

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: P175482

Luminaire Tested: **LDA6A10840D010TE LARL20NF 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175482
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: LDA6A10840D010TE 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 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 914.1 lumens
Efficiency: N/A
Efficacy: 66.0 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

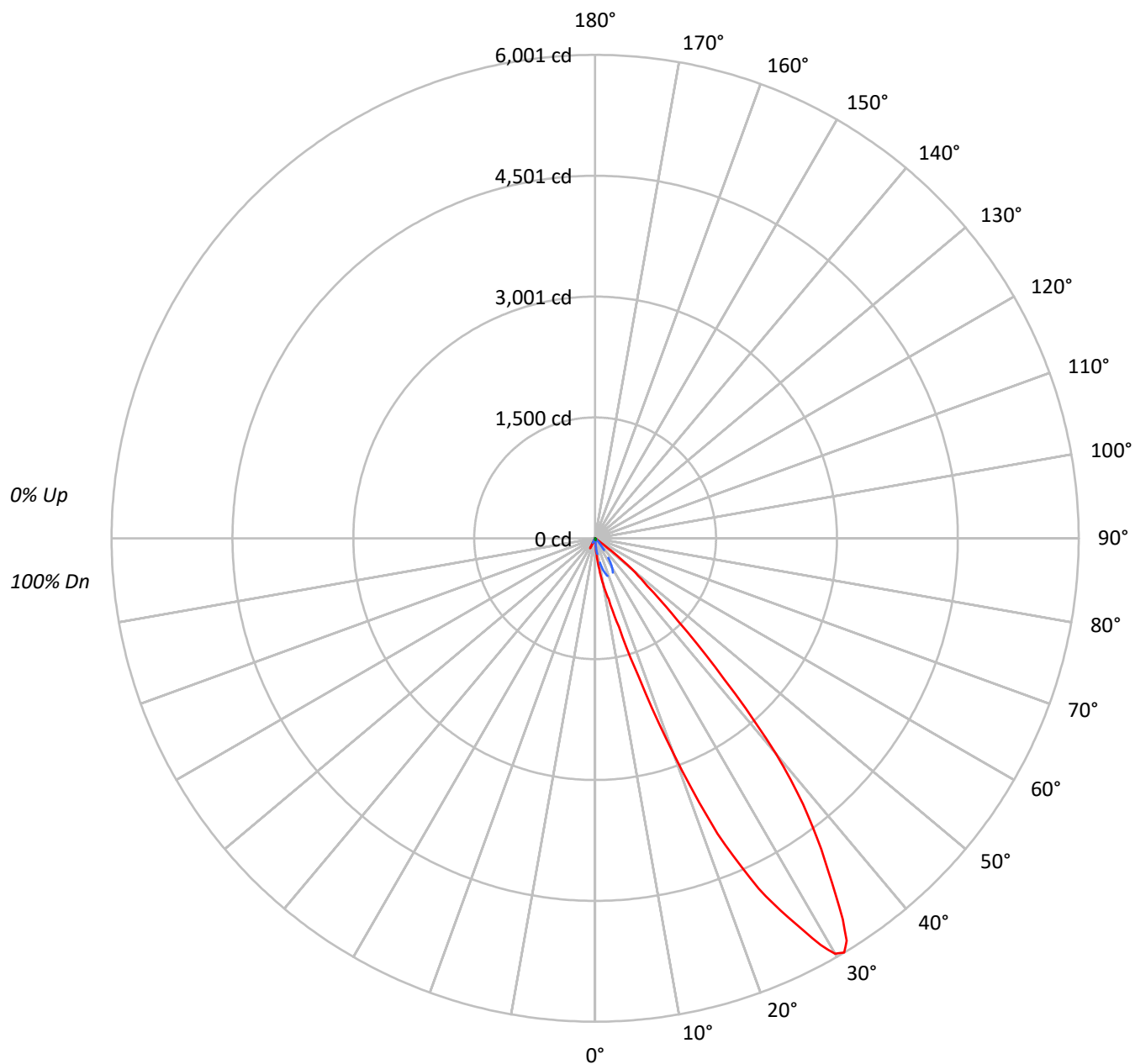
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	30	10
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104		110	107	104	102		103	101	99		99	97	96		96	94	93
2	105	100	95	91		103	98	93	90		94	91	88		91	88	86		89	86	84
3	99	91	85	80		96	89	84	79		87	82	78		84	80	77		82	78	76
4	92	83	76	71		90	82	75	70		79	74	70		77	72	69		75	71	68
5	86	75	68	63		84	74	68	63		73	67	62		71	66	62		69	65	61
6	80	69	62	56		78	68	61	56		66	60	56		65	59	55		63	59	55
7	74	63	56	50		73	62	55	50		61	55	50		59	54	50		58	53	49
8	69	58	50	45		68	57	50	45		56	49	45		55	49	45		54	48	44
9	65	53	46	41		63	52	45	41		51	45	40		50	44	40		49	44	40
10	60	49	41	37		59	48	41	37		47	41	37		46	41	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	1135	1135	1135
5°	10995	1002	413
10°	32520	713	256
15°	64552	482	221
20°	166521	397	309
25°	290212	472	2238
30°	376969	494	1260
35°	337774	214	120
40°	249718	79	0
45°	112454	85	0
50°	50736	94	0
55°	4530	105	0
60°	548	121	0
65°	233	182	0
70°	176	224	0
75°	0	297	0
80°	0	442	126
85°	0	881	252



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	8.2	0.9
10°-20°	77.0	8.4
20°-30°	303.9	33.2
30°-40°	366.8	40.1
40°-50°	142.3	15.6
50°-60°	12.5	1.4
60°-70°	1.2	0.1
70°-80°	1.1	0.1
80°-90°	1.0	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°	389.1	42.6
0°-40°	755.9	82.7
0°-60°	910.8	99.6
0°-90°	914.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	914.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	21	21	21	21	21	
5°	200	98	18	9	8	32
15°	1137	430	8	5	4	417
25°	4798	509	8	25	37	2194
35°	5047	259	3	3	2	3102
45°	1450	18	1	1	0	1274
55°	47	2	1	1	0	114
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°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
2.5°	64.8	61.6	58.1	59.5	60.2	62.0	60.6	55.2	58.4	55.9	53.8
5°	199.8	196.3	189.5	190.6	188.4	190.9	185.2	173.8	176.0	172.4	163.1
7.5°	389.7	374.7	363.7	364.4	358.0	360.8	350.2	330.6	328.4	310.3	307.4
10°	584.2	576.7	563.5	561.8	550.4	551.8	535.0	509.0	501.9	480.9	468.8
12.5°	775.1	762.7	744.1	740.2	721.7	722.0	699.3	670.0	659.4	637.6	620.9
15°	1137.4	1119.6	1077.2	1061.2	1009.9	1002.0	945.8	879.5	847.4	810.0	760.9
17.5°	1806.0	1794.6	1711.6	1665.7	1561.6	1458.3	1397.4	1254.2	1170.5	1065.8	975.0
20°	2854.4	2875.4	2730.4	2627.8	2434.7	2216.7	2062.8	1802.1	1627.9	1447.3	1276.3
22.5°	3969.3	3978.2	3829.7	3701.8	3477.0	3177.4	2823.0	2506.7	2187.5	1877.3	1595.1
25°	4797.9	4772.2	4608.7	4455.2	4218.7	3912.7	3568.2	3145.7	2709.4	2283.3	1870.1
26°	5050.8	5036.9	4873.0	4689.2	4428.8	4118.2	3759.9	3333.5	2872.5	2413.7	1954.2
27°	5285.2	5276.3	5098.5	4894.0	4602.3	4277.1	3902.0	3475.9	2995.8	2514.5	2015.1
28°	5522.8	5512.8	5297.6	5060.4	4743.4	4390.0	4000.3	3571.1	3075.2	2573.7	2040.4
29°	5773.9	5754.7	5479.7	5182.6	4837.4	4455.9	4051.6	3614.5	3102.3	2588.3	2034.0
30°	5955.2	5925.3	5611.1	5259.9	4875.9	4476.6	4057.3	3613.4	3085.5	2558.0	1993.0
31°	6000.8	5970.5	5647.8	5258.8	4847.7	4445.2	4016.3	3562.9	3015.7	2484.6	1923.9
32°	5890.4	5862.6	5554.8	5138.8	4758.7	4369.7	3934.8	3469.2	2907.4	2374.9	1830.2
33°	5643.9	5622.9	5357.5	4981.0	4631.2	4262.5	3817.9	3336.0	2753.5	2235.3	1720.2
34°	5332.9	5317.6	5113.5	4795.4	4469.4	4115.4	3666.5	3160.3	2550.9	2077.1	1600.1
35°	5047.2	5035.8	4870.5	4588.4	4284.6	3933.3	3474.9	2944.1	2342.1	1906.8	1471.9
36°	4772.2	4762.6	4619.0	4356.9	4063.7	3720.0	3233.7	2685.5	2118.1	1730.1	1339.0
37°	4485.1	4476.6	4353.3	4104.0	3815.4	3464.9	2947.3	2410.2	1890.4	1553.8	1202.6
38°	4187.3	4180.2	4067.3	3818.6	3525.8	3153.2	2620.7	2125.5	1668.5	1381.8	1080.0
39°	3855.0	3848.9	3744.9	3484.1	3171.4	2786.0	2284.4	1848.0	1458.0	1214.7	961.4
40°	3489.5	3481.3	3377.3	3085.9	2769.9	2408.0	1961.3	1593.4	1259.2	1058.7	857.1
42.5°	2372.4	2363.5	2286.2	2116.6	1812.4	1579.8	1299.8	1066.5	892.3	771.6	667.5
45°	1450.5	1451.6	1411.0	1306.2	1123.1	993.8	841.7	730.2	651.9	605.6	533.3
47.5°	877.4	877.4	859.2	805.8	723.5	671.8	608.8	556.8	496.9	451.3	373.0
50°	594.9	595.2	567.5	570.3	515.4	483.4	423.2	359.8	301.0	234.7	167.4
51°	440.3	442.4	416.8	428.5	368.3	341.3	284.3	230.5	178.5	127.2	73.4
52°	269.3	273.2	255.8	266.4	231.5	192.0	145.7	107.6	72.3	50.6	35.3
53°	125.0	128.2	119.3	124.3	103.7	80.9	61.3	49.9	39.9	32.4	23.9
54°	66.3	67.0	64.1	62.7	57.0	50.2	41.7	34.6	27.1	21.7	16.0
55°	47.4	47.4	46.0	44.5	39.9	34.2	27.8	23.5	17.8	14.2	10.3
57.5°	14.6	14.6	14.6	13.9	12.1	10.3	8.2	7.1	5.7	5.3	4.3
60°	5.0	5.0	5.0	4.6	4.3	3.9	3.6	3.2	2.8	2.8	2.5
61°	3.6	3.6	3.6	3.6	3.2	3.2	2.8	2.5	2.1	2.5	2.1
62°	2.8	3.2	2.8	2.8	2.8	2.5	2.1	2.1	1.8	2.1	1.8
63°	2.5	2.5	2.5	2.5	2.1	2.1	1.8	1.8	1.4	1.8	1.8
64°	2.1	2.1	2.1	2.1	1.8	1.8	1.4	1.4	1.1	1.4	1.4
65°	1.8	1.8	1.8	1.8	1.4	1.4	1.4	1.1	1.1	1.4	1.4
66°	1.4	1.4	1.4	1.4	1.4	1.1	1.1	1.1	0.7	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°	0.7	0.7	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.7	0.7
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°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
2.5°	51.7	48.1	47.4	47.4	39.9	41.3	38.8	37.0	26.0	19.9	15.0
5°	157.8	145.0	139.6	135.0	114.7	112.9	100.5	97.6	34.9	18.2	11.4
7.5°	294.2	274.6	262.2	250.1	217.3	208.4	187.0	181.7	47.4	15.3	8.9
10°	449.5	421.4	399.7	370.8	328.4	309.9	278.6	267.2	57.7	12.8	8.5
12.5°	595.6	563.5	534.0	495.9	438.5	408.9	367.6	353.0	61.6	10.7	7.8
15°	721.7	678.9	642.3	601.3	537.2	499.8	449.2	430.3	58.4	8.5	6.8
17.5°	881.6	809.3	745.6	688.2	618.4	572.8	514.0	483.4	47.4	7.5	6.1
20°	1118.2	972.5	860.3	767.6	670.8	614.1	548.9	511.9	34.2	6.8	6.1
22.5°	1340.8	1132.8	960.7	828.2	697.8	630.1	562.5	521.5	24.2	6.8	7.1
25°	1522.5	1253.5	1030.2	868.1	712.8	633.4	557.5	509.0	18.9	7.8	13.9
26°	1573.4	1283.4	1043.7	871.3	710.6	628.7	548.9	497.6	16.7	10.7	26.0
27°	1605.1	1297.0	1044.1	866.3	702.8	619.5	536.1	482.3	14.6	16.4	43.8
28°	1611.5	1290.6	1032.0	852.4	689.3	607.0	521.9	463.8	13.5	20.7	49.9
29°	1594.1	1267.8	1009.9	832.1	672.9	592.0	504.8	443.5	11.8	15.7	32.4
30°	1554.9	1230.0	977.5	806.1	655.4	575.3	483.7	419.3	9.6	7.8	14.6
31°	1496.1	1178.0	937.6	775.5	635.8	553.9	458.4	392.2	8.2	5.3	8.5
32°	1421.7	1115.7	893.0	744.1	613.8	527.9	428.9	361.9	7.5	4.3	7.1
33°	1336.2	1050.1	847.1	712.4	587.4	496.9	397.2	329.5	6.8	4.6	7.1
34°	1242.8	983.2	795.1	679.3	556.8	463.1	363.3	291.4	6.1	4.3	5.3
35°	1141.7	913.7	748.4	650.1	522.2	426.4	328.8	259.0	5.3	3.2	3.6
36°	1054.4	846.0	703.2	613.0	484.5	388.6	293.2	224.1	4.6	2.1	2.5
37°	959.3	782.6	661.1	574.6	443.8	349.8	257.5	189.5	4.3	1.4	2.1
38°	870.6	724.2	619.1	530.4	402.2	310.6	221.2	155.7	3.9	1.4	1.8
39°	790.1	671.1	579.9	483.4	358.4	269.7	184.5	122.2	3.6	1.1	1.8
40°	721.0	623.7	532.9	433.9	313.1	229.0	147.8	90.5	3.2	1.1	1.8
42.5°	586.3	500.5	402.2	306.7	202.7	129.7	66.3	33.1	2.5	1.1	1.4
45°	448.1	356.2	265.4	184.5	104.4	50.2	24.6	18.2	2.1	1.1	1.4
47.5°	291.0	213.7	142.5	80.5	34.9	20.3	12.8	9.3	1.8	1.1	1.4
50°	107.6	59.5	31.3	19.6	13.5	8.5	5.7	5.3	1.8	1.1	1.4
51°	44.2	28.9	19.6	13.2	8.5	6.1	4.6	4.6	1.8	1.1	1.4
52°	26.4	18.2	13.2	9.6	6.4	4.6	3.6	3.9	1.8	1.1	1.4
53°	17.5	12.5	9.6	7.5	5.0	3.6	2.5	2.8	1.8	1.1	1.4
54°	11.8	8.9	7.1	5.7	3.6	2.8	1.4	2.5	1.4	1.1	1.4
55°	8.2	6.4	5.3	4.3	2.5	1.8	1.1	2.1	1.4	1.1	1.4
57.5°	3.6	3.2	2.8	2.5	1.1	0.7	0.4	1.8	1.4	1.1	1.4
60°	2.5	2.1	1.8	1.8	0.4	0.4	0.0	1.4	1.4	1.1	1.4
61°	2.1	1.8	1.8	1.4	0.4	0.4	0.0	1.4	1.8	1.1	1.4
62°	1.8	1.8	1.4	1.4	0.4	0.0	0.0	1.4	1.8	1.1	1.8
63°	1.4	1.4	1.4	1.4	0.4	0.0	0.0	1.4	1.8	1.1	1.8
64°	1.4	1.4	1.4	1.4	0.0	0.0	0.0	1.4	1.8	1.1	1.8
65°	1.4	1.1	1.1	1.1	0.0	0.0	0.0	1.4	1.8	1.4	1.8
66°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.4	1.8	1.4	1.8



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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°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.1	1.8	1.4	2.1
75°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
77.5°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
80°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
82.5°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
85°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
87.5°	0.4	0.7	0.7	0.7	0.0	0.0	0.0	1.4	1.8	1.4	2.1
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: LDA6A10840D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	20.7	20.7	20.7
2.5°	12.5	11.4	10.7
5°	8.9	8.2	7.5
7.5°	7.5	6.4	6.1
10°	6.8	5.0	4.6
12.5°	5.7	4.3	3.9
15°	5.3	4.3	3.9
17.5°	5.3	4.3	3.9
20°	5.7	5.3	5.3
22.5°	8.2	8.9	9.3
25°	24.9	32.1	37.0
26°	58.4	87.6	117.6
27°	88.7	129.3	137.9
28°	79.8	92.6	90.1
29°	38.5	43.5	39.5
30°	17.1	20.3	19.9
31°	11.0	12.5	12.1
32°	9.3	8.5	8.2
33°	7.5	6.1	5.0
34°	5.0	3.9	3.2
35°	3.2	2.1	1.8
36°	2.1	1.1	0.7
37°	1.4	0.7	0.4
38°	1.4	0.4	0.0
39°	1.1	0.4	0.0
40°	1.1	0.4	0.0
42.5°	1.1	0.0	0.0
45°	0.7	0.0	0.0
47.5°	0.7	0.0	0.0
50°	1.1	0.4	0.0
51°	1.1	0.0	0.0
52°	1.1	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°	1.1	0.0	0.0
62°	1.1	0.0	0.0
63°	1.1	0.0	0.0
64°	1.1	0.4	0.0
65°	1.1	0.4	0.0
66°	1.1	0.4	0.0



TEST NUMBER: P175482

CATALOG NUMBER: LDA6A10840D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.4	0.4	0.0
75°	1.4	0.4	0.0
77.5°	1.4	0.4	0.0
80°	1.4	0.7	0.4
82.5°	1.4	0.7	0.4
85°	1.4	0.7	0.4
87.5°	1.4	0.7	0.4
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.7	0.7	0.7	1.1	1.1
70°	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.4	0.4	1.1	1.1





67.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.4	1.8	1.4	1.8
70°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	1.4	1.8	1.4	2.1





67.5°	1.4	0.4	0.0
70°	1.4	0.4	0.0



(END OF REPORT)