

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: P175449

Luminaire Tested: **LDA6A10835D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175449
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: LDA6A10835D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 771.7 lumens
Efficiency: N/A
Efficacy: 55.8 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

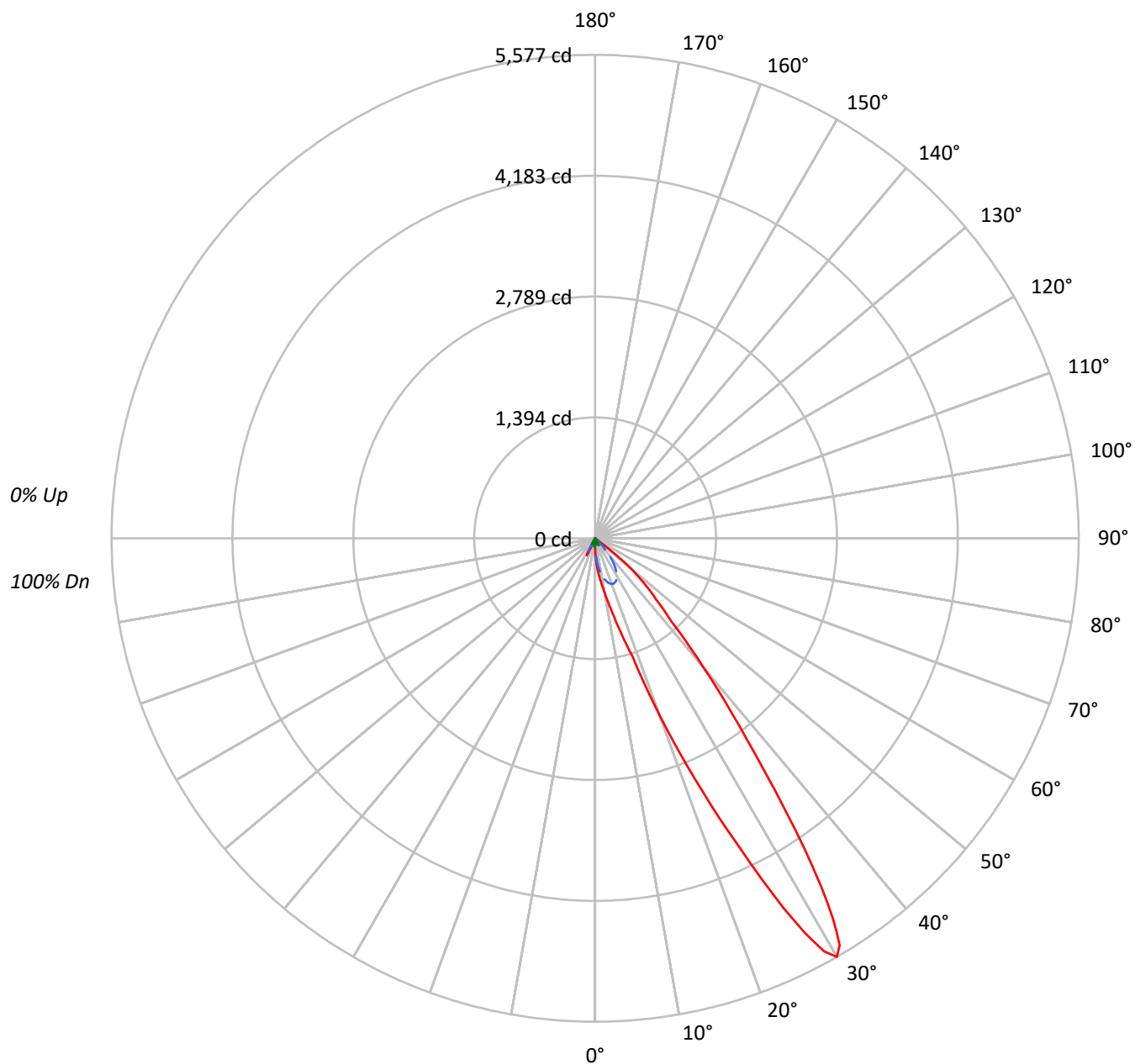
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	30	10
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	113	109	106	104		110	107	105	102		103	101	99		99	98	96		96	95	93
2	106	100	95	91		103	98	94	90		95	91	88		92	89	86		89	87	85
3	99	91	86	81		97	90	85	80		87	83	79		85	81	78		82	79	76
4	93	84	77	72		91	82	76	72		80	75	71		78	74	70		76	72	69
5	87	77	70	64		85	76	69	64		74	68	64		72	67	63		70	66	62
6	81	70	63	58		79	69	63	58		68	62	57		66	61	57		65	60	56
7	75	64	57	52		74	64	57	52		62	56	52		61	55	51		60	55	51
8	71	59	52	47		69	59	52	47		57	51	47		56	51	47		55	50	46
9	66	55	47	43		65	54	47	43		53	47	42		52	46	42		51	46	42
10	62	50	43	39		61	50	43	39		49	43	39		48	42	38		47	42	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6228	6228	6228
5°	21296	5294	710
10°	35643	2939	351
15°	61913	1084	295
20°	126495	712	508
25°	237443	1385	8970
30°	353042	2418	1450
35°	254783	187	114
40°	138388	72	0
45°	76814	78	0
50°	44945	85	0
55°	1424	67	0
60°	493	110	0
65°	221	130	0
70°	160	160	0
75°	64	297	0
80°	0	442	0
85°	0	881	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.9	2.1
10°-20°	82.6	10.7
20°-30°	265.9	34.5
30°-40°	276.9	35.9
40°-50°	117.9	15.3
50°-60°	9.8	1.3
60°-70°	1.0	0.1
70°-80°	0.9	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°	364.5	47.2
0°-40°	641.4	83.1
0°-60°	769.1	99.7
0°-90°	771.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	771.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	114	114	114	114	114	
5°	387	282	96	17	13	44
15°	1091	519	19	7	5	357
25°	3926	553	23	69	148	1885
35°	3807	395	3	2	2	2357
45°	991	68	1	1	0	815
55°	15	2	1	1	0	93
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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CATALOG NUMBER: LDA6A10835D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6
2.5°	252.2	239.0	249.1	243.2	239.4	238.3	244.2	237.6	230.7	230.3	228.3
5°	387.0	374.5	384.9	375.9	371.7	368.3	371.0	360.3	348.8	349.2	343.9
7.5°	504.5	497.5	504.5	494.7	491.6	488.1	487.1	476.7	463.1	464.2	456.2
10°	640.3	620.1	631.3	610.1	604.9	595.5	592.4	575.3	553.8	552.7	541.3
12.5°	827.6	819.6	830.7	800.8	794.6	778.6	769.9	742.8	707.4	698.3	671.9
15°	1090.9	1065.2	1076.3	1034.3	1022.5	994.7	975.6	933.5	899.8	861.6	821.3
17.5°	1425.5	1410.9	1425.1	1342.4	1311.9	1257.7	1212.9	1142.7	1071.1	1036.7	980.1
20°	2168.3	2098.8	2106.4	1952.9	1854.9	1709.0	1592.2	1437.3	1295.2	1213.5	1120.1
22.5°	2992.7	2913.5	2894.0	2696.7	2530.6	2311.4	2106.4	1847.2	1595.4	1413.0	1254.5
25°	3925.5	3874.1	3772.3	3449.2	3163.6	2850.9	2549.4	2210.3	1883.7	1604.4	1366.8
26°	4368.5	4327.1	4174.3	3770.2	3400.6	3026.4	2681.8	2317.7	1965.4	1658.9	1393.2
27°	4789.2	4755.9	4557.1	4086.7	3624.7	3174.4	2778.0	2394.1	2024.1	1694.0	1411.9
28°	5159.9	5125.9	4869.1	4354.9	3802.2	3281.4	2838.4	2441.7	2057.8	1702.4	1410.9
29°	5448.3	5405.2	5073.8	4526.9	3906.4	3332.8	2850.6	2447.6	2052.9	1682.9	1391.4
30°	5577.2	5523.7	5132.1	4563.7	3908.2	3313.4	2816.2	2416.0	2013.3	1637.1	1355.3
31°	5476.1	5430.6	5026.2	4457.4	3802.2	3224.4	2730.7	2343.0	1938.3	1570.7	1307.3
32°	5181.5	5139.8	4767.0	4224.0	3601.7	3074.0	2606.7	2238.8	1838.6	1490.4	1251.8
33°	4777.4	4745.1	4410.9	3903.3	3344.3	2888.8	2458.4	2108.2	1718.7	1400.5	1184.0
34°	4316.4	4291.0	3986.0	3540.9	3063.2	2683.1	2289.2	1920.2	1587.7	1309.8	1133.3
35°	3807.1	3789.7	3540.9	3168.8	2783.5	2469.5	2101.2	1754.1	1455.7	1222.6	1078.7
36°	3323.1	3308.8	3119.2	2827.7	2517.4	2247.8	1897.6	1581.1	1329.2	1144.1	1027.7
37°	2909.7	2899.2	2758.9	2524.0	2261.7	2017.5	1690.2	1419.2	1219.1	1075.6	975.2
38°	2565.7	2557.4	2443.4	2235.3	1998.4	1779.1	1490.1	1276.1	1125.3	1016.2	915.8
39°	2245.0	2234.3	2131.8	1943.5	1736.1	1547.1	1357.4	1158.3	1051.6	954.4	851.9
40°	1933.8	1919.9	1829.9	1669.7	1496.7	1350.1	1179.8	1086.0	991.9	882.5	786.6
42.5°	1297.6	1290.0	1241.0	1168.7	1095.4	1041.9	988.1	904.3	805.0	714.6	643.8
45°	990.8	989.1	965.1	927.3	878.6	833.5	761.5	713.3	646.2	570.1	519.4
47.5°	760.2	760.5	738.3	709.8	676.4	647.2	594.8	556.2	508.3	464.9	425.6
50°	527.0	504.8	507.9	485.3	458.2	441.2	392.6	363.1	295.0	226.2	176.8
51°	395.0	365.8	369.7	344.3	316.2	301.2	255.7	225.8	161.9	106.3	69.5
52°	241.1	218.2	217.8	198.4	174.1	160.9	124.7	97.3	55.2	29.2	20.2
53°	108.0	92.8	89.3	76.1	59.8	51.8	35.4	26.1	19.5	14.9	11.5
54°	28.5	25.4	24.3	22.2	20.2	19.5	17.0	14.2	11.1	8.7	7.3
55°	14.9	13.9	13.5	12.9	11.8	11.5	10.1	8.7	6.9	6.3	5.6
57.5°	6.9	6.9	6.6	6.3	5.9	5.9	5.2	4.9	4.5	4.5	3.8
60°	4.5	4.5	4.5	4.2	4.2	3.8	3.5	3.1	2.8	3.1	2.8
61°	3.8	3.8	3.8	3.5	3.1	2.8	2.8	2.8	2.4	2.4	2.1
62°	2.8	2.8	2.4	2.4	2.1	2.1	2.1	2.1	1.7	2.1	2.1
63°	2.1	2.1	1.7	1.7	1.7	1.7	1.4	1.4	1.4	2.1	2.1
64°	1.7	1.7	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.7	1.4
65°	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.4	1.4
66°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.4	1.4



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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°	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6	113.6
2.5°	228.3	224.1	215.4	213.7	205.3	200.5	201.9	199.1	154.6	109.1	68.1
5°	340.1	330.7	317.9	313.4	299.1	291.5	289.1	282.1	191.4	96.2	32.0
7.5°	449.6	437.4	421.8	414.5	395.0	382.2	373.8	363.4	216.8	76.4	17.7
10°	530.9	517.0	500.6	491.3	469.4	456.5	443.0	431.5	230.3	52.8	13.2
12.5°	639.3	611.8	577.8	557.3	525.0	507.2	491.6	480.5	235.6	31.6	10.1
15°	783.8	739.7	691.4	654.2	599.3	566.0	539.5	519.4	231.4	19.1	8.7
17.5°	923.8	861.3	798.0	747.7	684.8	635.1	584.4	544.8	213.7	15.3	8.0
20°	1040.2	966.9	886.3	815.7	743.1	684.1	616.7	560.7	185.2	12.2	8.7
22.5°	1129.8	1036.4	945.0	857.4	770.9	703.2	629.2	564.2	149.0	12.5	12.2
25°	1194.4	1071.8	974.5	874.8	780.7	706.3	622.6	553.1	109.8	22.9	41.0
26°	1207.6	1079.1	978.3	873.1	777.2	701.1	614.9	546.1	99.0	45.5	90.3
27°	1214.9	1078.1	975.6	866.1	769.9	693.5	606.3	539.9	97.3	77.8	134.8
28°	1208.3	1069.4	963.7	853.6	758.1	683.4	596.2	532.6	96.2	95.5	127.9
29°	1190.3	1054.1	946.0	834.2	740.0	667.4	580.9	522.2	86.2	76.1	77.1
30°	1162.8	1032.5	920.3	808.1	717.1	644.5	559.0	505.5	57.0	38.2	32.7
31°	1128.8	1004.7	888.7	777.9	691.0	616.7	536.1	484.0	29.5	16.3	15.3
32°	1091.3	971.4	854.7	747.3	664.6	589.9	517.0	464.9	19.5	9.0	8.7
33°	1051.6	932.5	817.1	715.7	635.1	560.0	497.2	444.4	14.6	5.6	5.2
34°	1012.7	890.8	779.3	681.6	603.1	533.3	479.1	420.7	11.8	4.2	3.5
35°	968.6	845.6	740.4	645.5	568.7	510.4	461.0	395.0	9.4	2.8	2.8
36°	917.2	797.7	700.1	607.6	536.1	489.2	441.2	366.9	7.3	2.1	2.4
37°	862.6	750.1	659.4	570.1	509.3	469.7	417.3	338.0	6.3	1.7	2.1
38°	806.4	702.8	615.6	534.0	486.0	448.5	390.2	308.2	5.2	1.4	1.7
39°	751.1	654.5	571.9	504.8	464.2	423.5	359.2	277.6	4.5	1.4	1.7
40°	697.3	605.9	532.9	479.4	439.8	392.9	327.3	245.6	3.1	1.0	1.7
42.5°	569.4	505.2	458.9	405.4	360.6	307.8	240.8	159.5	2.4	1.0	1.4
45°	476.7	423.9	370.0	309.6	265.4	211.2	142.4	67.7	2.4	1.0	1.4
47.5°	377.0	314.8	235.6	159.1	103.9	53.5	16.7	9.4	1.7	1.0	1.4
50°	109.8	63.6	23.6	14.2	10.8	6.6	4.2	3.8	1.4	1.0	1.4
51°	31.6	18.8	12.5	8.3	6.3	3.8	3.1	3.5	1.4	1.0	1.0
52°	14.9	10.8	7.3	5.6	4.2	3.1	2.8	3.1	1.4	1.0	1.0
53°	8.7	6.6	5.2	4.5	3.1	2.8	2.1	2.8	1.4	1.0	1.0
54°	5.9	5.2	4.5	3.8	2.8	2.1	2.1	2.8	1.4	1.0	1.0
55°	5.2	4.5	3.8	3.5	2.4	2.1	2.1	2.1	1.0	0.7	1.0
57.5°	3.5	3.5	2.8	2.8	2.1	1.4	0.7	1.7	1.4	1.0	1.0
60°	2.4	2.4	2.4	1.7	0.7	0.7	0.3	1.4	1.4	1.0	1.4
61°	2.4	2.4	1.7	1.4	0.7	0.7	0.3	1.4	1.4	1.0	1.4
62°	2.1	1.7	1.4	1.4	0.7	0.7	0.3	1.4	1.4	1.0	1.4
63°	1.7	1.4	1.4	1.4	0.7	0.3	0.3	1.4	1.4	1.0	1.4
64°	1.4	1.4	1.4	1.4	0.3	0.3	0.3	1.4	1.4	1.0	1.4
65°	1.4	1.4	1.4	1.0	0.3	0.3	0.3	1.0	1.4	1.0	1.4
66°	1.4	1.4	1.0	1.0	0.3	0.3	0.3	1.0	1.4	1.0	1.4



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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	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.0	1.4
75°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	1.4
77.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	1.7
80°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	1.7
82.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	1.7
85°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	1.7
87.5°	0.3	0.3	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.4	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: LDA6A10835D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	113.6	113.6	113.6
2.5°	43.4	31.3	28.5
5°	17.4	14.2	12.9
7.5°	10.8	9.0	8.3
10°	8.7	6.6	6.3
12.5°	6.9	5.9	5.6
15°	6.6	5.6	5.2
17.5°	6.6	6.3	5.9
20°	8.3	8.3	8.7
22.5°	14.2	16.7	18.8
25°	69.1	111.9	148.3
26°	144.9	204.3	218.5
27°	179.6	185.9	178.6
28°	138.3	124.0	116.7
29°	74.0	61.8	56.6
30°	29.5	24.3	22.9
31°	14.2	12.2	11.8
32°	8.0	6.6	6.6
33°	4.9	4.2	3.8
34°	3.5	2.8	2.4
35°	2.4	2.1	1.7
36°	2.1	1.4	1.0
37°	1.7	1.0	1.0
38°	1.4	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: P175449

CATALOG NUMBER: LDA6A10835D010TE 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°	1.4	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	1.4	1.0	1.4
70°	0.7	0.7	0.7	0.7	0.0	0.0	0.0	1.0	1.4	1.0	1.4





67.5°	1.0	0.3	0.0
70°	1.0	0.3	0.0



(END OF REPORT)