

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: P175479

Luminaire Tested: **LDA6A10827D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175479
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26268)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A10827D010TE LARL20NF 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 20° Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 783.1 lumens
Efficiency: N/A
Efficacy: 56.6 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

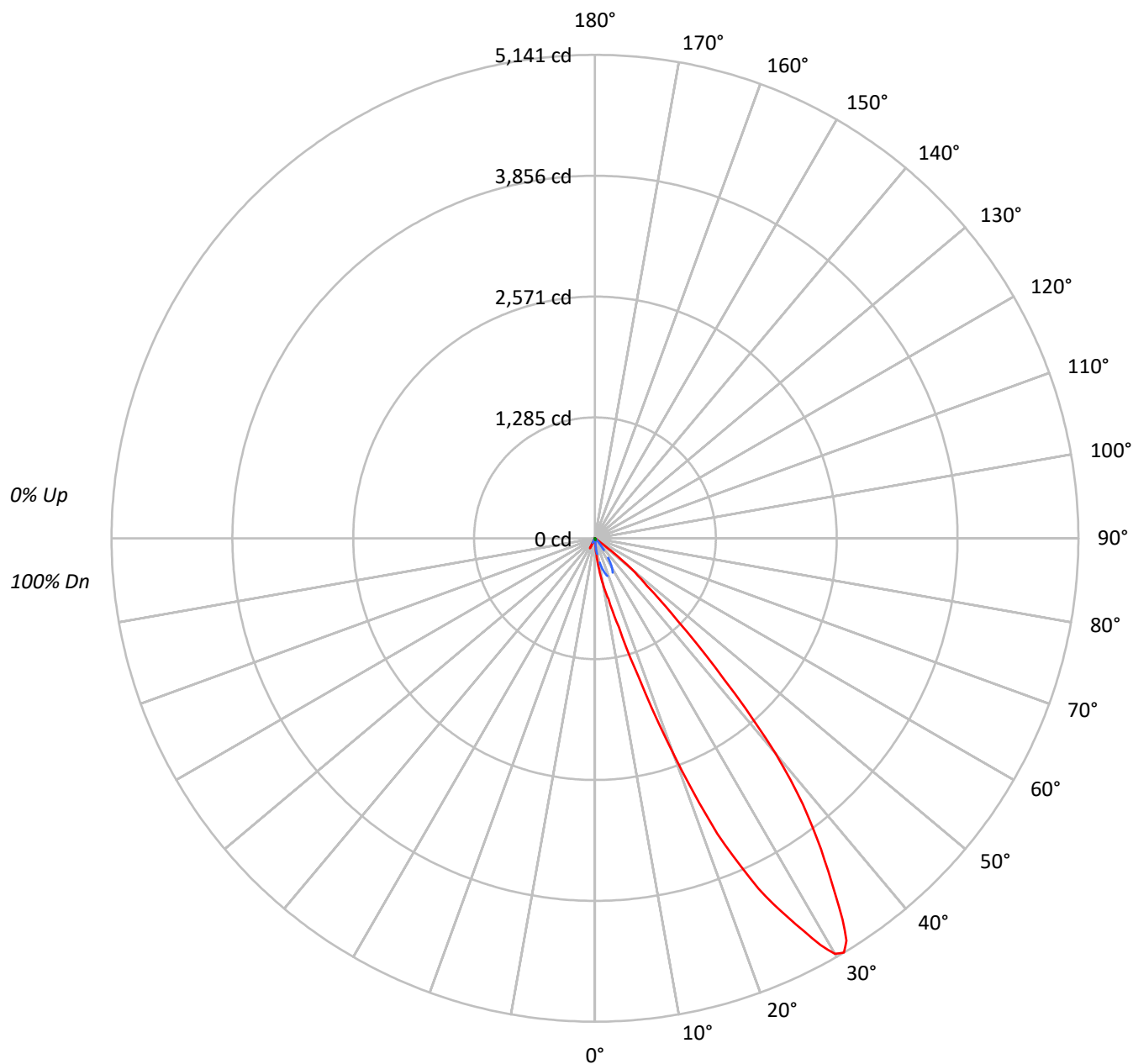
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104		110	107	104	102		103	101	99		99	97	96		96	94	93
2	105	100	95	91		103	98	93	90		94	91	88		91	88	86		89	86	84
3	99	91	85	80		96	89	84	79		87	82	78		84	80	77		82	78	76
4	92	83	76	71		90	82	75	70		79	74	70		77	72	69		75	71	68
5	86	75	68	63		84	74	68	63		73	67	62		71	66	62		69	65	61
6	80	69	62	56		78	68	61	56		66	60	56		65	59	55		63	59	55
7	74	63	56	50		73	62	55	50		61	55	50		59	54	50		58	53	49
8	69	58	50	45		68	57	50	45		56	49	45		55	49	45		54	48	44
9	65	53	46	41		63	52	45	41		51	45	40		50	44	40		49	44	40
10	60	49	41	37		59	48	41	37		47	41	37		46	41	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	970	970	970
5°	9421	858	352
10°	27861	612	223
15°	55307	414	193
20°	142661	338	268
25°	248633	405	1917
30°	322967	424	1082
35°	289382	181	100
40°	213944	64	0
45°	96343	70	0
50°	43470	77	0
55°	3880	86	0
60°	471	99	0
65°	195	156	0
70°	144	192	0
75°	0	254	0
80°	0	379	95
85°	0	755	189



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.0	0.9
10°-20°	65.9	8.4
20°-30°	260.4	33.3
30°-40°	314.2	40.1
40°-50°	121.9	15.6
50°-60°	10.7	1.4
60°-70°	1.0	0.1
70°-80°	1.0	0.1
80°-90°	0.9	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°	333.4	42.6
0°-40°	647.6	82.7
0°-60°	780.3	99.6
0°-90°	783.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	783.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	18	18	18	18	18	
5°	171	84	16	8	6	27
15°	974	369	7	5	3	357
25°	4110	436	7	21	32	1880
35°	4324	222	3	3	2	2658
45°	1243	16	1	1	0	1092
55°	41	2	1	1	0	98
65°	2	1	1	1	0	2
75°	0	1	1	1	0	0
85°	0	1	1	1	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°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
2.5°	55.5	52.8	49.7	51.0	51.6	53.1	51.9	47.3	50.1	47.9	46.1
5°	171.2	168.2	162.4	163.3	161.4	163.6	158.7	148.9	150.8	147.7	139.8
7.5°	333.9	321.1	311.6	312.2	306.7	309.2	300.0	283.2	281.4	265.8	263.4
10°	500.5	494.1	482.8	481.3	471.5	472.7	458.4	436.1	430.0	412.0	401.6
12.5°	664.1	653.4	637.5	634.2	618.3	618.6	599.1	574.0	564.9	546.3	531.9
15°	974.5	959.2	922.9	909.1	865.2	858.5	810.3	753.5	726.0	694.0	651.9
17.5°	1547.3	1537.5	1466.4	1427.0	1337.9	1249.4	1197.2	1074.6	1002.8	913.1	835.3
20°	2445.4	2463.4	2339.2	2251.3	2085.9	1899.2	1767.3	1543.9	1394.7	1240.0	1093.5
22.5°	3400.7	3408.3	3281.0	3171.5	2978.9	2722.2	2418.6	2147.6	1874.1	1608.3	1366.6
25°	4110.5	4088.5	3948.5	3816.9	3614.3	3352.1	3057.0	2695.1	2321.2	1956.2	1602.2
26°	4327.2	4315.3	4174.9	4017.4	3794.3	3528.2	3221.2	2855.9	2461.0	2067.9	1674.2
27°	4528.0	4520.4	4368.1	4192.9	3943.0	3664.3	3343.0	2978.0	2566.6	2154.3	1726.4
28°	4731.6	4723.0	4538.7	4335.4	4063.8	3761.1	3427.2	3059.5	2634.6	2204.9	1748.1
29°	4946.7	4930.2	4694.6	4440.1	4144.4	3817.5	3471.2	3096.7	2657.8	2217.5	1742.6
30°	5102.1	5076.4	4807.2	4506.3	4177.4	3835.2	3476.0	3095.8	2643.5	2191.5	1707.5
31°	5141.1	5115.2	4838.7	4505.4	4153.2	3808.4	3440.9	3052.4	2583.7	2128.7	1648.3
32°	5046.5	5022.7	4759.0	4402.6	4076.9	3743.7	3371.1	2972.2	2490.9	2034.7	1568.0
33°	4835.3	4817.3	4590.0	4267.4	3967.7	3651.8	3271.0	2858.0	2359.1	1915.0	1473.7
34°	4568.9	4555.8	4380.9	4108.4	3829.1	3525.8	3141.3	2707.6	2185.4	1779.5	1370.9
35°	4324.1	4314.4	4172.8	3931.1	3670.7	3369.8	2977.1	2522.3	2006.6	1633.6	1261.0
36°	4088.5	4080.3	3957.3	3732.7	3481.5	3187.0	2770.5	2300.8	1814.6	1482.3	1147.2
37°	3842.6	3835.2	3729.6	3516.0	3268.8	2968.5	2525.1	2064.9	1619.6	1331.2	1030.3
38°	3587.4	3581.3	3484.6	3271.6	3020.7	2701.5	2245.2	1821.0	1429.5	1183.8	925.3
39°	3302.7	3297.5	3208.4	2985.0	2717.0	2386.8	1957.1	1583.3	1249.1	1040.7	823.7
40°	2989.6	2982.6	2893.4	2643.8	2373.1	2063.0	1680.3	1365.1	1078.8	907.0	734.3
42.5°	2032.5	2024.9	1958.7	1813.4	1552.8	1353.5	1113.6	913.7	764.5	661.0	571.9
45°	1242.7	1243.6	1208.8	1119.1	962.2	851.5	721.1	625.6	558.5	518.8	456.9
47.5°	751.7	751.7	736.1	690.3	619.8	575.6	521.6	477.0	425.7	386.7	319.5
50°	509.7	510.0	486.2	488.6	441.6	414.1	362.6	308.2	257.9	201.1	143.4
51°	377.2	379.0	357.1	367.1	315.6	292.4	243.5	197.5	152.9	109.0	62.9
52°	230.7	234.1	219.1	228.3	198.4	164.5	124.8	92.2	62.0	43.3	30.2
53°	107.1	109.9	102.2	106.5	88.8	69.3	52.5	42.7	34.2	27.8	20.4
54°	56.8	57.4	54.9	53.7	48.8	43.0	35.7	29.6	23.2	18.6	13.7
55°	40.6	40.6	39.4	38.1	34.2	29.3	23.8	20.1	15.3	12.2	8.9
57.5°	12.5	12.5	12.5	11.9	10.4	8.9	7.0	6.1	4.9	4.6	3.7
60°	4.3	4.3	4.3	4.0	3.7	3.4	3.1	2.7	2.4	2.4	2.1
61°	3.1	3.1	3.1	3.1	2.7	2.7	2.4	2.1	1.8	2.1	1.8
62°	2.4	2.7	2.4	2.4	2.4	2.1	1.8	1.8	1.5	1.8	1.5
63°	2.1	2.1	2.1	2.1	1.8	1.8	1.5	1.5	1.2	1.5	1.5
64°	1.8	1.8	1.8	1.8	1.5	1.5	1.2	1.2	0.9	1.2	1.2
65°	1.5	1.5	1.5	1.5	1.2	1.2	1.2	0.9	0.9	1.2	1.2
66°	1.2	1.2	1.2	1.2	1.2	0.9	0.9	0.9	0.6	0.9	0.9



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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°	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.6	0.6
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
2.5°	44.3	41.2	40.6	40.6	34.2	35.4	33.3	31.7	22.3	17.1	12.8
5°	135.2	124.2	119.6	115.7	98.3	96.7	86.1	83.6	29.9	15.6	9.8
7.5°	252.1	235.3	224.6	214.2	186.2	178.5	160.2	155.6	40.6	13.1	7.6
10°	385.1	361.0	342.4	317.7	281.4	265.5	238.7	228.9	49.4	11.0	7.3
12.5°	510.3	482.8	457.5	424.8	375.7	350.4	314.9	302.4	52.8	9.2	6.7
15°	618.3	581.7	550.2	515.1	460.2	428.2	384.8	368.7	50.1	7.3	5.8
17.5°	755.3	693.4	638.7	589.6	529.8	490.7	440.4	414.1	40.6	6.4	5.2
20°	958.0	833.2	737.0	657.7	574.7	526.1	470.3	438.5	29.3	5.8	5.2
22.5°	1148.7	970.5	823.1	709.6	597.9	539.9	481.9	446.8	20.8	5.8	6.1
25°	1304.4	1073.9	882.6	743.7	610.7	542.6	477.6	436.1	16.2	6.7	11.9
26°	1348.0	1099.6	894.2	746.5	608.8	538.6	470.3	426.3	14.3	9.2	22.3
27°	1375.2	1111.2	894.5	742.2	602.1	530.7	459.3	413.2	12.5	14.0	37.5
28°	1380.6	1105.7	884.1	730.3	590.5	520.0	447.1	397.3	11.6	17.7	42.7
29°	1365.7	1086.1	865.2	712.9	576.5	507.2	432.4	380.0	10.1	13.4	27.8
30°	1332.1	1053.8	837.4	690.6	561.5	492.9	414.4	359.2	8.2	6.7	12.5
31°	1281.8	1009.2	803.2	664.4	544.8	474.6	392.8	336.0	7.0	4.6	7.3
32°	1218.0	955.8	765.1	637.5	525.8	452.3	367.4	310.1	6.4	3.7	6.1
33°	1144.7	899.7	725.7	610.4	503.2	425.7	340.3	282.3	5.8	4.0	6.1
34°	1064.8	842.3	681.2	582.0	477.0	396.7	311.3	249.6	5.2	3.7	4.6
35°	978.1	782.8	641.2	557.0	447.4	365.3	281.7	221.9	4.6	2.7	3.1
36°	903.3	724.8	602.4	525.2	415.0	333.0	251.2	192.0	4.0	1.8	2.1
37°	821.9	670.5	566.4	492.3	380.3	299.7	220.6	162.4	3.7	1.2	1.8
38°	745.9	620.4	530.4	454.4	344.6	266.1	189.5	133.4	3.4	1.2	1.5
39°	676.9	575.0	496.8	414.1	307.0	231.0	158.1	104.7	3.1	0.9	1.5
40°	617.7	534.4	456.6	371.7	268.3	196.2	126.7	77.5	2.7	0.9	1.5
42.5°	502.3	428.8	344.6	262.8	173.6	111.1	56.8	28.4	2.1	0.9	1.2
45°	383.9	305.2	227.4	158.1	89.4	43.0	21.1	15.6	1.8	0.9	1.2
47.5°	249.3	183.1	122.1	69.0	29.9	17.4	11.0	7.9	1.5	0.9	1.2
50°	92.2	51.0	26.9	16.8	11.6	7.3	4.9	4.6	1.5	0.9	1.2
51°	37.8	24.7	16.8	11.3	7.3	5.2	4.0	4.0	1.5	0.9	1.2
52°	22.6	15.6	11.3	8.2	5.5	4.0	3.1	3.4	1.5	0.9	1.2
53°	15.0	10.7	8.2	6.4	4.3	3.1	2.1	2.4	1.5	0.9	1.2
54°	10.1	7.6	6.1	4.9	3.1	2.4	1.2	2.1	1.2	0.9	1.2
55°	7.0	5.5	4.6	3.7	2.1	1.5	0.9	1.8	1.2	0.9	1.2
57.5°	3.1	2.7	2.4	2.1	0.9	0.6	0.3	1.5	1.2	0.9	1.2
60°	2.1	1.8	1.5	1.5	0.3	0.3	0.0	1.2	1.2	0.9	1.2
61°	1.8	1.5	1.5	1.2	0.3	0.3	0.0	1.2	1.5	0.9	1.2
62°	1.5	1.5	1.2	1.2	0.3	0.0	0.0	1.2	1.5	0.9	1.5
63°	1.2	1.2	1.2	1.2	0.3	0.0	0.0	1.2	1.5	0.9	1.5
64°	1.2	1.2	1.2	1.2	0.0	0.0	0.0	1.2	1.5	0.9	1.5
65°	1.2	0.9	0.9	0.9	0.0	0.0	0.0	1.2	1.5	1.2	1.5
66°	0.9	0.9	0.9	0.9	0.0	0.0	0.0	1.2	1.5	1.2	1.5



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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	0.0	0.0	0.0	0.9	1.5	1.2	1.8
75°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
77.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
80°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
82.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
85°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
87.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.2	1.5	1.2	1.8
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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CATALOG NUMBER: LDA6A10827D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	17.7	17.7	17.7
2.5°	10.7	9.8	9.2
5°	7.6	7.0	6.4
7.5°	6.4	5.5	5.2
10°	5.8	4.3	4.0
12.5°	4.9	3.7	3.4
15°	4.6	3.7	3.4
17.5°	4.6	3.7	3.4
20°	4.9	4.6	4.6
22.5°	7.0	7.6	7.9
25°	21.4	27.5	31.7
26°	50.1	75.1	100.7
27°	76.0	110.8	118.1
28°	68.4	79.3	77.2
29°	33.0	37.2	33.9
30°	14.6	17.4	17.1
31°	9.5	10.7	10.4
32°	7.9	7.3	7.0
33°	6.4	5.2	4.3
34°	4.3	3.4	2.7
35°	2.7	1.8	1.5
36°	1.8	0.9	0.6
37°	1.2	0.6	0.3
38°	1.2	0.3	0.0
39°	0.9	0.3	0.0
40°	0.9	0.3	0.0
42.5°	0.9	0.0	0.0
45°	0.6	0.0	0.0
47.5°	0.6	0.0	0.0
50°	0.9	0.3	0.0
51°	0.9	0.0	0.0
52°	0.9	0.0	0.0
53°	0.6	0.0	0.0
54°	0.6	0.0	0.0
55°	0.6	0.0	0.0
57.5°	0.6	0.0	0.0
60°	0.6	0.0	0.0
61°	0.9	0.0	0.0
62°	0.9	0.0	0.0
63°	0.9	0.0	0.0
64°	0.9	0.3	0.0
65°	0.9	0.3	0.0
66°	0.9	0.3	0.0



TEST NUMBER: P175479

CATALOG NUMBER: LDA6A10827D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.2	0.3	0.0
75°	1.2	0.3	0.0
77.5°	1.2	0.3	0.0
80°	1.2	0.6	0.3
82.5°	1.2	0.6	0.3
85°	1.2	0.6	0.3
87.5°	1.2	0.6	0.3
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.6	0.6	0.6	0.9	0.9
70°	0.9	0.9	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.9	0.9





67.5°	0.9	0.9	0.9	0.9	0.0	0.0	0.0	1.2	1.5	1.2	1.5
70°	0.9	0.9	0.9	0.9	0.0	0.0	0.0	1.2	1.5	1.2	1.8





67.5°	1.2	0.3	0.0
70°	1.2	0.3	0.0



(END OF REPORT)