

Scaled data based on original data using
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: P646009

Luminaire Tested: **FLDSQ4C35D010 FEU4C359030 F4LC-SQLWW-LI-D2W**

Issue Date: 12/13/2022

Test Information

Test Method: LM-79-08
Report Number: P646009
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P219529)
Test Lab: INNOVATION CENTER
Issue Date: 12/13/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FLDSQ4C35D010 FEU4C359030 F4LC-SQLWW-LI-D2W
Description: 4 INCH 3500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS
AND F4LC-SQLWW TRIM WITH LI FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2706.0 lumens
Efficiency: N/A
Efficacy: 67.0 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

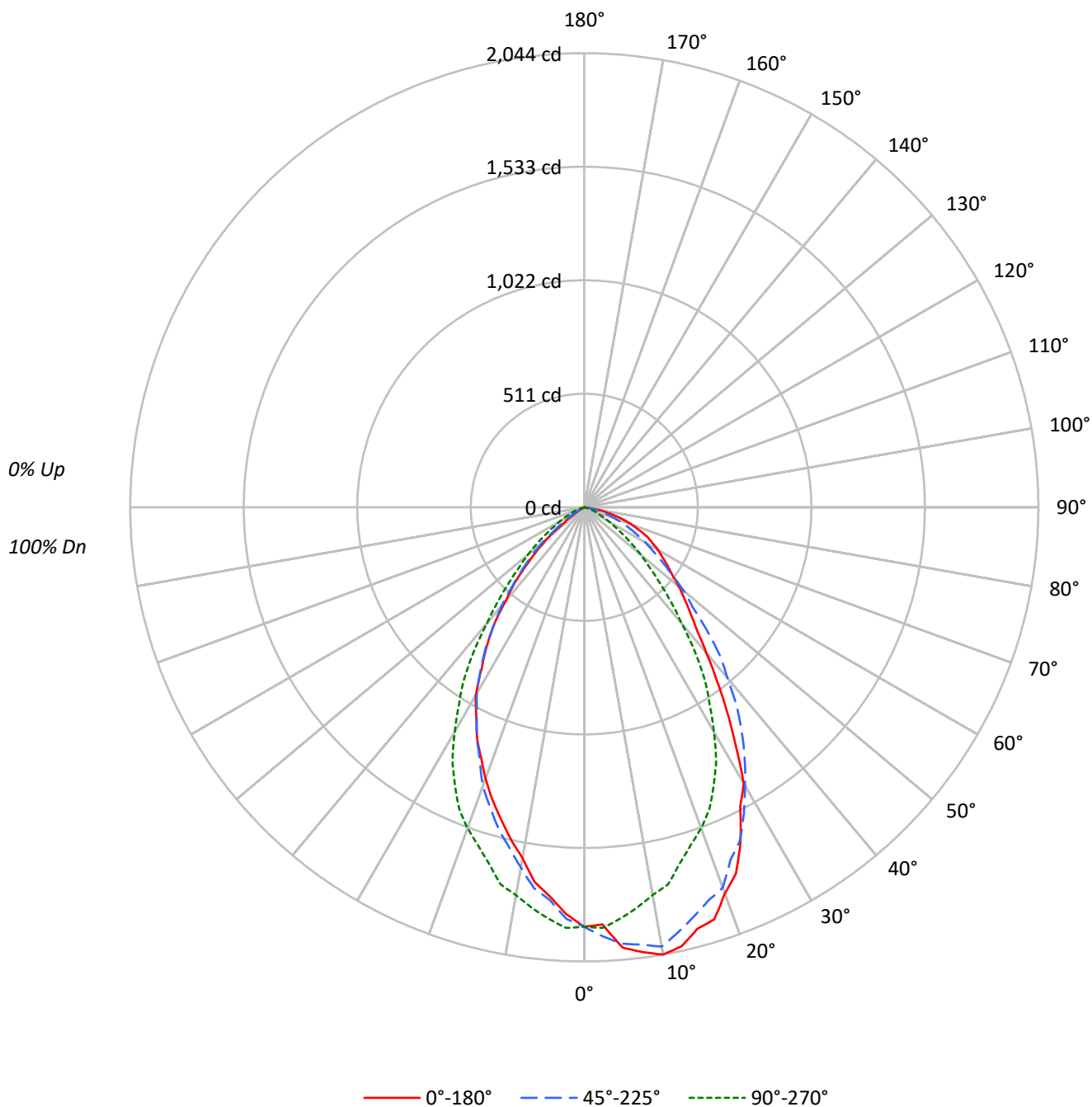
Input Watts (W): 40.4
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
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°	182152	182152	182152
5°	192717	180000	170353
10°	200266	173655	157019
15°	196259	165732	144934
20°	189899	157811	133414
25°	177134	146760	121699
30°	159893	129877	108953
35°	131714	111183	90393
40°	107492	85815	69566
45°	92353	65171	50038
50°	83581	49611	31598
55°	76912	35781	11422
60°	73833	24450	1737
65°	71302	16553	525
70°	63843	11482	649
75°	52342	5928	0
80°	32728	2500	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.9	6.5
10°-20°	476.5	17.6
20°-30°	636.3	23.5
30°-40°	604.0	22.3
40°-50°	417.5	15.4
50°-60°	230.7	8.5
60°-70°	114.6	4.2
70°-80°	45.1	1.7
80°-90°	4.3	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°	1289.7	47.7
0°-40°	1893.8	70.0
0°-60°	2542.0	93.9
0°-90°	2706.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2706.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1888	1888	1888	1888	1888	
5°	1990	1972	1858	1775	1759	190
15°	1965	1906	1659	1496	1451	556
25°	1664	1657	1378	1143	1143	758
35°	1118	1236	944	776	767	701
45°	677	776	478	392	367	528
55°	457	430	213	109	68	412
65°	312	226	72	2	2	303
75°	140	86	16	0	0	150
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°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1878.7	1930.8	1935.3	1930.8	1937.6	1935.3	1946.7	1935.3	1949.0	1928.6	1933.1
5°	1989.7	1969.3	2012.3	1989.7	1989.7	1987.4	1980.6	1978.3	1987.4	1958.0	1971.6
7.5°	2019.1	2048.5	2087.0	2039.5	2041.7	2041.7	2028.2	2023.6	2023.6	1969.3	1985.1
10°	2044.0	2025.8	2046.2	2028.2	2044.0	2041.7	2050.8	2021.3	2041.7	2010.1	2007.8
12.5°	2023.6	2016.8	2044.0	2014.6	2005.5	2007.8	1996.5	1989.7	1996.5	1960.2	1958.0
15°	1964.7	1971.6	2012.3	1980.6	1976.1	1971.6	1958.0	1935.3	1953.5	1903.6	1905.9
17.5°	1944.4	1933.1	1939.9	1912.7	1919.5	1915.0	1912.7	1892.4	1887.8	1856.1	1856.1
20°	1849.4	1874.2	1874.2	1856.1	1856.1	1853.9	1824.4	1842.5	1822.1	1813.1	1822.1
22.5°	1783.7	1786.0	1786.0	1770.1	1772.4	1763.3	1747.5	1736.1	1747.5	1736.1	1718.0
25°	1663.8	1668.3	1695.4	1666.0	1661.5	1670.5	1656.9	1650.1	1647.9	1620.7	1656.9
27.5°	1518.9	1564.1	1561.9	1550.5	1564.1	1546.0	1539.2	1541.5	1548.3	1546.0	1555.0
30°	1435.1	1441.9	1448.7	1439.7	1441.9	1435.1	1435.1	1437.4	1455.4	1448.7	1446.4
32.5°	1265.3	1287.9	1306.1	1306.1	1308.3	1315.1	1312.8	1360.4	1371.7	1349.1	1344.6
35°	1118.2	1134.1	1149.8	1152.2	1181.6	1183.8	1186.1	1199.7	1231.3	1238.2	1235.9
37.5°	977.9	993.7	998.2	1018.6	1034.5	1050.3	1068.4	1086.5	1113.7	1136.3	1125.0
40°	853.4	860.1	871.5	880.5	912.2	912.2	921.2	957.5	986.9	1005.0	1002.7
42.5°	749.3	751.5	760.5	776.4	805.9	799.0	805.9	830.8	873.7	876.0	900.9
45°	676.8	674.5	681.3	683.6	701.7	710.8	715.3	733.4	769.6	774.1	776.4
47.5°	611.2	608.9	620.2	624.8	631.5	640.5	640.5	642.9	656.4	667.8	658.7
50°	556.8	556.8	556.8	561.4	572.7	570.4	572.7	581.8	588.5	584.0	581.8
52.5°	497.9	507.0	513.8	516.1	518.3	518.3	520.7	516.1	513.8	507.0	493.4
55°	457.2	466.3	466.3	466.3	466.3	475.3	464.1	466.3	466.3	448.2	430.1
57.5°	416.5	425.6	432.3	423.3	432.3	423.3	418.8	416.5	411.9	393.8	366.7
60°	382.6	387.1	384.8	382.6	387.1	380.3	375.7	366.7	362.2	337.3	319.2
62.5°	344.1	346.3	348.6	344.1	339.6	337.3	328.2	314.6	305.6	285.2	269.3
65°	312.3	305.6	303.3	301.1	296.6	289.7	283.0	267.1	260.3	242.2	226.3
67.5°	264.8	262.6	267.1	260.3	249.0	249.0	242.2	228.6	212.7	201.5	185.6
70°	226.3	224.1	219.6	212.7	210.5	201.5	201.5	185.6	181.1	160.7	147.1
72.5°	185.6	185.6	178.8	172.0	165.2	160.7	158.5	147.1	140.4	129.0	117.7
75°	140.4	140.4	138.1	131.2	126.7	122.2	120.0	110.9	104.1	92.8	86.0
77.5°	99.6	99.6	90.5	86.0	88.2	83.7	79.2	77.0	74.7	67.9	58.9
80°	58.9	56.6	49.8	52.1	49.8	49.8	47.5	45.2	40.7	36.2	31.7
82.5°	15.9	18.1	18.1	18.1	20.4	15.9	15.9	15.9	18.1	18.1	11.4
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	4.5	9.0	9.0	9.0	9.0	9.0	6.8	6.8	6.8	4.5
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°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1910.5	1908.2	1910.5	1894.6	1930.8	1903.6	1899.1	1894.6	1910.5	1894.6	1872.0
5°	1951.2	1928.6	1921.7	1915.0	1935.3	1903.6	1896.9	1899.1	1887.8	1858.4	1860.6
7.5°	1964.7	1944.4	1924.0	1881.0	1899.1	1892.4	1874.2	1860.6	1842.5	1817.6	1813.1
10°	1969.3	1946.7	1917.2	1903.6	1876.5	1867.5	1860.6	1838.0	1815.4	1772.4	1761.0
12.5°	1955.7	1928.6	1892.4	1881.0	1860.6	1831.2	1815.4	1792.7	1772.4	1738.4	1713.5
15°	1896.9	1874.2	1862.9	1824.4	1815.4	1797.2	1765.6	1733.9	1704.5	1659.1	1645.6
17.5°	1829.0	1819.9	1808.6	1779.1	1776.9	1758.8	1729.4	1702.2	1663.8	1593.5	1570.9
20°	1758.8	1758.8	1722.6	1711.3	1733.9	1697.6	1675.0	1650.1	1570.9	1536.9	1496.2
22.5°	1706.8	1681.8	1661.5	1643.4	1645.6	1623.0	1591.3	1541.5	1512.0	1471.3	1423.8
25°	1604.9	1613.9	1568.7	1561.9	1568.7	1516.5	1500.8	1460.0	1417.0	1378.5	1342.3
27.5°	1541.5	1516.5	1487.2	1462.3	1462.3	1441.9	1396.6	1387.6	1321.9	1285.7	1240.4
30°	1446.4	1428.3	1403.4	1367.2	1362.7	1346.8	1310.6	1287.9	1220.1	1165.7	1140.8
32.5°	1326.4	1319.7	1299.3	1258.6	1245.0	1226.8	1181.6	1143.1	1111.4	1050.3	1020.9
35°	1240.4	1215.6	1172.5	1138.6	1127.2	1095.6	1059.3	1032.2	998.2	943.9	905.4
37.5°	1111.4	1086.5	1045.7	1005.0	1005.0	973.4	923.5	896.4	848.9	817.1	785.5
40°	998.2	966.5	925.8	878.3	871.5	826.2	805.9	760.5	731.1	681.3	676.8
42.5°	871.5	842.0	805.9	769.6	742.4	719.8	667.8	633.8	602.1	577.2	570.4
45°	756.0	717.5	685.9	640.5	613.4	586.3	552.3	529.7	504.8	477.6	461.8
47.5°	656.4	624.8	579.4	538.7	511.6	497.9	459.5	434.6	414.2	396.1	384.8
50°	554.6	516.1	491.2	445.9	441.4	409.7	378.1	357.7	346.3	330.5	314.6
52.5°	477.6	441.4	407.4	373.5	355.3	344.1	314.6	294.2	278.5	267.1	258.1
55°	402.9	371.2	344.1	310.1	298.8	283.0	249.0	244.5	228.6	212.7	201.5
57.5°	346.3	316.9	285.2	262.6	242.2	230.9	203.7	185.6	176.6	163.0	151.6
60°	294.2	262.6	237.7	210.5	201.5	185.6	165.2	149.4	138.1	126.7	115.5
62.5°	246.7	219.6	192.4	169.7	156.2	147.1	131.2	117.7	106.4	97.4	88.2
65°	203.7	178.8	156.2	133.6	126.7	115.5	104.1	92.8	83.7	72.5	63.4
67.5°	167.5	144.9	122.2	106.4	99.6	95.1	81.5	70.1	63.4	56.6	47.5
70°	131.2	115.5	97.4	83.7	77.0	70.1	61.1	54.4	45.2	40.7	34.0
72.5°	101.9	88.2	72.5	61.1	56.6	52.1	43.0	36.2	31.7	27.1	22.6
75°	72.5	61.1	52.1	40.7	38.5	36.2	29.4	24.9	20.4	15.9	13.6
77.5°	49.8	40.7	31.7	27.1	24.9	20.4	18.1	13.6	11.4	9.0	6.8
80°	27.1	20.4	15.9	13.6	11.4	9.0	9.0	6.8	4.5	4.5	2.3
82.5°	9.0	6.8	4.5	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°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1885.6	1860.6	1867.5	1867.5	1862.9	1862.9	1858.4	1851.6	1853.9	1840.2	1810.9
5°	1865.2	1833.5	1829.0	1833.5	1815.4	1810.9	1801.8	1815.4	1774.6	1790.5	1772.4
7.5°	1806.4	1776.9	1770.1	1786.0	1763.3	1749.7	1747.5	1765.6	1729.4	1711.3	1690.9
10°	1740.6	1729.4	1709.0	1697.6	1690.9	1693.1	1675.0	1652.4	1645.6	1641.1	1623.0
12.5°	1681.8	1656.9	1638.8	1625.3	1620.7	1620.7	1591.3	1586.8	1566.4	1561.9	1534.7
15°	1611.6	1582.3	1570.9	1552.8	1536.9	1546.0	1512.0	1503.0	1496.2	1466.8	1471.3
17.5°	1550.5	1518.9	1491.7	1480.4	1466.8	1453.2	1421.5	1428.3	1412.4	1412.4	1371.7
20°	1471.3	1437.4	1417.0	1394.3	1394.3	1376.3	1353.6	1355.9	1335.5	1315.1	1278.9
22.5°	1387.6	1351.3	1326.4	1317.4	1294.8	1290.2	1263.1	1256.3	1229.1	1231.3	1199.7
25°	1299.3	1263.1	1229.1	1231.3	1211.0	1202.0	1186.1	1154.5	1143.1	1129.5	1120.5
27.5°	1195.2	1170.2	1140.8	1138.6	1100.1	1102.3	1082.0	1073.0	1045.7	1052.6	1032.2
30°	1100.1	1063.9	1036.7	1029.9	1014.1	1009.6	977.9	964.2	968.8	950.7	939.4
32.5°	1002.7	948.5	937.1	923.5	914.5	903.1	880.5	889.6	869.2	873.7	855.6
35°	873.7	851.1	821.6	821.6	812.6	803.5	787.8	796.8	776.4	767.4	749.3
37.5°	765.1	744.7	715.3	724.4	708.5	694.9	681.3	683.6	665.5	663.3	645.1
40°	647.4	636.0	615.7	615.7	604.4	604.4	597.5	590.8	579.4	565.9	545.5
42.5°	536.4	527.4	518.3	520.7	504.8	518.3	500.3	511.6	475.3	473.1	459.5
45°	454.9	434.6	436.8	427.8	418.8	423.3	407.4	411.9	391.6	387.1	373.5
47.5°	369.0	362.2	348.6	344.1	344.1	337.3	330.5	328.2	319.2	307.8	289.7
50°	303.3	278.5	273.8	267.1	262.6	262.6	253.5	240.0	242.2	230.9	212.7
52.5°	237.7	217.3	208.2	206.0	197.0	192.4	181.1	172.0	165.2	160.7	149.4
55°	183.3	165.2	154.0	154.0	140.4	140.4	124.5	117.7	108.6	99.6	92.8
57.5°	138.1	129.0	117.7	108.6	104.1	92.8	83.7	72.5	65.6	52.1	43.0
60°	104.1	95.1	83.7	77.0	72.5	61.1	49.8	40.7	24.9	20.4	18.1
62.5°	77.0	67.9	56.6	52.1	47.5	38.5	27.1	13.6	6.8	6.8	6.8
65°	56.6	45.2	36.2	31.7	27.1	20.4	9.0	4.5	2.3	2.3	2.3
67.5°	38.5	29.4	20.4	18.1	13.6	6.8	2.3	2.3	2.3	2.3	2.3
70°	24.9	18.1	9.0	6.8	4.5	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	15.9	9.0	4.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	9.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	4.5	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: P646009

CATALOG NUMBER: FLDSQ4C35D010 FEU4C359030 F4LC-SQLWW-LI-D2W

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1842.5	1826.7	1835.7	1815.4	1824.4	1840.2	1829.0	1833.5
5°	1779.1	1770.1	1758.8	1729.4	1752.0	1770.1	1761.0	1758.8
7.5°	1711.3	1679.5	1695.4	1686.4	1681.8	1699.9	1679.5	1702.2
10°	1641.1	1618.4	1616.2	1600.4	1600.4	1613.9	1616.2	1602.6
12.5°	1536.9	1525.7	1525.7	1523.4	1521.1	1534.7	1536.9	1530.2
15°	1462.3	1457.7	1446.4	1444.2	1430.6	1450.9	1453.2	1450.9
17.5°	1371.7	1373.9	1362.7	1362.7	1371.7	1378.5	1360.4	1378.5
20°	1310.6	1299.3	1294.8	1274.4	1285.7	1297.1	1297.1	1299.3
22.5°	1222.3	1204.2	1211.0	1199.7	1192.9	1208.7	1208.7	1215.6
25°	1122.7	1122.7	1127.2	1120.5	1125.0	1134.1	1127.2	1143.1
27.5°	1027.6	1036.7	1036.7	1027.6	1032.2	1059.3	1070.7	1052.6
30°	939.4	941.6	948.5	943.9	957.5	966.5	964.2	977.9
32.5°	839.8	851.1	855.6	848.9	853.4	873.7	862.4	860.1
35°	762.8	742.4	740.2	742.4	751.5	756.0	751.5	767.4
37.5°	651.9	645.1	636.0	638.3	645.1	654.2	658.7	670.0
40°	545.5	536.4	536.4	534.2	527.4	552.3	552.3	552.3
42.5°	452.7	450.4	439.2	439.2	448.2	454.9	450.4	466.3
45°	371.2	362.2	355.3	355.3	362.2	362.2	369.0	366.7
47.5°	292.0	283.0	285.2	278.5	285.2	294.2	283.0	285.2
50°	219.6	219.6	215.1	219.6	217.3	219.6	215.1	210.5
52.5°	149.4	169.7	172.0	163.0	142.6	124.5	113.2	122.2
55°	86.0	77.0	77.0	74.7	70.1	67.9	61.1	67.9
57.5°	43.0	38.5	38.5	38.5	36.2	34.0	29.4	29.4
60°	18.1	15.9	15.9	13.6	11.4	9.0	6.8	9.0
62.5°	6.8	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)