

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: P175450

Luminaire Tested: **LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175450
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26267)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 15° Spot
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: 791.6 lumens
Efficiency: N/A
Efficacy: 57.2 lumens/watt
Spacing Criteria (0/90/45): 2.44 / 0.33 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

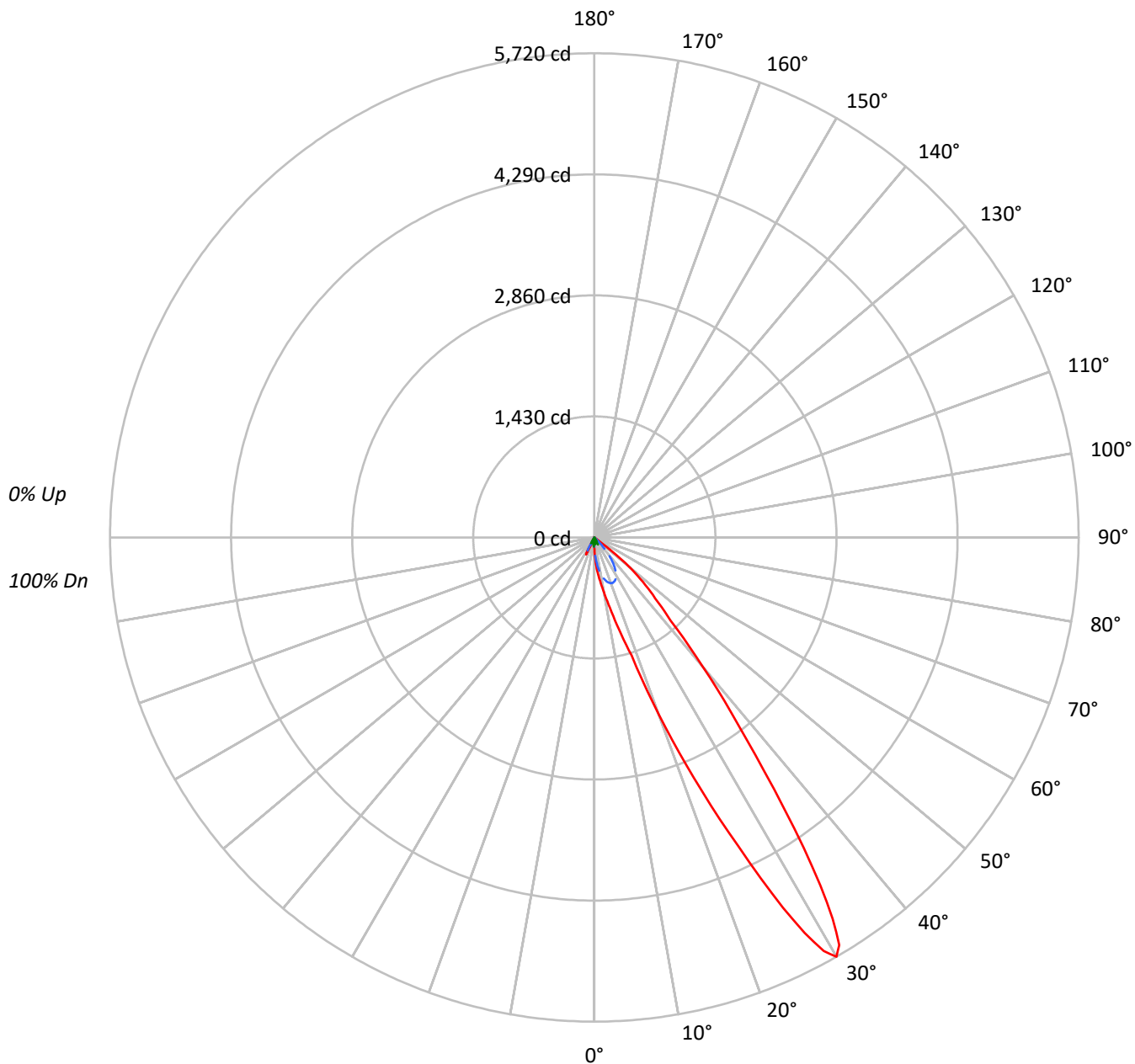
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	109	106	104		110	107	105	102		103	101	99		99	98	96		96	95	93
2	106	100	95	91		103	98	94	90		95	91	88		92	89	86		89	87	85
3	99	91	86	81		97	90	85	80		87	83	79		85	81	78		82	79	76
4	93	84	77	72		91	82	76	72		80	75	71		78	74	70		76	72	69
5	87	77	70	64		85	76	69	64		74	68	64		72	67	63		70	66	62
6	81	70	63	58		79	69	63	58		68	62	57		66	61	57		65	60	56
7	75	64	57	52		74	64	57	52		62	56	52		61	55	51		60	55	51
8	71	59	52	47		69	59	52	47		57	51	47		56	51	47		55	50	46
9	66	55	47	43		65	54	47	43		53	47	42		52	46	42		51	46	42
10	62	50	43	39		61	50	43	39		49	43	39		48	42	38		47	42	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6387	6387	6387
5°	21841	5431	726
10°	36556	3017	356
15°	63502	1112	301
20°	129733	729	519
25°	243528	1421	9200
30°	362081	2481	1488
35°	261308	194	120
40°	141930	79	0
45°	78783	85	0
50°	46097	94	0
55°	1462	67	0
60°	504	121	0
65°	233	143	0
70°	176	176	0
75°	85	297	0
80°	0	442	0
85°	0	881	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	16.3	2.1
10°-20°	84.8	10.7
20°-30°	272.8	34.5
30°-40°	284.0	35.9
40°-50°	121.0	15.3
50°-60°	10.0	1.3
60°-70°	1.0	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°	373.8	47.2
0°-40°	657.8	83.1
0°-60°	788.8	99.6
0°-90°	791.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	791.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	116	116	116	116	116	
5°	397	289	99	18	13	45
15°	1119	533	20	7	5	366
25°	4026	567	24	71	152	1934
35°	3905	405	3	2	2	2417
45°	1016	70	1	1	0	836
55°	15	2	1	1	0	96
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	



TEST NUMBER: P175450

CATALOG NUMBER: LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5
2.5°	258.7	245.1	255.5	249.4	245.5	244.4	250.5	243.7	236.6	236.2	234.1
5°	396.9	384.1	394.8	385.5	381.3	377.7	380.6	369.5	357.7	358.1	352.8
7.5°	517.4	510.3	517.4	507.4	504.2	500.6	499.6	488.9	475.0	476.0	467.9
10°	656.7	636.0	647.4	625.7	620.4	610.7	607.5	590.1	568.0	566.9	555.2
12.5°	848.8	840.6	852.0	821.3	814.9	798.5	789.6	761.8	725.5	716.2	689.1
15°	1118.9	1092.5	1103.9	1060.8	1048.7	1020.2	1000.6	957.4	922.9	883.7	842.3
17.5°	1462.0	1447.0	1461.6	1376.8	1345.5	1289.9	1243.9	1171.9	1098.5	1063.3	1005.2
20°	2223.8	2152.5	2160.4	2002.9	1902.4	1752.7	1633.0	1474.1	1328.4	1244.6	1148.8
22.5°	3069.4	2988.1	2968.2	2765.8	2595.5	2370.6	2160.4	1894.6	1636.2	1449.2	1286.7
25°	4026.1	3973.4	3868.9	3537.6	3244.7	2924.0	2614.7	2266.9	1932.0	1645.5	1401.8
26°	4480.4	4438.0	4281.2	3866.8	3487.7	3103.9	2750.5	2377.0	2015.7	1701.4	1428.9
27°	4911.9	4877.7	4673.9	4191.4	3717.5	3255.7	2849.2	2455.4	2075.9	1737.4	1448.1
28°	5292.1	5257.2	4993.9	4466.5	3899.6	3365.5	2911.2	2504.2	2110.5	1746.0	1447.0
29°	5587.8	5543.7	5203.7	4642.9	4006.5	3418.2	2923.6	2510.3	2105.5	1726.0	1427.1
30°	5720.0	5665.2	5263.6	4680.6	4008.3	3398.2	2888.3	2477.9	2064.9	1679.0	1390.0
31°	5616.4	5569.7	5154.9	4571.6	3899.6	3307.0	2800.7	2403.0	1987.9	1610.9	1340.8
32°	5314.2	5271.4	4889.1	4332.2	3694.0	3152.7	2673.5	2296.1	1885.7	1528.6	1283.8
33°	4899.8	4866.7	4523.9	4003.3	3430.0	2962.8	2521.3	2162.2	1762.7	1436.3	1214.3
34°	4426.9	4400.9	4088.1	3631.6	3141.7	2751.9	2347.8	1969.4	1628.4	1343.3	1162.3
35°	3904.6	3886.8	3631.6	3250.0	2854.9	2532.7	2155.0	1799.1	1493.0	1253.9	1106.4
36°	3408.2	3393.6	3199.1	2900.1	2581.9	2305.4	1946.2	1621.6	1363.3	1173.4	1054.0
37°	2984.2	2973.5	2829.6	2588.7	2319.7	2069.2	1733.5	1455.6	1250.3	1103.2	1000.2
38°	2631.4	2622.9	2506.0	2292.6	2049.6	1824.7	1528.3	1308.8	1154.1	1042.2	939.3
39°	2302.6	2291.5	2186.4	1993.3	1780.5	1586.7	1392.2	1188.0	1078.6	978.8	873.7
40°	1983.3	1969.0	1876.7	1712.5	1535.0	1384.7	1210.1	1113.9	1017.3	905.1	806.7
42.5°	1330.9	1323.0	1272.8	1198.7	1123.5	1068.6	1013.4	927.5	825.6	733.0	660.3
45°	1016.2	1014.4	989.9	951.0	901.1	854.8	781.1	731.5	662.8	584.7	532.7
47.5°	779.6	780.0	757.2	728.0	693.8	663.8	610.0	570.5	521.3	476.8	436.5
50°	540.5	517.7	520.9	497.8	470.0	452.5	402.6	372.4	302.5	232.0	181.4
51°	405.1	375.2	379.1	353.1	324.3	308.9	262.3	231.6	166.0	109.0	71.3
52°	247.3	223.8	223.4	203.5	178.5	165.0	127.9	99.8	56.7	29.9	20.7
53°	110.8	95.1	91.6	78.0	61.3	53.1	36.3	26.7	20.0	15.3	11.8
54°	29.2	26.0	24.9	22.8	20.7	20.0	17.5	14.6	11.4	8.9	7.5
55°	15.3	14.3	13.9	13.2	12.1	11.8	10.3	8.9	7.1	6.4	5.7
57.5°	7.1	7.1	6.8	6.4	6.1	6.1	5.3	5.0	4.6	4.6	3.9
60°	4.6	4.6	4.6	4.3	4.3	3.9	3.6	3.2	2.9	3.2	2.9
61°	3.9	3.9	3.9	3.6	3.2	2.9	2.9	2.9	2.5	2.5	2.1
62°	2.9	2.9	2.5	2.5	2.1	2.1	2.1	2.1	1.8	2.1	2.1
63°	2.1	2.1	1.8	1.8	1.8	1.8	1.4	1.4	1.4	2.1	2.1
64°	1.8	1.8	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.8	1.4
65°	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.1	1.4	1.4
66°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.1	1.1	1.4	1.4



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CATALOG NUMBER: LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
75°	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
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°	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5	116.5
2.5°	234.1	229.8	220.9	219.1	210.6	205.6	207.0	204.2	158.6	111.9	69.8
5°	348.8	339.2	326.0	321.4	306.8	299.0	296.5	289.3	196.3	98.7	32.8
7.5°	461.1	448.6	432.6	425.1	405.1	392.0	383.4	372.7	222.3	78.4	18.2
10°	544.5	530.2	513.5	503.8	481.4	468.2	454.3	442.6	236.2	54.2	13.5
12.5°	655.6	627.5	592.6	571.5	538.4	520.2	504.2	492.8	241.6	32.4	10.3
15°	803.9	758.6	709.1	671.0	614.7	580.4	553.4	532.7	237.3	19.6	8.9
17.5°	947.5	883.3	818.5	766.8	702.3	651.4	599.3	558.7	219.1	15.7	8.2
20°	1066.8	991.6	909.0	836.6	762.2	701.6	632.5	575.1	189.9	12.5	8.9
22.5°	1158.8	1062.9	969.2	879.4	790.7	721.2	645.3	578.7	152.9	12.8	12.5
25°	1225.0	1099.3	999.5	897.2	800.7	724.4	638.5	567.3	112.6	23.5	42.0
26°	1238.6	1106.7	1003.4	895.4	797.1	719.1	630.7	560.1	101.6	46.7	92.6
27°	1246.1	1105.7	1000.6	888.3	789.6	711.2	621.8	553.7	99.8	79.8	138.3
28°	1239.3	1096.8	988.4	875.5	777.5	700.9	611.4	546.2	98.7	98.0	131.1
29°	1220.8	1081.1	970.3	855.5	759.0	684.5	595.8	535.6	88.4	78.0	79.1
30°	1192.6	1059.0	943.9	828.8	735.4	661.0	573.3	518.4	58.4	39.2	33.5
31°	1157.7	1030.5	911.5	797.8	708.7	632.5	549.8	496.4	30.3	16.7	15.7
32°	1119.2	996.3	876.6	766.4	681.6	605.0	530.2	476.8	20.0	9.3	8.9
33°	1078.6	956.4	838.1	734.0	651.4	574.4	509.9	455.7	15.0	5.7	5.3
34°	1038.7	913.6	799.2	699.1	618.6	547.0	491.4	431.5	12.1	4.3	3.6
35°	993.4	867.3	759.3	662.0	583.3	523.4	472.8	405.1	9.6	2.9	2.9
36°	940.7	818.1	718.0	623.2	549.8	501.7	452.5	376.3	7.5	2.1	2.5
37°	884.7	769.3	676.3	584.7	522.4	481.7	427.9	346.7	6.4	1.8	2.1
38°	827.0	720.8	631.4	547.7	498.5	460.0	400.1	316.1	5.3	1.4	1.8
39°	770.4	671.3	586.5	517.7	476.0	434.4	368.4	284.7	4.6	1.4	1.8
40°	715.1	621.4	546.6	491.7	451.1	403.0	335.7	251.9	3.2	1.1	1.8
42.5°	584.0	518.1	470.7	415.8	369.9	315.7	246.9	163.6	2.5	1.1	1.4
45°	488.9	434.7	379.5	317.5	272.2	216.6	146.1	69.5	2.5	1.1	1.4
47.5°	386.6	322.8	241.6	163.2	106.5	54.9	17.1	9.6	1.8	1.1	1.4
50°	112.6	65.2	24.2	14.6	11.0	6.8	4.3	3.9	1.4	1.1	1.4
51°	32.4	19.2	12.8	8.6	6.4	3.9	3.2	3.6	1.4	1.1	1.1
52°	15.3	11.0	7.5	5.7	4.3	3.2	2.9	3.2	1.4	1.1	1.1
53°	8.9	6.8	5.3	4.6	3.2	2.9	2.1	2.9	1.4	1.1	1.1
54°	6.1	5.3	4.6	3.9	2.9	2.1	2.1	2.9	1.4	1.1	1.1
55°	5.3	4.6	3.9	3.6	2.5	2.1	2.1	2.1	1.1	0.7	1.1
57.5°	3.6	3.6	2.9	2.9	2.1	1.4	0.7	1.8	1.4	1.1	1.1
60°	2.5	2.5	2.5	1.8	0.7	0.7	0.4	1.4	1.4	1.1	1.4
61°	2.5	2.5	1.8	1.4	0.7	0.7	0.4	1.4	1.4	1.1	1.4
62°	2.1	1.8	1.4	1.4	0.7	0.7	0.4	1.4	1.4	1.1	1.4
63°	1.8	1.4	1.4	1.4	0.7	0.4	0.4	1.4	1.4	1.1	1.4
64°	1.4	1.4	1.4	1.4	0.4	0.4	0.4	1.4	1.4	1.1	1.4
65°	1.4	1.4	1.4	1.1	0.4	0.4	0.4	1.1	1.4	1.1	1.4
66°	1.4	1.4	1.1	1.1	0.4	0.4	0.4	1.1	1.4	1.1	1.4



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CATALOG NUMBER: LDA6A10840D010TE LARL15SP 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°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.1	1.4
75°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	1.4
77.5°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	1.8
80°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	1.8
82.5°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	1.8
85°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	1.8
87.5°	0.4	0.4	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.4	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



TEST NUMBER: P175450

CATALOG NUMBER: LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	116.5	116.5	116.5
2.5°	44.5	32.1	29.2
5°	17.8	14.6	13.2
7.5°	11.0	9.3	8.6
10°	8.9	6.8	6.4
12.5°	7.1	6.1	5.7
15°	6.8	5.7	5.3
17.5°	6.8	6.4	6.1
20°	8.6	8.6	8.9
22.5°	14.6	17.1	19.2
25°	70.9	114.7	152.1
26°	148.6	209.5	224.1
27°	184.2	190.6	183.1
28°	141.8	127.2	119.7
29°	75.9	63.4	58.1
30°	30.3	24.9	23.5
31°	14.6	12.5	12.1
32°	8.2	6.8	6.8
33°	5.0	4.3	3.9
34°	3.6	2.9	2.5
35°	2.5	2.1	1.8
36°	2.1	1.4	1.1
37°	1.8	1.1	1.1
38°	1.4	1.1	0.7
39°	1.1	0.7	0.4
40°	1.1	0.4	0.0
42.5°	0.7	0.4	0.0
45°	0.7	0.0	0.0
47.5°	1.1	0.7	0.4
50°	0.7	0.4	0.0
51°	0.7	0.0	0.0
52°	0.7	0.0	0.0
53°	0.7	0.0	0.0
54°	0.7	0.0	0.0
55°	0.7	0.0	0.0
57.5°	0.7	0.0	0.0
60°	0.7	0.0	0.0
61°	0.7	0.0	0.0
62°	0.7	0.0	0.0
63°	0.7	0.4	0.0
64°	0.7	0.4	0.0
65°	0.7	0.4	0.0
66°	0.7	0.4	0.0



TEST NUMBER: P175450

CATALOG NUMBER: LDA6A10840D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.1	0.4	0.0
75°	1.1	0.4	0.0
77.5°	1.1	0.4	0.0
80°	1.1	0.4	0.0
82.5°	1.1	0.4	0.0
85°	1.1	0.4	0.0
87.5°	1.1	0.4	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	1.4	1.1	1.1	1.1	1.1	1.1	1.1	0.7	0.7	1.1	1.1
70°	1.1	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7





67.5°	1.1	1.1	1.1	1.1	0.4	0.0	0.0	1.1	1.4	1.1	1.4
70°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.1	1.4	1.1	1.4





67.5°	1.1	0.4	0.0
70°	1.1	0.4	0.0



(END OF REPORT)