

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: P175460

Luminaire Tested: **LDA6A15930D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175460
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: LDA6A15930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 931.8 lumens
Efficiency: N/A
Efficacy: 41.8 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

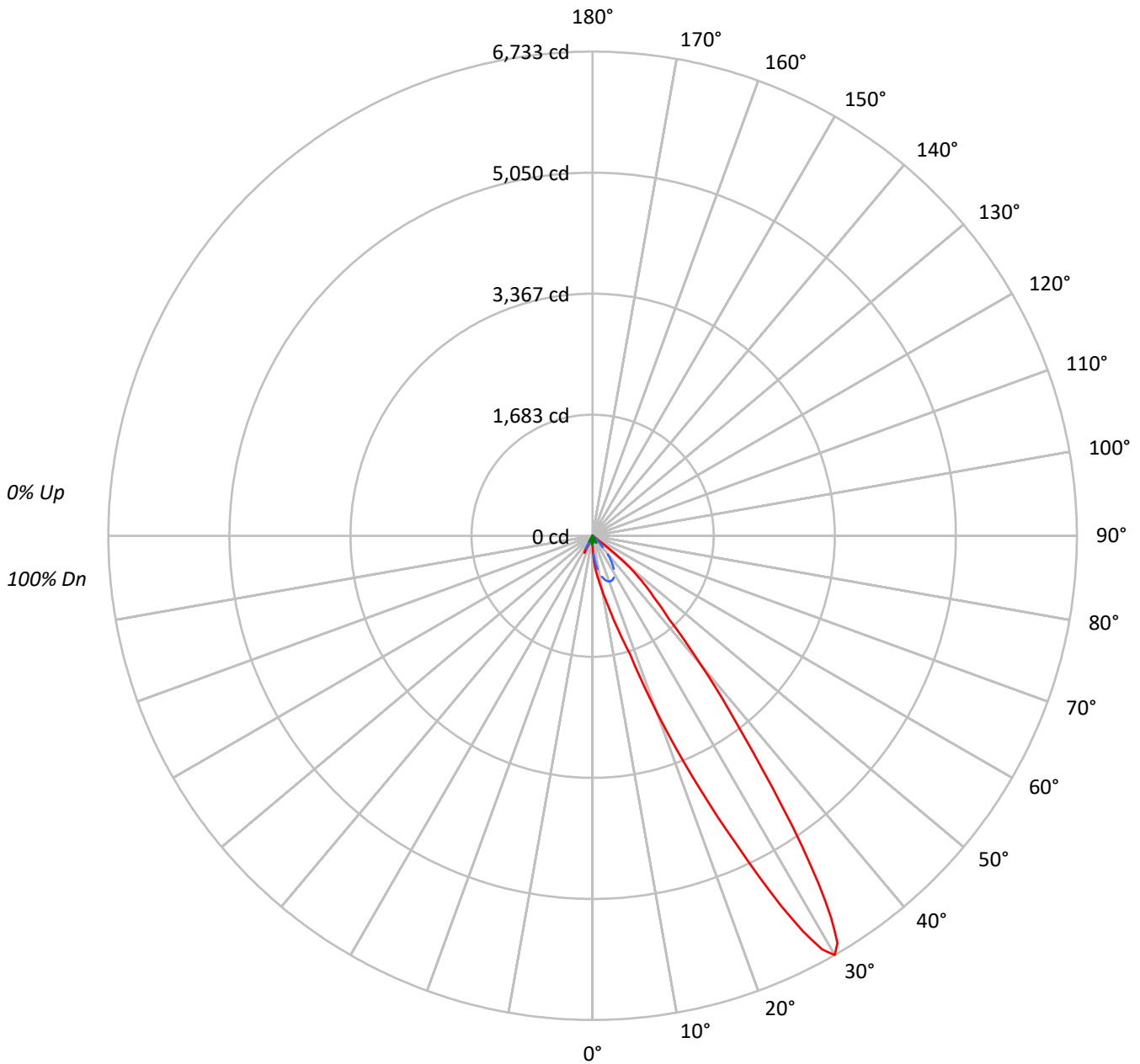
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	7516	7516	7516
5°	25710	6394	853
10°	43030	3551	417
15°	74739	1311	358
20°	152701	858	613
25°	286644	1675	10833
30°	426192	2918	1753
35°	307572	228	141
40°	167056	93	0
45°	92738	101	0
50°	54258	111	0
55°	1720	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°	19.2	2.1
10°-20°	99.8	10.7
20°-30°	321.0	34.5
30°-40°	334.2	35.9
40°-50°	142.4	15.3
50°-60°	11.8	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°	440.0	47.2
0°-40°	774.2	83.1
0°-60°	928.5	99.6
0°-90°	931.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	931.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	137	137	137	137	137	
5°	467	341	116	21	16	53
15°	1317	627	23	8	6	430
25°	4739	668	28	84	179	2276
35°	4596	477	3	3	2	2845
45°	1196	82	1	1	0	984
55°	18	2	1	1	0	113
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	



TEST NUMBER: P175460

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1
2.5°	304.5	288.6	300.7	293.6	289.0	287.7	294.8	286.9	278.5	278.1	275.6
5°	467.2	452.1	464.7	453.8	448.8	444.6	447.9	434.9	421.1	421.5	415.2
7.5°	609.0	600.6	609.0	597.2	593.5	589.3	588.0	575.4	559.1	560.3	550.7
10°	773.0	748.6	762.1	736.5	730.2	718.9	715.1	694.5	668.5	667.3	653.4
12.5°	999.0	989.4	1002.8	966.7	959.2	939.9	929.4	896.7	853.9	843.0	811.1
15°	1316.9	1285.9	1299.3	1248.6	1234.3	1200.8	1177.7	1127.0	1086.3	1040.1	991.5
17.5°	1720.8	1703.2	1720.4	1620.6	1583.7	1518.3	1464.2	1379.4	1293.0	1251.5	1183.2
20°	2617.5	2533.7	2542.9	2357.5	2239.2	2063.1	1922.2	1735.1	1563.6	1465.0	1352.2
22.5°	3612.8	3517.2	3493.7	3255.5	3055.0	2790.3	2542.9	2230.0	1925.9	1705.7	1514.5
25°	4738.9	4676.8	4553.9	4163.9	3819.1	3441.7	3077.6	2668.3	2274.0	1936.8	1650.0
26°	5273.7	5223.7	5039.2	4551.4	4105.2	3653.5	3237.4	2797.9	2372.6	2002.7	1681.8
27°	5781.6	5741.3	5501.4	4933.5	4375.7	3832.1	3353.6	2890.1	2443.5	2045.0	1704.5
28°	6229.1	6188.0	5878.0	5257.3	4590.0	3961.3	3426.6	2947.6	2484.2	2055.1	1703.2
29°	6577.2	6525.2	6125.1	5464.9	4715.8	4023.4	3441.3	2954.7	2478.3	2031.6	1679.7
30°	6732.8	6668.2	6195.5	5509.4	4717.9	3999.9	3399.7	2916.6	2430.5	1976.3	1636.1
31°	6610.7	6555.8	6067.6	5381.0	4590.0	3892.5	3296.6	2828.5	2339.9	1896.1	1578.2
32°	6255.1	6204.7	5754.7	5099.2	4348.0	3710.9	3146.8	2702.7	2219.5	1799.3	1511.1
33°	5767.3	5728.3	5324.8	4712.1	4037.2	3487.4	2967.7	2545.0	2074.8	1690.6	1429.3
34°	5210.7	5180.1	4811.9	4274.6	3697.9	3239.1	2763.5	2318.1	1916.7	1581.2	1368.1
35°	4595.9	4574.9	4274.6	3825.4	3360.3	2981.2	2536.6	2117.6	1757.3	1475.9	1302.3
36°	4011.6	3994.5	3765.5	3413.6	3039.0	2713.6	2290.8	1908.7	1604.7	1381.1	1240.6
37°	3512.6	3500.0	3330.5	3047.0	2730.4	2435.5	2040.4	1713.3	1471.7	1298.5	1177.3
38°	3097.3	3087.3	2949.7	2698.5	2412.4	2147.8	1798.8	1540.5	1358.5	1226.8	1105.6
39°	2710.2	2697.2	2573.5	2346.2	2095.8	1867.6	1638.6	1398.3	1269.6	1152.1	1028.4
40°	2334.4	2317.7	2209.0	2015.7	1806.8	1629.8	1424.3	1311.1	1197.4	1065.3	949.5
42.5°	1566.5	1557.3	1498.1	1410.9	1322.4	1257.8	1192.8	1091.7	971.8	862.7	777.2
45°	1196.2	1194.1	1165.1	1119.4	1060.7	1006.2	919.3	861.0	780.1	688.3	627.0
47.5°	917.7	918.1	891.2	856.9	816.6	781.4	718.0	671.5	613.6	561.2	513.8
50°	636.2	609.4	613.2	585.9	553.2	532.6	473.9	438.3	356.1	273.0	213.5
51°	476.9	441.6	446.3	415.6	381.7	363.6	308.7	272.6	195.4	128.3	83.9
52°	291.1	263.4	263.0	239.5	210.1	194.2	150.6	117.4	66.7	35.2	24.3
53°	130.4	112.0	107.8	91.9	72.1	62.5	42.8	31.5	23.5	18.0	13.8
54°	34.4	30.6	29.4	26.8	24.3	23.5	20.6	17.2	13.4	10.5	8.8
55°	18.0	16.8	16.4	15.5	14.3	13.8	12.2	10.5	8.4	7.5	6.7
57.5°	8.4	8.4	8.0	7.5	7.1	7.1	6.3	5.9	5.5	5.5	4.6
60°	5.5	5.5	5.5	5.0	5.0	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	2.9	2.9	2.5
62°	3.4	3.4	2.9	2.9	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°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1
2.5°	275.6	270.5	260.0	257.9	247.9	242.0	243.7	240.3	186.6	131.7	82.2
5°	410.6	399.3	383.8	378.3	361.1	351.9	348.9	340.6	231.1	116.2	38.6
7.5°	542.7	528.0	509.2	500.4	476.9	461.4	451.3	438.7	261.7	92.3	21.4
10°	640.9	624.1	604.4	593.0	566.6	551.1	534.7	520.9	278.1	63.8	15.9
12.5°	771.7	738.6	697.5	672.7	633.7	612.3	593.5	580.0	284.4	38.2	12.2
15°	946.2	892.9	834.6	789.7	723.5	683.2	651.3	627.0	279.3	23.1	10.5
17.5°	1115.2	1039.7	963.4	902.6	826.7	766.7	705.4	657.6	257.9	18.5	9.6
20°	1255.7	1167.2	1069.9	984.8	897.1	825.8	744.5	676.9	223.5	14.7	10.5
22.5°	1363.9	1251.1	1140.8	1035.1	930.7	848.9	759.6	681.1	179.9	15.1	14.7
25°	1441.9	1293.9	1176.4	1056.1	942.4	852.7	751.6	667.7	132.5	27.7	49.5
26°	1457.9	1302.7	1181.1	1054.0	938.2	846.4	742.4	659.3	119.5	54.9	109.0
27°	1466.7	1301.4	1177.7	1045.6	929.4	837.1	731.9	651.8	117.4	93.9	162.7
28°	1458.7	1290.9	1163.4	1030.5	915.2	825.0	719.7	643.0	116.2	115.3	154.3
29°	1436.9	1272.5	1142.1	1007.0	893.3	805.7	701.3	630.4	104.0	91.9	93.1
30°	1403.8	1246.5	1111.0	975.5	865.7	778.0	674.8	610.2	68.8	46.1	39.4
31°	1362.7	1212.9	1072.8	939.1	834.2	744.5	647.1	584.2	35.6	19.7	18.5
32°	1317.4	1172.7	1031.7	902.1	802.3	712.2	624.1	561.2	23.5	10.9	10.5
33°	1269.6	1125.7	986.5	864.0	766.7	676.1	600.2	536.4	17.6	6.7	6.3
34°	1222.6	1075.4	940.7	822.9	728.1	643.8	578.4	507.9	14.3	5.0	4.2
35°	1169.3	1020.8	893.8	779.3	686.6	616.1	556.6	476.9	11.3	3.4	3.4
36°	1107.2	963.0	845.1	733.5	647.1	590.5	532.6	442.9	8.8	2.5	2.9
37°	1041.4	905.5	796.0	688.3	614.9	567.0	503.7	408.1	7.5	2.1	2.5
38°	973.4	848.5	743.2	644.6	586.8	541.5	471.0	372.0	6.3	1.7	2.1
39°	906.8	790.2	690.3	609.4	560.3	511.3	433.7	335.1	5.5	1.7	2.1
40°	841.8	731.4	643.4	578.8	531.0	474.4	395.1	296.5	3.8	1.3	2.1
42.5°	687.4	609.8	554.0	489.5	435.3	371.6	290.7	192.5	2.9	1.3	1.7
45°	575.4	511.7	446.7	373.7	320.4	255.0	172.0	81.8	2.9	1.3	1.7
47.5°	455.1	380.0	284.4	192.1	125.4	64.6	20.1	11.3	2.1	1.3	1.7
50°	132.5	76.8	28.5	17.2	13.0	8.0	5.0	4.6	1.7	1.3	1.7
51°	38.2	22.6	15.1	10.1	7.5	4.6	3.8	4.2	1.7	1.3	1.3
52°	18.0	13.0	8.8	6.7	5.0	3.8	3.4	3.8	1.7	1.3	1.3
53°	10.5	8.0	6.3	5.5	3.8	3.4	2.5	3.4	1.7	1.3	1.3
54°	7.1	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	2.9	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°	2.9	2.9	2.9	2.1	0.8	0.8	0.4	1.7	1.7	1.3	1.7
61°	2.9	2.9	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: LDA6A15930D010TE 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



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CATALOG NUMBER: LDA6A15930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	137.1	137.1	137.1
2.5°	52.4	37.7	34.4
5°	21.0	17.2	15.5
7.5°	13.0	10.9	10.1
10°	10.5	8.0	7.5
12.5°	8.4	7.1	6.7
15°	8.0	6.7	6.3
17.5°	8.0	7.5	7.1
20°	10.1	10.1	10.5
22.5°	17.2	20.1	22.6
25°	83.5	135.0	179.1
26°	174.9	246.6	263.8
27°	216.8	224.4	215.6
28°	166.9	149.7	140.9
29°	89.3	74.7	68.4
30°	35.6	29.4	27.7
31°	17.2	14.7	14.3
32°	9.6	8.0	8.0
33°	5.9	5.0	4.6
34°	4.2	3.4	2.9
35°	2.9	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: P175460

CATALOG NUMBER: LDA6A15930D010TE 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)