

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: P645901

Luminaire Tested: **FLDSQ4C25D010 FEU4C259030 F4LC-SQLWW-LI-D2W**

Issue Date: 12/13/2022

Test Information

Test Method: LM-79-08
Report Number: P645901
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: FLDSQ4C25D010 FEU4C259030 F4LC-SQLWW-LI-D2W
Description: 4 INCH 2500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3000K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH LI FINISH, DIM TO WARM
Light Source: -
Ballast/Driver: -

Summary

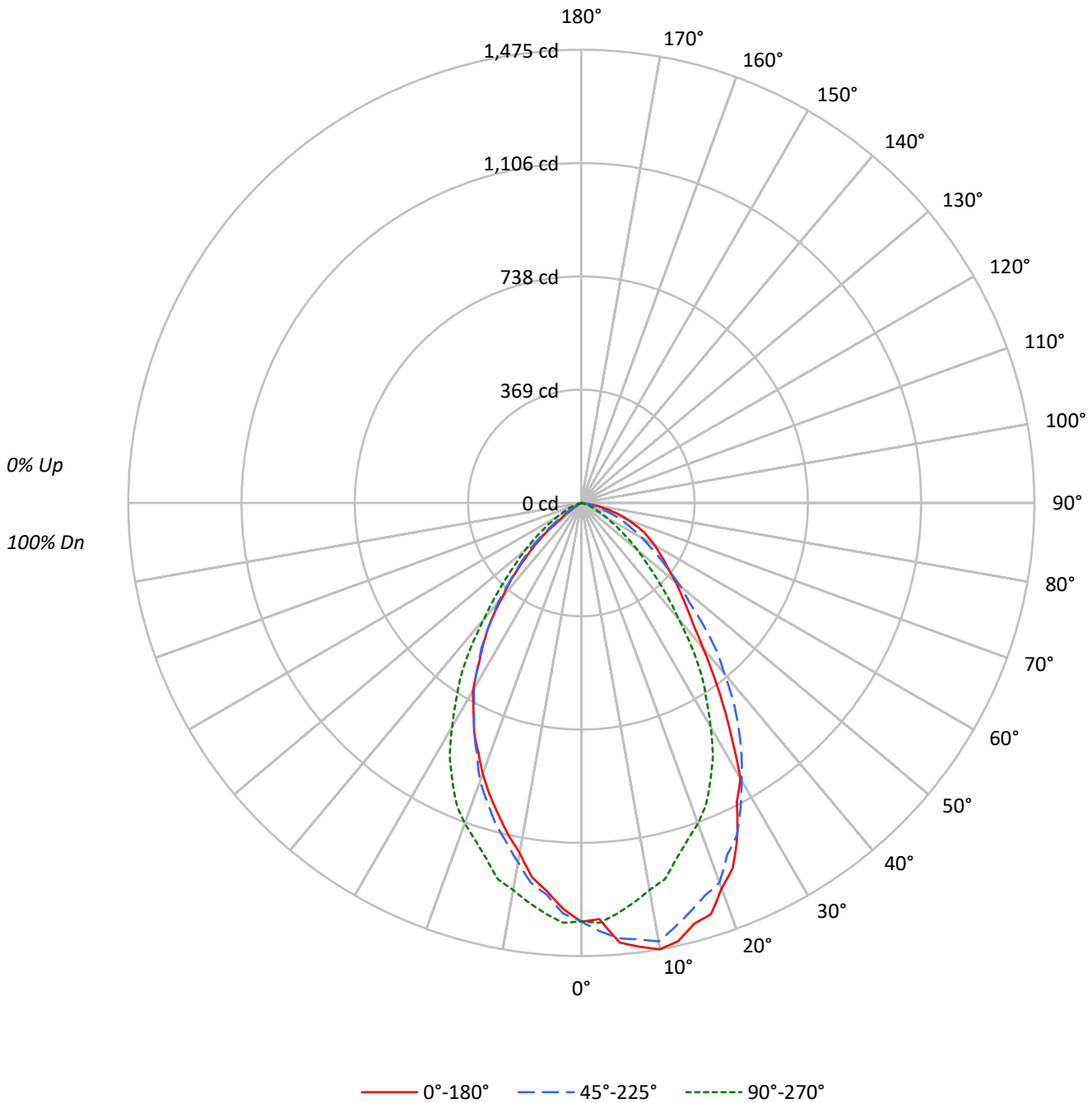
Lumens per Lamp: N/A
Luminaire Lumens: 1953.0 lumens
Efficiency: N/A
Efficacy: 62.0 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 31.5
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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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°	131466	131466	131466
5°	139087	129915	122951
10°	144536	125333	113321
15°	141648	119621	104608
20°	137049	113904	96284
25°	127842	105921	87833
30°	115404	93734	78637
35°	95057	80251	65233
40°	77577	61933	50207
45°	66659	47036	36120
50°	60329	35801	22802
55°	55514	25822	8243
60°	53281	17657	1254
65°	51462	11941	388
70°	46069	8294	480
75°	37765	4287	0
80°	23615	1834	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.7	6.5
10°-20°	343.9	17.6
20°-30°	459.2	23.5
30°-40°	436.0	22.3
40°-50°	301.4	15.4
50°-60°	166.5	8.5
60°-70°	82.7	4.2
70°-80°	32.6	1.7
80°-90°	3.1	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°	930.8	47.7
0°-40°	1366.8	70.0
0°-60°	1834.6	93.9
0°-90°	1953.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1953.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1362	1362	1362	1362	1362	
5°	1436	1423	1341	1281	1269	137
15°	1418	1376	1198	1080	1047	401
25°	1201	1196	995	825	825	547
35°	807	892	681	560	554	506
45°	488	560	345	283	265	381
55°	330	310	154	78	49	297
65°	225	163	52	2	2	219
75°	101	62	12	0	0	108
85°	0	2	0	0	0	9
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°	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5
2.5°	1355.9	1393.5	1396.8	1393.5	1398.4	1396.8	1405.0	1396.8	1406.6	1391.9	1395.2
5°	1436.0	1421.3	1452.3	1436.0	1436.0	1434.4	1429.5	1427.8	1434.4	1413.1	1422.9
7.5°	1457.2	1478.5	1506.3	1472.0	1473.6	1473.6	1463.8	1460.5	1460.5	1421.3	1432.7
10°	1475.2	1462.1	1476.8	1463.8	1475.2	1473.6	1480.1	1458.8	1473.6	1450.7	1449.1
12.5°	1460.5	1455.6	1475.2	1454.0	1447.5	1449.1	1440.9	1436.0	1440.9	1414.7	1413.1
15°	1418.0	1422.9	1452.3	1429.5	1426.2	1422.9	1413.1	1396.8	1409.9	1373.9	1375.6
17.5°	1403.4	1395.2	1400.1	1380.4	1385.4	1382.1	1380.4	1365.8	1362.5	1339.6	1339.6
20°	1334.7	1352.7	1352.7	1339.6	1339.6	1338.0	1316.8	1329.8	1315.1	1308.6	1315.1
22.5°	1287.3	1289.0	1289.0	1277.5	1279.2	1272.7	1261.2	1253.0	1261.2	1253.0	1240.0
25°	1200.8	1204.0	1223.6	1202.4	1199.1	1205.6	1195.9	1190.9	1189.3	1169.7	1195.9
27.5°	1096.2	1128.8	1127.2	1119.0	1128.8	1115.8	1110.9	1112.5	1117.4	1115.8	1122.3
30°	1035.8	1040.6	1045.6	1039.0	1040.6	1035.8	1035.8	1037.4	1050.4	1045.6	1043.9
32.5°	913.2	929.5	942.7	942.7	944.3	949.2	947.5	981.8	990.0	973.7	970.4
35°	807.0	818.5	829.9	831.5	852.8	854.4	856.1	865.8	888.7	893.6	892.0
37.5°	705.8	717.2	720.4	735.2	746.6	758.0	771.1	784.2	803.8	820.1	812.0
40°	615.9	620.8	629.0	635.5	658.3	658.3	664.9	691.1	712.3	725.4	723.7
42.5°	540.8	542.4	548.9	560.4	581.6	576.7	581.6	599.6	630.6	632.2	650.2
45°	488.5	486.8	491.7	493.3	506.5	513.0	516.3	529.3	555.4	558.7	560.4
47.5°	441.1	439.5	447.6	450.9	455.8	462.3	462.3	464.0	473.8	482.0	475.4
50°	401.9	401.9	401.9	405.1	413.3	411.7	413.3	419.9	424.7	421.5	419.9
52.5°	359.4	365.9	370.8	372.5	374.1	374.1	375.8	372.5	370.8	365.9	356.1
55°	330.0	336.5	336.5	336.5	336.5	343.1	334.9	336.5	336.5	323.5	310.4
57.5°	300.6	307.2	312.0	305.5	312.0	305.5	302.2	300.6	297.3	284.2	264.7
60°	276.1	279.4	277.7	276.1	279.4	274.5	271.2	264.7	261.4	243.4	230.4
62.5°	248.3	249.9	251.6	248.3	245.1	243.4	236.9	227.1	220.6	205.8	194.4
65°	225.4	220.6	218.9	217.3	214.0	209.1	204.2	192.8	187.9	174.8	163.3
67.5°	191.1	189.5	192.8	187.9	179.7	179.7	174.8	165.0	153.5	145.4	134.0
70°	163.3	161.7	158.5	153.5	151.9	145.4	145.4	134.0	130.7	116.0	106.2
72.5°	134.0	134.0	129.0	124.2	119.2	116.0	114.4	106.2	101.3	93.1	84.9
75°	101.3	101.3	99.7	94.7	91.5	88.2	86.6	80.1	75.1	67.0	62.1
77.5°	71.9	71.9	65.3	62.1	63.7	60.4	57.2	55.6	53.9	49.0	42.5
80°	42.5	40.8	36.0	37.6	36.0	36.0	34.3	32.6	29.4	26.1	22.8
82.5°	11.5	13.1	13.1	13.1	14.7	11.5	11.5	11.5	13.1	13.1	8.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7
87.5°	1.7	3.3	6.5	6.5	6.5	6.5	6.5	4.9	4.9	4.9	3.3
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°	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5
2.5°	1378.8	1377.2	1378.8	1367.4	1393.5	1373.9	1370.7	1367.4	1378.8	1367.4	1351.1
5°	1408.2	1391.9	1387.0	1382.1	1396.8	1373.9	1369.0	1370.7	1362.5	1341.3	1342.9
7.5°	1418.0	1403.4	1388.6	1357.6	1370.7	1365.8	1352.7	1342.9	1329.8	1311.8	1308.6
10°	1421.3	1405.0	1383.7	1373.9	1354.3	1347.8	1342.9	1326.6	1310.2	1279.2	1271.0
12.5°	1411.5	1391.9	1365.8	1357.6	1342.9	1321.6	1310.2	1293.8	1279.2	1254.7	1236.7
15°	1369.0	1352.7	1344.5	1316.8	1310.2	1297.1	1274.3	1251.4	1230.2	1197.5	1187.7
17.5°	1320.0	1313.5	1305.3	1284.1	1282.5	1269.4	1248.1	1228.5	1200.8	1150.1	1133.8
20°	1269.4	1269.4	1243.2	1235.1	1251.4	1225.2	1208.9	1190.9	1133.8	1109.3	1079.9
22.5°	1231.8	1213.8	1199.1	1186.1	1187.7	1171.3	1148.5	1112.5	1091.3	1061.9	1027.6
25°	1158.3	1164.8	1132.2	1127.2	1132.2	1094.5	1083.1	1053.7	1022.7	994.9	968.8
27.5°	1112.5	1094.5	1073.4	1055.4	1055.4	1040.6	1008.0	1001.5	954.0	927.9	895.2
30°	1043.9	1030.9	1012.9	986.8	983.5	972.0	945.9	929.5	880.6	841.3	823.4
32.5°	957.3	952.4	937.7	908.3	898.6	885.4	852.8	825.0	802.2	758.0	736.8
35°	895.2	877.3	846.3	821.7	813.6	790.7	764.5	744.9	720.4	681.3	653.5
37.5°	802.2	784.2	754.7	725.4	725.4	702.5	666.5	647.0	612.6	589.7	566.9
40°	720.4	697.6	668.2	633.9	629.0	596.3	581.6	548.9	527.7	491.7	488.5
42.5°	629.0	607.7	581.6	555.4	535.8	519.5	482.0	457.4	434.6	416.6	411.7
45°	545.6	517.9	495.0	462.3	442.7	423.1	398.6	382.3	364.3	344.7	333.3
47.5°	473.8	450.9	418.2	388.8	369.2	359.4	331.6	313.7	299.0	285.9	277.7
50°	400.3	372.5	354.5	321.8	318.5	295.7	272.8	258.1	249.9	238.5	227.1
52.5°	344.7	318.5	294.0	269.6	256.5	248.3	227.1	212.4	201.0	192.8	186.3
55°	290.8	267.9	248.3	223.8	215.6	204.2	179.7	176.5	165.0	153.5	145.4
57.5°	249.9	228.7	205.8	189.5	174.8	166.7	147.0	134.0	127.4	117.6	109.4
60°	212.4	189.5	171.5	151.9	145.4	134.0	119.2	107.8	99.7	91.5	83.3
62.5°	178.1	158.5	138.9	122.5	112.7	106.2	94.7	84.9	76.8	70.3	63.7
65°	147.0	129.0	112.7	96.4	91.5	83.3	75.1	67.0	60.4	52.3	45.8
67.5°	120.9	104.6	88.2	76.8	71.9	68.6	58.8	50.6	45.8	40.8	34.3
70°	94.7	83.3	70.3	60.4	55.6	50.6	44.1	39.2	32.6	29.4	24.5
72.5°	73.5	63.7	52.3	44.1	40.8	37.6	31.0	26.1	22.8	19.6	16.3
75°	52.3	44.1	37.6	29.4	27.8	26.1	21.2	18.0	14.7	11.5	9.8
77.5°	36.0	29.4	22.8	19.6	18.0	14.7	13.1	9.8	8.2	6.5	4.9
80°	19.6	14.7	11.5	9.8	8.2	6.5	6.5	4.9	3.3	3.3	1.7
82.5°	6.5	4.9	3.3	1.7	1.7	1.7	1.7	1.7	1.7	0.0	1.7
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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	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°	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5
2.5°	1360.9	1342.9	1347.8	1347.8	1344.5	1344.5	1341.3	1336.3	1338.0	1328.2	1307.0
5°	1346.1	1323.3	1320.0	1323.3	1310.2	1307.0	1300.4	1310.2	1280.8	1292.2	1279.2
7.5°	1303.7	1282.5	1277.5	1289.0	1272.7	1262.8	1261.2	1274.3	1248.1	1235.1	1220.4
10°	1256.3	1248.1	1233.4	1225.2	1220.4	1222.0	1208.9	1192.6	1187.7	1184.4	1171.3
12.5°	1213.8	1195.9	1182.8	1173.0	1169.7	1169.7	1148.5	1145.2	1130.5	1127.2	1107.7
15°	1163.1	1142.0	1133.8	1120.7	1109.3	1115.8	1091.3	1084.7	1079.9	1058.6	1061.9
17.5°	1119.0	1096.2	1076.6	1068.4	1058.6	1048.8	1025.9	1030.9	1019.4	1019.4	990.0
20°	1061.9	1037.4	1022.7	1006.3	1006.3	993.3	977.0	978.6	963.8	949.2	923.0
22.5°	1001.5	975.3	957.3	950.8	934.5	931.2	911.6	906.7	887.1	888.7	865.8
25°	937.7	911.6	887.1	888.7	874.0	867.5	856.1	833.2	825.0	815.2	808.7
27.5°	862.6	844.6	823.4	821.7	794.0	795.6	780.9	774.4	754.7	759.7	744.9
30°	794.0	767.9	748.2	743.3	731.9	728.6	705.8	695.9	699.2	686.1	678.0
32.5°	723.7	684.5	676.3	666.5	660.0	651.8	635.5	642.0	627.3	630.6	617.5
35°	630.6	614.2	593.0	593.0	586.5	579.9	568.5	575.1	560.4	553.8	540.8
37.5°	552.2	537.5	516.3	522.8	511.3	501.5	491.7	493.3	480.3	478.7	465.6
40°	467.2	459.0	444.4	444.4	436.2	436.2	431.3	426.4	418.2	408.4	393.7
42.5°	387.2	380.6	374.1	375.8	364.3	374.1	361.0	369.2	343.1	341.5	331.6
45°	328.3	313.7	315.3	308.8	302.2	305.5	294.0	297.3	282.6	279.4	269.6
47.5°	266.3	261.4	251.6	248.3	248.3	243.4	238.5	236.9	230.4	222.2	209.1
50°	218.9	201.0	197.6	192.8	189.5	189.5	183.0	173.2	174.8	166.7	153.5
52.5°	171.5	156.8	150.3	148.7	142.2	138.9	130.7	124.2	119.2	116.0	107.8
55°	132.3	119.2	111.1	111.1	101.3	101.3	89.9	84.9	78.4	71.9	67.0
57.5°	99.7	93.1	84.9	78.4	75.1	67.0	60.4	52.3	47.4	37.6	31.0
60°	75.1	68.6	60.4	55.6	52.3	44.1	36.0	29.4	18.0	14.7	13.1
62.5°	55.6	49.0	40.8	37.6	34.3	27.8	19.6	9.8	4.9	4.9	4.9
65°	40.8	32.6	26.1	22.8	19.6	14.7	6.5	3.3	1.7	1.7	1.7
67.5°	27.8	21.2	14.7	13.1	9.8	4.9	1.7	1.7	1.7	1.7	1.7
70°	18.0	13.1	6.5	4.9	3.3	1.7	1.7	1.7	1.7	1.7	1.7
72.5°	11.5	6.5	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.5	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.7	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	1.7	1.7	1.7
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: P645901
 CATALOG NUMBER: FLDSQ4C25D010 FEU4C259030 F4LC-SQLWW-LI-D2W

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5	1362.5
2.5°	1329.8	1318.4	1324.9	1310.2	1316.8	1328.2	1320.0	1323.3
5°	1284.1	1277.5	1269.4	1248.1	1264.5	1277.5	1271.0	1269.4
7.5°	1235.1	1212.2	1223.6	1217.1	1213.8	1226.9	1212.2	1228.5
10°	1184.4	1168.1	1166.5	1155.0	1155.0	1164.8	1166.5	1156.6
12.5°	1109.3	1101.1	1101.1	1099.5	1097.8	1107.7	1109.3	1104.4
15°	1055.4	1052.1	1043.9	1042.3	1032.5	1047.2	1048.8	1047.2
17.5°	990.0	991.6	983.5	983.5	990.0	994.9	981.8	994.9
20°	945.9	937.7	934.5	919.7	927.9	936.1	936.1	937.7
22.5°	882.2	869.1	874.0	865.8	860.9	872.4	872.4	877.3
25°	810.3	810.3	813.6	808.7	812.0	818.5	813.6	825.0
27.5°	741.7	748.2	748.2	741.7	744.9	764.5	772.7	759.7
30°	678.0	679.6	684.5	681.3	691.1	697.6	695.9	705.8
32.5°	606.1	614.2	617.5	612.6	615.9	630.6	622.4	620.8
35°	550.6	535.8	534.2	535.8	542.4	545.6	542.4	553.8
37.5°	470.5	465.6	459.0	460.7	465.6	472.2	475.4	483.6
40°	393.7	387.2	387.2	385.6	380.6	398.6	398.6	398.6
42.5°	326.7	325.1	316.9	316.9	323.5	328.3	325.1	336.5
45°	267.9	261.4	256.5	256.5	261.4	261.4	266.3	264.7
47.5°	210.8	204.2	205.8	201.0	205.8	212.4	204.2	205.8
50°	158.5	158.5	155.2	158.5	156.8	158.5	155.2	151.9
52.5°	107.8	122.5	124.2	117.6	102.9	89.9	81.7	88.2
55°	62.1	55.6	55.6	53.9	50.6	49.0	44.1	49.0
57.5°	31.0	27.8	27.8	27.8	26.1	24.5	21.2	21.2
60°	13.1	11.5	11.5	9.8	8.2	6.5	4.9	6.5
62.5°	4.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3
65°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
67.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)