

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: P175447

Luminaire Tested: **LDA6A10827D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175447
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: LDA6A10827D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 678.1 lumens
Efficiency: N/A
Efficacy: 49.0 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

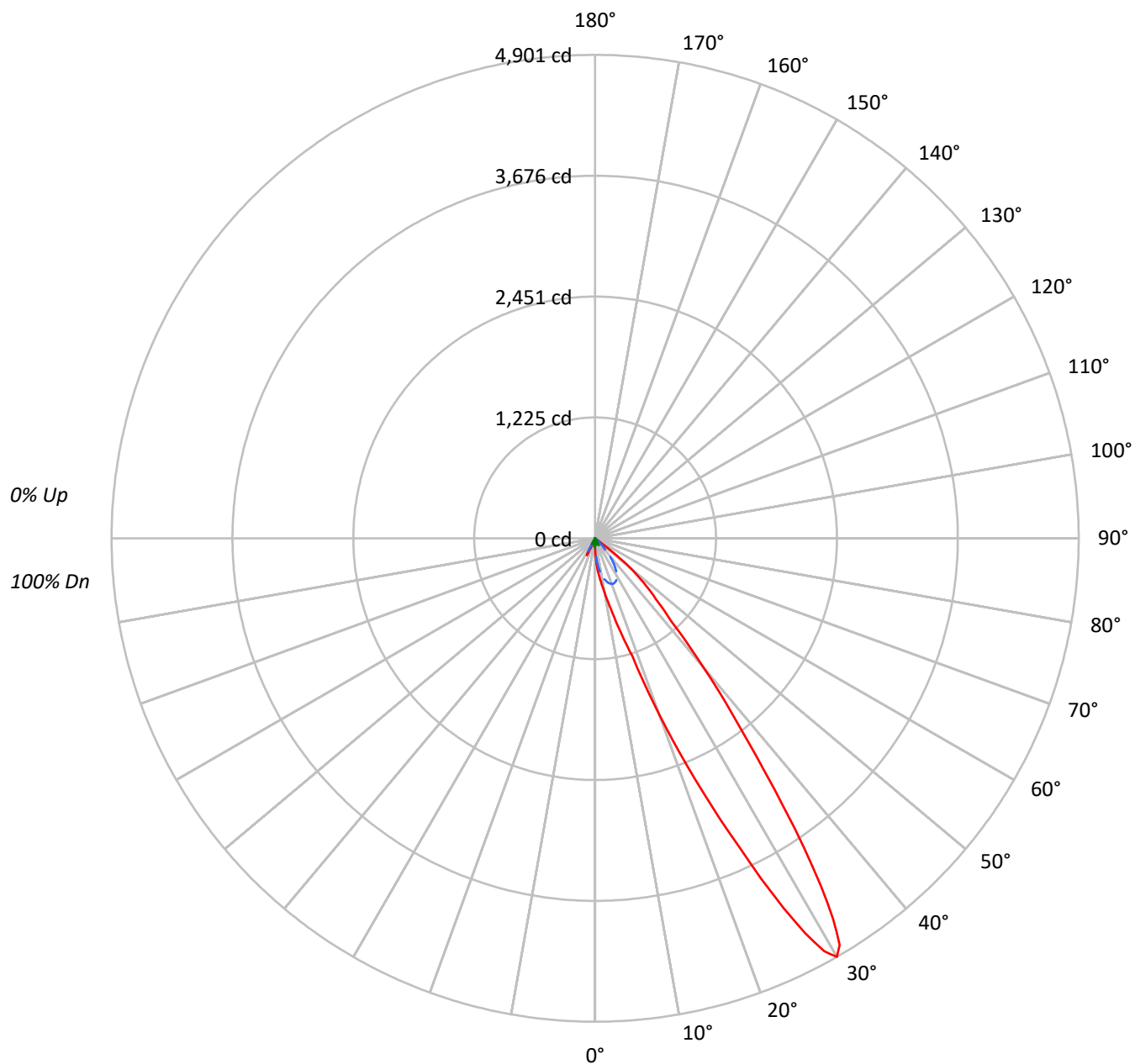
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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°	5471	5471	5471
5°	18716	4656	622
10°	31318	2583	306
15°	54404	953	261
20°	111146	624	443
25°	208639	1216	7888
30°	310212	2127	1272
35°	223871	161	100
40°	121599	64	0
45°	67495	70	0
50°	39496	77	0
55°	1252	57	0
60°	439	99	0
65°	195	117	0
70°	144	144	0
75°	64	254	0
80°	0	379	0
85°	0	755	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.0	2.1
10°-20°	72.6	10.7
20°-30°	233.7	34.5
30°-40°	243.3	35.9
40°-50°	103.6	15.3
50°-60°	8.6	1.3
60°-70°	0.9	0.1
70°-80°	0.8	0.1
80°-90°	0.7	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°	320.3	47.2
0°-40°	563.5	83.1
0°-60°	675.8	99.7
0°-90°	678.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	678.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	100	100	100	100	100	
5°	340	248	85	15	11	39
15°	959	456	17	6	5	313
25°	3449	486	20	61	130	1657
35°	3345	347	2	2	2	2071
45°	871	60	1	1	0	716
55°	13	2	1	1	0	82
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°	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
2.5°	221.6	210.0	218.9	213.7	210.3	209.4	214.6	208.8	202.7	202.4	200.6
5°	340.1	329.1	338.2	330.3	326.6	323.6	326.0	316.6	306.5	306.8	302.2
7.5°	443.3	437.2	443.3	434.7	432.0	428.9	428.0	418.8	406.9	407.8	400.8
10°	562.6	544.9	554.7	536.1	531.5	523.2	520.5	505.5	486.6	485.7	475.6
12.5°	727.2	720.1	729.9	703.7	698.2	684.1	676.5	652.7	621.5	613.6	590.4
15°	958.6	936.0	945.7	908.8	898.4	874.0	857.2	820.3	790.7	757.1	721.7
17.5°	1252.5	1239.7	1252.2	1179.6	1152.7	1105.1	1065.7	1004.1	941.2	910.9	861.2
20°	1905.2	1844.2	1850.9	1716.0	1629.9	1501.6	1399.1	1262.9	1138.1	1066.3	984.2
22.5°	2629.6	2560.0	2542.9	2369.5	2223.6	2031.0	1850.9	1623.1	1401.8	1241.6	1102.3
25°	3449.3	3404.1	3314.7	3030.8	2779.8	2505.1	2240.1	1942.2	1655.2	1409.8	1201.0
26°	3838.5	3802.2	3667.9	3312.8	2988.0	2659.3	2356.4	2036.5	1726.9	1457.7	1224.2
27°	4208.2	4178.9	4004.3	3591.0	3184.9	2789.3	2441.0	2103.7	1778.5	1488.5	1240.6
28°	4533.9	4504.0	4278.4	3826.6	3340.9	2883.3	2494.1	2145.5	1808.1	1495.8	1239.7
29°	4787.3	4749.5	4458.2	3977.7	3432.5	2928.5	2504.8	2150.7	1803.9	1478.8	1222.6
30°	4900.6	4853.6	4509.5	4010.1	3434.0	2911.4	2474.6	2122.9	1769.1	1438.5	1190.9
31°	4811.7	4771.8	4416.4	3916.7	3340.9	2833.3	2399.5	2058.8	1703.1	1380.1	1148.8
32°	4552.9	4516.2	4188.7	3711.5	3164.8	2701.1	2290.5	1967.2	1615.5	1309.6	1099.9
33°	4197.8	4169.4	3875.8	3429.8	2938.6	2538.4	2160.1	1852.4	1510.2	1230.6	1040.4
34°	3792.7	3770.5	3502.4	3111.4	2691.6	2357.6	2011.5	1687.3	1395.1	1150.9	995.8
35°	3345.2	3329.9	3111.4	2784.4	2445.9	2169.9	1846.3	1541.3	1279.1	1074.3	947.9
36°	2920.0	2907.4	2740.8	2484.6	2212.0	1975.1	1667.4	1389.3	1168.0	1005.3	903.0
37°	2556.7	2547.5	2424.2	2217.8	1987.3	1772.7	1485.2	1247.0	1071.2	945.1	856.9
38°	2254.5	2247.1	2147.0	1964.1	1755.9	1563.3	1309.3	1121.3	988.8	892.9	804.7
39°	1972.7	1963.2	1873.2	1707.7	1525.5	1359.4	1192.7	1017.8	924.1	838.6	748.5
40°	1699.2	1687.0	1607.9	1467.2	1315.1	1186.3	1036.7	954.3	871.6	775.4	691.1
42.5°	1140.2	1133.5	1090.4	1026.9	962.5	915.5	868.2	794.6	707.3	628.0	565.7
45°	870.6	869.1	848.1	814.8	772.0	732.4	669.2	626.7	567.8	501.0	456.4
47.5°	667.9	668.2	648.7	623.7	594.4	568.7	522.6	488.7	446.6	408.5	374.0
50°	463.1	443.6	446.3	426.5	402.7	387.7	345.0	319.0	259.2	198.7	155.4
51°	347.1	321.5	324.8	302.5	277.8	264.7	224.7	198.4	142.3	93.4	61.1
52°	211.9	191.7	191.4	174.3	152.9	141.3	109.6	85.5	48.5	25.6	17.7
53°	94.9	81.5	78.5	66.9	52.5	45.5	31.1	22.9	17.1	13.1	10.1
54°	25.0	22.3	21.4	19.5	17.7	17.1	15.0	12.5	9.8	7.6	6.4
55°	13.1	12.2	11.9	11.3	10.4	10.1	8.9	7.6	6.1	5.5	4.9
57.5°	6.1	6.1	5.8	5.5	5.2	5.2	4.6	4.3	4.0	4.0	3.4
60°	4.0	4.0	4.0	3.7	3.7	3.4	3.1	2.7	2.4	2.7	2.4
61°	3.4	3.4	3.4	3.1	2.7	2.4	2.4	2.4	2.1	2.1	1.8
62°	2.4	2.4	2.1	2.1	1.8	1.8	1.8	1.8	1.5	1.8	1.8
63°	1.8	1.8	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.8	1.8
64°	1.5	1.5	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.2
65°	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.9	1.2	1.2
66°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.9	0.9	1.2	1.2



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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°	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
2.5°	200.6	196.9	189.3	187.7	180.4	176.1	177.4	174.9	135.8	95.9	59.8
5°	298.9	290.6	279.3	275.4	262.8	256.1	254.0	247.9	168.2	84.6	28.1
7.5°	395.0	384.3	370.6	364.2	347.1	335.8	328.5	319.3	190.5	67.2	15.6
10°	466.5	454.2	439.9	431.7	412.4	401.1	389.2	379.2	202.4	46.4	11.6
12.5°	561.7	537.6	507.7	489.7	461.3	445.7	432.0	422.2	207.0	27.8	8.9
15°	688.7	649.9	607.5	574.8	526.6	497.3	474.1	456.4	203.3	16.8	7.6
17.5°	811.7	756.8	701.2	657.0	601.7	558.0	513.5	478.7	187.7	13.4	7.0
20°	914.0	849.6	778.8	716.8	653.0	601.1	541.9	492.7	162.7	10.7	7.6
22.5°	992.8	910.6	830.3	753.4	677.4	617.9	552.9	495.8	131.0	11.0	10.7
25°	1049.5	941.8	856.3	768.7	686.0	620.6	547.1	486.0	96.5	20.1	36.0
26°	1061.1	948.2	859.7	767.2	682.9	616.0	540.3	479.9	87.0	40.0	79.4
27°	1067.5	947.3	857.2	761.1	676.5	609.3	532.7	474.4	85.5	68.4	118.4
28°	1061.7	939.6	846.8	750.1	666.1	600.5	523.9	468.0	84.6	84.0	112.3
29°	1045.9	926.2	831.3	733.0	650.2	586.4	510.4	458.8	75.7	66.9	67.8
30°	1021.8	907.3	808.7	710.1	630.1	566.3	491.2	444.2	50.1	33.6	28.7
31°	991.8	882.9	780.9	683.5	607.2	541.9	471.0	425.2	25.9	14.3	13.4
32°	958.9	853.5	751.0	656.6	584.0	518.4	454.2	408.5	17.1	7.9	7.6
33°	924.1	819.4	718.0	628.9	558.0	492.1	436.8	390.4	12.8	4.9	4.6
34°	889.9	782.7	684.7	598.9	530.0	468.6	421.0	369.7	10.4	3.7	3.1
35°	851.1	743.0	650.5	567.2	499.7	448.4	405.1	347.1	8.2	2.4	2.4
36°	805.9	700.9	615.1	533.9	471.0	429.8	387.7	322.4	6.4	1.8	2.1
37°	758.0	659.1	579.4	501.0	447.5	412.7	366.6	297.0	5.5	1.5	1.8
38°	708.5	617.6	540.9	469.2	427.1	394.1	342.8	270.8	4.6	1.2	1.5
39°	660.0	575.1	502.5	443.6	407.8	372.1	315.7	243.9	4.0	1.2	1.5
40°	612.7	532.4	468.3	421.3	386.5	345.3	287.6	215.8	2.7	0.9	1.5
42.5°	500.3	443.9	403.3	356.3	316.9	270.5	211.6	140.1	2.1	0.9	1.2
45°	418.8	372.4	325.1	272.0	233.2	185.6	125.2	59.5	2.1	0.9	1.2
47.5°	331.2	276.6	207.0	139.8	91.3	47.0	14.7	8.2	1.5	0.9	1.2
50°	96.5	55.9	20.8	12.5	9.5	5.8	3.7	3.4	1.2	0.9	1.2
51°	27.8	16.5	11.0	7.3	5.5	3.4	2.7	3.1	1.2	0.9	0.9
52°	13.1	9.5	6.4	4.9	3.7	2.7	2.4	2.7	1.2	0.9	0.9
53°	7.6	5.8	4.6	4.0	2.7	2.4	1.8	2.4	1.2	0.9	0.9
54°	5.2	4.6	4.0	3.4	2.4	1.8	1.8	2.4	1.2	0.9	0.9
55°	4.6	4.0	3.4	3.1	2.1	1.8	1.8	1.8	0.9	0.6	0.9
57.5°	3.1	3.1	2.4	2.4	1.8	1.2	0.6	1.5	1.2	0.9	0.9
60°	2.1	2.1	2.1	1.5	0.6	0.6	0.3	1.2	1.2	0.9	1.2
61°	2.1	2.1	1.5	1.2	0.6	0.6	0.3	1.2	1.2	0.9	1.2
62°	1.8	1.5	1.2	1.2	0.6	0.6	0.3	1.2	1.2	0.9	1.2
63°	1.5	1.2	1.2	1.2	0.6	0.3	0.3	1.2	1.2	0.9	1.2
64°	1.2	1.2	1.2	1.2	0.3	0.3	0.3	1.2	1.2	0.9	1.2
65°	1.2	1.2	1.2	0.9	0.3	0.3	0.3	0.9	1.2	0.9	1.2
66°	1.2	1.2	0.9	0.9	0.3	0.3	0.3	0.9	1.2	0.9	1.2



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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	0.9	1.2	0.9	1.2
75°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.2
77.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.5
80°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.5
82.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.5
85°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.5
87.5°	0.3	0.3	0.6	0.6	0.0	0.0	0.0	0.9	1.2	1.2	1.5
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: P175447

CATALOG NUMBER: LDA6A10827D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	99.8	99.8	99.8
2.5°	38.2	27.5	25.0
5°	15.3	12.5	11.3
7.5°	9.5	7.9	7.3
10°	7.6	5.8	5.5
12.5°	6.1	5.2	4.9
15°	5.8	4.9	4.6
17.5°	5.8	5.5	5.2
20°	7.3	7.3	7.6
22.5°	12.5	14.7	16.5
25°	60.7	98.3	130.4
26°	127.3	179.5	192.0
27°	157.8	163.3	156.9
28°	121.5	109.0	102.6
29°	65.0	54.3	49.8
30°	25.9	21.4	20.1
31°	12.5	10.7	10.4
32°	7.0	5.8	5.8
33°	4.3	3.7	3.4
34°	3.1	2.4	2.1
35°	2.1	1.8	1.5
36°	1.8	1.2	0.9
37°	1.5	0.9	0.9
38°	1.2	0.9	0.6
39°	0.9	0.6	0.3
40°	0.9	0.3	0.0
42.5°	0.6	0.3	0.0
45°	0.6	0.0	0.0
47.5°	0.9	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: P175447

CATALOG NUMBER: LDA6A10827D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	0.9	0.3	0.0
75°	0.9	0.3	0.0
77.5°	0.9	0.3	0.0
80°	0.9	0.3	0.0
82.5°	0.9	0.3	0.0
85°	0.9	0.3	0.0
87.5°	0.9	0.3	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	1.2	0.9	0.9	0.9	0.9	0.9	0.9	0.6	0.6	0.9	0.9
70°	0.9	0.9	0.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6





67.5°	0.9	0.9	0.9	0.9	0.3	0.0	0.0	0.9	1.2	0.9	1.2
70°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.9	1.2	0.9	1.2





67.5°	0.9	0.3	0.0
70°	0.9	0.3	0.0



(END OF REPORT)