

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: P170688

Luminaire Tested: **LDA4A09840D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170688
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: LDA4A09840D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 976.2 lumens
Efficiency: N/A
Efficacy: 70.5 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

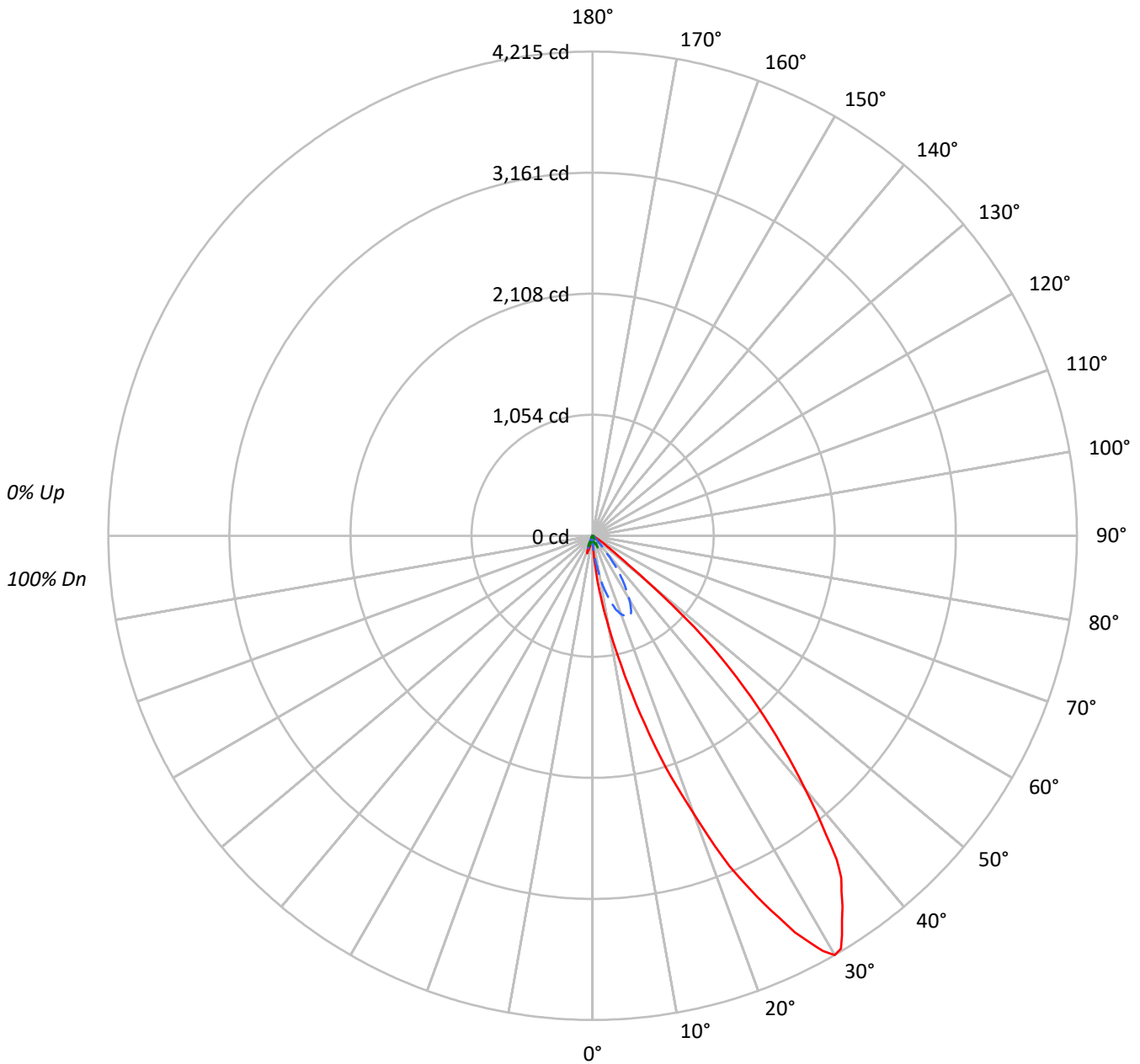
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82																			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74																			
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66																			
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60																			
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	58	51	46	68	57	51	46	56	50	46	55	49	45	54	49	45	43																			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39																			
10	61	49	42	38	60	49	42	37	48	42	37	47	41	37	46	41	37	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7980	7980	7980
5°	34669	7528	4556
10°	99973	6776	4960
15°	204851	7483	14315
20°	337973	13914	14491
25°	481443	8887	4859
30°	600288	3888	1909
35°	568790	1762	843
40°	463260	902	274
45°	324488	488	0
50°	121602	326	0
55°	25913	366	0
60°	4958	271	0
65°	1459	496	0
70°	397	613	0
75°	0	810	0
80°	0	1208	0
85°	0	2406	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.6	1.4
10°-20°	116.9	12.0
20°-30°	298.6	30.6
30°-40°	345.8	35.4
40°-50°	178.4	18.3
50°-60°	18.4	1.9
60°-70°	2.0	0.2
70°-80°	1.3	0.1
80°-90°	1.2	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°	429.1	44.0
0°-40°	774.9	79.4
0°-60°	971.8	99.5
0°-90°	976.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	976.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	65	65	65	65	65	
5°	280	146	61	40	37	44
15°	1604	587	59	78	112	491
25°	3538	767	65	41	36	1643
35°	3777	420	12	7	6	2313
45°	1860	49	3	2	0	1393
55°	120	7	2	1	0	151
65°	5	2	2	1	0	7
75°	0	1	2	2	0	0
85°	0	1	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°	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
2.5°	111.6	107.7	104.9	106.0	112.1	105.4	106.0	103.7	102.6	101.5	98.7
5°	280.0	268.9	261.6	262.2	246.0	258.3	257.1	247.7	241.5	229.8	223.1
7.5°	525.4	501.5	493.1	490.3	492.0	480.3	475.2	463.0	446.8	425.6	413.3
10°	798.2	783.7	778.7	769.8	769.2	748.6	736.3	720.7	688.3	658.8	637.0
12.5°	1163.0	1118.4	1110.6	1093.8	1089.4	1054.2	1028.6	1005.7	951.6	912.5	878.0
15°	1604.2	1568.0	1576.3	1525.0	1511.1	1453.6	1405.6	1356.5	1269.0	1209.3	1147.9
17.5°	2105.1	2058.8	2064.4	2000.2	1884.8	1895.4	1825.7	1758.2	1634.9	1555.1	1460.3
20°	2574.8	2541.9	2544.1	2458.7	2419.7	2313.7	2220.6	2140.2	1976.3	1874.7	1749.2
22.5°	3115.3	3029.9	3013.7	2897.7	2829.1	2686.9	2556.9	2450.4	2251.8	2137.5	1983.5
25°	3537.5	3478.9	3434.3	3297.1	3201.7	3016.5	2865.9	2708.1	2469.3	2342.7	2159.8
26°	3695.9	3640.7	3583.3	3435.4	3328.3	3132.6	2968.6	2799.0	2543.5	2408.0	2208.9
27°	3875.0	3784.6	3715.4	3549.8	3433.8	3227.9	3033.3	2873.2	2599.9	2449.8	2240.1
28°	4001.6	3911.2	3819.8	3639.6	3514.1	3298.8	3096.3	2921.7	2632.8	2469.9	2252.9
29°	4131.6	4035.6	3902.3	3706.0	3569.3	3342.8	3132.6	2945.7	2642.3	2468.8	2246.2
30°	4214.7	4118.2	3945.8	3743.3	3598.9	3360.7	3142.6	2941.2	2627.2	2446.5	2221.7
31°	4195.1	4106.5	3935.2	3747.2	3596.1	3350.1	3124.2	2909.4	2589.3	2406.9	2177.1
32°	4097.5	4022.2	3892.3	3721.0	3565.4	3313.8	3081.2	2859.2	2534.6	2360.6	2123.0
33°	3984.3	3921.8	3832.0	3668.0	3511.9	3259.2	3022.1	2797.3	2471.6	2297.5	2057.7
34°	3889.5	3833.1	3750.0	3596.6	3438.8	3186.1	2947.4	2719.2	2399.6	2223.4	1980.7
35°	3777.4	3726.0	3649.1	3500.1	3337.3	3087.9	2853.7	2628.9	2314.8	2135.2	1891.5
36°	3679.7	3598.9	3520.8	3375.8	3213.4	2969.1	2743.2	2522.9	2218.9	2034.3	1791.1
37°	3528.6	3447.7	3364.0	3226.8	3066.7	2833.0	2620.5	2409.7	2109.6	1958.4	1684.0
38°	3302.7	3265.3	3181.6	3051.1	2902.2	2683.0	2486.1	2280.8	1986.3	1811.7	1570.2
39°	3091.8	3061.2	2979.7	2860.4	2722.6	2521.8	2337.1	2135.8	1847.4	1682.3	1450.3
40°	2877.1	2846.4	2770.0	2662.3	2538.5	2353.9	2178.7	1981.3	1701.8	1549.0	1329.8
42.5°	2368.4	2336.6	2320.4	2210.5	2079.4	1921.0	1758.7	1580.2	1342.6	1217.1	1045.3
45°	1860.2	1831.2	1770.4	1725.2	1608.1	1476.5	1344.3	1198.7	1023.5	899.7	739.1
47.5°	1329.8	1315.8	1318.1	1234.4	1122.8	1019.1	909.8	778.1	623.1	467.4	343.0
50°	633.7	637.6	653.2	594.6	510.9	450.1	385.4	302.3	220.9	173.5	134.4
51°	410.5	415.0	428.4	386.5	325.8	284.5	243.2	196.3	156.7	133.3	106.5
52°	277.8	277.8	280.6	256.0	225.9	202.5	178.5	151.2	122.2	104.9	84.2
53°	208.6	208.1	209.2	193.0	172.4	155.1	138.3	118.3	96.5	82.0	65.3
54°	159.5	159.0	160.1	147.8	133.3	120.5	107.7	92.6	74.7	61.4	49.1
55°	120.5	120.5	122.2	112.7	101.5	91.5	82.0	69.2	55.2	44.6	35.7
57.5°	48.5	48.5	50.2	46.9	41.8	37.9	34.6	29.6	24.5	20.6	16.7
60°	20.1	20.6	21.2	19.5	18.4	17.3	16.2	14.5	12.8	10.6	8.9
61°	15.1	15.1	15.6	14.5	13.9	12.8	12.3	11.2	10.0	8.4	7.3
62°	11.2	11.2	11.7	11.2	10.6	10.0	9.5	8.9	7.8	6.7	5.6
63°	8.4	8.4	8.9	8.4	8.4	7.8	7.3	6.7	6.1	5.0	4.5
64°	6.7	6.7	6.7	6.1	6.1	6.1	5.6	5.6	4.5	3.9	3.3
65°	5.0	5.0	5.0	5.0	4.5	4.5	4.5	3.9	3.9	2.8	2.8
66°	3.9	3.9	3.9	3.3	3.3	3.3	3.3	3.3	2.8	2.2	1.7



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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	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
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°	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
2.5°	99.8	99.3	93.7	93.7	95.9	92.6	90.9	87.0	74.7	63.6	53.5
5°	220.9	214.7	195.8	190.2	189.6	174.0	165.1	145.6	85.3	60.8	46.3
7.5°	407.7	389.3	357.0	339.7	318.5	306.2	284.5	251.0	97.1	56.9	41.8
10°	603.0	582.3	534.4	503.7	487.5	447.9	411.6	365.9	108.8	54.1	41.3
12.5°	826.6	780.3	734.6	679.9	631.4	596.3	536.0	482.5	116.6	53.5	45.2
15°	1068.7	1010.7	932.6	859.0	790.4	740.2	659.3	587.4	119.4	58.6	59.1
17.5°	1339.8	1231.0	1118.4	1018.0	923.7	856.2	755.8	671.0	117.7	72.0	94.3
20°	1593.6	1449.1	1296.3	1156.9	1023.5	936.0	820.0	727.9	118.3	106.0	127.2
22.5°	1795.0	1619.3	1433.0	1262.8	1093.8	989.0	862.3	758.0	132.8	113.2	86.5
25°	1943.3	1736.4	1522.8	1327.0	1149.0	1031.4	892.5	767.0	123.8	65.3	49.1
26°	1982.9	1764.9	1539.5	1336.5	1155.7	1031.4	888.0	757.5	107.1	51.9	40.7
27°	2005.3	1777.7	1542.3	1332.0	1147.4	1019.6	871.8	738.5	87.6	43.5	34.6
28°	2008.0	1772.1	1528.3	1313.6	1123.9	994.5	842.8	709.5	72.5	36.8	28.4
29°	1993.0	1751.5	1501.6	1282.9	1088.3	957.7	803.2	673.8	61.9	31.8	24.0
30°	1961.2	1715.2	1460.9	1241.6	1042.0	913.1	756.9	634.2	54.1	27.3	20.1
31°	1915.5	1665.6	1416.8	1192.6	993.4	868.5	713.4	594.0	48.0	22.9	16.7
32°	1856.3	1607.0	1359.9	1139.6	949.9	826.1	671.6	553.3	42.9	19.5	13.9
33°	1790.5	1540.6	1298.0	1084.3	908.1	782.6	627.5	510.4	38.5	16.2	11.7
34°	1714.6	1467.5	1232.2	1029.1	863.5	734.6	580.1	466.3	33.5	13.4	10.0
35°	1628.2	1386.1	1161.3	978.9	813.8	682.7	530.5	419.5	29.6	11.7	8.4
36°	1534.5	1301.3	1089.9	921.5	760.3	628.6	478.0	372.0	25.7	10.0	7.3
37°	1436.3	1213.2	1018.5	856.2	701.1	571.2	423.9	320.7	22.3	8.4	6.1
38°	1332.6	1124.5	949.4	794.3	638.7	509.3	368.7	264.4	19.5	7.3	5.6
39°	1226.6	1036.9	880.8	726.2	574.5	448.5	315.7	205.3	17.3	6.1	5.0
40°	1122.8	954.4	808.2	652.1	510.4	388.8	264.4	151.2	15.1	5.6	3.9
42.5°	889.1	732.9	580.1	435.1	355.9	246.5	146.7	79.2	10.6	3.9	2.8
45°	581.8	433.4	312.9	212.0	184.1	104.3	68.1	49.1	7.8	2.8	2.2
47.5°	241.0	175.7	122.2	88.1	71.4	55.8	43.5	31.8	5.6	2.2	2.2
50°	106.0	83.7	66.4	51.9	45.2	36.3	27.9	19.5	3.3	1.7	1.7
51°	84.8	67.5	51.9	41.3	36.8	29.6	22.9	15.6	3.3	1.7	1.7
52°	66.9	52.4	40.7	31.8	29.6	24.0	19.0	12.8	2.8	1.7	1.7
53°	51.3	39.6	30.7	25.1	23.4	19.5	15.6	10.6	2.2	1.7	1.7
54°	37.9	30.1	24.0	19.5	19.0	15.6	12.8	8.9	2.2	1.7	1.7
55°	27.9	23.4	18.4	15.6	15.1	12.8	10.6	7.3	2.2	1.7	1.7
57.5°	14.5	12.3	10.0	8.9	8.9	8.4	7.3	4.5	1.7	1.1	1.7
60°	7.8	6.7	5.6	5.0	6.1	5.6	5.0	2.8	1.7	1.1	1.7
61°	6.1	5.6	4.5	3.9	5.0	4.5	4.5	2.2	1.7	1.7	1.7
62°	5.0	4.5	3.9	3.3	4.5	3.9	3.9	2.2	1.7	1.7	1.7
63°	3.9	3.3	2.8	2.8	3.9	3.9	3.3	1.7	1.7	1.7	1.7
64°	2.8	2.8	2.2	2.2	3.3	3.3	2.8	1.7	1.7	1.7	1.7
65°	2.2	2.2	1.7	1.7	2.8	2.8	2.8	1.7	1.7	1.7	1.7
66°	1.7	1.7	1.7	1.1	2.2	2.8	2.8	1.1	1.7	1.7	1.7



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CATALOG NUMBER: LDA4A09840D010TE 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°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	1.7
75°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	1.7
77.5°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	2.2
80°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	2.2
82.5°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	2.2
85°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	2.2
87.5°	0.6	0.6	0.6	0.6	1.7	2.2	2.2	1.1	1.7	1.7	2.2
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):

	135°	157.5°	180°
0°	64.7	64.7	64.7
2.5°	48.5	45.7	45.2
5°	40.2	37.4	36.8
7.5°	36.8	34.6	34.0
10°	37.9	38.5	39.6
12.5°	48.5	53.5	58.0
15°	78.1	98.2	112.1
17.5°	136.1	150.6	160.1
20°	119.4	109.9	110.4
22.5°	66.9	60.2	59.7
25°	40.7	36.8	35.7
26°	34.0	30.7	29.6
27°	27.9	25.1	24.0
28°	22.9	20.6	20.1
29°	19.5	16.7	16.2
30°	16.2	13.9	13.4
31°	13.4	11.7	11.2
32°	11.7	10.0	8.9
33°	9.5	8.4	7.8
34°	8.4	6.7	6.1
35°	6.7	5.6	5.6
36°	6.1	5.0	4.5
37°	5.0	3.9	3.9
38°	4.5	3.3	2.8
39°	3.9	2.8	2.2
40°	3.3	2.2	1.7
42.5°	2.2	1.1	0.6
45°	1.7	0.6	0.0
47.5°	1.1	0.6	0.0
50°	1.1	0.0	0.0
51°	1.1	0.0	0.0
52°	1.1	0.0	0.0
53°	1.1	0.0	0.0
54°	1.1	0.0	0.0
55°	1.1	0.0	0.0
57.5°	1.1	0.0	0.0
60°	1.1	0.0	0.0
61°	1.1	0.0	0.0
62°	1.1	0.0	0.0
63°	1.1	0.6	0.0
64°	1.1	0.6	0.0
65°	1.1	0.6	0.0
66°	1.1	0.6	0.0



TEST NUMBER: P170688

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.7	0.6	0.0
75°	1.7	0.6	0.0
77.5°	1.7	0.6	0.0
80°	1.7	0.6	0.0
82.5°	1.7	0.6	0.0
85°	1.7	0.6	0.0
87.5°	1.1	0.6	0.0
90°	0.0	0.0	0.0



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







67.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.7	1.1
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.6	0.6





67.5°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	1.1	1.7	1.7	1.7
70°	0.6	0.6	0.6	1.1	1.7	2.2	2.2	1.1	1.7	1.7	1.7





67.5°	1.1	0.6	0.0
70°	1.1	0.6	0.0



(END OF REPORT)