

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: P646063

Luminaire Tested: **FLDSQ4C40D010 FEU4C409030 F4LC-SQLWW-LI-D2W**

Issue Date: 12/13/2022

**Test Information**

Test Method: LM-79-08  
Report Number: P646063  
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: FLDSQ4C40D010 FEU4C409030 F4LC-SQLWW-LI-D2W  
Description: 4 INCH 4000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH LI FINISH, DIM TO WARM  
Light Source: -  
Ballast/Driver: -

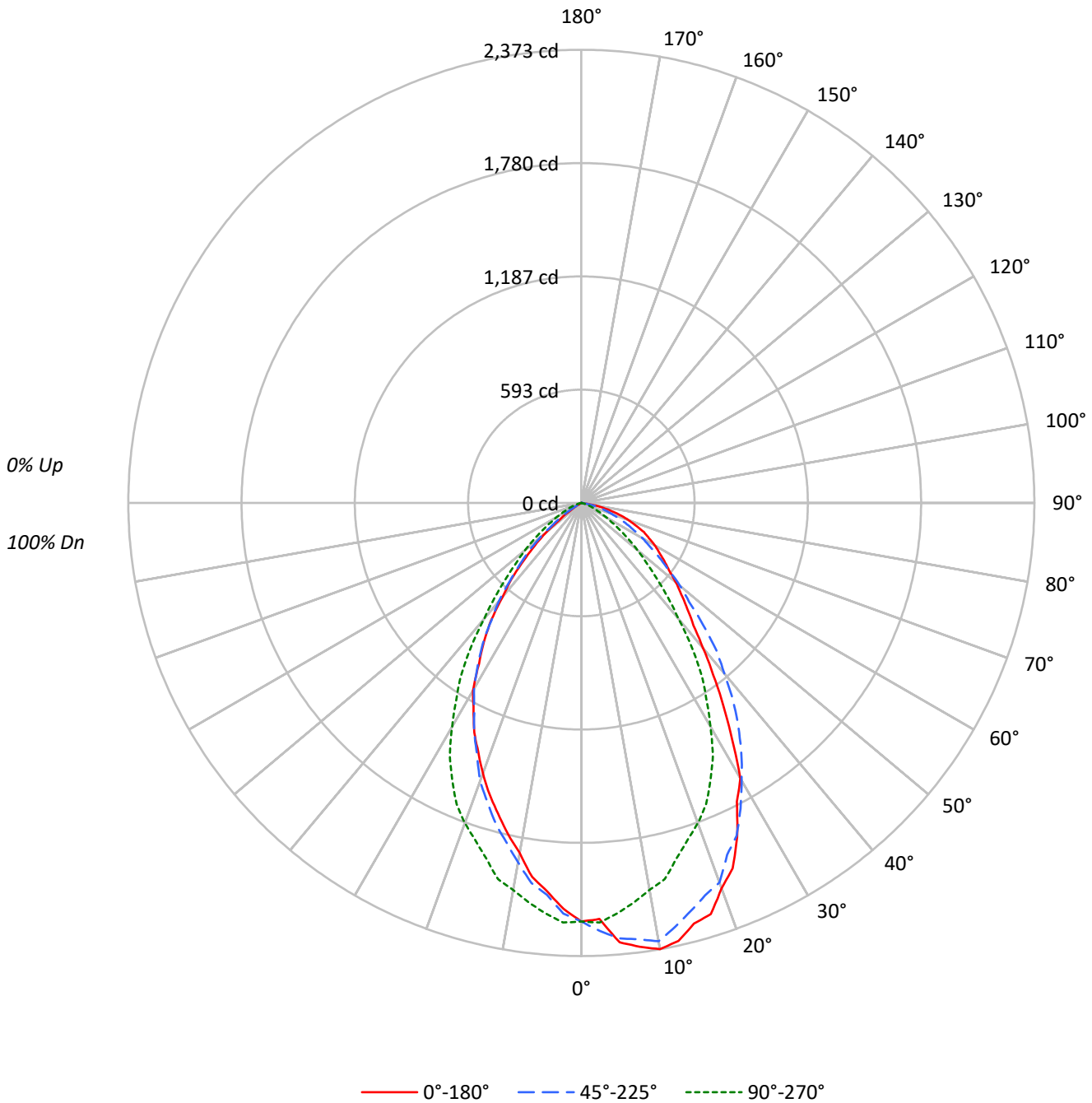
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3141.0 lumens  
Efficiency: N/A  
Efficacy: 66.8 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): 47  
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



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### Luminous Intensity Polar Plot





TEST NUMBER: P646063

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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°	211426	211426	211426
5°	223692	208941	197744
10°	232461	201569	182258
15°	227815	192383	168239
20°	220426	183184	154854
25°	205603	170353	141267
30°	185596	150757	126468
35°	152881	129064	104917
40°	124773	99620	80751
45°	107200	75651	58076
50°	97016	57582	36687
55°	89276	41534	13273
60°	85701	28387	2026
65°	82763	19201	616
70°	74112	13316	762
75°	60767	6860	0
80°	38007	2889	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.3	6.5
10°-20°	553.1	17.6
20°-30°	738.6	23.5
30°-40°	701.1	22.3
40°-50°	484.7	15.4
50°-60°	267.8	8.5
60°-70°	133.0	4.2
70°-80°	52.4	1.7
80°-90°	5.0	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°	1497.0	47.7
0°-40°	2198.2	70.0
0°-60°	2950.6	93.9
0°-90°	3141.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3141.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2191	2191	2191	2191	2191	
5°	2310	2288	2157	2060	2042	221
15°	2281	2212	1926	1737	1684	645
25°	1931	1923	1600	1327	1327	880
35°	1298	1434	1096	901	891	813
45°	786	901	554	455	426	613
55°	531	499	247	126	79	478
65°	362	263	84	3	3	352
75°	163	100	18	0	0	174
85°	0	3	0	0	0	15
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°	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2
2.5°	2180.7	2241.2	2246.4	2241.2	2249.1	2246.4	2259.6	2246.4	2262.3	2238.6	2243.8
5°	2309.5	2285.8	2335.8	2309.5	2309.5	2306.9	2299.0	2296.3	2306.9	2272.8	2288.5
7.5°	2343.7	2377.9	2422.5	2367.4	2369.9	2369.9	2354.2	2348.9	2348.9	2285.8	2304.3
10°	2372.6	2351.5	2375.2	2354.2	2372.6	2369.9	2380.4	2346.3	2369.9	2333.2	2330.5
12.5°	2348.9	2341.0	2372.6	2338.4	2327.9	2330.5	2317.4	2309.5	2317.4	2275.3	2272.8
15°	2280.6	2288.5	2335.8	2299.0	2293.8	2288.5	2272.8	2246.4	2267.5	2209.7	2212.3
17.5°	2257.0	2243.8	2251.8	2220.2	2228.1	2222.8	2220.2	2196.6	2191.2	2154.5	2154.5
20°	2146.7	2175.5	2175.5	2154.5	2154.5	2151.9	2117.7	2138.7	2115.1	2104.6	2115.1
22.5°	2070.4	2073.1	2073.1	2054.6	2057.3	2046.8	2028.4	2015.2	2028.4	2015.2	1994.2
25°	1931.2	1936.5	1968.0	1933.8	1928.5	1939.0	1923.3	1915.4	1912.8	1881.3	1923.3
27.5°	1763.0	1815.5	1812.9	1799.8	1815.5	1794.5	1786.7	1789.3	1797.2	1794.5	1805.0
30°	1665.8	1673.7	1681.6	1671.1	1673.7	1665.8	1665.8	1668.4	1689.4	1681.6	1678.9
32.5°	1468.7	1495.0	1516.1	1516.1	1518.6	1526.6	1523.9	1579.1	1592.2	1566.0	1560.7
35°	1297.9	1316.4	1334.7	1337.4	1371.5	1374.1	1376.8	1392.5	1429.3	1437.2	1434.5
37.5°	1135.1	1153.4	1158.7	1182.3	1200.8	1219.1	1240.2	1261.2	1292.7	1318.9	1305.9
40°	990.6	998.4	1011.6	1022.1	1058.8	1058.8	1069.3	1111.4	1145.6	1166.6	1163.9
42.5°	869.7	872.3	882.8	901.2	935.4	927.5	935.4	964.3	1014.1	1016.8	1045.7
45°	785.6	782.9	790.9	793.4	814.5	825.0	830.3	851.3	893.3	898.5	901.2
47.5°	709.4	706.8	719.9	725.2	733.0	743.5	743.5	746.2	761.9	775.1	764.6
50°	646.3	646.3	646.3	651.6	664.8	662.1	664.8	675.3	683.1	677.8	675.3
52.5°	578.0	588.5	596.4	599.1	601.7	601.7	604.3	599.1	596.4	588.5	572.7
55°	530.7	541.2	541.2	541.2	541.2	551.7	538.7	541.2	541.2	520.2	499.2
57.5°	483.5	494.0	501.8	491.3	501.8	491.3	486.1	483.5	478.1	457.1	425.6
60°	444.1	449.3	446.6	444.1	449.3	441.4	436.1	425.6	420.4	391.5	370.5
62.5°	399.4	402.0	404.6	399.4	394.1	391.5	381.0	365.2	354.7	331.0	312.6
65°	362.5	354.7	352.0	349.5	344.2	336.3	328.5	310.0	302.1	281.1	262.7
67.5°	307.4	304.8	310.0	302.1	289.0	289.0	281.1	265.4	246.9	233.9	215.4
70°	262.7	260.1	254.9	246.9	244.4	233.9	233.9	215.4	210.2	186.5	170.8
72.5°	215.4	215.4	207.5	199.7	191.8	186.5	183.9	170.8	163.0	149.8	136.6
75°	163.0	163.0	160.3	152.3	147.1	141.8	139.3	128.8	120.8	107.8	99.8
77.5°	115.6	115.6	105.1	99.8	102.4	97.2	91.9	89.3	86.7	78.9	68.4
80°	68.4	65.7	57.9	60.4	57.9	57.9	55.2	52.5	47.2	42.0	36.7
82.5°	18.4	21.0	21.0	21.0	23.7	18.4	18.4	18.4	21.0	21.0	13.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	2.7
87.5°	2.7	5.2	10.5	10.5	10.5	10.5	10.5	7.9	7.9	7.9	5.2
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°	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2
2.5°	2217.6	2214.9	2217.6	2199.2	2241.2	2209.7	2204.4	2199.2	2217.6	2199.2	2172.9
5°	2264.8	2238.6	2230.7	2222.8	2246.4	2209.7	2201.8	2204.4	2191.2	2157.2	2159.7
7.5°	2280.6	2257.0	2233.3	2183.4	2204.4	2196.6	2175.5	2159.7	2138.7	2109.8	2104.6
10°	2285.8	2259.6	2225.4	2209.7	2178.2	2167.7	2159.7	2133.5	2107.2	2057.3	2044.1
12.5°	2270.1	2238.6	2196.6	2183.4	2159.7	2125.6	2107.2	2080.9	2057.3	2017.9	1989.0
15°	2201.8	2175.5	2162.4	2117.7	2107.2	2086.1	2049.4	2012.6	1978.5	1925.9	1910.1
17.5°	2123.0	2112.5	2099.3	2065.1	2062.6	2041.6	2007.4	1975.8	1931.2	1849.7	1823.4
20°	2041.6	2041.6	1999.5	1986.4	2012.6	1970.5	1944.3	1915.4	1823.4	1784.0	1736.8
22.5°	1981.1	1952.2	1928.5	1907.5	1910.1	1883.9	1847.1	1789.3	1755.1	1707.8	1652.7
25°	1862.9	1873.4	1820.9	1812.9	1820.9	1760.3	1742.0	1694.7	1644.7	1600.1	1558.1
27.5°	1789.3	1760.3	1726.3	1697.3	1697.3	1673.7	1621.2	1610.7	1534.4	1492.4	1439.8
30°	1678.9	1657.9	1629.0	1587.0	1581.7	1563.3	1521.3	1495.0	1416.2	1353.1	1324.2
32.5°	1539.6	1531.8	1508.1	1460.9	1445.1	1424.0	1371.5	1326.9	1290.1	1219.1	1185.0
35°	1439.8	1411.0	1361.0	1321.6	1308.4	1271.7	1229.6	1198.1	1158.7	1095.7	1051.0
37.5°	1290.1	1261.2	1213.8	1166.6	1166.6	1129.8	1072.0	1040.5	985.3	948.5	911.7
40°	1158.7	1121.9	1074.7	1019.5	1011.6	959.0	935.4	882.8	848.6	790.9	785.6
42.5°	1011.6	977.4	935.4	893.3	861.8	835.5	775.1	735.7	698.9	670.0	662.1
45°	877.5	832.9	796.1	743.5	712.0	680.5	641.1	614.8	585.9	554.4	536.0
47.5°	761.9	725.2	672.6	625.3	593.8	578.0	533.3	504.5	480.8	459.8	446.6
50°	643.8	599.1	570.2	517.6	512.3	475.6	438.8	415.1	402.0	383.6	365.2
52.5°	554.4	512.3	472.9	433.6	412.5	399.4	365.2	341.5	323.2	310.0	299.5
55°	467.6	430.9	399.4	360.0	346.8	328.5	289.0	283.8	265.4	246.9	233.9
57.5°	402.0	367.8	331.0	304.8	281.1	268.0	236.4	215.4	204.9	189.2	176.0
60°	341.5	304.8	275.9	244.4	233.9	215.4	191.8	173.4	160.3	147.1	134.0
62.5°	286.4	254.9	223.4	197.0	181.3	170.8	152.3	136.6	123.5	113.0	102.4
65°	236.4	207.5	181.3	155.0	147.1	134.0	120.8	107.8	97.2	84.1	73.6
67.5°	194.4	168.2	141.8	123.5	115.6	110.3	94.6	81.4	73.6	65.7	55.2
70°	152.3	134.0	113.0	97.2	89.3	81.4	70.9	63.1	52.5	47.2	39.4
72.5°	118.3	102.4	84.1	70.9	65.7	60.4	49.9	42.0	36.7	31.5	26.2
75°	84.1	70.9	60.4	47.2	44.7	42.0	34.2	28.9	23.7	18.4	15.7
77.5°	57.9	47.2	36.7	31.5	28.9	23.7	21.0	15.7	13.2	10.5	7.9
80°	31.5	23.7	18.4	15.7	13.2	10.5	10.5	7.9	5.2	5.2	2.7
82.5°	10.5	7.9	5.2	2.7	2.7	2.7	2.7	2.7	2.7	0.0	2.7
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°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	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°	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2
2.5°	2188.7	2159.7	2167.7	2167.7	2162.4	2162.4	2157.2	2149.2	2151.9	2136.1	2102.0
5°	2165.0	2128.2	2123.0	2128.2	2107.2	2102.0	2091.5	2107.2	2059.9	2078.3	2057.3
7.5°	2096.7	2062.6	2054.6	2073.1	2046.8	2031.0	2028.4	2049.4	2007.4	1986.4	1962.7
10°	2020.5	2007.4	1983.7	1970.5	1962.7	1965.3	1944.3	1918.0	1910.1	1904.9	1883.9
12.5°	1952.2	1923.3	1902.3	1886.5	1881.3	1881.3	1847.1	1841.9	1818.2	1812.9	1781.4
15°	1870.7	1836.6	1823.4	1802.4	1784.0	1794.5	1755.1	1744.6	1736.8	1702.6	1707.8
17.5°	1799.8	1763.0	1731.5	1718.3	1702.6	1686.8	1650.0	1657.9	1639.5	1639.5	1592.2
20°	1707.8	1668.4	1644.7	1618.5	1618.5	1597.5	1571.2	1573.8	1550.1	1526.6	1484.5
22.5°	1610.7	1568.6	1539.6	1529.1	1502.9	1497.6	1466.1	1458.2	1426.7	1429.3	1392.5
25°	1508.1	1466.1	1426.7	1429.3	1405.7	1395.2	1376.8	1340.0	1326.9	1311.1	1300.6
27.5°	1387.3	1358.4	1324.2	1321.6	1276.9	1279.5	1255.9	1245.4	1213.8	1221.8	1198.1
30°	1276.9	1234.9	1203.3	1195.5	1177.1	1171.8	1135.1	1119.2	1124.6	1103.5	1090.4
32.5°	1163.9	1100.9	1087.7	1072.0	1061.5	1048.3	1022.1	1032.6	1008.9	1014.1	993.1
35°	1014.1	987.9	953.7	953.7	943.2	932.7	914.4	924.9	901.2	890.7	869.7
37.5°	888.0	864.5	830.3	840.8	822.4	806.6	790.9	793.4	772.4	769.9	748.8
40°	751.4	738.3	714.7	714.7	701.5	701.5	693.6	685.8	672.6	656.8	633.2
42.5°	622.7	612.2	601.7	604.3	585.9	601.7	580.7	593.8	551.7	549.2	533.3
45°	528.1	504.5	507.1	496.6	486.1	491.3	472.9	478.1	454.6	449.3	433.6
47.5°	428.3	420.4	404.6	399.4	399.4	391.5	383.6	381.0	370.5	357.3	336.3
50°	352.0	323.2	317.9	310.0	304.8	304.8	294.3	278.5	281.1	268.0	246.9
52.5°	275.9	252.2	241.7	239.1	228.6	223.4	210.2	199.7	191.8	186.5	173.4
55°	212.8	191.8	178.7	178.7	163.0	163.0	144.5	136.6	126.1	115.6	107.8
57.5°	160.3	149.8	136.6	126.1	120.8	107.8	97.2	84.1	76.2	60.4	49.9
60°	120.8	110.3	97.2	89.3	84.1	70.9	57.9	47.2	28.9	23.7	21.0
62.5°	89.3	78.9	65.7	60.4	55.2	44.7	31.5	15.7	7.9	7.9	7.9
65°	65.7	52.5	42.0	36.7	31.5	23.7	10.5	5.2	2.7	2.7	2.7
67.5°	44.7	34.2	23.7	21.0	15.7	7.9	2.7	2.7	2.7	2.7	2.7
70°	28.9	21.0	10.5	7.9	5.2	2.7	2.7	2.7	2.7	2.7	2.7
72.5°	18.4	10.5	5.2	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	10.5	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	5.2	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.7	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	2.7	2.7	2.7
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: P646063  
 CATALOG NUMBER: FLDSQ4C40D010 FEU4C409030 F4LC-SQLWW-LI-D2W

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2	2191.2
2.5°	2138.7	2120.3	2130.8	2107.2	2117.7	2136.1	2123.0	2128.2
5°	2065.1	2054.6	2041.6	2007.4	2033.6	2054.6	2044.1	2041.6
7.5°	1986.4	1949.5	1968.0	1957.5	1952.2	1973.2	1949.5	1975.8
10°	1904.9	1878.6	1876.0	1857.6	1857.6	1873.4	1876.0	1860.2
12.5°	1784.0	1770.9	1770.9	1768.3	1765.6	1781.4	1784.0	1776.2
15°	1697.3	1692.1	1678.9	1676.3	1660.6	1684.2	1686.8	1684.2
17.5°	1592.2	1594.8	1581.7	1581.7	1592.2	1600.1	1579.1	1600.1
20°	1521.3	1508.1	1502.9	1479.2	1492.4	1505.6	1505.6	1508.1
22.5°	1418.8	1397.8	1405.7	1392.5	1384.6	1403.0	1403.0	1411.0
25°	1303.2	1303.2	1308.4	1300.6	1305.9	1316.4	1308.4	1326.9
27.5°	1192.8	1203.3	1203.3	1192.8	1198.1	1229.6	1242.8	1221.8
30°	1090.4	1093.0	1100.9	1095.7	1111.4	1121.9	1119.2	1135.1
32.5°	974.8	987.9	993.1	985.3	990.6	1014.1	1001.1	998.4
35°	885.5	861.8	859.2	861.8	872.3	877.5	872.3	890.7
37.5°	756.7	748.8	738.3	740.9	748.8	759.4	764.6	777.7
40°	633.2	622.7	622.7	620.1	612.2	641.1	641.1	641.1
42.5°	525.5	522.8	509.7	509.7	520.2	528.1	522.8	541.2
45°	430.9	420.4	412.5	412.5	420.4	420.4	428.3	425.6
47.5°	339.0	328.5	331.0	323.2	331.0	341.5	328.5	331.0
50°	254.9	254.9	249.6	254.9	252.2	254.9	249.6	244.4
52.5°	173.4	197.0	199.7	189.2	165.5	144.5	131.3	141.8
55°	99.8	89.3	89.3	86.7	81.4	78.9	70.9	78.9
57.5°	49.9	44.7	44.7	44.7	42.0	39.4	34.2	34.2
60°	21.0	18.4	18.4	15.7	13.2	10.5	7.9	10.5
62.5°	7.9	5.2	5.2	5.2	5.2	5.2	5.2	5.2
65°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
67.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
70°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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)