

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: P175484

Luminaire Tested: **LDA6A10930D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175484
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: LDA6A10930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 725.0 lumens
Efficiency: N/A
Efficacy: 52.4 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

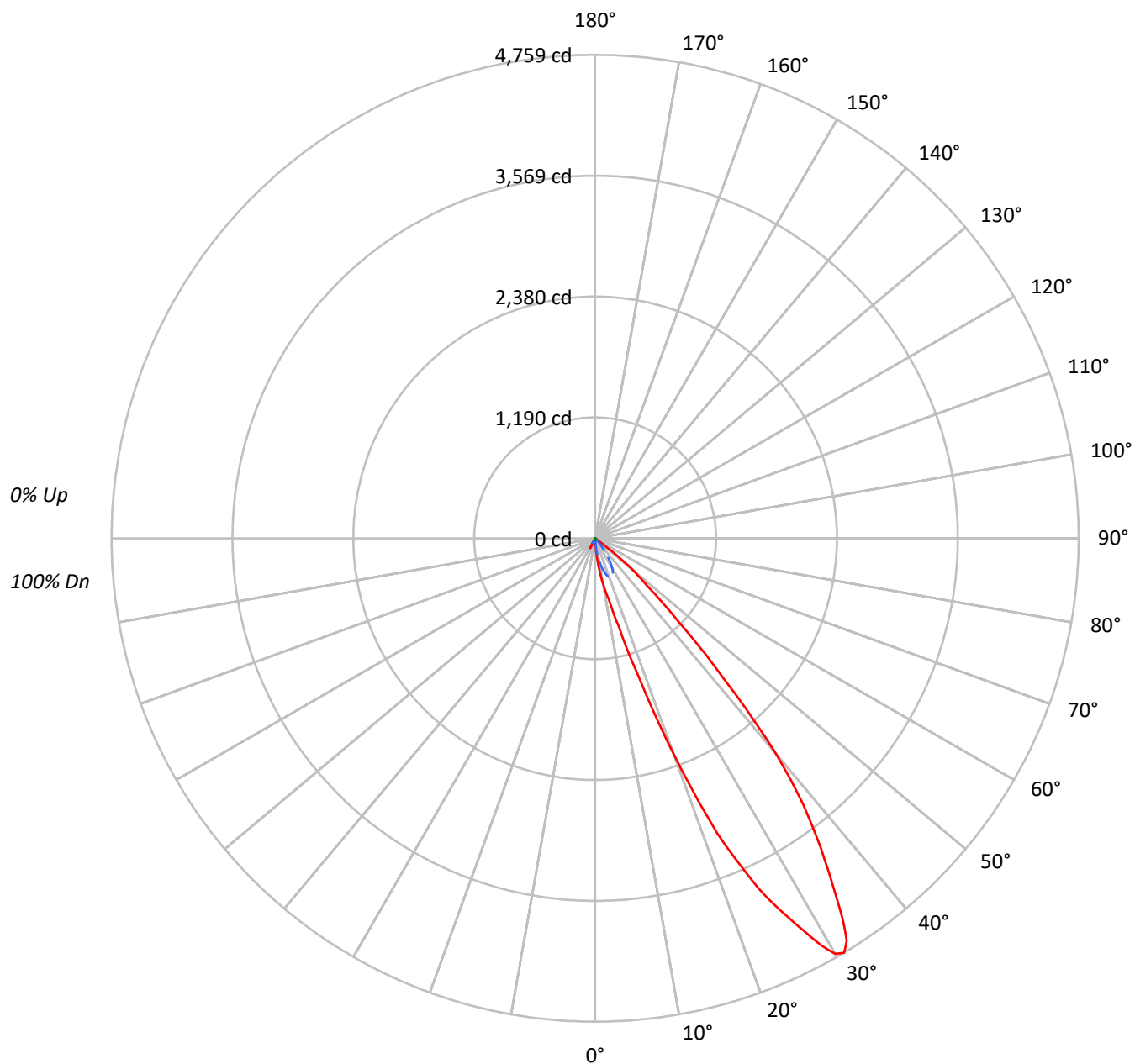
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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°	899	899	899
5°	8722	792	325
10°	25790	568	206
15°	51198	386	176
20°	132066	315	245
25°	230173	375	1778
30°	298983	392	1000
35°	267893	167	94
40°	198057	57	0
45°	89188	62	0
50°	40237	68	0
55°	3594	76	0
60°	439	88	0
65°	182	143	0
70°	128	176	0
75°	0	233	0
80°	0	347	95
85°	0	692	189



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	6.5	0.9
10°-20°	61.0	8.4
20°-30°	241.1	33.3
30°-40°	290.9	40.1
40°-50°	112.9	15.6
50°-60°	9.9	1.4
60°-70°	0.9	0.1
70°-80°	0.9	0.1
80°-90°	0.8	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°	308.6	42.6
0°-40°	599.5	82.7
0°-60°	722.3	99.6
0°-90°	725.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	725.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	16	16	16	16	16	
5°	158	77	14	7	6	25
15°	902	341	7	4	3	331
25°	3805	404	6	20	29	1740
35°	4003	205	2	2	1	2461
45°	1150	14	1	1	0	1011
55°	38	2	1	1	0	91
65°	1	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°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
2.5°	51.4	48.9	46.1	47.2	47.7	49.2	48.0	43.8	46.3	44.4	42.7
5°	158.5	155.7	150.3	151.1	149.5	151.4	146.9	137.9	139.6	136.7	129.4
7.5°	309.1	297.2	288.5	289.0	283.9	286.2	277.7	262.2	260.5	246.1	243.8
10°	463.3	457.4	446.9	445.5	436.5	437.6	424.3	403.7	398.1	381.4	371.8
12.5°	614.8	604.9	590.2	587.1	572.4	572.7	554.6	531.4	522.9	505.7	492.4
15°	902.1	888.0	854.3	841.6	800.9	794.7	750.1	697.5	672.1	642.5	603.5
17.5°	1432.4	1423.3	1357.5	1321.1	1238.6	1156.6	1108.3	994.8	928.4	845.3	773.3
20°	2263.8	2280.5	2165.5	2084.2	1931.0	1758.1	1636.1	1429.3	1291.1	1147.9	1012.3
22.5°	3148.1	3155.2	3037.4	2936.0	2757.7	2520.1	2239.0	1988.1	1735.0	1488.9	1265.1
25°	3805.3	3784.9	3655.3	3533.5	3345.9	3103.2	2830.0	2494.9	2148.9	1811.0	1483.2
26°	4005.9	3994.9	3864.9	3719.1	3512.6	3266.2	2982.0	2643.8	2278.3	1914.4	1549.9
27°	4191.8	4184.7	4043.7	3881.6	3650.2	3392.2	3094.7	2756.8	2376.0	1994.3	1598.2
28°	4380.2	4372.3	4201.7	4013.5	3762.1	3481.8	3172.7	2832.3	2439.0	2041.2	1618.3
29°	4579.4	4564.1	4346.0	4110.4	3836.6	3534.1	3213.4	2866.7	2460.5	2052.8	1613.2
30°	4723.2	4699.5	4450.3	4171.7	3867.2	3550.4	3217.9	2865.9	2447.2	2028.8	1580.7
31°	4759.4	4735.3	4479.4	4170.9	3844.8	3525.6	3185.4	2825.8	2391.8	1970.6	1525.9
32°	4671.8	4649.7	4405.6	4075.7	3774.2	3465.7	3120.7	2751.5	2305.9	1883.6	1451.6
33°	4476.3	4459.6	4249.1	3950.5	3673.1	3380.6	3028.1	2645.8	2183.9	1772.8	1364.3
34°	4229.6	4217.5	4055.6	3803.3	3544.8	3264.0	2908.0	2506.5	2023.1	1647.4	1269.1
35°	4003.0	3994.0	3862.9	3639.2	3398.2	3119.6	2756.0	2335.0	1857.6	1512.3	1167.4
36°	3784.9	3777.3	3663.5	3455.5	3223.0	2950.4	2564.7	2129.9	1679.9	1372.2	1062.0
37°	3557.2	3550.4	3452.7	3254.9	3026.1	2748.1	2337.6	1911.5	1499.3	1232.4	953.8
38°	3321.0	3315.4	3225.8	3028.6	2796.4	2500.9	2078.5	1685.8	1323.3	1095.9	856.6
39°	3057.4	3052.6	2970.1	2763.3	2515.3	2209.6	1811.8	1465.7	1156.4	963.4	762.5
40°	2767.6	2761.1	2678.6	2447.5	2196.9	1909.8	1555.6	1263.7	998.7	839.7	679.7
42.5°	1881.6	1874.5	1813.2	1678.7	1437.5	1253.0	1030.9	845.9	707.7	611.9	529.4
45°	1150.4	1151.3	1119.1	1036.0	890.8	788.2	667.6	579.2	517.0	480.3	422.9
47.5°	695.8	695.8	681.4	639.1	573.8	532.8	482.8	441.6	394.1	358.0	295.8
50°	471.8	472.1	450.1	452.3	408.8	383.4	335.6	285.3	238.7	186.2	132.8
51°	349.2	350.9	330.5	339.9	292.1	270.7	225.5	182.8	141.5	100.9	58.2
52°	213.6	216.7	202.9	211.3	183.6	152.3	115.6	85.3	57.4	40.1	28.0
53°	99.2	101.7	94.6	98.6	82.2	64.1	48.6	39.6	31.6	25.7	18.9
54°	52.5	53.1	50.9	49.7	45.2	39.8	33.1	27.4	21.5	17.2	12.7
55°	37.6	37.6	36.4	35.3	31.6	27.1	22.0	18.6	14.1	11.3	8.2
57.5°	11.6	11.6	11.6	11.0	9.6	8.2	6.5	5.7	4.5	4.2	3.4
60°	4.0	4.0	4.0	3.7	3.4	3.1	2.8	2.5	2.3	2.3	2.0
61°	2.8	2.8	2.8	2.8	2.5	2.5	2.3	2.0	1.7	2.0	1.7
62°	2.3	2.5	2.3	2.3	2.3	2.0	1.7	1.7	1.4	1.7	1.4
63°	2.0	2.0	2.0	2.0	1.7	1.7	1.4	1.4	1.1	1.4	1.4
64°	1.7	1.7	1.7	1.7	1.4	1.4	1.1	1.1	0.8	1.1	1.1
65°	1.4	1.4	1.4	1.4	1.1	1.1	1.1	0.8	0.8	1.1	1.1
66°	1.1	1.1	1.1	1.1	1.1	0.8	0.8	0.8	0.6	0.8	0.8



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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°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
2.5°	41.0	38.1	37.6	37.6	31.6	32.8	30.8	29.4	20.6	15.8	11.9
5°	125.2	115.0	110.7	107.1	91.0	89.6	79.7	77.4	27.7	14.4	9.0
7.5°	233.4	217.8	207.9	198.3	172.3	165.3	148.3	144.1	37.6	12.1	7.1
10°	356.5	334.2	317.0	294.1	260.5	245.8	220.9	211.9	45.8	10.2	6.8
12.5°	472.4	446.9	423.5	393.3	347.8	324.3	291.6	280.0	48.9	8.5	6.2
15°	572.4	538.5	509.4	476.9	426.0	396.4	356.3	341.3	46.3	6.8	5.4
17.5°	699.2	641.9	591.3	545.8	490.5	454.3	407.7	383.4	37.6	5.9	4.8
20°	886.8	771.3	682.3	608.8	532.0	487.1	435.4	406.0	27.1	5.4	4.8
22.5°	1063.4	898.4	762.0	656.9	553.5	499.8	446.1	413.6	19.2	5.4	5.7
25°	1207.5	994.2	817.1	688.5	565.3	502.3	442.1	403.7	15.0	6.2	11.0
26°	1247.9	1017.9	827.8	691.0	563.6	498.7	435.4	394.7	13.3	8.5	20.6
27°	1273.0	1028.7	828.1	687.1	557.4	491.3	425.2	382.5	11.6	13.0	34.8
28°	1278.1	1023.6	818.5	676.1	546.7	481.4	413.9	367.8	10.7	16.4	39.6
29°	1264.3	1005.5	800.9	660.0	533.7	469.6	400.3	351.7	9.3	12.4	25.7
30°	1233.2	975.5	775.2	639.3	519.8	456.3	383.7	332.5	7.6	6.2	11.6
31°	1186.6	934.3	743.6	615.0	504.3	439.3	363.6	311.1	6.5	4.2	6.8
32°	1127.5	884.9	708.3	590.2	486.8	418.7	340.2	287.0	5.9	3.4	5.7
33°	1059.7	832.9	671.8	565.0	465.9	394.1	315.0	261.3	5.4	3.7	5.7
34°	985.7	779.8	630.6	538.8	441.6	367.3	288.2	231.1	4.8	3.4	4.2
35°	905.5	724.7	593.6	515.6	414.2	338.2	260.8	205.4	4.2	2.5	2.8
36°	836.3	671.0	557.7	486.2	384.2	308.2	232.5	177.7	3.7	1.7	2.0
37°	760.8	620.7	524.4	455.7	352.0	277.4	204.3	150.3	3.4	1.1	1.7
38°	690.5	574.4	491.0	420.7	319.0	246.4	175.4	123.5	3.1	1.1	1.4
39°	626.6	532.3	459.9	383.4	284.2	213.9	146.3	96.9	2.8	0.8	1.4
40°	571.8	494.7	422.7	344.1	248.3	181.7	117.2	71.8	2.5	0.8	1.4
42.5°	465.0	396.9	319.0	243.3	160.8	102.8	52.5	26.3	2.0	0.8	1.1
45°	355.4	282.5	210.5	146.3	82.8	39.8	19.5	14.4	1.7	0.8	1.1
47.5°	230.8	169.5	113.0	63.8	27.7	16.1	10.2	7.3	1.4	0.8	1.1
50°	85.3	47.2	24.9	15.5	10.7	6.8	4.5	4.2	1.4	0.8	1.1
51°	35.0	22.9	15.5	10.5	6.8	4.8	3.7	3.7	1.4	0.8	1.1
52°	20.9	14.4	10.5	7.6	5.1	3.7	2.8	3.1	1.4	0.8	1.1
53°	13.8	9.9	7.6	5.9	4.0	2.8	2.0	2.3	1.4	0.8	1.1
54°	9.3	7.1	5.7	4.5	2.8	2.3	1.1	2.0	1.1	0.8	1.1
55°	6.5	5.1	4.2	3.4	2.0	1.4	0.8	1.7	1.1	0.8	1.1
57.5°	2.8	2.5	2.3	2.0	0.8	0.6	0.3	1.4	1.1	0.8	1.1
60°	2.0	1.7	1.4	1.4	0.3	0.3	0.0	1.1	1.1	0.8	1.1
61°	1.7	1.4	1.4	1.1	0.3	0.3	0.0	1.1	1.4	0.8	1.1
62°	1.4	1.4	1.1	1.1	0.3	0.0	0.0	1.1	1.4	0.8	1.4
63°	1.1	1.1	1.1	1.1	0.3	0.0	0.0	1.1	1.4	0.8	1.4
64°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.1	1.4	0.8	1.4
65°	1.1	0.8	0.8	0.8	0.0	0.0	0.0	1.1	1.4	1.1	1.4
66°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	1.1	1.4	1.1	1.4



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CATALOG NUMBER: LDA6A10930D010TE 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°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.8	1.4	1.1	1.7
75°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
77.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
80°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
82.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
85°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
87.5°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	1.1	1.4	1.1	1.7
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: LDA6A10930D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	16.4	16.4	16.4
2.5°	9.9	9.0	8.5
5°	7.1	6.5	5.9
7.5°	5.9	5.1	4.8
10°	5.4	4.0	3.7
12.5°	4.5	3.4	3.1
15°	4.2	3.4	3.1
17.5°	4.2	3.4	3.1
20°	4.5	4.2	4.2
22.5°	6.5	7.1	7.3
25°	19.8	25.4	29.4
26°	46.3	69.5	93.2
27°	70.3	102.6	109.3
28°	63.3	73.5	71.5
29°	30.5	34.5	31.4
30°	13.6	16.1	15.8
31°	8.8	9.9	9.6
32°	7.3	6.8	6.5
33°	5.9	4.8	4.0
34°	4.0	3.1	2.5
35°	2.5	1.7	1.4
36°	1.7	0.8	0.6
37°	1.1	0.6	0.3
38°	1.1	0.3	0.0
39°	0.8	0.3	0.0
40°	0.8	0.3	0.0
42.5°	0.8	0.0	0.0
45°	0.6	0.0	0.0
47.5°	0.6	0.0	0.0
50°	0.8	0.3	0.0
51°	0.8	0.0	0.0
52°	0.8	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°	0.8	0.0	0.0
62°	0.8	0.0	0.0
63°	0.8	0.0	0.0
64°	0.8	0.3	0.0
65°	0.8	0.3	0.0
66°	0.8	0.3	0.0



TEST NUMBER: P175484

CATALOG NUMBER: LDA6A10930D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.1	0.3	0.0
75°	1.1	0.3	0.0
77.5°	1.1	0.3	0.0
80°	1.1	0.6	0.3
82.5°	1.1	0.6	0.3
85°	1.1	0.6	0.3
87.5°	1.1	0.6	0.3
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.8	0.8
70°	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.8	0.8





67.5°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	1.1	1.4	1.1	1.4
70°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	1.1	1.4	1.1	1.7





67.5°	1.1	0.3	0.0
70°	1.1	0.3	0.0



(END OF REPORT)