

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: P646332

Luminaire Tested: **FLDSQ4C60D010 FEU4C609030 F4LC-SQLWW-H-D2W**

Issue Date: 12/13/2022

Test Information

Test Method: LM-79-08
Report Number: P646332
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: FLDSQ4C60D010 FEU4C609030 F4LC-SQLWW-H-D2W
Description: 4 INCH 6000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH H FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

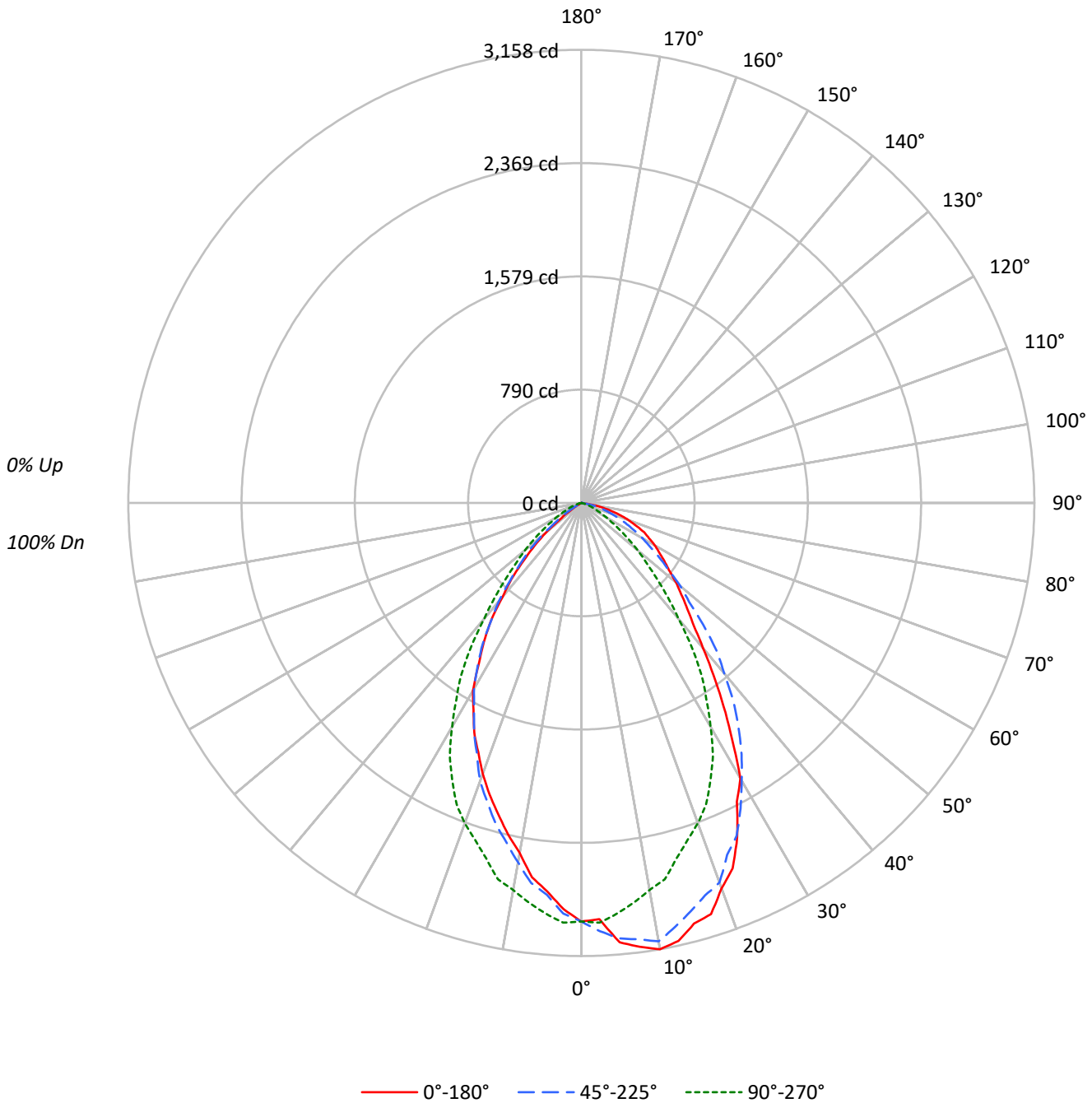
Lumens per Lamp: N/A
Luminaire Lumens: 4181.0 lumens
Efficiency: N/A
Efficacy: 58.1 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 72
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





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CATALOG NUMBER: FLDSQ4C60D010 FEU4C609030 F4LC-SQLWW-H-D2W

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°	281439	281439	281439
5°	297759	278117	263210
10°	309432	268311	242602
15°	303244	256075	223939
20°	293402	243837	206133
25°	273676	226757	188036
30°	247053	200671	168338
35°	203508	171787	139653
40°	166087	132595	107492
45°	142692	100704	77316
50°	129155	76661	48831
55°	118850	55295	17663
60°	114069	37785	2702
65°	110183	25548	822
70°	98655	17745	1016
75°	80861	9134	0
80°	50565	3890	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.3	6.5
10°-20°	736.3	17.6
20°-30°	983.2	23.5
30°-40°	933.3	22.3
40°-50°	645.1	15.4
50°-60°	356.5	8.5
60°-70°	177.0	4.2
70°-80°	69.7	1.7
80°-90°	6.6	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°	1992.7	47.7
0°-40°	2926.0	70.0
0°-60°	3927.6	93.9
0°-90°	4181.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4181.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2917	2917	2917	2917	2917	
5°	3074	3046	2871	2742	2718	294
15°	3036	2945	2564	2312	2242	859
25°	2571	2560	2130	1766	1766	1172
35°	1728	1910	1458	1200	1186	1082
45°	1046	1200	738	605	567	816
55°	706	665	329	168	105	636
65°	483	350	112	4	4	468
75°	217	133	24	0	0	231
85°	0	4	0	0	0	20
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°	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8
2.5°	2902.8	2983.2	2990.2	2983.2	2993.8	2990.2	3007.7	2990.2	3011.3	2979.8	2986.8
5°	3074.2	3042.7	3109.1	3074.2	3074.2	3070.8	3060.2	3056.7	3070.8	3025.3	3046.2
7.5°	3119.7	3165.2	3224.6	3151.2	3154.6	3154.6	3133.7	3126.7	3126.7	3042.7	3067.2
10°	3158.2	3130.1	3161.6	3133.7	3158.2	3154.6	3168.6	3123.1	3154.6	3105.7	3102.2
12.5°	3126.7	3116.1	3158.2	3112.7	3098.7	3102.2	3084.7	3074.2	3084.7	3028.7	3025.3
15°	3035.7	3046.2	3109.1	3060.2	3053.2	3046.2	3025.3	2990.2	3018.3	2941.3	2944.9
17.5°	3004.3	2986.8	2997.3	2955.3	2965.8	2958.8	2955.3	2923.9	2916.8	2867.8	2867.8
20°	2857.4	2895.8	2895.8	2867.8	2867.8	2864.4	2818.9	2846.9	2815.4	2801.4	2815.4
22.5°	2755.9	2759.5	2759.5	2734.9	2738.5	2724.5	2700.0	2682.5	2700.0	2682.5	2654.5
25°	2570.6	2577.6	2619.6	2574.1	2567.1	2581.1	2560.1	2549.5	2546.1	2504.2	2560.1
27.5°	2346.8	2416.6	2413.2	2395.7	2416.6	2388.7	2378.3	2381.7	2392.2	2388.7	2402.7
30°	2217.4	2227.8	2238.4	2224.4	2227.8	2217.4	2217.4	2220.8	2248.8	2238.4	2234.8
32.5°	1955.0	1990.0	2018.0	2018.0	2021.5	2032.0	2028.5	2101.9	2119.4	2084.5	2077.5
35°	1727.7	1752.2	1776.6	1780.2	1825.7	1829.1	1832.7	1853.6	1902.5	1913.1	1909.5
37.5°	1510.9	1535.3	1542.3	1573.8	1598.3	1622.7	1650.8	1678.8	1720.7	1755.6	1738.2
40°	1318.6	1329.0	1346.5	1360.5	1409.4	1409.4	1423.4	1479.4	1524.9	1552.9	1549.3
42.5°	1157.7	1161.1	1175.1	1199.6	1245.1	1234.6	1245.1	1283.6	1349.9	1353.5	1392.0
45°	1045.7	1042.2	1052.7	1056.2	1084.2	1098.2	1105.2	1133.2	1189.1	1196.1	1199.6
47.5°	944.3	940.8	958.3	965.3	975.7	989.7	989.7	993.3	1014.2	1031.8	1017.8
50°	860.4	860.4	860.4	867.3	884.9	881.3	884.9	898.9	909.3	902.3	898.9
52.5°	769.4	783.3	793.9	797.5	800.9	800.9	804.4	797.5	793.9	783.3	762.4
55°	706.5	720.5	720.5	720.5	720.5	734.4	717.0	720.5	720.5	692.5	664.6
57.5°	643.6	657.6	668.0	654.0	668.0	654.0	647.0	643.6	636.5	608.5	566.6
60°	591.1	598.1	594.5	591.1	598.1	587.5	580.6	566.6	559.6	521.1	493.1
62.5°	531.6	535.1	538.6	531.6	524.7	521.1	507.1	486.1	472.2	440.7	416.1
65°	482.6	472.2	468.6	465.2	458.2	447.6	437.2	412.7	402.2	374.2	349.7
67.5°	409.1	405.7	412.7	402.2	384.8	384.8	374.2	353.2	328.7	311.3	286.8
70°	349.7	346.3	339.3	328.7	325.3	311.3	311.3	286.8	279.8	248.3	227.3
72.5°	286.8	286.8	276.2	265.8	255.3	248.3	244.9	227.3	216.9	199.4	181.8
75°	216.9	216.9	213.3	202.8	195.8	188.8	185.4	171.4	160.9	143.5	132.9
77.5°	153.9	153.9	139.9	132.9	136.3	129.3	122.4	118.9	115.4	105.0	91.0
80°	91.0	87.4	77.0	80.4	77.0	77.0	73.4	69.9	62.9	55.9	48.9
82.5°	24.5	28.0	28.0	28.0	31.5	24.5	24.5	24.5	28.0	28.0	17.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.6	3.6
87.5°	3.6	7.0	14.0	14.0	14.0	14.0	14.0	10.6	10.6	10.6	7.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8
2.5°	2951.8	2948.3	2951.8	2927.3	2983.2	2941.3	2934.3	2927.3	2951.8	2927.3	2892.4
5°	3014.7	2979.8	2969.2	2958.8	2990.2	2941.3	2930.9	2934.3	2916.8	2871.4	2874.8
7.5°	3035.7	3004.3	2972.8	2906.3	2934.3	2923.9	2895.8	2874.8	2846.9	2808.4	2801.4
10°	3042.7	3007.7	2962.3	2941.3	2899.4	2885.4	2874.8	2839.9	2805.0	2738.5	2721.0
12.5°	3021.7	2979.8	2923.9	2906.3	2874.8	2829.3	2805.0	2769.9	2738.5	2686.0	2647.5
15°	2930.9	2895.8	2878.4	2818.9	2805.0	2776.9	2727.9	2679.0	2633.5	2563.5	2542.6
17.5°	2825.9	2811.9	2794.4	2748.9	2745.5	2717.5	2672.0	2630.0	2570.6	2462.1	2427.2
20°	2717.5	2717.5	2661.5	2644.1	2679.0	2623.0	2588.0	2549.5	2427.2	2374.7	2311.8
22.5°	2637.1	2598.6	2567.1	2539.1	2542.6	2507.6	2458.7	2381.7	2336.2	2273.3	2199.9
25°	2479.7	2493.6	2423.8	2413.2	2423.8	2343.2	2318.8	2255.8	2189.3	2129.9	2073.9
27.5°	2381.7	2343.2	2297.8	2259.3	2259.3	2227.8	2157.9	2144.0	2042.4	1986.5	1916.5
30°	2234.8	2206.9	2168.4	2112.4	2105.5	2080.9	2025.0	1990.0	1885.1	1801.1	1762.6
32.5°	2049.4	2039.0	2007.5	1944.6	1923.6	1895.5	1825.7	1766.2	1717.3	1622.7	1577.4
35°	1916.5	1878.1	1811.7	1759.2	1741.7	1692.8	1636.7	1594.8	1542.3	1458.4	1399.0
37.5°	1717.3	1678.8	1615.7	1552.9	1552.9	1503.9	1426.9	1385.0	1311.6	1262.5	1213.6
40°	1542.3	1493.4	1430.5	1357.1	1346.5	1276.5	1245.1	1175.1	1129.6	1052.7	1045.7
42.5°	1346.5	1301.0	1245.1	1189.1	1147.1	1112.2	1031.8	979.3	930.4	891.9	881.3
45°	1168.1	1108.6	1059.7	989.7	947.8	905.8	853.4	818.4	779.9	738.0	713.5
47.5°	1014.2	965.3	895.3	832.4	790.5	769.4	709.9	671.5	640.0	612.1	594.5
50°	856.9	797.5	759.0	688.9	682.0	633.0	584.1	552.6	535.1	510.7	486.1
52.5°	738.0	682.0	629.5	577.1	549.0	531.6	486.1	454.6	430.2	412.7	398.7
55°	622.5	573.6	531.6	479.2	461.6	437.2	384.8	377.8	353.2	328.7	311.3
57.5°	535.1	489.6	440.7	405.7	374.2	356.8	314.7	286.8	272.8	251.8	234.3
60°	454.6	405.7	367.2	325.3	311.3	286.8	255.3	230.9	213.3	195.8	178.4
62.5°	381.2	339.3	297.3	262.3	241.3	227.3	202.8	181.8	164.4	150.4	136.3
65°	314.7	276.2	241.3	206.4	195.8	178.4	160.9	143.5	129.3	111.9	98.0
67.5°	258.8	223.9	188.8	164.4	153.9	146.9	125.9	108.4	98.0	87.4	73.4
70°	202.8	178.4	150.4	129.3	118.9	108.4	94.4	84.0	69.9	62.9	52.5
72.5°	157.4	136.3	111.9	94.4	87.4	80.4	66.5	55.9	48.9	41.9	34.9
75°	111.9	94.4	80.4	62.9	59.5	55.9	45.5	38.5	31.5	24.5	21.0
77.5°	77.0	62.9	48.9	41.9	38.5	31.5	28.0	21.0	17.5	14.0	10.6
80°	41.9	31.5	24.5	21.0	17.5	14.0	14.0	10.6	7.0	7.0	3.6
82.5°	14.0	10.6	7.0	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6
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°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	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°	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8
2.5°	2913.3	2874.8	2885.4	2885.4	2878.4	2878.4	2871.4	2860.9	2864.4	2843.3	2798.0
5°	2881.8	2832.9	2825.9	2832.9	2805.0	2798.0	2784.0	2805.0	2741.9	2766.4	2738.5
7.5°	2791.0	2745.5	2734.9	2759.5	2724.5	2703.4	2700.0	2727.9	2672.0	2644.1	2612.6
10°	2689.4	2672.0	2640.5	2623.0	2612.6	2616.0	2588.0	2553.1	2542.6	2535.6	2507.6
12.5°	2598.6	2560.1	2532.1	2511.2	2504.2	2504.2	2458.7	2451.7	2420.2	2413.2	2371.3
15°	2490.1	2444.7	2427.2	2399.2	2374.7	2388.7	2336.2	2322.2	2311.8	2266.3	2273.3
17.5°	2395.7	2346.8	2304.8	2287.3	2266.3	2245.4	2196.3	2206.9	2182.3	2182.3	2119.4
20°	2273.3	2220.8	2189.3	2154.4	2154.4	2126.4	2091.5	2094.9	2063.4	2032.0	1976.0
22.5°	2144.0	2087.9	2049.4	2035.4	2000.5	1993.5	1951.6	1941.0	1899.1	1902.5	1853.6
25°	2007.5	1951.6	1899.1	1902.5	1871.2	1857.2	1832.7	1783.7	1766.2	1745.2	1731.3
27.5°	1846.6	1808.1	1762.6	1759.2	1699.7	1703.2	1671.8	1657.8	1615.7	1626.3	1594.8
30°	1699.7	1643.8	1601.8	1591.4	1566.8	1559.8	1510.9	1489.8	1497.0	1468.9	1451.5
32.5°	1549.3	1465.4	1447.9	1426.9	1413.0	1395.4	1360.5	1374.5	1342.9	1349.9	1322.0
35°	1349.9	1315.0	1269.5	1269.5	1255.5	1241.5	1217.2	1231.1	1199.6	1185.6	1157.7
37.5°	1182.1	1150.7	1105.2	1119.2	1094.7	1073.7	1052.7	1056.2	1028.2	1024.8	996.7
40°	1000.3	982.7	951.3	951.3	933.8	933.8	923.2	912.8	895.3	874.3	842.8
42.5°	828.8	814.9	800.9	804.4	779.9	800.9	772.9	790.5	734.4	731.0	709.9
45°	702.9	671.5	675.0	661.0	647.0	654.0	629.5	636.5	605.1	598.1	577.1
47.5°	570.1	559.6	538.6	531.6	531.6	521.1	510.7	507.1	493.1	475.6	447.6
50°	468.6	430.2	423.1	412.7	405.7	405.7	391.7	370.8	374.2	356.8	328.7
52.5°	367.2	335.7	321.7	318.3	304.3	297.3	279.8	265.8	255.3	248.3	230.9
55°	283.2	255.3	237.9	237.9	216.9	216.9	192.4	181.8	167.9	153.9	143.5
57.5°	213.3	199.4	181.8	167.9	160.9	143.5	129.3	111.9	101.4	80.4	66.5
60°	160.9	146.9	129.3	118.9	111.9	94.4	77.0	62.9	38.5	31.5	28.0
62.5°	118.9	105.0	87.4	80.4	73.4	59.5	41.9	21.0	10.6	10.6	10.6
65°	87.4	69.9	55.9	48.9	41.9	31.5	14.0	7.0	3.6	3.6	3.6
67.5°	59.5	45.5	31.5	28.0	21.0	10.6	3.6	3.6	3.6	3.6	3.6
70°	38.5	28.0	14.0	10.6	7.0	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	24.5	14.0	7.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	14.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	7.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	3.6	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	3.6	3.6	3.6
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: P646332
 CATALOG NUMBER: FLDSQ4C60D010 FEU4C609030 F4LC-SQLWW-H-D2W

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8	2916.8
2.5°	2846.9	2822.4	2836.3	2805.0	2818.9	2843.3	2825.9	2832.9
5°	2748.9	2734.9	2717.5	2672.0	2707.0	2734.9	2721.0	2717.5
7.5°	2644.1	2595.0	2619.6	2605.6	2598.6	2626.6	2595.0	2630.0
10°	2535.6	2500.6	2497.2	2472.7	2472.7	2493.6	2497.2	2476.1
12.5°	2374.7	2357.3	2357.3	2353.7	2350.2	2371.3	2374.7	2364.3
15°	2259.3	2252.3	2234.8	2231.4	2210.4	2241.8	2245.4	2241.8
17.5°	2119.4	2122.9	2105.5	2105.5	2119.4	2129.9	2101.9	2129.9
20°	2025.0	2007.5	2000.5	1969.0	1986.5	2004.1	2004.1	2007.5
22.5°	1888.6	1860.6	1871.2	1853.6	1843.1	1867.6	1867.6	1878.1
25°	1734.7	1734.7	1741.7	1731.3	1738.2	1752.2	1741.7	1766.2
27.5°	1587.8	1601.8	1601.8	1587.8	1594.8	1636.7	1654.3	1626.3
30°	1451.5	1454.9	1465.4	1458.4	1479.4	1493.4	1489.8	1510.9
32.5°	1297.6	1315.0	1322.0	1311.6	1318.6	1349.9	1332.5	1329.0
35°	1178.7	1147.1	1143.7	1147.1	1161.1	1168.1	1161.1	1185.6
37.5°	1007.2	996.7	982.7	986.3	996.7	1010.8	1017.8	1035.2
40°	842.8	828.8	828.8	825.4	814.9	853.4	853.4	853.4
42.5°	699.5	695.9	678.5	678.5	692.5	702.9	695.9	720.5
45°	573.6	559.6	549.0	549.0	559.6	559.6	570.1	566.6
47.5°	451.2	437.2	440.7	430.2	440.7	454.6	437.2	440.7
50°	339.3	339.3	332.3	339.3	335.7	339.3	332.3	325.3
52.5°	230.9	262.3	265.8	251.8	220.3	192.4	174.8	188.8
55°	132.9	118.9	118.9	115.4	108.4	105.0	94.4	105.0
57.5°	66.5	59.5	59.5	59.5	55.9	52.5	45.5	45.5
60°	28.0	24.5	24.5	21.0	17.5	14.0	10.6	14.0
62.5°	10.6	7.0	7.0	7.0	7.0	7.0	7.0	7.0
65°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
67.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
70°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
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)