

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

Summary

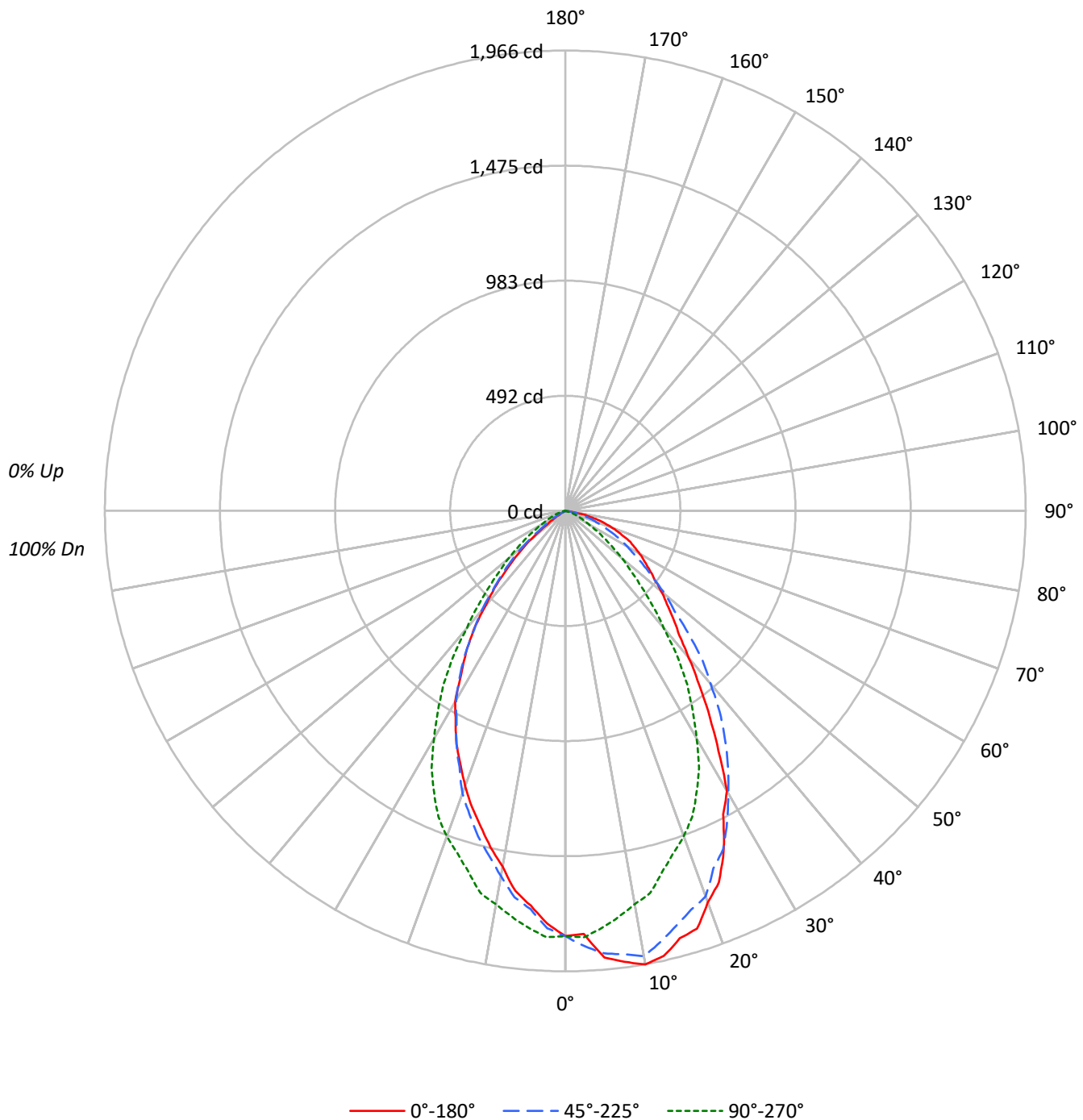
Lumens per Lamp: N/A
 Luminaire Lumens: 2603.0 lumens
 Efficiency: N/A
 Efficacy: 64.4 lumens/watt
 Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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 FEU4C359027 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°	175214	175214	175214
5°	185376	173152	163873
10°	192643	167042	151042
15°	188797	159429	139420
20°	182670	151804	128331
25°	170385	141171	117068
30°	153809	124931	104809
35°	126696	106954	86953
40°	103398	82552	66921
45°	88846	62701	48128
50°	80399	47720	30397
55°	73985	34418	10985
60°	71016	23524	1679
65°	68585	15913	502
70°	61416	11059	621
75°	50329	5704	0
80°	31450	2445	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	170.1	6.5
10°-20°	458.4	17.6
20°-30°	612.1	23.5
30°-40°	581.1	22.3
40°-50°	401.6	15.4
50°-60°	221.9	8.5
60°-70°	110.2	4.2
70°-80°	43.4	1.7
80°-90°	4.1	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°	1240.6	47.7
0°-40°	1821.7	70.0
0°-60°	2445.2	93.9
0°-90°	2603.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2603.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1816	1816	1816	1816	1816	
5°	1914	1896	1788	1707	1692	183
15°	1890	1833	1596	1439	1396	535
25°	1600	1594	1326	1100	1100	730
35°	1076	1189	908	747	738	674
45°	651	747	460	377	353	508
55°	440	414	205	104	65	396
65°	300	218	70	2	2	292
75°	135	83	15	0	0	144
85°	0	2	0	0	0	12
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°	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9
2.5°	1807.2	1857.3	1861.6	1857.3	1863.9	1861.6	1872.6	1861.6	1874.8	1855.2	1859.5
5°	1913.9	1894.3	1935.7	1913.9	1913.9	1911.8	1905.2	1903.0	1911.8	1883.5	1896.5
7.5°	1942.3	1970.6	2007.6	1961.9	1964.0	1964.0	1951.0	1946.6	1946.6	1894.3	1909.6
10°	1966.2	1948.7	1968.4	1951.0	1966.2	1964.0	1972.7	1944.4	1964.0	1933.5	1931.3
12.5°	1946.6	1940.0	1966.2	1937.9	1929.2	1931.3	1920.5	1913.9	1920.5	1885.6	1883.5
15°	1890.0	1896.5	1935.7	1905.2	1900.9	1896.5	1883.5	1861.6	1879.1	1831.2	1833.4
17.5°	1870.4	1859.5	1866.1	1839.9	1846.5	1842.1	1839.9	1820.3	1815.9	1785.5	1785.5
20°	1779.0	1802.9	1802.9	1785.5	1785.5	1783.3	1755.0	1772.4	1752.8	1744.1	1752.8
22.5°	1715.8	1718.0	1718.0	1702.7	1704.9	1696.2	1681.0	1670.0	1681.0	1670.0	1652.6
25°	1600.4	1604.8	1630.9	1602.6	1598.2	1606.9	1593.9	1587.3	1585.2	1559.1	1593.9
27.5°	1461.0	1504.5	1502.4	1491.5	1504.5	1487.1	1480.7	1482.8	1489.4	1487.1	1495.8
30°	1380.5	1387.0	1393.6	1384.9	1387.0	1380.5	1380.5	1382.6	1400.0	1393.6	1391.3
32.5°	1217.1	1238.9	1256.4	1256.4	1258.5	1265.1	1262.9	1308.6	1319.5	1297.8	1293.4
35°	1075.6	1090.9	1106.1	1108.3	1136.6	1138.8	1141.0	1154.0	1184.5	1191.0	1188.8
37.5°	940.7	955.9	960.2	979.8	995.1	1010.3	1027.8	1045.2	1071.3	1093.0	1082.2
40°	820.9	827.4	838.3	847.0	877.5	877.5	886.2	921.1	949.4	966.8	964.6
42.5°	720.8	722.9	731.6	746.9	775.2	768.6	775.2	799.1	840.4	842.7	866.6
45°	651.1	648.8	655.4	657.5	675.0	683.7	688.1	705.5	740.3	744.6	746.9
47.5°	587.9	585.7	596.6	601.0	607.5	616.2	616.2	618.4	631.4	642.4	633.7
50°	535.6	535.6	535.6	540.0	550.9	548.7	550.9	559.6	566.1	561.7	559.6
52.5°	479.0	487.7	494.3	496.5	498.6	498.6	500.8	496.5	494.3	487.7	474.6
55°	439.8	448.5	448.5	448.5	448.5	457.2	446.4	448.5	448.5	431.1	413.7
57.5°	400.7	409.4	415.9	407.2	415.9	407.2	402.8	400.7	396.2	378.8	352.7
60°	368.0	372.4	370.1	368.0	372.4	365.8	361.4	352.7	348.4	324.4	307.0
62.5°	331.0	333.1	335.3	331.0	326.6	324.4	315.7	302.7	294.0	274.3	259.1
65°	300.4	294.0	291.7	289.6	285.3	278.7	272.2	256.9	250.4	233.0	217.7
67.5°	254.7	252.6	256.9	250.4	239.5	239.5	233.0	219.9	204.6	193.8	178.5
70°	217.7	215.6	211.2	204.6	202.5	193.8	193.8	178.5	174.2	154.6	141.5
72.5°	178.5	178.5	172.0	165.5	158.9	154.6	152.4	141.5	135.0	124.1	113.2
75°	135.0	135.0	132.8	126.3	121.9	117.6	115.4	106.7	100.1	89.3	82.7
77.5°	95.8	95.8	87.1	82.7	84.9	80.5	76.2	74.0	71.8	65.3	56.6
80°	56.6	54.4	47.9	50.1	47.9	47.9	45.7	43.5	39.2	34.8	30.5
82.5°	15.3	17.4	17.4	17.4	19.6	15.3	15.3	15.3	17.4	17.4	10.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	2.2
87.5°	2.2	4.4	8.7	8.7	8.7	8.7	8.7	6.6	6.6	6.6	4.4
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°	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9
2.5°	1837.8	1835.5	1837.8	1822.5	1857.3	1831.2	1826.8	1822.5	1837.8	1822.5	1800.7
5°	1876.9	1855.2	1848.6	1842.1	1861.6	1831.2	1824.7	1826.8	1815.9	1787.7	1789.8
7.5°	1890.0	1870.4	1850.8	1809.4	1826.8	1820.3	1802.9	1789.8	1772.4	1748.4	1744.1
10°	1894.3	1872.6	1844.2	1831.2	1805.1	1796.4	1789.8	1768.1	1746.3	1704.9	1694.0
12.5°	1881.3	1855.2	1820.3	1809.4	1789.8	1761.5	1746.3	1724.5	1704.9	1672.3	1648.3
15°	1824.7	1802.9	1792.0	1755.0	1746.3	1728.8	1698.4	1667.9	1639.6	1596.0	1582.9
17.5°	1759.4	1750.7	1739.7	1711.4	1709.3	1691.9	1663.6	1637.4	1600.4	1532.9	1511.1
20°	1691.9	1691.9	1657.0	1646.2	1667.9	1633.0	1611.3	1587.3	1511.1	1478.4	1439.3
22.5°	1641.8	1617.8	1598.2	1580.8	1582.9	1561.2	1530.7	1482.8	1454.5	1415.3	1369.6
25°	1543.8	1552.5	1509.0	1502.4	1509.0	1458.8	1443.6	1404.4	1363.0	1326.0	1291.2
27.5°	1482.8	1458.8	1430.6	1406.6	1406.6	1387.0	1343.5	1334.8	1271.6	1236.8	1193.2
30°	1391.3	1373.9	1350.0	1315.2	1310.8	1295.5	1260.7	1238.9	1173.6	1121.3	1097.4
32.5°	1275.9	1269.4	1249.8	1210.7	1197.6	1180.1	1136.6	1099.6	1069.1	1010.3	982.0
35°	1193.2	1169.3	1127.9	1095.2	1084.3	1053.9	1019.0	992.9	960.2	908.0	871.0
37.5°	1069.1	1045.2	1005.9	966.8	966.8	936.3	888.4	862.3	816.6	786.0	755.6
40°	960.2	929.8	890.6	844.9	838.3	794.7	775.2	731.6	703.3	655.4	651.1
42.5°	838.3	810.0	775.2	740.3	714.2	692.4	642.4	609.7	579.2	555.3	548.7
45°	727.2	690.2	659.8	616.2	590.1	564.0	531.3	509.5	485.6	459.5	444.2
47.5°	631.4	601.0	557.4	518.2	492.1	479.0	442.0	418.1	398.5	381.1	370.1
50°	533.5	496.5	472.5	428.9	424.6	394.1	363.7	344.0	333.1	317.9	302.7
52.5°	459.5	424.6	391.9	359.3	341.8	331.0	302.7	283.0	267.9	256.9	248.2
55°	387.5	357.1	331.0	298.3	287.4	272.2	239.5	235.2	219.9	204.6	193.8
57.5°	333.1	304.8	274.3	252.6	233.0	222.1	195.9	178.5	169.8	156.8	145.9
60°	283.0	252.6	228.6	202.5	193.8	178.5	158.9	143.7	132.8	121.9	111.1
62.5°	237.3	211.2	185.1	163.3	150.2	141.5	126.3	113.2	102.4	93.7	84.9
65°	195.9	172.0	150.2	128.5	121.9	111.1	100.1	89.3	80.5	69.7	61.0
67.5°	161.1	139.4	117.6	102.4	95.8	91.4	78.4	67.5	61.0	54.4	45.7
70°	126.3	111.1	93.7	80.5	74.0	67.5	58.8	52.3	43.5	39.2	32.7
72.5°	98.0	84.9	69.7	58.8	54.4	50.1	41.4	34.8	30.5	26.1	21.8
75°	69.7	58.8	50.1	39.2	37.0	34.8	28.3	24.0	19.6	15.3	13.1
77.5°	47.9	39.2	30.5	26.1	24.0	19.6	17.4	13.1	10.9	8.7	6.6
80°	26.1	19.6	15.3	13.1	10.9	8.7	8.7	6.6	4.4	4.4	2.2
82.5°	8.7	6.6	4.4	2.2	2.2	2.2	2.2	2.2	2.2	0.0	2.2
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°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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°	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9
2.5°	1813.8	1789.8	1796.4	1796.4	1792.0	1792.0	1787.7	1781.1	1783.3	1770.2	1742.0
5°	1794.2	1763.7	1759.4	1763.7	1746.3	1742.0	1733.3	1746.3	1707.1	1722.3	1704.9
7.5°	1737.6	1709.3	1702.7	1718.0	1696.2	1683.1	1681.0	1698.4	1663.6	1646.2	1626.5
10°	1674.4	1663.6	1643.9	1633.0	1626.5	1628.7	1611.3	1589.5	1582.9	1578.6	1561.2
12.5°	1617.8	1593.9	1576.5	1563.4	1559.1	1559.1	1530.7	1526.4	1506.8	1502.4	1476.3
15°	1550.3	1522.0	1511.1	1493.7	1478.4	1487.1	1454.5	1445.8	1439.3	1411.0	1415.3
17.5°	1491.5	1461.0	1434.9	1424.0	1411.0	1397.9	1367.4	1373.9	1358.7	1358.7	1319.5
20°	1415.3	1382.6	1363.0	1341.3	1341.3	1323.9	1302.1	1304.2	1284.6	1265.1	1230.2
22.5°	1334.8	1299.9	1275.9	1267.2	1245.5	1241.1	1215.0	1208.4	1182.3	1184.5	1154.0
25°	1249.8	1215.0	1182.3	1184.5	1164.9	1156.2	1141.0	1110.5	1099.6	1086.5	1077.8
27.5°	1149.7	1125.7	1097.4	1095.2	1058.2	1060.4	1040.8	1032.1	1005.9	1012.5	992.9
30°	1058.2	1023.4	997.2	990.7	975.5	971.1	940.7	927.5	932.0	914.5	903.6
32.5°	964.6	912.3	901.4	888.4	879.7	868.8	847.0	855.7	836.1	840.4	823.0
35°	840.4	818.7	790.4	790.4	781.7	773.0	757.8	766.5	746.9	738.2	720.8
37.5°	735.9	716.4	688.1	696.8	681.5	668.5	655.4	657.5	640.1	638.0	620.5
40°	622.7	611.8	592.3	592.3	581.4	581.4	574.8	568.3	557.4	544.3	524.7
42.5°	516.0	507.3	498.6	500.8	485.6	498.6	481.2	492.1	457.2	455.1	442.0
45°	437.6	418.1	420.2	411.5	402.8	407.2	391.9	396.2	376.7	372.4	359.3
47.5°	355.0	348.4	335.3	331.0	331.0	324.4	317.9	315.7	307.0	296.1	278.7
50°	291.7	267.9	263.4	256.9	252.6	252.6	243.9	230.8	233.0	222.1	204.6
52.5°	228.6	209.0	200.3	198.2	189.5	185.1	174.2	165.5	158.9	154.6	143.7
55°	176.3	158.9	148.1	148.1	135.0	135.0	119.8	113.2	104.5	95.8	89.3
57.5°	132.8	124.1	113.2	104.5	100.1	89.3	80.5	69.7	63.1	50.1	41.4
60°	100.1	91.4	80.5	74.0	69.7	58.8	47.9	39.2	24.0	19.6	17.4
62.5°	74.0	65.3	54.4	50.1	45.7	37.0	26.1	13.1	6.6	6.6	6.6
65°	54.4	43.5	34.8	30.5	26.1	19.6	8.7	4.4	2.2	2.2	2.2
67.5°	37.0	28.3	19.6	17.4	13.1	6.6	2.2	2.2	2.2	2.2	2.2
70°	24.0	17.4	8.7	6.6	4.4	2.2	2.2	2.2	2.2	2.2	2.2
72.5°	15.3	8.7	4.4	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	8.7	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	4.4	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.2	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	2.2	2.2	2.2
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-LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9	1815.9
2.5°	1772.4	1757.1	1765.8	1746.3	1755.0	1770.2	1759.4	1763.7
5°	1711.4	1702.7	1691.9	1663.6	1685.3	1702.7	1694.0	1691.9
7.5°	1646.2	1615.6	1630.9	1622.2	1617.8	1635.2	1615.6	1637.4
10°	1578.6	1556.8	1554.7	1539.4	1539.4	1552.5	1554.7	1541.6
12.5°	1478.4	1467.6	1467.6	1465.4	1463.2	1476.3	1478.4	1472.0
15°	1406.6	1402.3	1391.3	1389.2	1376.2	1395.7	1397.9	1395.7
17.5°	1319.5	1321.6	1310.8	1310.8	1319.5	1326.0	1308.6	1326.0
20°	1260.7	1249.8	1245.5	1225.8	1236.8	1247.7	1247.7	1249.8
22.5°	1175.8	1158.4	1164.9	1154.0	1147.5	1162.7	1162.7	1169.3
25°	1080.0	1080.0	1084.3	1077.8	1082.2	1090.9	1084.3	1099.6
27.5°	988.5	997.2	997.2	988.5	992.9	1019.0	1029.9	1012.5
30°	903.6	905.8	912.3	908.0	921.1	929.8	927.5	940.7
32.5°	807.8	818.7	823.0	816.6	820.9	840.4	829.6	827.4
35°	733.8	714.2	712.1	714.2	722.9	727.2	722.9	738.2
37.5°	627.1	620.5	611.8	614.0	620.5	629.3	633.7	644.5
40°	524.7	516.0	516.0	513.9	507.3	531.3	531.3	531.3
42.5°	435.5	433.3	422.4	422.4	431.1	437.6	433.3	448.5
45°	357.1	348.4	341.8	341.8	348.4	348.4	355.0	352.7
47.5°	280.9	272.2	274.3	267.9	274.3	283.0	272.2	274.3
50°	211.2	211.2	206.9	211.2	209.0	211.2	206.9	202.5
52.5°	143.7	163.3	165.5	156.8	137.2	119.8	108.9	117.6
55°	82.7	74.0	74.0	71.8	67.5	65.3	58.8	65.3
57.5°	41.4	37.0	37.0	37.0	34.8	32.7	28.3	28.3
60°	17.4	15.3	15.3	13.1	10.9	8.7	6.6	8.7
62.5°	6.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4
65°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)