622.8	1622.8	1636.6	1638.9	1625.1
12.5°	1558.5	1547.1	1547.1	1544.8	1542.4	1556.3	1558.5	1551.7
15°	1482.8	1478.2	1466.7	1464.5	1450.7	1471.3	1473.6	1471.3
17.5°	1391.0	1393.2	1381.8	1381.8	1391.0	1397.8	1379.5	1397.8
20°	1329.0	1317.5	1312.9	1292.3	1303.8	1315.3	1315.3	1317.5
22.5°	1239.5	1221.1	1228.0	1216.5	1209.6	1225.7	1225.7	1232.6
25°	1138.5	1138.5	1143.1	1136.2	1140.8	1150.0	1143.1	1159.2
27.5°	1042.1	1051.2	1051.2	1042.1	1046.7	1074.2	1085.7	1067.3
30°	952.6	954.8	961.8	957.2	970.9	980.1	977.8	991.6
32.5°	851.6	863.0	867.6	860.8	865.4	886.0	874.5	872.2
35°	773.6	752.9	750.6	752.9	762.0	766.6	762.0	778.1
37.5°	661.1	654.1	645.0	647.3	654.1	663.4	668.0	679.4
40°	553.1	544.0	544.0	541.7	534.8	560.1	560.1	560.1
42.5°	459.1	456.7	445.3	445.3	454.5	461.3	456.7	472.8
45°	376.4	367.3	360.3	360.3	367.3	367.3	374.2	371.8
47.5°	296.1	287.0	289.2	282.4	289.2	298.4	287.0	289.2
50°	222.7	222.7	218.1	222.7	220.3	222.7	218.1	213.5
52.5°	151.5	172.1	174.5	165.3	144.6	126.3	114.7	123.9
55°	87.2	78.1	78.1	75.7	71.1	68.9	62.0	68.9
57.5°	43.6	39.0	39.0	39.0	36.7	34.4	29.9	29.9
60°	18.3	16.1	16.1	13.8	11.5	9.2	6.9	9.2
62.5°	6.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6
65°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)