

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: P175492

Luminaire Tested: **LDA6A15930D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175492
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26268)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A15930D010TE LARL20NF 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 20° Narrow Flood 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: 1076.0 lumens
Efficiency: N/A
Efficacy: 48.3 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

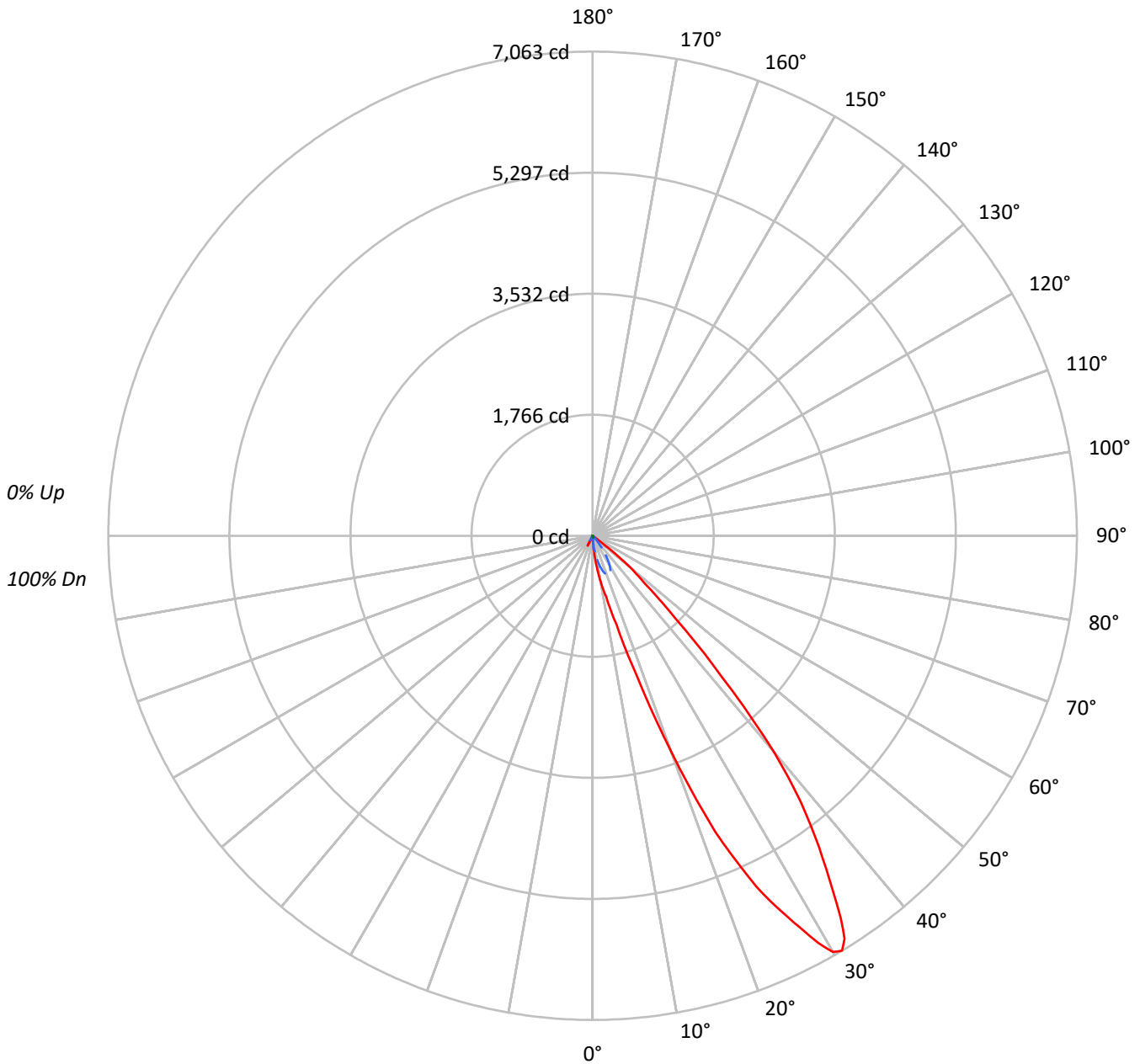
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	93	90	94	91	88	91	88	86	89	86	84	82																			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74																			
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66																			
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59																			
6	80	69	62	56	78	68	61	56	66	60	56	65	59	55	63	59	55	53																			
7	74	63	56	50	73	62	55	50	61	55	50	59	54	50	58	53	49	48																			
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	54	48	44	43																			
9	65	53	46	41	63	52	45	41	51	45	40	50	44	40	49	44	40	39																			
10	60	49	41	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	1332	1332	1332
5°	12943	1178	484
10°	38276	841	306
15°	75982	573	261
20°	196000	467	368
25°	341590	556	2637
30°	443714	582	1488
35°	397577	254	141
40°	293929	93	0
45°	132363	101	0
50°	59717	111	0
55°	5333	124	0
60°	647	143	0
65°	272	221	0
70°	208	272	0
75°	0	360	0
80°	0	537	126
85°	0	1069	252



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.7	0.9
10°-20°	90.6	8.4
20°-30°	357.8	33.2
30°-40°	431.7	40.1
40°-50°	167.5	15.6
50°-60°	14.7	1.4
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°	458.0	42.6
0°-40°	889.7	82.7
0°-60°	1072.0	99.6
0°-90°	1076.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1076.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	24	24	24	24	24	
5°	235	115	21	10	9	37
15°	1339	506	10	6	5	491
25°	5647	599	9	29	44	2583
35°	5941	305	4	4	2	3652
45°	1707	21	1	1	0	1500
55°	56	2	1	1	0	135
65°	2	2	2	1	0	2
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°	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
2.5°	76.3	72.5	68.3	70.0	70.9	73.0	71.3	65.0	68.8	65.8	63.3
5°	235.2	231.0	223.1	224.3	221.8	224.7	218.0	204.6	207.1	202.9	192.0
7.5°	458.7	441.1	428.1	428.9	421.4	424.7	412.2	389.1	386.6	365.2	361.8
10°	687.6	678.8	663.3	661.2	647.8	649.5	629.8	599.2	590.8	566.0	551.8
12.5°	912.4	897.7	875.9	871.3	849.5	849.9	823.1	788.7	776.1	750.5	730.8
15°	1338.8	1317.8	1267.9	1249.0	1188.7	1179.4	1113.2	1035.2	997.5	953.4	895.6
17.5°	2125.8	2112.3	2014.7	1960.6	1838.1	1716.5	1644.8	1476.3	1377.8	1254.5	1147.6
20°	3359.7	3384.5	3213.8	3093.1	2865.8	2609.2	2428.1	2121.2	1916.1	1703.5	1502.3
22.5°	4672.1	4682.6	4507.7	4357.2	4092.6	3740.0	3322.8	2950.5	2574.8	2209.6	1877.5
25°	5647.3	5617.1	5424.7	5244.0	4965.6	4605.4	4200.0	3702.7	3189.1	2687.6	2201.2
26°	5945.0	5928.7	5735.8	5519.4	5212.9	4847.3	4425.5	3923.7	3381.1	2841.1	2300.2
27°	6220.9	6210.4	6001.2	5760.5	5417.1	5034.3	4592.8	4091.4	3526.2	2959.7	2371.9
28°	6500.6	6488.8	6235.6	5956.3	5583.2	5167.2	4708.5	4203.3	3619.7	3029.3	2401.7
29°	6796.2	6773.5	6449.8	6100.1	5693.9	5244.8	4768.9	4254.5	3651.5	3046.5	2394.1
30°	7009.6	6974.4	6604.5	6191.1	5739.1	5269.1	4775.6	4253.2	3631.8	3010.9	2345.9
31°	7063.2	7027.6	6647.7	6189.9	5706.0	5232.2	4727.4	4193.7	3549.7	2924.5	2264.5
32°	6933.3	6900.6	6538.3	6048.6	5601.2	5143.3	4631.4	4083.4	3422.2	2795.4	2154.3
33°	6643.1	6618.4	6306.0	5862.8	5451.1	5017.1	4493.9	3926.6	3241.1	2631.0	2024.7
34°	6277.1	6259.1	6018.8	5644.4	5260.7	4844.0	4315.7	3719.9	3002.5	2444.8	1883.4
35°	5940.8	5927.4	5732.9	5400.8	5043.1	4629.7	4090.1	3465.4	2756.8	2244.4	1732.5
36°	5617.1	5605.8	5436.8	5128.3	4783.2	4378.6	3806.3	3161.0	2493.1	2036.5	1576.1
37°	5279.2	5269.1	5124.1	4830.6	4490.9	4078.4	3469.1	2836.9	2225.1	1828.9	1415.5
38°	4928.7	4920.3	4787.4	4494.7	4150.1	3711.5	3084.7	2501.9	1963.9	1626.4	1271.3
39°	4537.5	4530.4	4407.9	4101.0	3732.9	3279.2	2688.9	2175.2	1716.1	1429.8	1131.6
40°	4107.3	4097.7	3975.2	3632.2	3260.3	2834.4	2308.6	1875.5	1482.2	1246.1	1008.8
42.5°	2792.4	2781.9	2691.0	2491.4	2133.3	1859.5	1530.0	1255.3	1050.3	908.2	785.7
45°	1707.3	1708.6	1660.8	1537.5	1322.0	1169.8	990.8	859.5	767.3	712.8	627.7
47.5°	1032.7	1032.7	1011.3	948.4	851.6	790.8	716.6	655.3	584.9	531.2	439.0
50°	700.2	700.6	667.9	671.3	606.7	569.0	498.1	423.5	354.3	276.3	197.1
51°	518.2	520.7	490.6	504.4	433.5	401.7	334.6	271.3	210.1	149.7	86.4
52°	317.0	321.6	301.0	313.6	272.5	226.0	171.5	126.6	85.1	59.5	41.5
53°	147.2	150.9	140.5	146.3	122.0	95.2	72.1	58.7	47.0	38.2	28.1
54°	78.0	78.8	75.5	73.8	67.1	59.1	49.1	40.7	31.9	25.6	18.9
55°	55.8	55.8	54.1	52.4	47.0	40.3	32.7	27.7	21.0	16.8	12.2
57.5°	17.2	17.2	17.2	16.4	14.3	12.2	9.6	8.4	6.7	6.3	5.0
60°	5.9	5.9	5.9	5.5	5.0	4.6	4.2	3.8	3.4	3.4	2.9
61°	4.2	4.2	4.2	4.2	3.8	3.8	3.4	2.9	2.5	2.9	2.5
62°	3.4	3.8	3.4	3.4	3.4	2.9	2.5	2.5	2.1	2.5	2.1
63°	2.9	2.9	2.9	2.9	2.5	2.5	2.1	2.1	1.7	2.1	2.1
64°	2.5	2.5	2.5	2.5	2.1	2.1	1.7	1.7	1.3	1.7	1.7
65°	2.1	2.1	2.1	2.1	1.7	1.7	1.7	1.3	1.3	1.7	1.7
66°	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.3	0.8	1.3	1.3



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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°	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.8	0.8
75°	0.0	0.0	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°	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
2.5°	60.8	56.6	55.8	55.8	47.0	48.6	45.7	43.6	30.6	23.5	17.6
5°	185.7	170.6	164.4	158.9	135.0	132.9	118.2	114.9	41.1	21.4	13.4
7.5°	346.3	323.3	308.6	294.3	255.8	245.3	220.1	213.8	55.8	18.0	10.5
10°	529.1	496.0	470.4	436.5	386.6	364.8	327.9	314.5	67.9	15.1	10.1
12.5°	701.0	663.3	628.5	583.6	516.1	481.3	432.7	415.5	72.5	12.6	9.2
15°	849.5	799.2	756.0	707.7	632.3	588.3	528.7	506.5	68.8	10.1	8.0
17.5°	1037.7	952.6	877.6	810.1	727.9	674.2	605.0	569.0	55.8	8.8	7.1
20°	1316.1	1144.6	1012.6	903.6	789.5	722.8	646.1	602.5	40.3	8.0	7.1
22.5°	1578.2	1333.3	1130.8	974.8	821.4	741.7	662.0	613.8	28.5	8.0	8.4
25°	1792.0	1475.5	1212.6	1021.8	839.0	745.5	656.2	599.2	22.2	9.2	16.4
26°	1852.0	1510.7	1228.5	1025.6	836.5	740.0	646.1	585.7	19.7	12.6	30.6
27°	1889.3	1526.6	1228.9	1019.7	827.2	729.1	631.0	567.7	17.2	19.3	51.6
28°	1896.8	1519.1	1214.7	1003.3	811.3	714.5	614.2	545.9	15.9	24.3	58.7
29°	1876.3	1492.2	1188.7	979.4	792.0	696.8	594.1	522.0	13.8	18.4	38.2
30°	1830.2	1447.8	1150.5	948.8	771.5	677.1	569.4	493.5	11.3	9.2	17.2
31°	1761.0	1386.6	1103.6	912.8	748.4	652.0	539.6	461.6	9.6	6.3	10.1
32°	1673.4	1313.2	1051.1	875.9	722.4	621.4	504.8	426.0	8.8	5.0	8.4
33°	1572.7	1236.0	997.1	838.6	691.4	584.9	467.5	387.8	8.0	5.5	8.4
34°	1462.9	1157.2	935.8	799.6	655.3	545.1	427.7	343.0	7.1	5.0	6.3
35°	1343.8	1075.5	880.9	765.2	614.7	501.9	387.0	304.8	6.3	3.8	4.2
36°	1241.1	995.8	827.7	721.6	570.2	457.4	345.1	263.7	5.5	2.5	2.9
37°	1129.1	921.2	778.2	676.3	522.4	411.7	303.1	223.1	5.0	1.7	2.5
38°	1024.7	852.4	728.7	624.3	473.4	365.6	260.4	183.2	4.6	1.7	2.1
39°	930.0	789.9	682.6	569.0	421.8	317.4	217.2	143.8	4.2	1.3	2.1
40°	848.6	734.2	627.2	510.7	368.5	269.6	174.0	106.5	3.8	1.3	2.1
42.5°	690.1	589.1	473.4	361.0	238.6	152.6	78.0	39.0	2.9	1.3	1.7
45°	527.5	419.3	312.4	217.2	122.8	59.1	28.9	21.4	2.5	1.3	1.7
47.5°	342.6	251.6	167.7	94.8	41.1	23.9	15.1	10.9	2.1	1.3	1.7
50°	126.6	70.0	36.9	23.1	15.9	10.1	6.7	6.3	2.1	1.3	1.7
51°	52.0	34.0	23.1	15.5	10.1	7.1	5.5	5.5	2.1	1.3	1.7
52°	31.0	21.4	15.5	11.3	7.5	5.5	4.2	4.6	2.1	1.3	1.7
53°	20.5	14.7	11.3	8.8	5.9	4.2	2.9	3.4	2.1	1.3	1.7
54°	13.8	10.5	8.4	6.7	4.2	3.4	1.7	2.9	1.7	1.3	1.7
55°	9.6	7.5	6.3	5.0	2.9	2.1	1.3	2.5	1.7	1.3	1.7
57.5°	4.2	3.8	3.4	2.9	1.3	0.8	0.4	2.1	1.7	1.3	1.7
60°	2.9	2.5	2.1	2.1	0.4	0.4	0.0	1.7	1.7	1.3	1.7
61°	2.5	2.1	2.1	1.7	0.4	0.4	0.0	1.7	2.1	1.3	1.7
62°	2.1	2.1	1.7	1.7	0.4	0.0	0.0	1.7	2.1	1.3	2.1
63°	1.7	1.7	1.7	1.7	0.4	0.0	0.0	1.7	2.1	1.3	2.1
64°	1.7	1.7	1.7	1.7	0.0	0.0	0.0	1.7	2.1	1.3	2.1
65°	1.7	1.3	1.3	1.3	0.0	0.0	0.0	1.7	2.1	1.7	2.1
66°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	1.7	2.1	1.7	2.1



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CATALOG NUMBER: LDA6A15930D010TE LARL20NF 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°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	1.3	2.1	1.7	2.5
75°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	2.5
77.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	2.5
80°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	2.5
82.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	2.5
85°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	2.5
87.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.7	2.1	1.7	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



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CATALOG NUMBER: LDA6A15930D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	24.3	24.3	24.3
2.5°	14.7	13.4	12.6
5°	10.5	9.6	8.8
7.5°	8.8	7.5	7.1
10°	8.0	5.9	5.5
12.5°	6.7	5.0	4.6
15°	6.3	5.0	4.6
17.5°	6.3	5.0	4.6
20°	6.7	6.3	6.3
22.5°	9.6	10.5	10.9
25°	29.3	37.7	43.6
26°	68.8	103.1	138.4
27°	104.4	152.2	162.3
28°	93.9	109.0	106.1
29°	45.3	51.2	46.5
30°	20.1	23.9	23.5
31°	13.0	14.7	14.3
32°	10.9	10.1	9.6
33°	8.8	7.1	5.9
34°	5.9	4.6	3.8
35°	3.8	2.5	2.1
36°	2.5	1.3	0.8
37°	1.7	0.8	0.4
38°	1.7	0.4	0.0
39°	1.3	0.4	0.0
40°	1.3	0.4	0.0
42.5°	1.3	0.0	0.0
45°	0.8	0.0	0.0
47.5°	0.8	0.0	0.0
50°	1.3	0.4	0.0
51°	1.3	0.0	0.0
52°	1.3	0.0	0.0
53°	0.8	0.0	0.0
54°	0.8	0.0	0.0
55°	0.8	0.0	0.0
57.5°	0.8	0.0	0.0
60°	0.8	0.0	0.0
61°	1.3	0.0	0.0
62°	1.3	0.0	0.0
63°	1.3	0.0	0.0
64°	1.3	0.4	0.0
65°	1.3	0.4	0.0
66°	1.3	0.4	0.0



TEST NUMBER: P175492

CATALOG NUMBER: LDA6A15930D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.7	0.4	0.0
75°	1.7	0.4	0.0
77.5°	1.7	0.4	0.0
80°	1.7	0.8	0.4
82.5°	1.7	0.8	0.4
85°	1.7	0.8	0.4
87.5°	1.7	0.8	0.4
90°	0.0	0.0	0.0



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







67.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.8	0.8	0.8	1.3	1.3
70°	1.3	1.3	0.8	0.8	0.8	0.8	0.8	0.4	0.4	1.3	1.3





67.5°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	1.7	2.1	1.7	2.1
70°	1.3	1.3	1.3	1.3	0.0	0.0	0.0	1.7	2.1	1.7	2.5





67.5°	1.7	0.4	0.0
70°	1.7	0.4	0.0



(END OF REPORT)