

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: P175456

Luminaire Tested: **LDA6A15830D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175456
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: LDA6A15830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1089.6 lumens
Efficiency: N/A
Efficacy: 48.9 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

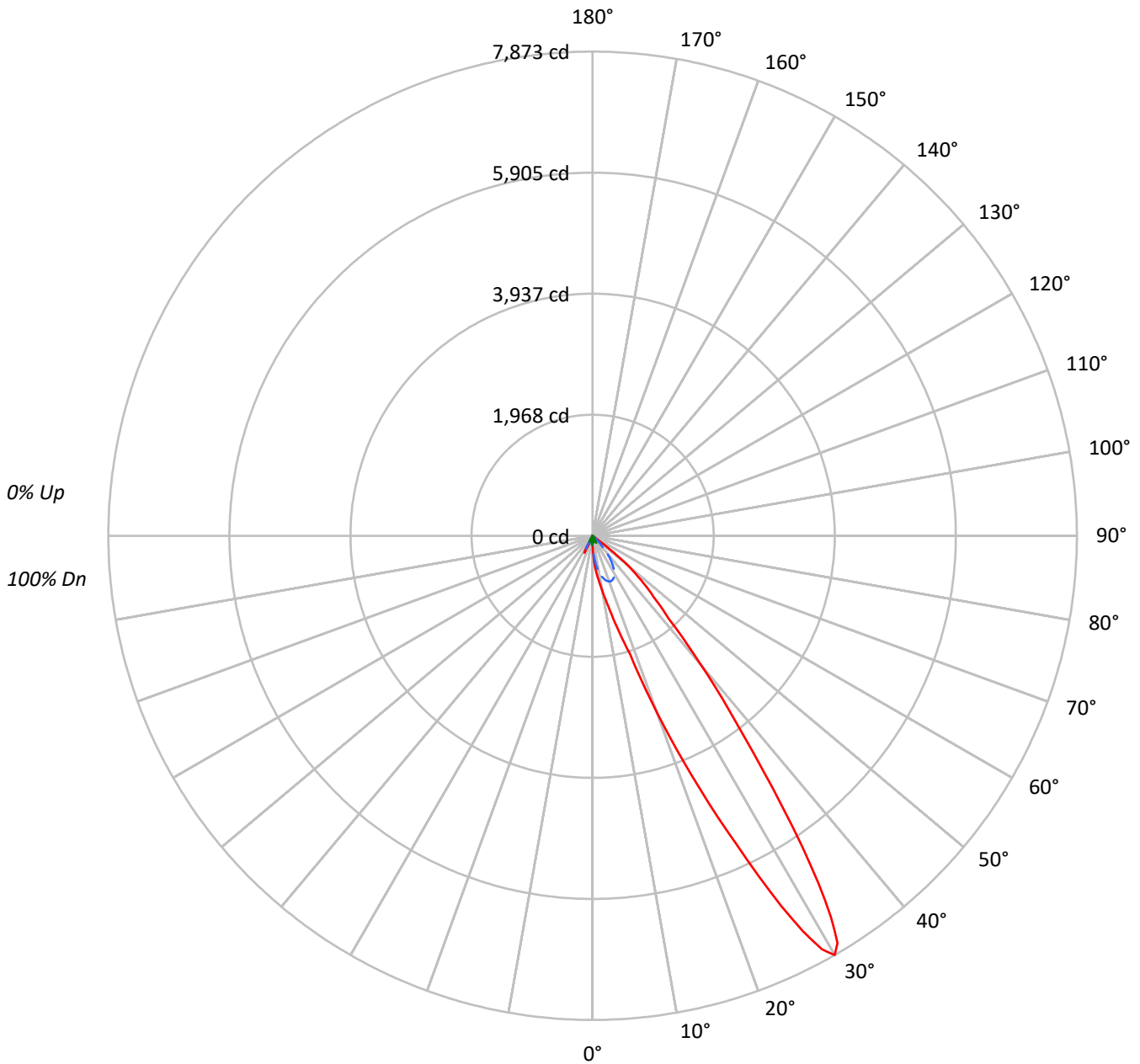
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83																			
3	99	91	86	81	97	90	85	80	87	83	79	85	81	78	82	79	76	75																			
4	93	84	77	72	91	82	76	72	80	75	71	78	74	70	76	72	69	67																			
5	87	77	70	64	85	76	69	64	74	68	64	72	67	63	70	66	62	61																			
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55																			
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49																			
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45																			
9	66	55	47	43	65	54	47	43	53	47	42	52	46	42	51	46	42	41																			
10	62	50	43	39	61	50	43	39	49	43	39	48	42	38	47	42	38	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8793	8793	8793
5°	30063	7473	996
10°	50316	4147	490
15°	87401	1532	420
20°	178562	1003	718
25°	335185	1960	12666
30°	498361	3412	2051
35°	359658	261	167
40°	195345	107	0
45°	108438	116	0
50°	63452	128	0
55°	2017	96	0
60°	702	164	0
65°	324	195	0
70°	240	240	0
75°	106	424	0
80°	0	631	0
85°	0	1258	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	22.5	2.1
10°-20°	116.7	10.7
20°-30°	375.4	34.5
30°-40°	390.8	35.9
40°-50°	166.5	15.3
50°-60°	13.8	1.3
60°-70°	1.4	0.1
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°	514.5	47.2
0°-40°	905.4	83.1
0°-60°	1085.7	99.6
0°-90°	1089.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1089.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	160	160	160	160	160	
5°	546	398	136	24	18	62
15°	1540	733	27	9	7	503
25°	5541	781	32	98	209	2661
35°	5374	558	4	3	2	3327
45°	1399	96	2	1	0	1150
55°	21	3	1	1	0	132
65°	2	2	2	1	0	3
75°	0	2	2	2	0	0
85°	0	2	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°	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4
2.5°	356.1	337.4	351.6	343.3	337.9	336.4	344.8	335.5	325.6	325.2	322.2
5°	546.3	528.7	543.4	530.6	524.8	519.9	523.8	508.6	492.4	492.9	485.5
7.5°	712.1	702.3	712.1	698.4	694.0	689.1	687.6	672.9	653.7	655.2	643.9
10°	903.9	875.4	891.1	861.2	853.8	840.6	836.2	812.2	781.7	780.3	764.1
12.5°	1168.2	1156.9	1172.6	1130.4	1121.6	1099.1	1086.8	1048.5	998.5	985.8	948.5
15°	1540.0	1503.7	1519.4	1460.0	1443.3	1404.1	1377.1	1317.8	1270.2	1216.3	1159.4
17.5°	2012.2	1991.6	2011.8	1895.0	1851.9	1775.4	1712.1	1613.0	1512.0	1463.4	1383.5
20°	3060.8	2962.7	2973.5	2756.7	2618.4	2412.4	2247.7	2028.9	1828.3	1713.1	1581.2
22.5°	4224.6	4112.8	4085.3	3806.7	3572.3	3262.8	2973.5	2607.6	2252.1	1994.6	1771.0
25°	5541.4	5468.8	5325.1	4869.0	4465.9	4024.5	3598.8	3120.1	2659.1	2264.8	1929.4
26°	6166.7	6108.3	5892.5	5322.2	4800.3	4272.2	3785.6	3271.7	2774.4	2341.8	1966.6
27°	6760.6	6713.5	6433.0	5769.0	5116.7	4481.1	3921.5	3379.6	2857.3	2391.3	1993.1
28°	7283.9	7235.8	6873.4	6147.6	5367.3	4632.1	4006.8	3446.8	2904.8	2403.1	1991.6
29°	7691.0	7630.1	7162.3	6390.3	5514.4	4704.7	4024.0	3455.1	2898.0	2375.7	1964.2
30°	7872.9	7797.4	7244.7	6442.3	5516.9	4677.3	3975.4	3410.5	2842.1	2310.9	1913.2
31°	7730.2	7665.9	7095.1	6292.2	5367.3	4551.7	3854.8	3307.5	2736.1	2217.2	1845.5
32°	7314.3	7255.5	6729.2	5962.7	5084.3	4339.3	3679.7	3160.3	2595.4	2104.0	1767.0
33°	6743.9	6698.3	6226.5	5510.0	4720.9	4077.9	3470.3	2975.9	2426.2	1976.9	1671.4
34°	6093.1	6057.3	5626.7	4998.5	4324.1	3787.6	3231.5	2710.6	2241.3	1848.9	1599.8
35°	5374.2	5349.6	4998.5	4473.2	3929.3	3486.0	2966.1	2476.2	2054.9	1725.8	1522.8
36°	4691.0	4670.9	4403.1	3991.6	3553.7	3173.1	2678.7	2232.0	1876.4	1615.0	1450.7
37°	4107.4	4092.7	3894.5	3563.0	3192.7	2847.9	2386.0	2003.4	1720.9	1518.4	1376.6
38°	3621.8	3610.1	3449.2	3155.4	2821.0	2511.5	2103.5	1801.4	1588.5	1434.5	1292.8
39°	3169.2	3154.0	3009.3	2743.5	2450.7	2183.9	1916.1	1635.1	1484.5	1347.2	1202.5
40°	2729.7	2710.1	2583.1	2357.0	2112.8	1905.8	1665.5	1533.1	1400.2	1245.7	1110.3
42.5°	1831.8	1821.0	1751.8	1649.8	1546.3	1470.8	1394.8	1276.6	1136.3	1008.8	908.8
45°	1398.7	1396.3	1362.4	1309.0	1240.3	1176.5	1075.0	1006.9	912.2	804.8	733.2
47.5°	1073.1	1073.6	1042.2	1002.0	954.9	913.7	839.6	785.2	717.5	656.2	600.8
50°	744.0	712.6	717.0	685.1	646.9	622.8	554.2	512.5	416.4	319.3	249.6
51°	557.6	516.4	521.8	486.0	446.3	425.2	361.0	318.8	228.5	150.1	98.1
52°	340.4	308.0	307.5	280.0	245.7	227.1	176.1	137.3	78.0	41.2	28.4
53°	152.5	130.9	126.0	107.4	84.4	73.1	50.0	36.8	27.5	21.1	16.2
54°	40.2	35.8	34.3	31.4	28.4	27.5	24.0	20.1	15.7	12.3	10.3
55°	21.1	19.6	19.1	18.1	16.7	16.2	14.2	12.3	9.8	8.8	7.8
57.5°	9.8	9.8	9.3	8.8	8.3	8.3	7.4	6.9	6.4	6.4	5.4
60°	6.4	6.4	6.4	5.9	5.9	5.4	4.9	4.4	3.9	4.4	3.9
61°	5.4	5.4	5.4	4.9	4.4	3.9	3.9	3.9	3.4	3.4	2.9
62°	3.9	3.9	3.4	3.4	2.9	2.9	2.9	2.9	2.5	2.9	2.9
63°	2.9	2.9	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.9	2.9
64°	2.5	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0
65°	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5	2.0	2.0
66°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	2.0	2.0



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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	0.0	0.0	0.0	0.0	0.0	0.5	0.5
75°	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
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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CATALOG NUMBER: LDA6A15830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4	160.4
2.5°	322.2	316.3	304.1	301.6	289.8	283.0	284.9	281.0	218.2	154.0	96.1
5°	480.1	466.9	448.7	442.4	422.3	411.5	408.0	398.2	270.2	135.8	45.1
7.5°	634.6	617.5	595.4	585.1	557.6	539.5	527.7	513.0	306.0	107.9	25.0
10°	749.4	729.8	706.7	693.5	662.6	644.4	625.3	609.1	325.2	74.5	18.6
12.5°	902.4	863.7	815.6	786.7	741.0	716.0	694.0	678.3	332.5	44.6	14.2
15°	1106.4	1044.1	976.0	923.5	846.0	798.9	761.6	733.2	326.6	27.0	12.3
17.5°	1304.1	1215.8	1126.5	1055.4	966.6	896.5	824.9	769.0	301.6	21.6	11.3
20°	1468.4	1364.9	1251.1	1151.5	1049.0	965.7	870.5	791.6	261.4	17.2	12.3
22.5°	1594.9	1463.0	1334.0	1210.4	1088.3	992.6	888.2	796.5	210.4	17.7	17.2
25°	1686.1	1513.0	1375.7	1234.9	1102.0	997.0	878.9	780.8	155.0	32.4	57.9
26°	1704.7	1523.3	1381.1	1232.5	1097.1	989.7	868.1	771.0	139.8	64.2	127.5
27°	1715.0	1521.8	1377.1	1222.6	1086.8	978.9	855.8	762.1	137.3	109.9	190.3
28°	1705.7	1509.6	1360.5	1205.0	1070.1	964.7	841.6	751.8	135.8	134.9	180.5
29°	1680.2	1488.0	1335.4	1177.5	1044.6	942.1	820.0	737.1	121.6	107.4	108.9
30°	1641.5	1457.6	1299.2	1140.7	1012.3	909.8	789.1	713.6	80.4	53.9	46.1
31°	1593.4	1418.3	1254.5	1098.1	975.5	870.5	756.7	683.2	41.7	23.1	21.6
32°	1540.4	1371.2	1206.5	1054.9	938.2	832.8	729.8	656.2	27.5	12.8	12.3
33°	1484.5	1316.3	1153.5	1010.3	896.5	790.6	701.8	627.3	20.6	7.8	7.4
34°	1429.6	1257.5	1100.0	962.2	851.4	752.8	676.3	593.9	16.7	5.9	4.9
35°	1367.3	1193.7	1045.1	911.2	802.8	720.4	650.8	557.6	13.2	3.9	3.9
36°	1294.7	1126.0	988.2	857.8	756.7	690.5	622.8	517.9	10.3	2.9	3.4
37°	1217.7	1058.8	930.8	804.8	719.0	663.1	589.0	477.2	8.8	2.5	2.9
38°	1138.3	992.1	869.0	753.8	686.1	633.1	550.8	435.0	7.4	2.0	2.5
39°	1060.3	924.0	807.3	712.6	655.2	597.8	507.1	391.9	6.4	2.0	2.5
40°	984.3	855.3	752.3	676.8	620.9	554.7	462.0	346.7	4.4	1.5	2.5
42.5°	803.8	713.1	647.9	572.3	509.1	434.5	339.9	225.1	3.4	1.5	2.0
45°	672.9	598.3	522.3	437.0	374.7	298.2	201.1	95.6	3.4	1.5	2.0
47.5°	532.1	444.3	332.5	224.6	146.6	75.5	23.5	13.2	2.5	1.5	2.0
50°	155.0	89.7	33.3	20.1	15.2	9.3	5.9	5.4	2.0	1.5	2.0
51°	44.6	26.5	17.7	11.8	8.8	5.4	4.4	4.9	2.0	1.5	1.5
52°	21.1	15.2	10.3	7.8	5.9	4.4	3.9	4.4	2.0	1.5	1.5
53°	12.3	9.3	7.4	6.4	4.4	3.9	2.9	3.9	2.0	1.5	1.5
54°	8.3	7.4	6.4	5.4	3.9	2.9	2.9	3.9	2.0	1.5	1.5
55°	7.4	6.4	5.4	4.9	3.4	2.9	2.9	2.9	1.5	1.0	1.5
57.5°	4.9	4.9	3.9	3.9	2.9	2.0	1.0	2.5	2.0	1.5	1.5
60°	3.4	3.4	3.4	2.5	1.0	1.0	0.5	2.0	2.0	1.5	2.0
61°	3.4	3.4	2.5	2.0	1.0	1.0	0.5	2.0	2.0	1.5	2.0
62°	2.9	2.5	2.0	2.0	1.0	1.0	0.5	2.0	2.0	1.5	2.0
63°	2.5	2.0	2.0	2.0	1.0	0.5	0.5	2.0	2.0	1.5	2.0
64°	2.0	2.0	2.0	2.0	0.5	0.5	0.5	2.0	2.0	1.5	2.0
65°	2.0	2.0	2.0	1.5	0.5	0.5	0.5	1.5	2.0	1.5	2.0
66°	2.0	2.0	1.5	1.5	0.5	0.5	0.5	1.5	2.0	1.5	2.0



TEST NUMBER: P175456

CATALOG NUMBER: LDA6A15830D010TE 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°	0.5	1.0	1.0	1.0	0.0	0.0	0.0	1.5	2.0	1.5	2.0
75°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.0
77.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.5
80°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.5
82.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.5
85°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.5
87.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.5	2.0	2.0	2.5
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: P175456

CATALOG NUMBER: LDA6A15830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	160.4	160.4	160.4
2.5°	61.3	44.1	40.2
5°	24.5	20.1	18.1
7.5°	15.2	12.8	11.8
10°	12.3	9.3	8.8
12.5°	9.8	8.3	7.8
15°	9.3	7.8	7.4
17.5°	9.3	8.8	8.3
20°	11.8	11.8	12.3
22.5°	20.1	23.5	26.5
25°	97.6	157.9	209.4
26°	204.5	288.4	308.5
27°	253.6	262.4	252.1
28°	195.2	175.1	164.8
29°	104.5	87.3	79.9
30°	41.7	34.3	32.4
31°	20.1	17.2	16.7
32°	11.3	9.3	9.3
33°	6.9	5.9	5.4
34°	4.9	3.9	3.4
35°	3.4	2.9	2.5
36°	2.9	2.0	1.5
37°	2.5	1.5	1.5
38°	2.0	1.5	1.0
39°	1.5	1.0	0.5
40°	1.5	0.5	0.0
42.5°	1.0	0.5	0.0
45°	1.0	0.0	0.0
47.5°	1.5	1.0	0.5
50°	1.0	0.5	0.0
51°	1.0	0.0	0.0
52°	1.0	0.0	0.0
53°	1.0	0.0	0.0
54°	1.0	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.0	0.0	0.0
60°	1.0	0.0	0.0
61°	1.0	0.0	0.0
62°	1.0	0.0	0.0
63°	1.0	0.5	0.0
64°	1.0	0.5	0.0
65°	1.0	0.5	0.0
66°	1.0	0.5	0.0



TEST NUMBER: P175456

CATALOG NUMBER: LDA6A15830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.5	0.5	0.0
75°	1.5	0.5	0.0
77.5°	1.5	0.5	0.0
80°	1.5	0.5	0.0
82.5°	1.5	0.5	0.0
85°	1.5	0.5	0.0
87.5°	1.5	0.5	0.0
90°	0.0	0.0	0.0



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







67.5°	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.5	1.5
70°	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0





67.5°	1.5	1.5	1.5	1.5	0.5	0.0	0.0	1.5	2.0	1.5	2.0
70°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.5	2.0	1.5	2.0





67.5°	1.5	0.5	0.0
70°	1.5	0.5	0.0



(END OF REPORT)