

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: P175483

Luminaire Tested: **LDA6A10927D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175483
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: LDA6A10927D010TE 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 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 628.9 lumens
Efficiency: N/A
Efficacy: 45.4 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

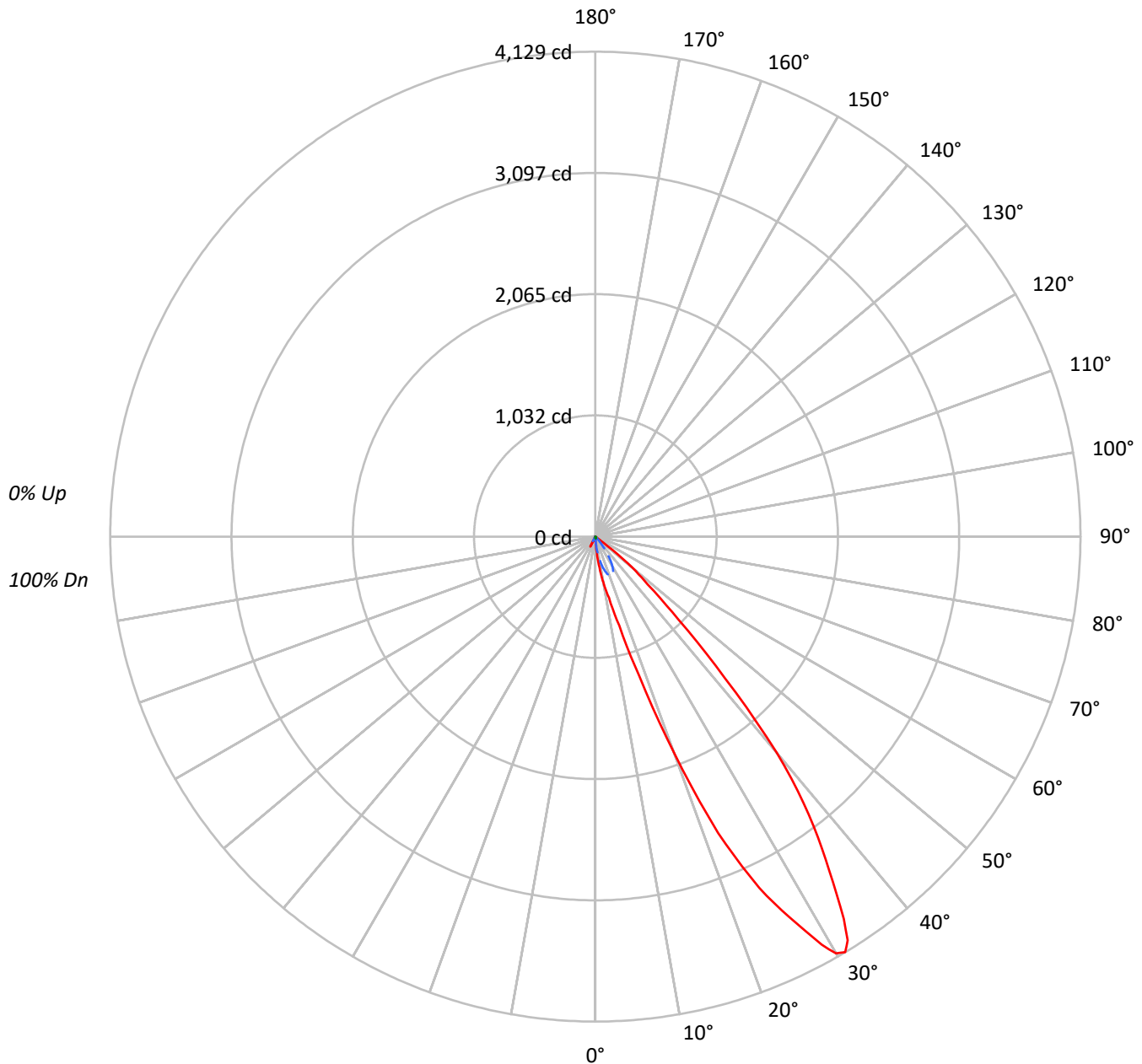
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	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	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	94	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	70	79	74	70	77	72	69	75	71	68	66		
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59		
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53		
7	74	63	56	50	73	62	55	50	61	55	50	59	54	50	58	53	49	48		
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	54	48	44	43		
9	65	53	46	41	63	52	45	41	51	45	40	50	44	40	49	44	40	39		
10	60	49	41	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	778	778	778
5°	7567	688	281
10°	22372	490	178
15°	44416	335	153
20°	114571	274	216
25°	199675	327	1542
30°	259369	342	867
35°	232397	147	80
40°	171815	50	0
45°	77372	54	0
50°	34907	60	0
55°	3116	67	0
60°	373	77	0
65°	156	130	0
70°	112	160	0
75°	0	212	0
80°	0	316	63
85°	0	629	126



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	5.7	0.9
10°-20°	53.0	8.4
20°-30°	209.1	33.3
30°-40°	252.3	40.1
40°-50°	97.9	15.6
50°-60°	8.6	1.4
60°-70°	0.8	0.1
70°-80°	0.8	0.1
80°-90°	0.7	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°	267.7	42.6
0°-40°	520.1	82.7
0°-60°	626.6	99.6
0°-90°	628.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	628.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	14	14	14	14	14	
5°	138	67	12	6	5	22
15°	783	296	6	4	3	287
25°	3301	350	5	17	26	1510
35°	3473	178	2	2	1	2135
45°	998	12	1	0	0	877
55°	33	2	1	0	0	79
65°	1	1	1	1	0	1
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°	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
2.5°	44.6	42.4	39.9	40.9	41.4	42.6	41.7	38.0	40.2	38.5	37.0
5°	137.5	135.0	130.4	131.1	129.7	131.4	127.4	119.6	121.1	118.6	112.2
7.5°	268.1	257.8	250.2	250.7	246.3	248.3	240.9	227.4	226.0	213.5	211.5
10°	401.9	396.8	387.7	386.5	378.7	379.6	368.1	350.2	345.3	330.9	322.5
12.5°	533.3	524.7	512.0	509.3	496.5	496.8	481.1	461.0	453.7	438.7	427.2
15°	782.6	770.3	741.1	730.1	694.8	689.4	650.7	605.1	583.1	557.3	523.5
17.5°	1242.6	1234.7	1177.6	1146.0	1074.5	1003.4	961.5	863.0	805.4	733.3	670.8
20°	1963.9	1978.3	1878.6	1808.0	1675.2	1525.2	1419.3	1239.9	1120.0	995.8	878.1
22.5°	2731.0	2737.1	2634.9	2546.9	2392.3	2186.2	1942.3	1724.7	1505.1	1291.6	1097.5
25°	3301.1	3283.4	3170.9	3065.3	2902.6	2692.0	2455.0	2164.4	1864.1	1571.0	1286.7
26°	3475.1	3465.5	3352.8	3226.3	3047.2	2833.4	2586.9	2293.5	1976.4	1660.7	1344.5
27°	3636.4	3630.2	3507.9	3367.2	3166.5	2942.8	2684.7	2391.6	2061.2	1730.1	1386.5
28°	3799.8	3793.0	3644.9	3481.7	3263.6	3020.4	2752.3	2457.0	2115.8	1770.8	1403.9
29°	3972.6	3959.4	3770.2	3565.8	3328.3	3065.8	2787.6	2486.9	2134.5	1780.8	1399.4
30°	4097.4	4076.8	3860.6	3619.0	3354.7	3080.0	2791.5	2486.2	2122.9	1760.0	1371.3
31°	4128.7	4107.9	3885.9	3618.2	3335.4	3058.4	2763.4	2451.4	2074.9	1709.5	1323.7
32°	4052.8	4033.6	3821.9	3535.6	3274.1	3006.5	2707.2	2386.9	2000.4	1634.0	1259.3
33°	3883.2	3868.7	3686.1	3427.0	3186.4	2932.7	2626.8	2295.2	1894.5	1537.9	1183.5
34°	3669.2	3658.7	3518.2	3299.4	3075.1	2831.5	2522.7	2174.4	1755.1	1429.1	1100.9
35°	3472.6	3464.8	3351.1	3157.0	2947.9	2706.2	2390.8	2025.6	1611.4	1311.9	1012.7
36°	3283.4	3276.8	3178.0	2997.7	2795.9	2559.4	2224.9	1847.7	1457.3	1190.4	921.3
37°	3085.9	3080.0	2995.2	2823.6	2625.1	2384.0	2027.8	1658.3	1300.7	1069.1	827.4
38°	2881.0	2876.1	2798.4	2627.3	2425.9	2169.5	1803.1	1462.4	1148.0	950.7	743.1
39°	2652.3	2648.2	2576.6	2397.2	2182.0	1916.8	1571.7	1271.5	1003.1	835.7	661.5
40°	2400.9	2395.2	2323.7	2123.2	1905.8	1656.8	1349.4	1096.3	866.4	728.4	589.7
42.5°	1632.3	1626.2	1573.0	1456.3	1247.0	1087.0	894.3	733.8	613.9	530.9	459.3
45°	998.0	998.7	970.8	898.7	772.8	683.8	579.1	502.4	448.5	416.6	366.9
47.5°	603.6	603.6	591.1	554.4	497.8	462.2	418.9	383.1	341.9	310.5	256.6
50°	409.3	409.5	390.4	392.4	354.6	332.6	291.2	247.5	207.1	161.5	115.2
51°	302.9	304.4	286.8	294.8	253.4	234.8	195.6	158.6	122.8	87.5	50.5
52°	185.3	188.0	176.0	183.3	159.3	132.1	100.2	74.0	49.8	34.8	24.3
53°	86.0	88.2	82.1	85.5	71.3	55.6	42.2	34.3	27.4	22.3	16.4
54°	45.6	46.1	44.1	43.1	39.2	34.6	28.7	23.8	18.6	15.0	11.0
55°	32.6	32.6	31.6	30.6	27.4	23.5	19.1	16.2	12.3	9.8	7.1
57.5°	10.0	10.0	10.0	9.6	8.3	7.1	5.6	4.9	3.9	3.7	2.9
60°	3.4	3.4	3.4	3.2	2.9	2.7	2.5	2.2	2.0	2.0	1.7
61°	2.5	2.5	2.5	2.5	2.2	2.2	2.0	1.7	1.5	1.7	1.5
62°	2.0	2.2	2.0	2.0	2.0	1.7	1.5	1.5	1.2	1.5	1.2
63°	1.7	1.7	1.7	1.7	1.5	1.5	1.2	1.2	1.0	1.2	1.2
64°	1.5	1.5	1.5	1.5	1.2	1.2	1.0	1.0	0.7	1.0	1.0
65°	1.2	1.2	1.2	1.2	1.0	1.0	1.0	0.7	0.7	1.0	1.0
66°	1.0	1.0	1.0	1.0	1.0	0.7	0.7	0.7	0.5	0.7	0.7



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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°	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
2.5°	35.5	33.1	32.6	32.6	27.4	28.4	26.7	25.5	17.9	13.7	10.3
5°	108.6	99.8	96.1	92.9	78.9	77.7	69.1	67.2	24.0	12.5	7.8
7.5°	202.4	189.0	180.4	172.1	149.5	143.4	128.7	125.0	32.6	10.5	6.1
10°	309.3	289.9	275.0	255.1	226.0	213.2	191.7	183.8	39.7	8.8	5.9
12.5°	409.8	387.7	367.4	341.2	301.7	281.4	252.9	242.9	42.4	7.4	5.4
15°	496.5	467.1	441.9	413.7	369.6	343.9	309.1	296.1	40.2	5.9	4.7
17.5°	606.6	556.8	513.0	473.5	425.5	394.1	353.7	332.6	32.6	5.1	4.2
20°	769.3	669.1	591.9	528.2	461.5	422.5	377.7	352.2	23.5	4.7	4.2
22.5°	922.5	779.4	661.0	569.8	480.1	433.6	387.0	358.8	16.7	4.7	4.9
25°	1047.5	862.5	708.8	597.3	490.4	435.8	383.6	350.2	13.0	5.4	9.6
26°	1082.5	883.0	718.1	599.5	488.9	432.6	377.7	342.4	11.5	7.4	17.9
27°	1104.4	892.4	718.3	596.1	483.6	426.2	368.9	331.8	10.0	11.3	30.1
28°	1108.8	887.9	710.0	586.5	474.2	417.6	359.1	319.1	9.3	14.2	34.3
29°	1096.8	872.3	694.8	572.5	463.0	407.3	347.3	305.1	8.1	10.8	22.3
30°	1069.8	846.3	672.5	554.6	451.0	395.8	332.8	288.5	6.6	5.4	10.0
31°	1029.4	810.5	645.1	533.6	437.5	381.1	315.4	269.8	5.6	3.7	5.9
32°	978.1	767.6	614.4	512.0	422.3	363.2	295.1	249.0	5.1	2.9	4.9
33°	919.3	722.5	582.8	490.2	404.1	341.9	273.3	226.7	4.7	3.2	4.9
34°	855.1	676.4	547.0	467.4	383.1	318.6	250.0	200.5	4.2	2.9	3.7
35°	785.5	628.6	514.9	447.3	359.3	293.4	226.2	178.2	3.7	2.2	2.5
36°	725.5	582.1	483.8	421.8	333.3	267.4	201.7	154.2	3.2	1.5	1.7
37°	660.0	538.5	454.9	395.3	305.4	240.7	177.2	130.4	2.9	1.0	1.5
38°	599.0	498.3	426.0	364.9	276.7	213.7	152.2	107.1	2.7	1.0	1.2
39°	543.6	461.7	399.0	332.6	246.6	185.5	127.0	84.1	2.5	0.7	1.2
40°	496.1	429.1	366.6	298.5	215.4	157.6	101.7	62.3	2.2	0.7	1.2
42.5°	403.4	344.3	276.7	211.0	139.5	89.2	45.6	22.8	1.7	0.7	1.0
45°	308.3	245.1	182.6	127.0	71.8	34.6	16.9	12.5	1.5	0.7	1.0
47.5°	200.2	147.1	98.0	55.4	24.0	14.0	8.8	6.4	1.2	0.7	1.0
50°	74.0	40.9	21.6	13.5	9.3	5.9	3.9	3.7	1.2	0.7	1.0
51°	30.4	19.9	13.5	9.1	5.9	4.2	3.2	3.2	1.2	0.7	1.0
52°	18.1	12.5	9.1	6.6	4.4	3.2	2.5	2.7	1.2	0.7	1.0
53°	12.0	8.6	6.6	5.1	3.4	2.5	1.7	2.0	1.2	0.7	1.0
54°	8.1	6.1	4.9	3.9	2.5	2.0	1.0	1.7	1.0	0.7	1.0
55°	5.6	4.4	3.7	2.9	1.7	1.2	0.7	1.5	1.0	0.7	1.0
57.5°	2.5	2.2	2.0	1.7	0.7	0.5	0.2	1.2	1.0	0.7	1.0
60°	1.7	1.5	1.2	1.2	0.2	0.2	0.0	1.0	1.0	0.7	1.0
61°	1.5	1.2	1.2	1.0	0.2	0.2	0.0	1.0	1.2	0.7	1.0
62°	1.2	1.2	1.0	1.0	0.2	0.0	0.0	1.0	1.2	0.7	1.2
63°	1.0	1.0	1.0	1.0	0.2	0.0	0.0	1.0	1.2	0.7	1.2
64°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.0	1.2	0.7	1.2
65°	1.0	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.2	1.0	1.2
66°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.2	1.0	1.2



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CATALOG NUMBER: LDA6A10927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.7	1.2	1.0	1.5
75°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
77.5°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
80°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
82.5°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
85°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
87.5°	0.2	0.5	0.5	0.5	0.0	0.0	0.0	1.0	1.2	1.0	1.5
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°	14.2	14.2	14.2
2.5°	8.6	7.8	7.4
5°	6.1	5.6	5.1
7.5°	5.1	4.4	4.2
10°	4.7	3.4	3.2
12.5°	3.9	2.9	2.7
15°	3.7	2.9	2.7
17.5°	3.7	2.9	2.7
20°	3.9	3.7	3.7
22.5°	5.6	6.1	6.4
25°	17.2	22.1	25.5
26°	40.2	60.3	80.9
27°	61.0	89.0	94.8
28°	54.9	63.7	62.0
29°	26.5	29.9	27.2
30°	11.8	14.0	13.7
31°	7.6	8.6	8.3
32°	6.4	5.9	5.6
33°	5.1	4.2	3.4
34°	3.4	2.7	2.2
35°	2.2	1.5	1.2
36°	1.5	0.7	0.5
37°	1.0	0.5	0.2
38°	1.0	0.2	0.0
39°	0.7	0.2	0.0
40°	0.7	0.2	0.0
42.5°	0.7	0.0	0.0
45°	0.5	0.0	0.0
47.5°	0.5	0.0	0.0
50°	0.7	0.2	0.0
51°	0.7	0.0	0.0
52°	0.7	0.0	0.0
53°	0.5	0.0	0.0
54°	0.5	0.0	0.0
55°	0.5	0.0	0.0
57.5°	0.5	0.0	0.0
60°	0.5	0.0	0.0
61°	0.7	0.0	0.0
62°	0.7	0.0	0.0
63°	0.7	0.0	0.0
64°	0.7	0.2	0.0
65°	0.7	0.2	0.0
66°	0.7	0.2	0.0



TEST NUMBER: P175483

CATALOG NUMBER: LDA6A10927D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.0	0.2	0.0
75°	1.0	0.2	0.0
77.5°	1.0	0.2	0.0
80°	1.0	0.5	0.2
82.5°	1.0	0.5	0.2
85°	1.0	0.5	0.2
87.5°	1.0	0.5	0.2
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.7	0.7
70°	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.7	0.7





67.5°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.2	1.0	1.2
70°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.2	1.0	1.5





67.5°	1.0	0.2	0.0
70°	1.0	0.2	0.0



(END OF REPORT)