

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: P175461

Luminaire Tested: **LDA6A15935D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175461
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: LDA6A15935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 938.9 lumens
Efficiency: N/A
Efficacy: 42.2 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

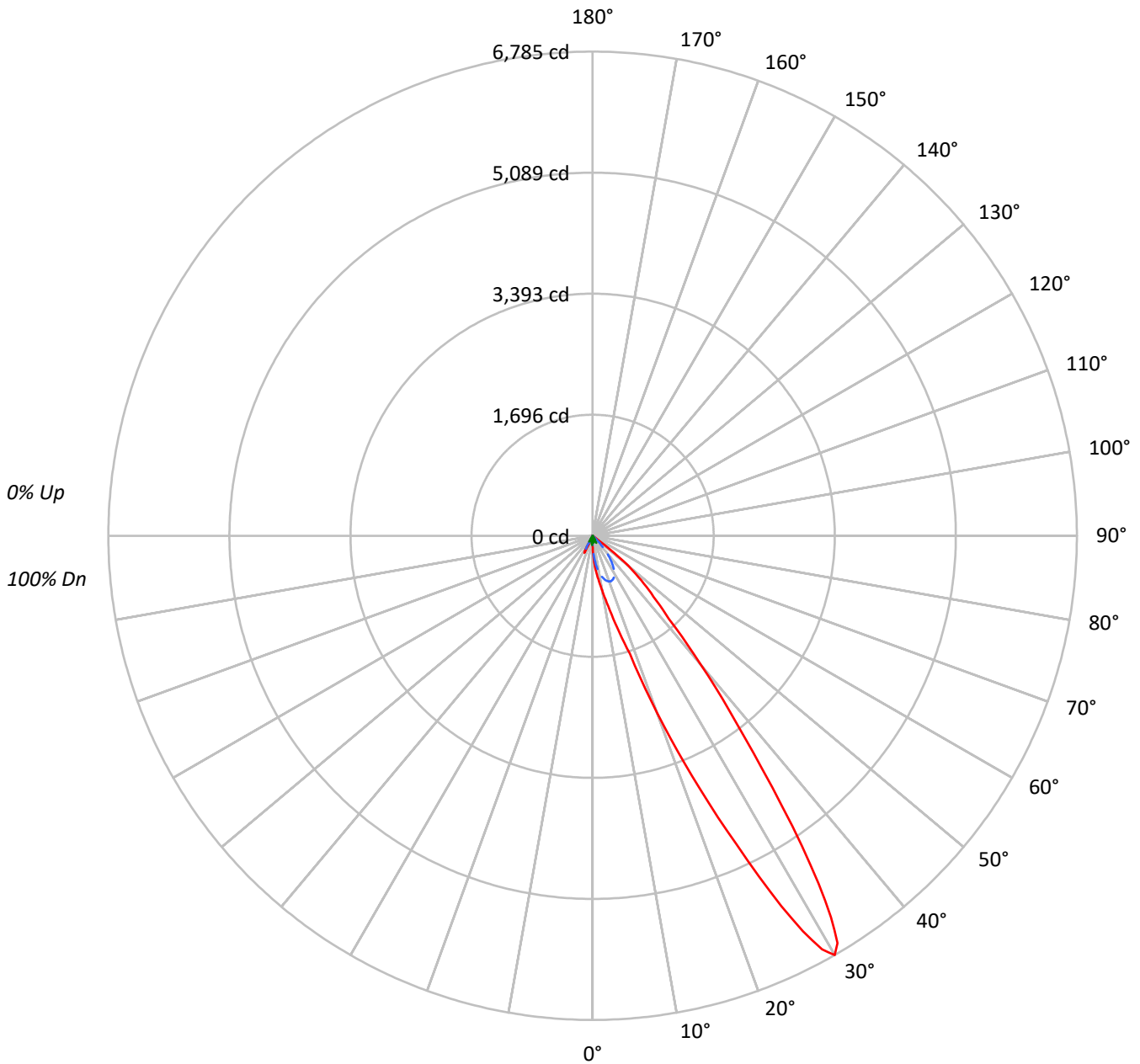
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	7576	7576	7576
5°	25908	6444	858
10°	43358	3574	423
15°	75318	1317	358
20°	153885	863	618
25°	288857	1688	10918
30°	429484	2943	1766
35°	309948	228	141
40°	168351	93	0
45°	93452	101	0
50°	54685	111	0
55°	1739	76	0
60°	603	143	0
65°	272	169	0
70°	208	208	0
75°	85	360	0
80°	0	537	0
85°	0	1069	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.4	2.1
10°-20°	100.5	10.7
20°-30°	323.5	34.5
30°-40°	336.8	35.9
40°-50°	143.5	15.3
50°-60°	11.9	1.3
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°	443.4	47.2
0°-40°	780.2	83.1
0°-60°	935.6	99.6
0°-90°	938.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	938.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	138	138	138	138	138	
5°	471	343	117	21	16	54
15°	1327	632	23	8	6	434
25°	4776	673	28	84	180	2293
35°	4631	481	3	3	2	2867
45°	1205	82	1	1	0	991
55°	18	2	1	1	0	114
65°	2	1	1	1	0	2
75°	0	1	2	1	0	0
85°	0	1	2	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°	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2
2.5°	306.8	290.8	303.0	295.9	291.2	289.9	297.1	289.1	280.6	280.2	277.7
5°	470.8	455.6	468.3	457.3	452.2	448.0	451.4	438.3	424.3	424.8	418.4
7.5°	613.7	605.2	613.7	601.9	598.0	593.8	592.6	579.9	563.4	564.7	554.9
10°	778.9	754.4	768.0	742.2	735.8	724.4	720.6	699.9	673.7	672.4	658.5
12.5°	1006.7	997.0	1010.6	974.2	966.6	947.2	936.6	903.6	860.5	849.5	817.4
15°	1327.1	1295.8	1309.4	1258.2	1243.9	1210.0	1186.8	1135.7	1094.7	1048.2	999.1
17.5°	1734.1	1716.4	1733.7	1633.1	1595.9	1530.0	1475.5	1390.1	1303.0	1261.2	1192.3
20°	2637.8	2553.2	2562.5	2375.7	2256.5	2079.0	1937.0	1748.5	1575.6	1476.3	1362.6
22.5°	3640.7	3544.3	3520.7	3280.6	3078.6	2811.9	2562.5	2247.2	1940.8	1718.9	1526.2
25°	4775.5	4713.0	4589.1	4196.1	3848.6	3468.3	3101.4	2688.9	2291.6	1951.8	1662.7
26°	5314.4	5264.1	5078.1	4586.6	4136.9	3681.7	3262.4	2819.5	2390.9	2018.1	1694.8
27°	5826.2	5785.6	5543.9	4971.6	4409.5	3861.7	3379.5	2912.5	2462.4	2060.8	1717.6
28°	6277.2	6235.8	5923.4	5297.9	4625.5	3991.9	3453.0	2970.4	2503.3	2071.0	1716.4
29°	6628.0	6575.6	6172.4	5507.1	4752.3	4054.5	3467.8	2977.6	2497.4	2047.3	1692.7
30°	6784.8	6719.7	6243.4	5551.9	4754.4	4030.8	3426.0	2939.1	2449.3	1991.5	1648.8
31°	6661.8	6606.4	6114.5	5422.6	4625.5	3922.6	3322.0	2850.3	2358.0	1910.8	1590.4
32°	6303.4	6252.7	5799.2	5138.6	4381.6	3739.6	3171.1	2723.5	2236.7	1813.2	1522.8
33°	5811.8	5772.5	5366.0	4748.5	4068.4	3514.3	2990.7	2564.6	2090.8	1703.7	1440.4
34°	5251.0	5220.1	4849.1	4307.6	3726.5	3264.1	2784.8	2336.0	1931.5	1593.4	1378.7
35°	4631.4	4610.3	4307.6	3855.0	3386.3	3004.2	2556.2	2134.0	1770.9	1487.3	1312.3
36°	4042.6	4025.3	3794.5	3439.9	3062.5	2734.5	2308.5	1923.5	1617.1	1391.8	1250.2
37°	3539.7	3527.0	3356.3	3070.5	2751.4	2454.3	2056.2	1726.5	1483.1	1308.5	1186.4
38°	3121.3	3111.1	2972.5	2719.3	2431.1	2164.4	1812.7	1552.4	1369.0	1236.2	1114.1
39°	2731.2	2718.1	2593.4	2364.3	2112.0	1882.1	1651.3	1409.1	1279.4	1161.0	1036.3
40°	2352.5	2335.6	2226.1	2031.3	1820.8	1642.4	1435.3	1321.2	1206.7	1073.5	956.9
42.5°	1578.6	1569.3	1509.7	1421.8	1332.6	1267.5	1202.0	1100.2	979.3	869.4	783.2
45°	1205.4	1203.3	1174.1	1128.0	1068.9	1013.9	926.4	867.7	786.1	693.6	631.9
47.5°	924.8	925.2	898.1	863.5	822.9	787.4	723.6	676.7	618.3	565.5	517.7
50°	641.2	614.1	617.9	590.4	557.5	536.8	477.6	441.7	358.8	275.1	215.1
51°	480.6	445.0	449.7	418.8	384.6	366.4	311.1	274.7	197.0	129.3	84.5
52°	293.3	265.4	265.0	241.3	211.7	195.7	151.7	118.3	67.2	35.5	24.5
53°	131.4	112.8	108.6	92.6	72.7	63.0	43.1	31.7	23.7	18.2	13.9
54°	34.7	30.9	29.6	27.0	24.5	23.7	20.7	17.3	13.5	10.6	8.9
55°	18.2	16.9	16.5	15.6	14.4	13.9	12.3	10.6	8.5	7.6	6.8
57.5°	8.5	8.5	8.0	7.6	7.2	7.2	6.3	5.9	5.5	5.5	4.6
60°	5.5	5.5	5.5	5.1	5.1	4.6	4.2	3.8	3.4	3.8	3.4
61°	4.6	4.6	4.6	4.2	3.8	3.4	3.4	3.4	3.0	3.0	2.5
62°	3.4	3.4	3.0	3.0	2.5	2.5	2.5	2.5	2.1	2.5	2.5
63°	2.5	2.5	2.1	2.1	2.1	2.1	1.7	1.7	1.7	2.5	2.5
64°	2.1	2.1	2.1	1.7	1.7	1.7	1.7	1.7	1.7	2.1	1.7
65°	2.1	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.3	1.7	1.7
66°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.7	1.7



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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°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
75°	0.4	0.4	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°	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2	138.2
2.5°	277.7	272.6	262.0	259.9	249.8	243.9	245.6	242.2	188.1	132.7	82.8
5°	413.8	402.4	386.7	381.2	363.9	354.6	351.6	343.2	232.9	117.1	38.9
7.5°	546.9	532.1	513.1	504.2	480.6	464.9	454.8	442.1	263.7	93.0	21.6
10°	645.8	628.9	609.0	597.6	571.0	555.4	538.9	524.9	280.2	64.2	16.1
12.5°	777.7	744.3	702.9	677.9	638.6	617.1	598.0	584.5	286.6	38.5	12.3
15°	953.5	899.8	841.1	795.8	729.1	688.5	656.4	631.9	281.5	23.2	10.6
17.5°	1123.8	1047.7	970.8	909.5	833.0	772.6	710.9	662.7	259.9	18.6	9.7
20°	1265.4	1176.2	1078.2	992.4	904.0	832.2	750.2	682.2	225.3	14.8	10.6
22.5°	1374.5	1260.8	1149.6	1043.1	937.9	855.4	765.4	686.4	181.3	15.2	14.8
25°	1453.1	1303.9	1185.5	1064.2	949.7	859.2	757.4	672.9	133.6	27.9	49.9
26°	1469.1	1312.7	1190.2	1062.1	945.5	852.9	748.1	664.4	120.5	55.4	109.9
27°	1478.0	1311.5	1186.8	1053.7	936.6	843.6	737.5	656.8	118.3	94.7	164.0
28°	1470.0	1300.9	1172.4	1038.4	922.2	831.4	725.3	647.9	117.1	116.2	155.5
29°	1448.0	1282.3	1150.9	1014.8	900.2	811.9	706.7	635.2	104.8	92.6	93.8
30°	1414.6	1256.1	1119.6	983.1	872.3	784.0	680.0	615.0	69.3	46.5	39.7
31°	1373.2	1222.3	1081.1	946.3	840.6	750.2	652.1	588.7	35.9	19.9	18.6
32°	1327.5	1181.7	1039.7	909.1	808.5	717.7	628.9	565.5	23.7	11.0	10.6
33°	1279.4	1134.4	994.1	870.7	772.6	681.3	604.8	540.6	17.8	6.8	6.3
34°	1232.0	1083.7	948.0	829.2	733.7	648.8	582.8	511.8	14.4	5.1	4.2
35°	1178.3	1028.7	900.7	785.3	691.9	620.9	560.9	480.6	11.4	3.4	3.4
36°	1115.8	970.4	851.6	739.2	652.1	595.1	536.8	446.3	8.9	2.5	3.0
37°	1049.4	912.5	802.2	693.6	619.6	571.4	507.6	411.2	7.6	2.1	2.5
38°	981.0	855.0	748.9	649.6	591.3	545.6	474.6	374.9	6.3	1.7	2.1
39°	913.8	796.3	695.7	614.1	564.7	515.2	437.0	337.7	5.5	1.7	2.1
40°	848.3	737.1	648.3	583.3	535.1	478.0	398.1	298.8	3.8	1.3	2.1
42.5°	692.7	614.5	558.3	493.2	438.7	374.5	292.9	194.0	3.0	1.3	1.7
45°	579.9	515.6	450.1	376.6	322.9	257.0	173.3	82.4	3.0	1.3	1.7
47.5°	458.6	382.9	286.6	193.6	126.4	65.1	20.3	11.4	2.1	1.3	1.7
50°	133.6	77.3	28.7	17.3	13.1	8.0	5.1	4.6	1.7	1.3	1.7
51°	38.5	22.8	15.2	10.1	7.6	4.6	3.8	4.2	1.7	1.3	1.3
52°	18.2	13.1	8.9	6.8	5.1	3.8	3.4	3.8	1.7	1.3	1.3
53°	10.6	8.0	6.3	5.5	3.8	3.4	2.5	3.4	1.7	1.3	1.3
54°	7.2	6.3	5.5	4.6	3.4	2.5	2.5	3.4	1.7	1.3	1.3
55°	6.3	5.5	4.6	4.2	3.0	2.5	2.5	2.5	1.3	0.8	1.3
57.5°	4.2	4.2	3.4	3.4	2.5	1.7	0.8	2.1	1.7	1.3	1.3
60°	3.0	3.0	3.0	2.1	0.8	0.8	0.4	1.7	1.7	1.3	1.7
61°	3.0	3.0	2.1	1.7	0.8	0.8	0.4	1.7	1.7	1.3	1.7
62°	2.5	2.1	1.7	1.7	0.8	0.8	0.4	1.7	1.7	1.3	1.7
63°	2.1	1.7	1.7	1.7	0.8	0.4	0.4	1.7	1.7	1.3	1.7
64°	1.7	1.7	1.7	1.7	0.4	0.4	0.4	1.7	1.7	1.3	1.7
65°	1.7	1.7	1.7	1.3	0.4	0.4	0.4	1.3	1.7	1.3	1.7
66°	1.7	1.7	1.3	1.3	0.4	0.4	0.4	1.3	1.7	1.3	1.7



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CATALOG NUMBER: LDA6A15935D010TE 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°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.3	1.7
75°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	1.7
77.5°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	2.1
80°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	2.1
82.5°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	2.1
85°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	2.1
87.5°	0.4	0.4	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.7	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



TEST NUMBER: P175461

CATALOG NUMBER: LDA6A15935D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	138.2	138.2	138.2
2.5°	52.8	38.0	34.7
5°	21.1	17.3	15.6
7.5°	13.1	11.0	10.1
10°	10.6	8.0	7.6
12.5°	8.5	7.2	6.8
15°	8.0	6.8	6.3
17.5°	8.0	7.6	7.2
20°	10.1	10.1	10.6
22.5°	17.3	20.3	22.8
25°	84.1	136.1	180.5
26°	176.2	248.5	265.8
27°	218.5	226.1	217.2
28°	168.2	150.9	142.0
29°	90.0	75.2	68.9
30°	35.9	29.6	27.9
31°	17.3	14.8	14.4
32°	9.7	8.0	8.0
33°	5.9	5.1	4.6
34°	4.2	3.4	3.0
35°	3.0	2.5	2.1
36°	2.5	1.7	1.3
37°	2.1	1.3	1.3
38°	1.7	1.3	0.8
39°	1.3	0.8	0.4
40°	1.3	0.4	0.0
42.5°	0.8	0.4	0.0
45°	0.8	0.0	0.0
47.5°	1.3	0.8	0.4
50°	0.8	0.4	0.0
51°	0.8	0.0	0.0
52°	0.8	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°	0.8	0.0	0.0
62°	0.8	0.0	0.0
63°	0.8	0.4	0.0
64°	0.8	0.4	0.0
65°	0.8	0.4	0.0
66°	0.8	0.4	0.0



TEST NUMBER: P175461

CATALOG NUMBER: LDA6A15935D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.3	0.4	0.0
75°	1.3	0.4	0.0
77.5°	1.3	0.4	0.0
80°	1.3	0.4	0.0
82.5°	1.3	0.4	0.0
85°	1.3	0.4	0.0
87.5°	1.3	0.4	0.0
90°	0.0	0.0	0.0



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







67.5°	1.7	1.3	1.3	1.3	1.3	1.3	1.3	0.8	0.8	1.3	1.3
70°	1.3	1.3	1.3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8





67.5°	1.3	1.3	1.3	1.3	0.4	0.0	0.0	1.3	1.7	1.3	1.7
70°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	1.3	1.7	1.3	1.7





67.5°	1.3	0.4	0.0
70°	1.3	0.4	0.0



(END OF REPORT)