

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P170694

Luminaire Tested: **LDA4A13830D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170694
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25649)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13830D010TE LAR25NF 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 25°
Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1343.6 lumens
Efficiency: N/A
Efficacy: 60.3 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

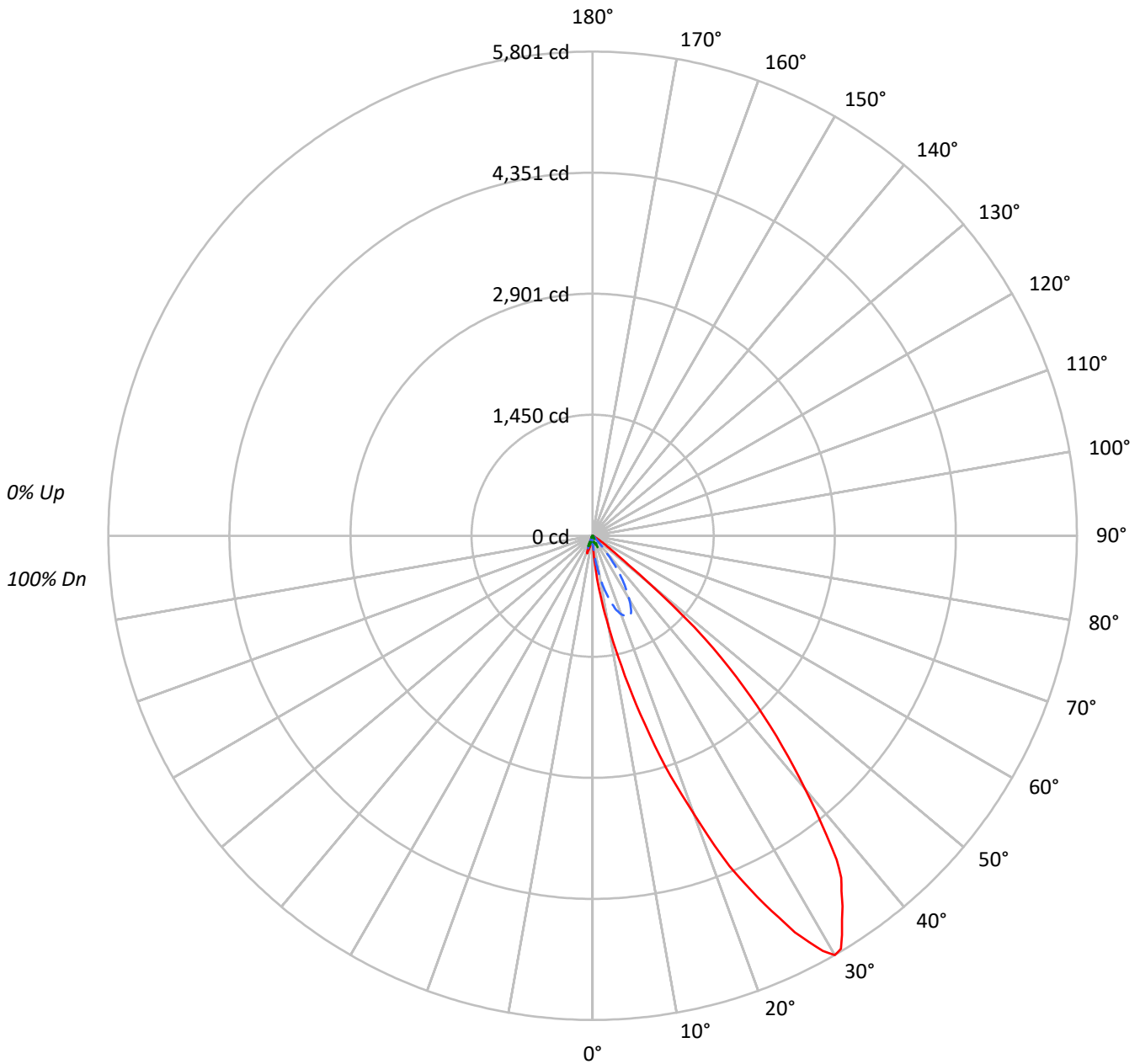
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					10					0
RW	70	50	30	10	70	50	30	10	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					100			
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82					82			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74					74			
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66					66			
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60					60			
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53					53			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48					48			
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43					43			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39					39			
10	61	49	42	38	60	49	42	38	48	42	37	47	41	37	46	41	37	36					36			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10990	10990	10990
5°	47719	10363	6278
10°	137598	9331	6826
15°	281955	10292	19704
20°	465165	19151	19952
25°	662642	12221	6682
30°	826221	5355	2621
35°	782866	2424	1159
40°	637608	1240	370
45°	446629	663	0
50°	167349	441	0
55°	35655	495	0
60°	6809	370	0
65°	2014	671	0
70°	541	829	0
75°	0	1096	0
80°	0	1634	0
85°	0	3255	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	18.7	1.4
10°-20°	160.9	12.0
20°-30°	411.0	30.6
30°-40°	476.0	35.4
40°-50°	245.6	18.3
50°-60°	25.3	1.9
60°-70°	2.7	0.2
70°-80°	1.7	0.1
80°-90°	1.6	0.1
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°	590.6	44.0
0°-40°	1066.6	79.4
0°-60°	1337.5	99.6
0°-90°	1343.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1343.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	89	89	89	89	89	
5°	385	200	84	55	51	60
15°	2208	808	81	108	154	676
25°	4869	1056	90	56	49	2262
35°	5199	577	16	9	8	3184
45°	2560	68	4	2	0	1917
55°	166	10	2	2	0	208
65°	7	2	2	2	0	9
75°	0	2	2	2	0	0
85°	0	2	2	2	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1
2.5°	153.5	148.2	144.3	145.9	154.3	145.1	145.9	142.8	141.3	139.7	135.9
5°	385.4	370.0	360.1	360.8	338.6	355.5	353.9	340.9	332.4	316.3	307.1
7.5°	723.2	690.2	678.7	674.8	677.1	661.0	654.1	637.2	615.0	585.8	568.9
10°	1098.6	1078.7	1071.7	1059.5	1058.7	1030.3	1013.4	991.9	947.4	906.7	876.7
12.5°	1600.7	1539.3	1528.5	1505.5	1499.4	1451.0	1415.7	1384.2	1309.7	1256.0	1208.4
15°	2208.0	2158.1	2169.6	2099.0	2079.8	2000.7	1934.7	1867.1	1746.6	1664.4	1580.0
17.5°	2897.4	2833.7	2841.4	2753.1	2594.2	2608.7	2512.8	2419.9	2250.2	2140.4	2009.9
20°	3543.8	3498.5	3501.6	3384.1	3330.4	3184.5	3056.3	2945.8	2720.1	2580.3	2407.6
22.5°	4287.8	4170.3	4148.0	3988.3	3893.9	3698.1	3519.3	3372.6	3099.3	2941.9	2730.0
25°	4868.9	4788.3	4726.9	4538.0	4406.8	4151.9	3944.6	3727.3	3398.7	3224.5	2972.6
26°	5087.0	5011.0	4931.9	4728.4	4581.0	4311.6	4085.9	3852.5	3500.8	3314.3	3040.2
27°	5333.4	5209.0	5113.8	4885.8	4726.1	4442.8	4174.9	3954.6	3578.4	3371.9	3083.2
28°	5507.7	5383.3	5257.4	5009.4	4836.7	4540.3	4261.7	4021.4	3623.7	3399.5	3100.9
29°	5686.6	5554.5	5371.0	5100.8	4912.7	4601.0	4311.6	4054.4	3636.7	3398.0	3091.6
30°	5801.0	5668.1	5430.9	5152.2	4953.4	4625.6	4325.4	4048.2	3616.0	3367.3	3057.9
31°	5774.1	5652.0	5416.3	5157.6	4949.5	4611.0	4300.0	4004.5	3563.8	3312.7	2996.4
32°	5639.7	5536.1	5357.2	5121.5	4907.3	4561.1	4240.9	3935.4	3488.6	3249.0	2922.0
33°	5483.9	5397.9	5274.3	5048.6	4833.6	4485.8	4159.6	3850.2	3401.8	3162.3	2832.1
34°	5353.4	5275.8	5161.4	4950.3	4733.0	4385.3	4056.7	3742.7	3302.8	3060.2	2726.2
35°	5199.1	5128.4	5022.5	4817.5	4593.3	4250.1	3927.7	3618.3	3186.1	2938.9	2603.4
36°	5064.7	4953.4	4845.9	4646.3	4422.9	4086.6	3775.7	3472.4	3054.0	2799.9	2465.2
37°	4856.6	4745.3	4630.2	4441.3	4221.0	3899.3	3606.8	3316.6	2903.5	2695.5	2317.8
38°	4545.7	4494.3	4379.1	4199.5	3994.5	3692.8	3421.8	3139.2	2733.9	2493.6	2161.2
39°	4255.5	4213.3	4101.2	3936.9	3747.3	3470.9	3216.8	2939.6	2542.7	2315.5	1996.1
40°	3959.9	3917.7	3812.5	3664.4	3493.9	3239.8	2998.7	2727.0	2342.3	2132.0	1830.3
42.5°	3259.8	3216.0	3193.8	3042.5	2862.1	2644.1	2420.6	2175.0	1847.9	1675.2	1438.7
45°	2560.4	2520.5	2436.8	2374.6	2213.4	2032.2	1850.2	1649.8	1408.8	1238.3	1017.2
47.5°	1830.3	1811.1	1814.1	1699.0	1545.4	1402.6	1252.2	1071.0	857.6	643.4	472.2
50°	872.1	877.5	899.0	818.4	703.2	619.6	530.5	416.1	304.0	238.8	185.0
51°	565.0	571.2	589.6	532.0	448.4	391.5	334.7	270.2	215.7	183.5	146.6
52°	382.3	382.3	386.2	352.4	310.9	278.7	245.7	208.1	168.1	144.3	115.9
53°	287.1	286.4	287.9	265.6	237.2	213.4	190.4	162.8	132.8	112.9	89.8
54°	219.6	218.8	220.3	203.4	183.5	165.8	148.2	127.4	102.9	84.5	67.6
55°	165.8	165.8	168.1	155.1	139.7	125.9	112.9	95.2	76.0	61.4	49.1
57.5°	66.8	66.8	69.1	64.5	57.6	52.2	47.6	40.7	33.8	28.4	23.0
60°	27.6	28.4	29.2	26.9	25.3	23.8	22.3	20.0	17.7	14.6	12.3
61°	20.7	20.7	21.5	20.0	19.2	17.7	16.9	15.4	13.8	11.5	10.0
62°	15.4	15.4	16.1	15.4	14.6	13.8	13.1	12.3	10.7	9.2	7.7
63°	11.5	11.5	12.3	11.5	11.5	10.7	10.0	9.2	8.4	6.9	6.1
64°	9.2	9.2	9.2	8.4	8.4	8.4	7.7	7.7	6.1	5.4	4.6
65°	6.9	6.9	6.9	6.9	6.1	6.1	6.1	5.4	5.4	3.8	3.8
66°	5.4	5.4	5.4	4.6	4.6	4.6	4.6	4.6	3.8	3.1	2.3



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1	89.1
2.5°	137.4	136.7	129.0	129.0	132.0	127.4	125.1	119.8	102.9	87.5	73.7
5°	304.0	295.6	269.5	261.8	261.0	239.5	227.2	200.4	117.5	83.7	63.7
7.5°	561.2	535.9	491.3	467.5	438.4	421.5	391.5	345.5	133.6	78.3	57.6
10°	829.9	801.5	735.5	693.3	671.0	616.5	566.6	503.6	149.7	74.5	56.8
12.5°	1137.8	1074.1	1011.1	935.9	869.1	820.7	737.8	664.1	160.5	73.7	62.2
15°	1471.0	1391.1	1283.6	1182.3	1087.9	1018.8	907.5	808.4	164.3	80.6	81.4
17.5°	1844.1	1694.4	1539.3	1401.1	1271.4	1178.5	1040.3	923.6	162.0	99.0	129.7
20°	2193.4	1994.6	1784.2	1592.3	1408.8	1288.2	1128.6	1001.9	162.8	145.9	175.0
22.5°	2470.5	2228.7	1972.3	1738.1	1505.5	1361.2	1186.9	1043.3	182.7	155.8	119.0
25°	2674.8	2389.9	2095.9	1826.4	1581.5	1419.5	1228.4	1055.6	170.4	89.8	67.6
26°	2729.3	2429.1	2118.9	1839.5	1590.7	1419.5	1222.2	1042.6	147.4	71.4	56.0
27°	2760.0	2446.8	2122.8	1833.3	1579.2	1403.4	1200.0	1016.5	120.5	59.9	47.6
28°	2763.8	2439.1	2103.6	1808.0	1547.0	1368.9	1160.0	976.6	99.8	50.7	39.2
29°	2743.1	2410.7	2066.7	1765.8	1497.8	1318.2	1105.5	927.4	85.2	43.8	33.0
30°	2699.3	2360.8	2010.7	1709.0	1434.1	1256.8	1041.8	872.9	74.5	37.6	27.6
31°	2636.4	2292.4	1950.0	1641.4	1367.3	1195.4	981.9	817.6	66.0	31.5	23.0
32°	2555.0	2211.8	1871.7	1568.5	1307.4	1137.0	924.3	761.6	59.1	26.9	19.2
33°	2464.4	2120.5	1786.5	1492.5	1249.9	1077.1	863.7	702.5	53.0	22.3	16.1
34°	2360.0	2019.9	1695.9	1416.5	1188.4	1011.1	798.4	641.8	46.1	18.4	13.8
35°	2241.0	1907.8	1598.4	1347.4	1120.1	939.7	730.1	577.3	40.7	16.1	11.5
36°	2112.0	1791.1	1500.1	1268.3	1046.4	865.2	657.9	512.1	35.3	13.8	10.0
37°	1976.9	1669.8	1401.9	1178.5	965.0	786.2	583.5	441.4	30.7	11.5	8.4
38°	1834.1	1547.7	1306.7	1093.2	879.0	700.9	507.5	363.9	26.9	10.0	7.7
39°	1688.2	1427.2	1212.2	999.6	790.8	617.3	434.5	282.5	23.8	8.4	6.9
40°	1545.4	1313.6	1112.4	897.5	702.5	535.1	363.9	208.1	20.7	7.7	5.4
42.5°	1223.8	1008.8	798.4	598.8	489.8	339.3	201.9	109.0	14.6	5.4	3.8
45°	800.7	596.5	430.7	291.7	253.4	143.6	93.7	67.6	10.7	3.8	3.1
47.5°	331.7	241.8	168.1	121.3	98.3	76.8	59.9	43.8	7.7	3.1	3.1
50°	145.9	115.2	91.4	71.4	62.2	49.9	38.4	26.9	4.6	2.3	2.3
51°	116.7	92.9	71.4	56.8	50.7	40.7	31.5	21.5	4.6	2.3	2.3
52°	92.1	72.2	56.0	43.8	40.7	33.0	26.1	17.7	3.8	2.3	2.3
53°	70.6	54.5	42.2	34.5	32.2	26.9	21.5	14.6	3.1	2.3	2.3
54°	52.2	41.5	33.0	26.9	26.1	21.5	17.7	12.3	3.1	2.3	2.3
55°	38.4	32.2	25.3	21.5	20.7	17.7	14.6	10.0	3.1	2.3	2.3
57.5°	20.0	16.9	13.8	12.3	12.3	11.5	10.0	6.1	2.3	1.5	2.3
60°	10.7	9.2	7.7	6.9	8.4	7.7	6.9	3.8	2.3	1.5	2.3
61°	8.4	7.7	6.1	5.4	6.9	6.1	6.1	3.1	2.3	2.3	2.3
62°	6.9	6.1	5.4	4.6	6.1	5.4	5.4	3.1	2.3	2.3	2.3
63°	5.4	4.6	3.8	3.8	5.4	5.4	4.6	2.3	2.3	2.3	2.3
64°	3.8	3.8	3.1	3.1	4.6	4.6	3.8	2.3	2.3	2.3	2.3
65°	3.1	3.1	2.3	2.3	3.8	3.8	3.8	2.3	2.3	2.3	2.3
66°	2.3	2.3	2.3	1.5	3.1	3.8	3.8	1.5	2.3	2.3	2.3



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CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	2.3
75°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	2.3
77.5°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	3.1
80°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	3.1
82.5°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	3.1
85°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	3.1
87.5°	0.8	0.8	0.8	0.8	2.3	3.1	3.1	1.5	2.3	2.3	3.1
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):

	135°	157.5°	180°
0°	89.1	89.1	89.1
2.5°	66.8	63.0	62.2
5°	55.3	51.4	50.7
7.5°	50.7	47.6	46.8
10°	52.2	53.0	54.5
12.5°	66.8	73.7	79.8
15°	107.5	135.1	154.3
17.5°	187.3	207.3	220.3
20°	164.3	151.2	152.0
22.5°	92.1	82.9	82.1
25°	56.0	50.7	49.1
26°	46.8	42.2	40.7
27°	38.4	34.5	33.0
28°	31.5	28.4	27.6
29°	26.9	23.0	22.3
30°	22.3	19.2	18.4
31°	18.4	16.1	15.4
32°	16.1	13.8	12.3
33°	13.1	11.5	10.7
34°	11.5	9.2	8.4
35°	9.2	7.7	7.7
36°	8.4	6.9	6.1
37°	6.9	5.4	5.4
38°	6.1	4.6	3.8
39°	5.4	3.8	3.1
40°	4.6	3.1	2.3
42.5°	3.1	1.5	0.8
45°	2.3	0.8	0.0
47.5°	1.5	0.8	0.0
50°	1.5	0.0	0.0
51°	1.5	0.0	0.0
52°	1.5	0.0	0.0
53°	1.5	0.0	0.0
54°	1.5	0.0	0.0
55°	1.5	0.0	0.0
57.5°	1.5	0.0	0.0
60°	1.5	0.0	0.0
61°	1.5	0.0	0.0
62°	1.5	0.0	0.0
63°	1.5	0.8	0.0
64°	1.5	0.8	0.0
65°	1.5	0.8	0.0
66°	1.5	0.8	0.0



TEST NUMBER: P170694

CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.3	0.8	0.0
75°	2.3	0.8	0.0
77.5°	2.3	0.8	0.0
80°	2.3	0.8	0.0
82.5°	2.3	0.8	0.0
85°	2.3	0.8	0.0
87.5°	1.5	0.8	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°







67.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.3	1.5
70°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.8	0.8





67.5°	1.5	1.5	1.5	1.5	3.1	3.1	3.1	1.5	2.3	2.3	2.3
70°	0.8	0.8	0.8	1.5	2.3	3.1	3.1	1.5	2.3	2.3	2.3





67.5°	1.5	0.8	0.0
70°	1.5	0.8	0.0



(END OF REPORT)