

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: **FLDSQ4C80D010 FEU4C809027 F4LC-SQLWW-H**

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: FLDSQ4C80D010 FEU4C809027 F4LC-SQLWW-H
 Description: 4 INCH 8000 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 2700K, 90CRI LEDS AND F4LC-SQLWW TRIM WITH H FINISH
 Light Source: -
 Ballast/Driver: -

Summary

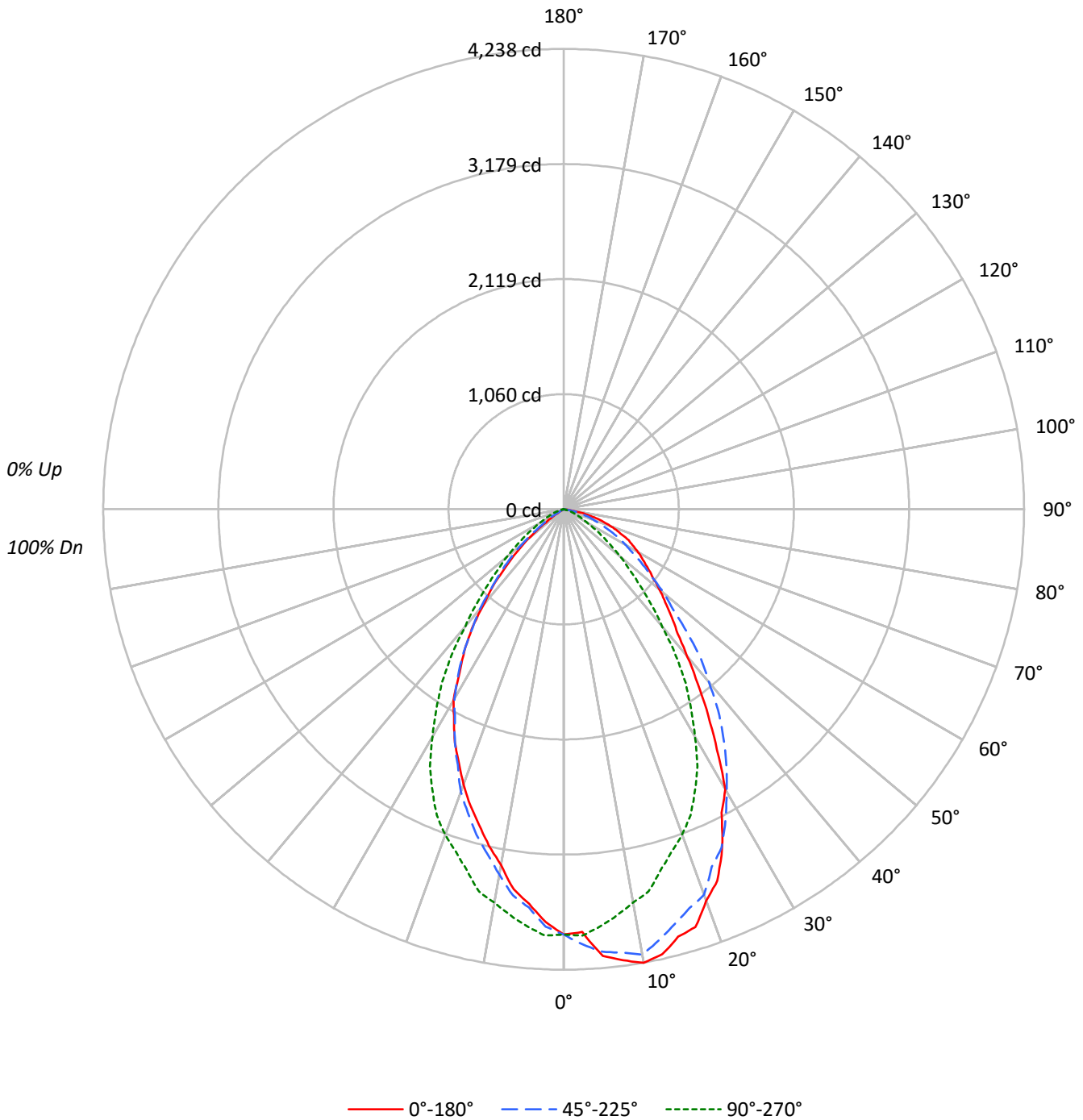
Lumens per Lamp: N/A
 Luminaire Lumens: 5611.0 lumens
 Efficiency: N/A
 Efficacy: 62.7 lumens/watt
 Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 89.5
 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

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: FLDSQ4C80D010 FEU4C809027 F4LC-SQLWW-H

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	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°	377696	377696	377696
5°	399595	373240	353239
10°	415267	360077	325579
15°	406963	343661	300527
20°	393752	327235	276634
25°	367289	304305	252351
30°	331551	269314	225918
35°	273111	230553	187429
40°	222881	177952	144246
45°	191502	135146	103761
50°	173317	102870	65523
55°	159492	74203	23703
60°	153089	50715	3628
65°	147855	34292	1096
70°	132396	23810	1354
75°	108523	12265	0
80°	67846	5223	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.8	6.5
10°-20°	988.1	17.6
20°-30°	1319.4	23.5
30°-40°	1252.5	22.3
40°-50°	865.8	15.4
50°-60°	478.4	8.5
60°-70°	237.6	4.2
70°-80°	93.6	1.7
80°-90°	8.9	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°	2674.3	47.7
0°-40°	3926.8	70.0
0°-60°	5270.9	93.9
0°-90°	5611.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5611.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3914	3914	3914	3914	3914	
5°	4126	4088	3854	3680	3647	395
15°	4074	3952	3440	3102	3008	1152
25°	3450	3436	2858	2370	2370	1573
35°	2319	2563	1957	1610	1591	1453
45°	1403	1610	990	812	760	1095
55°	948	892	441	225	141	853
65°	648	469	150	5	5	629
75°	291	178	33	0	0	310
85°	0	5	0	0	0	27
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°	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3895.6	4003.5	4012.9	4003.5	4017.7	4012.9	4036.5	4012.9	4041.2	3998.9	4008.3
5°	4125.6	4083.4	4172.5	4125.6	4125.6	4121.0	4106.9	4102.1	4121.0	4060.0	4088.1
7.5°	4186.7	4247.7	4327.6	4229.0	4233.6	4233.6	4205.5	4196.1	4196.1	4083.4	4116.3
10°	4238.4	4200.7	4243.0	4205.5	4238.4	4233.6	4252.3	4191.3	4233.6	4167.9	4163.2
12.5°	4196.1	4181.9	4238.4	4177.3	4158.6	4163.2	4139.8	4125.6	4139.8	4064.6	4060.0
15°	4074.0	4088.1	4172.5	4106.9	4097.5	4088.1	4060.0	4012.9	4050.6	3947.3	3952.1
17.5°	4031.9	4008.3	4022.5	3966.0	3980.2	3970.8	3966.0	3923.9	3914.4	3848.7	3848.7
20°	3834.7	3886.2	3886.2	3848.7	3848.7	3844.1	3783.1	3820.6	3778.3	3759.5	3778.3
22.5°	3698.5	3703.3	3703.3	3670.3	3675.1	3656.4	3623.5	3599.9	3623.5	3599.9	3562.4
25°	3449.9	3459.2	3515.5	3454.5	3445.1	3463.8	3435.7	3421.5	3417.0	3360.7	3435.7
27.5°	3149.4	3243.2	3238.6	3215.0	3243.2	3205.7	3191.7	3196.3	3210.4	3205.7	3224.4
30°	2975.8	2989.8	3003.9	2985.2	2989.8	2975.8	2975.8	2980.4	3017.9	3003.9	2999.2
32.5°	2623.7	2670.6	2708.3	2708.3	2712.9	2727.0	2722.2	2820.8	2844.3	2797.4	2788.1
35°	2318.6	2351.5	2384.3	2389.0	2450.1	2454.7	2459.5	2487.6	2553.2	2567.4	2562.6
37.5°	2027.7	2060.4	2069.8	2112.1	2145.0	2177.8	2215.4	2253.0	2309.2	2356.1	2332.8
40°	1769.5	1783.5	1807.0	1825.8	1891.4	1891.4	1910.2	1985.4	2046.5	2084.0	2079.2
42.5°	1553.6	1558.2	1577.0	1609.9	1671.0	1656.8	1671.0	1722.6	1811.6	1816.4	1868.1
45°	1403.4	1398.6	1412.8	1417.4	1455.1	1473.8	1483.2	1520.7	1595.8	1605.1	1609.9
47.5°	1267.3	1262.6	1286.1	1295.5	1309.4	1328.2	1328.2	1333.0	1361.1	1384.7	1365.9
50°	1154.6	1154.6	1154.6	1164.0	1187.5	1182.7	1187.5	1206.3	1220.3	1210.9	1206.3
52.5°	1032.5	1051.3	1065.4	1070.2	1074.8	1074.8	1079.6	1070.2	1065.4	1051.3	1023.1
55°	948.1	966.9	966.9	966.9	966.9	985.6	962.3	966.9	966.9	929.4	891.8
57.5°	863.7	882.5	896.4	877.7	896.4	877.7	868.3	863.7	854.1	816.6	760.4
60°	793.3	802.7	797.9	793.3	802.7	788.5	779.1	760.4	751.0	699.3	661.8
62.5°	713.5	718.1	722.9	713.5	704.1	699.3	680.6	652.4	633.7	591.4	558.5
65°	647.6	633.7	628.9	624.3	614.9	600.8	586.8	553.9	539.7	502.2	469.3
67.5°	549.1	544.5	553.9	539.7	516.3	516.3	502.2	474.1	441.1	417.8	384.9
70°	469.3	464.7	455.3	441.1	436.5	417.8	417.8	384.9	375.5	333.2	305.1
72.5°	384.9	384.9	370.7	356.7	342.6	333.2	328.6	305.1	291.1	267.6	244.0
75°	291.1	291.1	286.3	272.1	262.8	253.4	248.8	230.0	215.9	192.5	178.4
77.5°	206.5	206.5	187.7	178.4	183.0	173.6	164.2	159.6	154.8	140.9	122.1
80°	122.1	117.3	103.3	107.9	103.3	103.3	98.6	93.8	84.4	75.0	65.6
82.5°	32.9	37.5	37.5	37.5	42.3	32.9	32.9	32.9	37.5	37.5	23.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.8	4.8
87.5°	4.8	9.4	18.8	18.8	18.8	18.8	18.8	14.2	14.2	14.2	9.4
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°	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3961.4	3956.7	3961.4	3928.5	4003.5	3947.3	3937.9	3928.5	3961.4	3928.5	3881.6
5°	4045.8	3998.9	3984.8	3970.8	4012.9	3947.3	3933.3	3937.9	3914.4	3853.5	3858.1
7.5°	4074.0	4031.9	3989.6	3900.4	3937.9	3923.9	3886.2	3858.1	3820.6	3768.9	3759.5
10°	4083.4	4036.5	3975.4	3947.3	3891.0	3872.3	3858.1	3811.2	3764.3	3675.1	3651.6
12.5°	4055.2	3998.9	3923.9	3900.4	3858.1	3797.0	3764.3	3717.2	3675.1	3604.7	3553.0
15°	3933.3	3886.2	3862.9	3783.1	3764.3	3726.6	3661.0	3595.3	3534.3	3440.3	3412.2
17.5°	3792.4	3773.7	3750.2	3689.1	3684.5	3647.0	3585.9	3529.5	3449.9	3304.2	3257.3
20°	3647.0	3647.0	3571.8	3548.4	3595.3	3520.1	3473.2	3421.5	3257.3	3186.9	3102.5
22.5°	3539.1	3487.4	3445.1	3407.6	3412.2	3365.3	3299.6	3196.3	3135.2	3050.8	2952.3
25°	3327.8	3346.5	3252.7	3238.6	3252.7	3144.6	3111.9	3027.3	2938.1	2858.3	2783.3
27.5°	3196.3	3144.6	3083.8	3032.1	3032.1	2989.8	2896.0	2877.3	2741.0	2666.0	2572.0
30°	2999.2	2961.7	2910.0	2835.0	2825.6	2792.7	2717.6	2670.6	2529.9	2417.2	2365.5
32.5°	2750.4	2736.4	2694.1	2609.7	2581.6	2543.9	2450.1	2370.3	2304.6	2177.8	2116.9
35°	2572.0	2520.5	2431.3	2360.9	2337.4	2271.7	2196.5	2140.2	2069.8	1957.3	1877.5
37.5°	2304.6	2253.0	2168.4	2084.0	2084.0	2018.3	1915.0	1858.7	1760.1	1694.3	1628.7
40°	2069.8	2004.2	1919.8	1821.2	1807.0	1713.1	1671.0	1577.0	1515.9	1412.8	1403.4
42.5°	1807.0	1746.0	1671.0	1595.8	1539.5	1492.6	1384.7	1314.2	1248.6	1196.9	1182.7
45°	1567.6	1487.8	1422.2	1328.2	1271.9	1215.7	1145.2	1098.3	1046.7	990.4	957.5
47.5°	1361.1	1295.5	1201.5	1117.1	1060.8	1032.5	952.7	901.2	858.9	821.4	797.9
50°	1150.0	1070.2	1018.5	924.6	915.2	849.5	783.9	741.6	718.1	685.3	652.4
52.5°	990.4	915.2	844.8	774.5	736.8	713.5	652.4	610.1	577.4	553.9	535.1
55°	835.4	769.7	713.5	643.0	619.5	586.8	516.3	507.0	474.1	441.1	417.8
57.5°	718.1	657.0	591.4	544.5	502.2	478.8	422.4	384.9	366.1	338.0	314.4
60°	610.1	544.5	492.8	436.5	417.8	384.9	342.6	309.8	286.3	262.8	239.4
62.5°	511.6	455.3	399.0	352.0	323.8	305.1	272.1	244.0	220.7	201.9	183.0
65°	422.4	370.7	323.8	276.9	262.8	239.4	215.9	192.5	173.6	150.2	131.5
67.5°	347.4	300.5	253.4	220.7	206.5	197.1	169.0	145.5	131.5	117.3	98.6
70°	272.1	239.4	201.9	173.6	159.6	145.5	126.7	112.7	93.8	84.4	70.4
72.5°	211.3	183.0	150.2	126.7	117.3	107.9	89.2	75.0	65.6	56.3	46.9
75°	150.2	126.7	107.9	84.4	79.8	75.0	61.0	51.7	42.3	32.9	28.1
77.5°	103.3	84.4	65.6	56.3	51.7	42.3	37.5	28.1	23.5	18.8	14.2
80°	56.3	42.3	32.9	28.1	23.5	18.8	18.8	14.2	9.4	9.4	4.8
82.5°	18.8	14.2	9.4	4.8	4.8	4.8	4.8	4.8	4.8	0.0	4.8
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°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	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°	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3909.8	3858.1	3872.3	3872.3	3862.9	3862.9	3853.5	3839.3	3844.1	3815.8	3754.9
5°	3867.5	3801.8	3792.4	3801.8	3764.3	3754.9	3736.2	3764.3	3679.7	3712.6	3675.1
7.5°	3745.6	3684.5	3670.3	3703.3	3656.4	3628.1	3623.5	3661.0	3585.9	3548.4	3506.1
10°	3609.3	3585.9	3543.6	3520.1	3506.1	3510.7	3473.2	3426.3	3412.2	3402.8	3365.3
12.5°	3487.4	3435.7	3398.2	3370.1	3360.7	3360.7	3299.6	3290.3	3248.0	3238.6	3182.3
15°	3341.7	3280.9	3257.3	3219.8	3186.9	3205.7	3135.2	3116.5	3102.5	3041.5	3050.8
17.5°	3215.0	3149.4	3093.1	3069.6	3041.5	3013.3	2947.5	2961.7	2928.7	2928.7	2844.3
20°	3050.8	2980.4	2938.1	2891.2	2891.2	2853.7	2806.8	2811.4	2769.1	2727.0	2651.8
22.5°	2877.3	2802.0	2750.4	2731.6	2684.7	2675.3	2619.1	2604.9	2548.6	2553.2	2487.6
25°	2694.1	2619.1	2548.6	2553.2	2511.1	2492.4	2459.5	2393.8	2370.3	2342.1	2323.4
27.5°	2478.2	2426.5	2365.5	2360.9	2281.1	2285.7	2243.6	2224.8	2168.4	2182.5	2140.2
30°	2281.1	2206.1	2149.6	2135.6	2102.7	2093.3	2027.7	1999.4	2008.9	1971.2	1947.9
32.5°	2079.2	1966.7	1943.1	1915.0	1896.2	1872.7	1825.8	1844.6	1802.3	1811.6	1774.1
35°	1811.6	1764.7	1703.7	1703.7	1684.9	1666.2	1633.5	1652.2	1609.9	1591.2	1553.6
37.5°	1586.4	1544.3	1483.2	1502.0	1469.1	1440.9	1412.8	1417.4	1379.9	1375.3	1337.6
40°	1342.4	1318.8	1276.7	1276.7	1253.2	1253.2	1239.0	1225.0	1201.5	1173.4	1131.1
42.5°	1112.3	1093.6	1074.8	1079.6	1046.7	1074.8	1037.3	1060.8	985.6	981.0	952.7
45°	943.3	901.2	905.8	887.1	868.3	877.7	844.8	854.1	812.0	802.7	774.5
47.5°	765.1	751.0	722.9	713.5	713.5	699.3	685.3	680.6	661.8	638.3	600.8
50°	628.9	577.4	567.8	553.9	544.5	544.5	525.7	497.6	502.2	478.8	441.1
52.5°	492.8	450.5	431.8	427.2	408.4	399.0	375.5	356.7	342.6	333.2	309.8
55°	380.1	342.6	319.2	319.2	291.1	291.1	258.2	244.0	225.3	206.5	192.5
57.5°	286.3	267.6	244.0	225.3	215.9	192.5	173.6	150.2	136.1	107.9	89.2
60°	215.9	197.1	173.6	159.6	150.2	126.7	103.3	84.4	51.7	42.3	37.5
62.5°	159.6	140.9	117.3	107.9	98.6	79.8	56.3	28.1	14.2	14.2	14.2
65°	117.3	93.8	75.0	65.6	56.3	42.3	18.8	9.4	4.8	4.8	4.8
67.5°	79.8	61.0	42.3	37.5	28.1	14.2	4.8	4.8	4.8	4.8	4.8
70°	51.7	37.5	18.8	14.2	9.4	4.8	4.8	4.8	4.8	4.8	4.8
72.5°	32.9	18.8	9.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	18.8	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	9.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	4.8	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	4.8	4.8	4.8
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: FLDSQ4C80D010 FEU4C809027 F4LC-SQLWW-H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3820.6	3787.7	3806.4	3764.3	3783.1	3815.8	3792.4	3801.8
5°	3689.1	3670.3	3647.0	3585.9	3632.8	3670.3	3651.6	3647.0
7.5°	3548.4	3482.6	3515.5	3496.8	3487.4	3524.9	3482.6	3529.5
10°	3402.8	3355.9	3351.3	3318.4	3318.4	3346.5	3351.3	3323.0
12.5°	3186.9	3163.6	3163.6	3158.8	3154.0	3182.3	3186.9	3172.9
15°	3032.1	3022.7	2999.2	2994.6	2966.4	3008.5	3013.3	3008.5
17.5°	2844.3	2848.9	2825.6	2825.6	2844.3	2858.3	2820.8	2858.3
20°	2717.6	2694.1	2684.7	2642.4	2666.0	2689.5	2689.5	2694.1
22.5°	2534.5	2497.0	2511.1	2487.6	2473.4	2506.4	2506.4	2520.5
25°	2328.0	2328.0	2337.4	2323.4	2332.8	2351.5	2337.4	2370.3
27.5°	2130.9	2149.6	2149.6	2130.9	2140.2	2196.5	2220.0	2182.5
30°	1947.9	1952.5	1966.7	1957.3	1985.4	2004.2	1999.4	2027.7
32.5°	1741.4	1764.7	1774.1	1760.1	1769.5	1811.6	1788.3	1783.5
35°	1581.8	1539.5	1534.9	1539.5	1558.2	1567.6	1558.2	1591.2
37.5°	1351.7	1337.6	1318.8	1323.6	1337.6	1356.5	1365.9	1389.3
40°	1131.1	1112.3	1112.3	1107.7	1093.6	1145.2	1145.2	1145.2
42.5°	938.7	934.0	910.6	910.6	929.4	943.3	934.0	966.9
45°	769.7	751.0	736.8	736.8	751.0	751.0	765.1	760.4
47.5°	605.5	586.8	591.4	577.4	591.4	610.1	586.8	591.4
50°	455.3	455.3	445.9	455.3	450.5	455.3	445.9	436.5
52.5°	309.8	352.0	356.7	338.0	295.7	258.2	234.6	253.4
55°	178.4	159.6	159.6	154.8	145.5	140.9	126.7	140.9
57.5°	89.2	79.8	79.8	79.8	75.0	70.4	61.0	61.0
60°	37.5	32.9	32.9	28.1	23.5	18.8	14.2	18.8
62.5°	14.2	9.4	9.4	9.4	9.4	9.4	9.4	9.4
65°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
67.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
70°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
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)