

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: P175452

Luminaire Tested: **LDA6A10930D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175452
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: LDA6A10930D010TE 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 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 627.7 lumens
Efficiency: N/A
Efficacy: 45.4 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

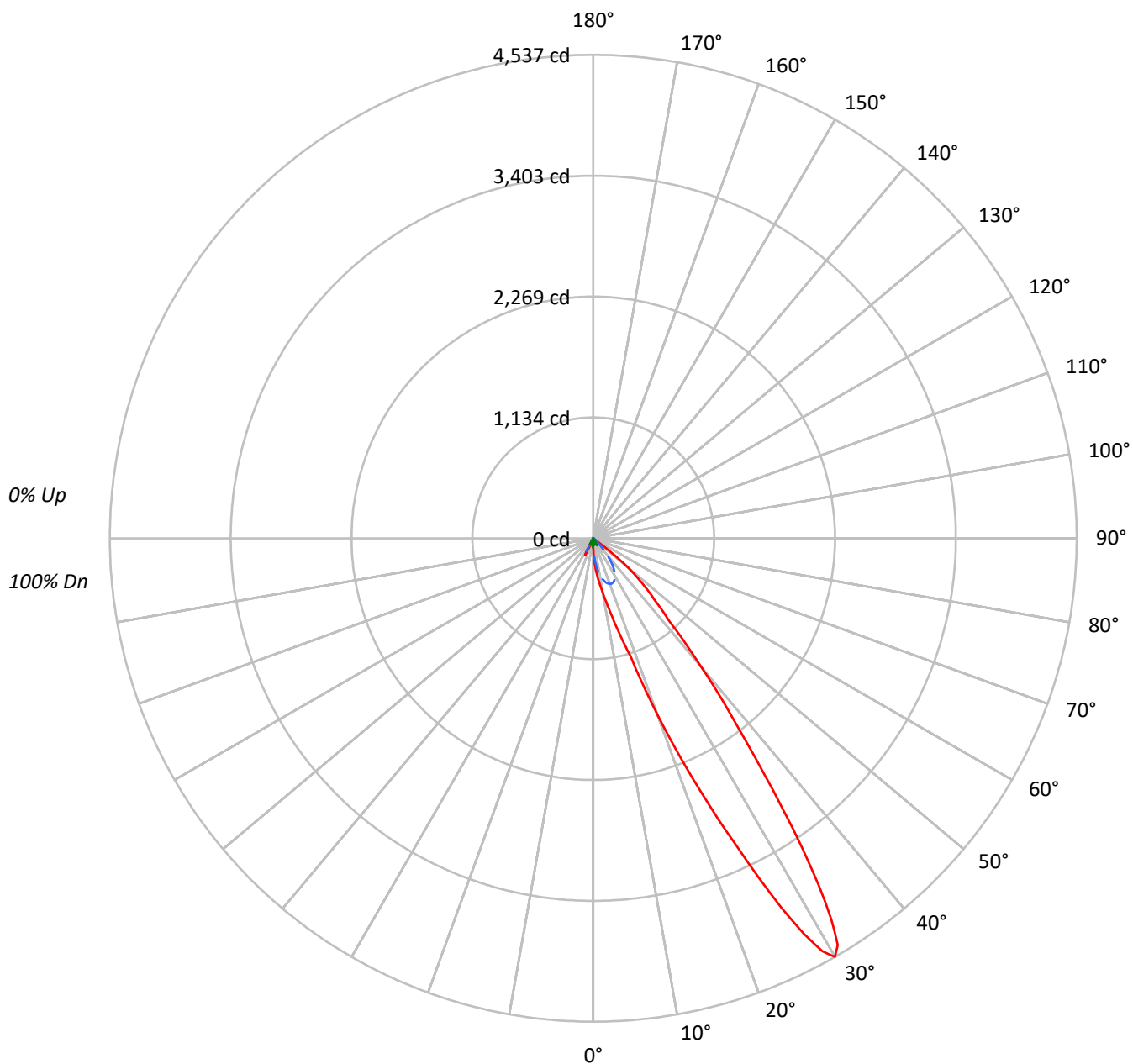
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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	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°	5065	5065	5065
5°	17323	4309	578
10°	28991	2394	284
15°	50364	880	238
20°	102891	578	414
25°	193148	1131	7301
30°	287177	1969	1184
35°	207247	154	94
40°	112568	57	0
45°	62487	62	0
50°	36562	68	0
55°	1166	57	0
60°	406	88	0
65°	182	104	0
70°	128	128	0
75°	64	233	0
80°	0	347	0
85°	0	692	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.9	2.1
10°-20°	67.2	10.7
20°-30°	216.3	34.5
30°-40°	225.2	35.9
40°-50°	95.9	15.3
50°-60°	8.0	1.3
60°-70°	0.8	0.1
70°-80°	0.7	0.1
80°-90°	0.6	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°	296.5	47.2
0°-40°	521.7	83.1
0°-60°	625.6	99.7
0°-90°	627.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	627.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	92	92	92	92	92	
5°	315	230	78	14	10	36
15°	887	422	16	5	4	290
25°	3193	450	19	56	121	1534
35°	3097	321	2	2	1	1917
45°	806	55	1	1	0	663
55°	12	2	1	1	0	76
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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CATALOG NUMBER: LDA6A10930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4
2.5°	205.2	194.4	202.6	197.8	194.7	193.9	198.7	193.3	187.7	187.4	185.7
5°	314.8	304.6	313.1	305.8	302.4	299.6	301.8	293.1	283.7	284.0	279.8
7.5°	410.3	404.7	410.3	402.4	399.9	397.1	396.2	387.7	376.7	377.6	371.1
10°	520.8	504.5	513.5	496.3	492.0	484.4	481.8	468.0	450.5	449.6	440.3
12.5°	673.2	666.7	675.7	651.4	646.3	633.3	626.3	604.2	575.4	568.0	546.6
15°	887.4	866.5	875.5	841.3	831.7	809.1	793.6	759.4	732.0	700.9	668.1
17.5°	1159.5	1147.7	1159.3	1092.0	1067.1	1023.0	986.6	929.5	871.3	843.3	797.2
20°	1763.7	1707.2	1713.4	1588.5	1508.8	1390.1	1295.2	1169.1	1053.6	987.1	911.1
22.5°	2434.4	2369.9	2354.1	2193.6	2058.5	1880.2	1713.4	1502.6	1297.7	1149.4	1020.5
25°	3193.2	3151.3	3068.5	2805.7	2573.4	2319.1	2073.8	1797.9	1532.3	1305.1	1111.8
26°	3553.5	3519.9	3395.5	3066.8	2766.1	2461.8	2181.4	1885.3	1598.7	1349.4	1133.3
27°	3895.7	3868.6	3706.9	3324.3	2948.4	2582.2	2259.7	1947.4	1646.5	1378.0	1148.5
28°	4197.3	4169.6	3960.7	3542.5	3092.8	2669.2	2308.9	1986.2	1673.9	1384.8	1147.7
29°	4431.8	4396.8	4127.2	3682.4	3177.6	2711.0	2318.8	1991.0	1669.9	1368.9	1131.8
30°	4536.7	4493.2	4174.7	3712.3	3179.0	2695.2	2290.8	1965.2	1637.7	1331.6	1102.4
31°	4454.4	4417.4	4088.5	3625.8	3092.8	2622.9	2221.3	1905.9	1576.7	1277.7	1063.4
32°	4214.8	4180.9	3877.6	3435.9	2929.8	2500.5	2120.4	1821.1	1495.6	1212.4	1018.2
33°	3886.1	3859.8	3588.0	3175.1	2720.4	2349.9	1999.7	1714.9	1398.1	1139.2	963.1
34°	3511.1	3490.5	3242.3	2880.3	2491.7	2182.6	1862.1	1562.0	1291.5	1065.4	921.9
35°	3096.8	3082.7	2880.3	2577.7	2264.2	2008.8	1709.2	1426.9	1184.1	994.5	877.5
36°	2703.1	2691.5	2537.2	2300.1	2047.8	1828.5	1543.6	1286.1	1081.3	930.6	835.9
37°	2366.8	2358.3	2244.2	2053.1	1839.8	1641.1	1374.9	1154.4	991.7	874.9	793.3
38°	2087.0	2080.3	1987.6	1818.3	1625.6	1447.2	1212.1	1038.0	915.4	826.6	745.0
39°	1826.2	1817.4	1734.1	1580.9	1412.2	1258.4	1104.1	942.2	855.4	776.3	693.0
40°	1573.0	1561.7	1488.5	1358.2	1217.5	1098.2	959.7	883.4	806.8	717.8	639.8
42.5°	1055.5	1049.3	1009.5	950.7	891.1	847.5	803.7	735.6	654.8	581.3	523.7
45°	806.0	804.6	785.1	754.3	714.7	678.0	619.5	580.2	525.6	463.8	422.5
47.5°	618.3	618.6	600.5	577.4	550.2	526.5	483.8	452.5	413.5	378.1	346.2
50°	428.7	410.6	413.2	394.8	372.8	358.9	319.3	295.3	239.9	184.0	143.8
51°	321.3	297.6	300.7	280.1	257.2	245.0	208.0	183.7	131.7	86.5	56.5
52°	196.1	177.5	177.2	161.4	141.6	130.8	101.5	79.1	44.9	23.7	16.4
53°	87.9	75.5	72.6	61.9	48.6	42.1	28.8	21.2	15.8	12.2	9.3
54°	23.2	20.6	19.8	18.1	16.4	15.8	13.8	11.6	9.0	7.1	5.9
55°	12.2	11.3	11.0	10.5	9.6	9.3	8.2	7.1	5.7	5.1	4.5
57.5°	5.7	5.7	5.4	5.1	4.8	4.8	4.2	4.0	3.7	3.7	3.1
60°	3.7	3.7	3.7	3.4	3.4	3.1	2.8	2.5	2.3	2.5	2.3
61°	3.1	3.1	3.1	2.8	2.5	2.3	2.3	2.3	2.0	2.0	1.7
62°	2.3	2.3	2.0	2.0	1.7	1.7	1.7	1.7	1.4	1.7	1.7
63°	1.7	1.7	1.4	1.4	1.4	1.4	1.1	1.1	1.1	1.7	1.7
64°	1.4	1.4	1.4	1.1	1.1	1.1	1.1	1.1	1.1	1.4	1.1
65°	1.4	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.8	1.1	1.1
66°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.8	0.8	1.1	1.1



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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°	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.3
75°	0.3	0.3	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°	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4	92.4
2.5°	185.7	182.3	175.2	173.8	167.0	163.1	164.2	161.9	125.8	88.7	55.4
5°	276.7	269.0	258.6	254.9	243.3	237.1	235.1	229.5	155.7	78.3	26.0
7.5°	365.7	355.8	343.1	337.1	321.3	310.9	304.1	295.6	176.3	62.2	14.4
10°	431.8	420.5	407.2	399.6	381.8	371.3	360.3	351.0	187.4	43.0	10.7
12.5°	520.0	497.7	470.0	453.3	427.0	412.6	399.9	390.8	191.6	25.7	8.2
15°	637.6	601.7	562.4	532.1	487.5	460.4	438.9	422.5	188.2	15.5	7.1
17.5°	751.5	700.6	649.1	608.2	557.0	516.6	475.3	443.1	173.8	12.4	6.5
20°	846.1	786.5	720.9	663.6	604.5	556.5	501.6	456.1	150.6	9.9	7.1
22.5°	919.0	843.0	768.7	697.5	627.1	572.0	511.8	459.0	121.2	10.2	9.9
25°	971.6	871.8	792.7	711.6	635.0	574.5	506.4	449.9	89.3	18.7	33.3
26°	982.3	877.8	795.8	710.2	632.2	570.3	500.2	444.3	80.5	37.0	73.5
27°	988.3	876.9	793.6	704.5	626.3	564.1	493.1	439.2	79.1	63.3	109.7
28°	982.9	869.9	783.9	694.4	616.6	555.9	485.0	433.2	78.3	77.7	104.0
29°	968.2	857.4	769.5	678.5	602.0	542.9	472.5	424.8	70.1	61.9	62.7
30°	945.9	839.9	748.6	657.3	583.3	524.2	454.7	411.2	46.3	31.1	26.6
31°	918.2	817.3	722.9	632.8	562.1	501.6	436.1	393.7	24.0	13.3	12.4
32°	887.7	790.2	695.2	607.9	540.6	479.9	420.5	378.1	15.8	7.3	7.1
33°	855.4	758.5	664.7	582.2	516.6	455.6	404.4	361.5	11.9	4.5	4.2
34°	823.8	724.6	633.9	554.5	490.6	433.8	389.7	342.2	9.6	3.4	2.8
35°	787.9	687.9	602.2	525.1	462.6	415.1	375.0	321.3	7.6	2.3	2.3
36°	746.1	648.9	569.5	494.3	436.1	397.9	358.9	298.4	5.9	1.7	2.0
37°	701.7	610.1	536.4	463.8	414.3	382.1	339.4	275.0	5.1	1.4	1.7
38°	655.9	571.7	500.8	434.4	395.4	364.8	317.4	250.7	4.2	1.1	1.4
39°	611.0	532.4	465.2	410.6	377.6	344.5	292.2	225.8	3.7	1.1	1.4
40°	567.2	492.9	433.5	390.0	357.8	319.6	266.2	199.8	2.5	0.8	1.4
42.5°	463.2	410.9	373.3	329.8	293.3	250.4	195.8	129.7	2.0	0.8	1.1
45°	387.7	344.8	301.0	251.8	215.9	171.8	115.9	55.1	2.0	0.8	1.1
47.5°	306.6	256.0	191.6	129.4	84.5	43.5	13.6	7.6	1.4	0.8	1.1
50°	89.3	51.7	19.2	11.6	8.8	5.4	3.4	3.1	1.1	0.8	1.1
51°	25.7	15.3	10.2	6.8	5.1	3.1	2.5	2.8	1.1	0.8	0.8
52°	12.2	8.8	5.9	4.5	3.4	2.5	2.3	2.5	1.1	0.8	0.8
53°	7.1	5.4	4.2	3.7	2.5	2.3	1.7	2.3	1.1	0.8	0.8
54°	4.8	4.2	3.7	3.1	2.3	1.7	1.7	2.3	1.1	0.8	0.8
55°	4.2	3.7	3.1	2.8	2.0	1.7	1.7	1.7	0.8	0.6	0.8
57.5°	2.8	2.8	2.3	2.3	1.7	1.1	0.6	1.4	1.1	0.8	0.8
60°	2.0	2.0	2.0	1.4	0.6	0.6	0.3	1.1	1.1	0.8	1.1
61°	2.0	2.0	1.4	1.1	0.6	0.6	0.3	1.1	1.1	0.8	1.1
62°	1.7	1.4	1.1	1.1	0.6	0.6	0.3	1.1	1.1	0.8	1.1
63°	1.4	1.1	1.1	1.1	0.6	0.3	0.3	1.1	1.1	0.8	1.1
64°	1.1	1.1	1.1	1.1	0.3	0.3	0.3	1.1	1.1	0.8	1.1
65°	1.1	1.1	1.1	0.8	0.3	0.3	0.3	0.8	1.1	0.8	1.1
66°	1.1	1.1	0.8	0.8	0.3	0.3	0.3	0.8	1.1	0.8	1.1



TEST NUMBER: P175452

CATALOG NUMBER: LDA6A10930D010TE 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°	0.3	0.6	0.6	0.6	0.0	0.0	0.0	0.8	1.1	0.8	1.1
75°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.1
77.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.4
80°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.4
82.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.4
85°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.4
87.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.8	1.1	1.1	1.4
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: P175452

CATALOG NUMBER: LDA6A10930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	92.4	92.4	92.4
2.5°	35.3	25.4	23.2
5°	14.1	11.6	10.5
7.5°	8.8	7.3	6.8
10°	7.1	5.4	5.1
12.5°	5.7	4.8	4.5
15°	5.4	4.5	4.2
17.5°	5.4	5.1	4.8
20°	6.8	6.8	7.1
22.5°	11.6	13.6	15.3
25°	56.2	91.0	120.7
26°	117.8	166.2	177.8
27°	146.1	151.2	145.3
28°	112.5	100.9	95.0
29°	60.2	50.3	46.1
30°	24.0	19.8	18.7
31°	11.6	9.9	9.6
32°	6.5	5.4	5.4
33°	4.0	3.4	3.1
34°	2.8	2.3	2.0
35°	2.0	1.7	1.4
36°	1.7	1.1	0.8
37°	1.4	0.8	0.8
38°	1.1	0.8	0.6
39°	0.8	0.6	0.3
40°	0.8	0.3	0.0
42.5°	0.6	0.3	0.0
45°	0.6	0.0	0.0
47.5°	0.8	0.6	0.3
50°	0.6	0.3	0.0
51°	0.6	0.0	0.0
52°	0.6	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°	0.6	0.0	0.0
62°	0.6	0.0	0.0
63°	0.6	0.3	0.0
64°	0.6	0.3	0.0
65°	0.6	0.3	0.0
66°	0.6	0.3	0.0



TEST NUMBER: P175452

CATALOG NUMBER: LDA6A10930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	0.8	0.3	0.0
75°	0.8	0.3	0.0
77.5°	0.8	0.3	0.0
80°	0.8	0.3	0.0
82.5°	0.8	0.3	0.0
85°	0.8	0.3	0.0
87.5°	0.8	0.3	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	1.1	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6	0.8	0.8
70°	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6





67.5°	0.8	0.8	0.8	0.8	0.3	0.0	0.0	0.8	1.1	0.8	1.1
70°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.8	1.1	0.8	1.1





67.5°	0.8	0.3	0.0
70°	0.8	0.3	0.0



(END OF REPORT)