

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: P175448

Luminaire Tested: **LDA6A10830D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175448
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: LDA6A10830D010TE 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: 734.1 lumens
Efficiency: N/A
Efficacy: 53.0 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

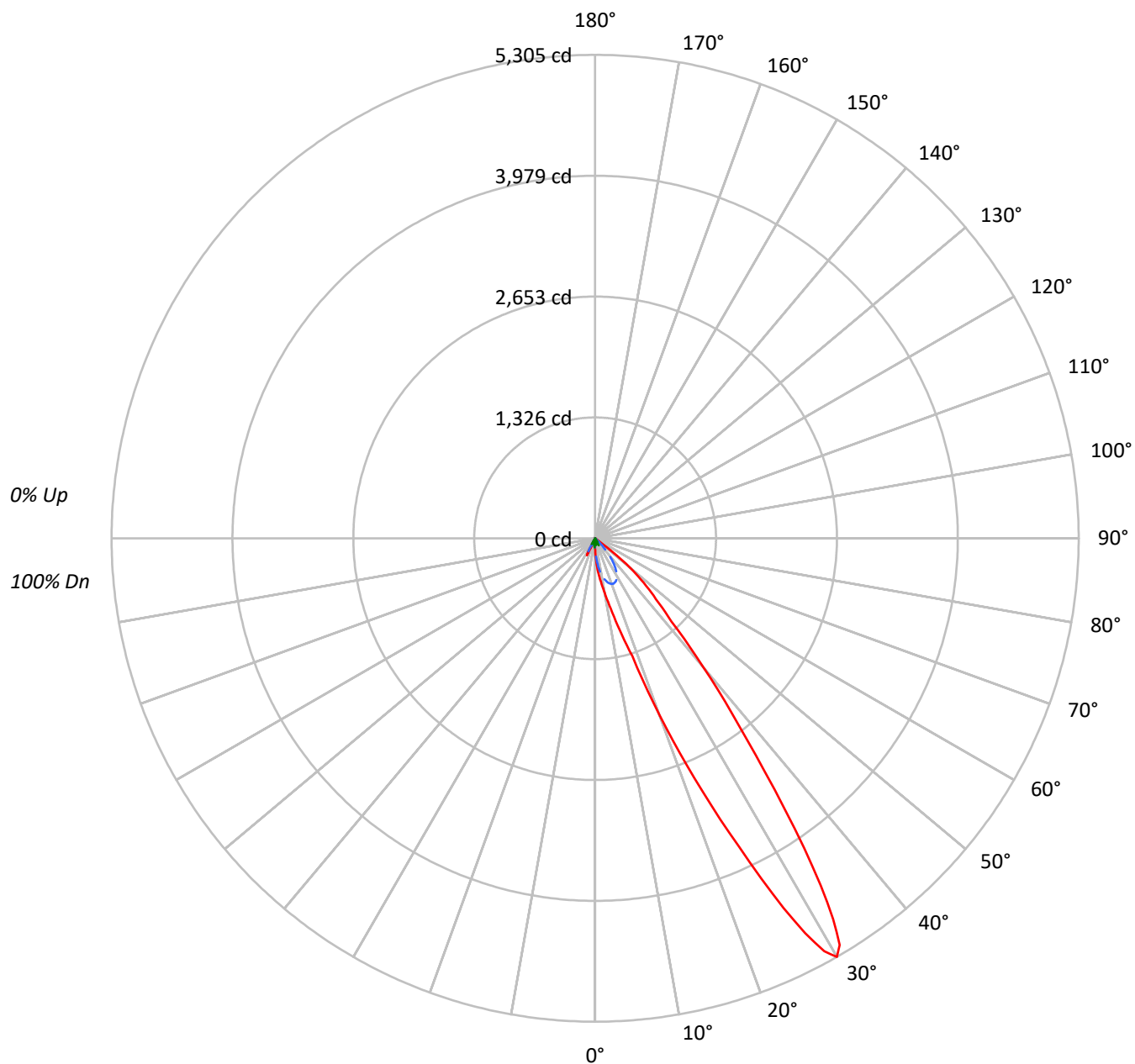
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	113	109	106	104	110	107	105	102	103	101	99		99	98	96		96
2	106	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	91	86	81	97	90	85	80	87	83	79		85	81	78		82
4	93	84	77	72	91	82	76	72	80	75	71		78	74	70		76
5	87	77	70	64	85	76	69	64	74	68	64		72	67	63		70
6	81	70	63	58	79	69	63	58	68	62	57		66	61	57		65
7	75	64	57	52	74	64	57	52	62	56	52		61	55	51		60
8	71	59	52	47	69	59	52	47	57	51	47		56	51	47		55
9	66	55	47	43	65	54	47	43	53	47	42		52	46	42		51
10	62	50	43	39	61	50	43	39	49	43	39		48	42	38		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5926	5926	5926
5°	20256	5035	671
10°	33901	2794	328
15°	58894	1033	284
20°	120317	677	484
25°	225854	1319	8535
30°	335805	2304	1380
35°	242342	174	114
40°	131632	72	0
45°	73070	78	0
50°	42753	85	0
55°	1357	67	0
60°	471	110	0
65°	221	130	0
70°	160	160	0
75°	64	275	0
80°	0	410	0
85°	0	818	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.1	2.1
10°-20°	78.6	10.7
20°-30°	253.0	34.5
30°-40°	263.3	35.9
40°-50°	112.2	15.3
50°-60°	9.3	1.3
60°-70°	1.0	0.1
70°-80°	0.8	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°	346.7	47.2
0°-40°	610.1	83.1
0°-60°	731.6	99.7
0°-90°	734.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	734.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	108	108	108	108	108	
5°	368	268	92	16	12	42
15°	1038	494	18	6	5	339
25°	3734	526	22	66	141	1793
35°	3621	376	3	2	2	2242
45°	942	64	1	1	0	775
55°	14	2	1	1	0	89
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	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1
2.5°	239.9	227.4	236.9	231.3	227.7	226.7	232.3	226.0	219.4	219.1	217.1
5°	368.1	356.2	366.2	357.6	353.6	350.3	352.9	342.7	331.8	332.1	327.2
7.5°	479.8	473.2	479.8	470.6	467.6	464.3	463.3	453.4	440.5	441.5	433.9
10°	609.0	589.9	600.5	580.3	575.3	566.4	563.4	547.2	526.8	525.8	514.9
12.5°	787.2	779.6	790.1	761.7	755.8	740.6	732.3	706.5	672.8	664.2	639.1
15°	1037.7	1013.2	1023.8	983.8	972.6	946.1	927.9	888.0	855.9	819.5	781.2
17.5°	1355.9	1342.0	1355.6	1276.9	1247.8	1196.3	1153.6	1086.9	1018.8	986.1	932.2
20°	2062.4	1996.3	2003.6	1857.5	1764.3	1625.5	1514.5	1367.1	1232.0	1154.3	1065.4
22.5°	2846.6	2771.3	2752.8	2565.1	2407.1	2198.6	2003.6	1757.1	1517.5	1344.0	1193.3
25°	3733.9	3685.0	3588.2	3280.8	3009.2	2711.8	2424.9	2102.4	1791.8	1526.1	1300.0
26°	4155.2	4115.9	3970.5	3586.2	3234.6	2878.7	2550.8	2204.5	1869.4	1578.0	1325.2
27°	4555.4	4523.7	4334.7	3887.2	3447.7	3019.4	2642.4	2277.2	1925.3	1611.3	1343.0
28°	4908.0	4875.6	4631.4	4142.4	3616.6	3121.2	2699.9	2322.5	1957.3	1619.3	1342.0
29°	5182.3	5141.3	4826.1	4305.9	3715.7	3170.1	2711.4	2328.1	1952.7	1600.8	1323.5
30°	5304.9	5254.0	4881.6	4341.0	3717.4	3151.6	2678.7	2298.0	1915.0	1557.1	1289.1
31°	5208.8	5165.5	4780.8	4239.8	3616.6	3067.0	2597.4	2228.6	1843.7	1494.0	1243.5
32°	4928.5	4888.9	4534.3	4017.8	3425.9	2923.9	2479.5	2129.5	1748.8	1417.7	1190.7
33°	4544.2	4513.5	4195.6	3712.8	3181.0	2747.8	2338.4	2005.2	1634.8	1332.1	1126.2
34°	4105.7	4081.5	3791.4	3368.1	2913.7	2552.2	2177.4	1826.5	1510.2	1245.8	1078.0
35°	3621.2	3604.7	3368.1	3014.2	2647.7	2348.9	1998.6	1668.5	1384.6	1162.9	1026.1
36°	3160.9	3147.3	2966.9	2689.6	2394.5	2138.1	1805.0	1503.9	1264.4	1088.2	977.5
37°	2767.6	2757.7	2624.2	2400.8	2151.3	1919.0	1607.7	1349.9	1159.6	1023.1	927.6
38°	2440.5	2432.5	2324.1	2126.2	1900.8	1692.3	1417.4	1213.8	1070.4	966.6	871.1
39°	2135.5	2125.2	2027.7	1848.6	1651.3	1471.6	1291.1	1101.8	1000.3	907.8	810.3
40°	1839.4	1826.1	1740.5	1588.2	1423.6	1284.2	1122.3	1033.0	943.5	839.4	748.2
42.5°	1234.3	1227.0	1180.4	1111.7	1041.9	991.1	939.8	860.2	765.7	679.8	612.3
45°	942.5	940.8	918.0	882.0	835.7	792.8	724.4	678.4	614.7	542.3	494.0
47.5°	723.1	723.4	702.2	675.1	643.4	615.7	565.8	529.1	483.5	442.2	404.8
50°	501.3	480.2	483.1	461.7	435.9	419.7	373.4	345.3	280.6	215.1	168.2
51°	375.7	348.0	351.6	327.5	300.7	286.5	243.2	214.8	154.0	101.1	66.1
52°	229.3	207.5	207.2	188.7	165.6	153.0	118.6	92.5	52.5	27.8	19.2
53°	102.8	88.2	84.9	72.4	56.8	49.2	33.7	24.8	18.5	14.2	10.9
54°	27.1	24.1	23.1	21.1	19.2	18.5	16.2	13.5	10.6	8.3	6.9
55°	14.2	13.2	12.9	12.2	11.2	10.9	9.6	8.3	6.6	5.9	5.3
57.5°	6.6	6.6	6.3	5.9	5.6	5.6	5.0	4.6	4.3	4.3	3.6
60°	4.3	4.3	4.3	4.0	4.0	3.6	3.3	3.0	2.6	3.0	2.6
61°	3.6	3.6	3.6	3.3	3.0	2.6	2.6	2.6	2.3	2.3	2.0
62°	2.6	2.6	2.3	2.3	2.0	2.0	2.0	2.0	1.7	2.0	2.0
63°	2.0	2.0	1.7	1.7	1.7	1.7	1.3	1.3	1.3	2.0	2.0
64°	1.7	1.7	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.7	1.3
65°	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.0	1.3	1.3
66°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.0	1.0	1.3	1.3



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CATALOG NUMBER: LDA6A10830D010TE 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°	0.3	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°	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1
2.5°	217.1	213.1	204.9	203.2	195.3	190.7	192.0	189.4	147.1	103.8	64.8
5°	323.5	314.6	302.4	298.1	284.5	277.3	274.9	268.3	182.1	91.5	30.4
7.5°	427.6	416.1	401.2	394.2	375.7	363.5	355.6	345.7	206.2	72.7	16.9
10°	504.9	491.7	476.2	467.3	446.5	434.2	421.3	410.4	219.1	50.2	12.6
12.5°	608.1	581.9	549.6	530.1	499.3	482.5	467.6	457.0	224.1	30.1	9.6
15°	745.5	703.6	657.6	622.3	570.0	538.3	513.2	494.0	220.1	18.2	8.3
17.5°	878.7	819.2	759.1	711.2	651.3	604.1	555.8	518.2	203.2	14.5	7.6
20°	989.4	919.7	843.0	775.9	706.9	650.7	586.6	533.4	176.1	11.6	8.3
22.5°	1074.7	985.8	898.9	815.6	733.3	668.9	598.5	536.7	141.8	11.9	11.6
25°	1136.1	1019.5	926.9	832.1	742.6	671.8	592.2	526.1	104.4	21.8	39.0
26°	1148.7	1026.4	930.6	830.5	739.2	666.9	584.9	519.5	94.2	43.3	85.9
27°	1155.6	1025.4	927.9	823.8	732.3	659.6	576.7	513.5	92.5	74.0	128.2
28°	1149.4	1017.2	916.7	811.9	721.1	650.0	567.1	506.6	91.5	90.9	121.6
29°	1132.2	1002.6	899.9	793.4	703.9	634.8	552.5	496.7	82.0	72.4	73.4
30°	1106.1	982.1	875.4	768.7	682.1	613.0	531.7	480.8	54.2	36.4	31.1
31°	1073.7	955.7	845.3	739.9	657.3	586.6	509.9	460.3	28.1	15.5	14.5
32°	1038.0	924.0	812.9	710.8	632.2	561.1	491.7	442.2	18.5	8.6	8.3
33°	1000.3	887.0	777.2	680.8	604.1	532.7	472.9	422.7	13.9	5.3	5.0
34°	963.3	847.3	741.2	648.4	573.7	507.3	455.7	400.2	11.2	4.0	3.3
35°	921.3	804.3	704.2	614.0	541.0	485.5	438.5	375.7	8.9	2.6	2.6
36°	872.4	758.7	665.9	578.0	509.9	465.3	419.7	349.0	6.9	2.0	2.3
37°	820.5	713.5	627.2	542.3	484.5	446.8	396.9	321.5	5.9	1.7	2.0
38°	767.0	668.5	585.6	507.9	462.3	426.6	371.1	293.1	5.0	1.3	1.7
39°	714.5	622.6	543.9	480.2	441.5	402.8	341.7	264.0	4.3	1.3	1.7
40°	663.2	576.3	506.9	456.0	418.4	373.8	311.3	233.6	3.0	1.0	1.7
42.5°	541.6	480.5	436.5	385.7	343.0	292.8	229.0	151.7	2.3	1.0	1.3
45°	453.4	403.2	351.9	294.4	252.5	200.9	135.5	64.4	2.3	1.0	1.3
47.5°	358.6	299.4	224.1	151.4	98.8	50.9	15.9	8.9	1.7	1.0	1.3
50°	104.4	60.5	22.5	13.5	10.2	6.3	4.0	3.6	1.3	1.0	1.3
51°	30.1	17.8	11.9	7.9	5.9	3.6	3.0	3.3	1.3	1.0	1.0
52°	14.2	10.2	6.9	5.3	4.0	3.0	2.6	3.0	1.3	1.0	1.0
53°	8.3	6.3	5.0	4.3	3.0	2.6	2.0	2.6	1.3	1.0	1.0
54°	5.6	5.0	4.3	3.6	2.6	2.0	2.0	2.6	1.3	1.0	1.0
55°	5.0	4.3	3.6	3.3	2.3	2.0	2.0	2.0	1.0	0.7	1.0
57.5°	3.3	3.3	2.6	2.6	2.0	1.3	0.7	1.7	1.3	1.0	1.0
60°	2.3	2.3	2.3	1.7	0.7	0.7	0.3	1.3	1.3	1.0	1.3
61°	2.3	2.3	1.7	1.3	0.7	0.7	0.3	1.3	1.3	1.0	1.3
62°	2.0	1.7	1.3	1.3	0.7	0.7	0.3	1.3	1.3	1.0	1.3
63°	1.7	1.3	1.3	1.3	0.7	0.3	0.3	1.3	1.3	1.0	1.3
64°	1.3	1.3	1.3	1.3	0.3	0.3	0.3	1.3	1.3	1.0	1.3
65°	1.3	1.3	1.3	1.0	0.3	0.3	0.3	1.0	1.3	1.0	1.3
66°	1.3	1.3	1.0	1.0	0.3	0.3	0.3	1.0	1.3	1.0	1.3



TEST NUMBER: P175448

CATALOG NUMBER: LDA6A10830D010TE 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	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.0	1.3
75°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	1.3
77.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	1.7
80°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	1.7
82.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	1.7
85°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	1.7
87.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.3	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: LDA6A10830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	108.1	108.1	108.1
2.5°	41.3	29.7	27.1
5°	16.5	13.5	12.2
7.5°	10.2	8.6	7.9
10°	8.3	6.3	5.9
12.5°	6.6	5.6	5.3
15°	6.3	5.3	5.0
17.5°	6.3	5.9	5.6
20°	7.9	7.9	8.3
22.5°	13.5	15.9	17.8
25°	65.8	106.4	141.1
26°	137.8	194.3	207.9
27°	170.8	176.8	169.9
28°	131.5	118.0	111.0
29°	70.4	58.8	53.9
30°	28.1	23.1	21.8
31°	13.5	11.6	11.2
32°	7.6	6.3	6.3
33°	4.6	4.0	3.6
34°	3.3	2.6	2.3
35°	2.3	2.0	1.7
36°	2.0	1.3	1.0
37°	1.7	1.0	1.0
38°	1.3	1.0	0.7
39°	1.0	0.7	0.3
40°	1.0	0.3	0.0
42.5°	0.7	0.3	0.0
45°	0.7	0.0	0.0
47.5°	1.0	0.7	0.3
50°	0.7	0.3	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	0.3	0.0
64°	0.7	0.3	0.0
65°	0.7	0.3	0.0
66°	0.7	0.3	0.0



TEST NUMBER: P175448

CATALOG NUMBER: LDA6A10830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.0	0.3	0.0
75°	1.0	0.3	0.0
77.5°	1.0	0.3	0.0
80°	1.0	0.3	0.0
82.5°	1.0	0.3	0.0
85°	1.0	0.3	0.0
87.5°	1.0	0.3	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	1.3	1.0	1.0	1.0	1.0	1.0	1.0	0.7	0.7	1.0	1.0
70°	1.0	1.0	1.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7





67.5°	1.0	1.0	1.0	1.0	0.3	0.0	0.0	1.0	1.3	1.0	1.3
70°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.3	1.0	1.3





67.5°	1.0	0.3	0.0
70°	1.0	0.3	0.0



(END OF REPORT)