

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: P175444

Luminaire Tested: **LDA6A20930D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175444
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: LDA6A20930D010TE 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: 1154.4 lumens
Efficiency: N/A
Efficacy: 39.6 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

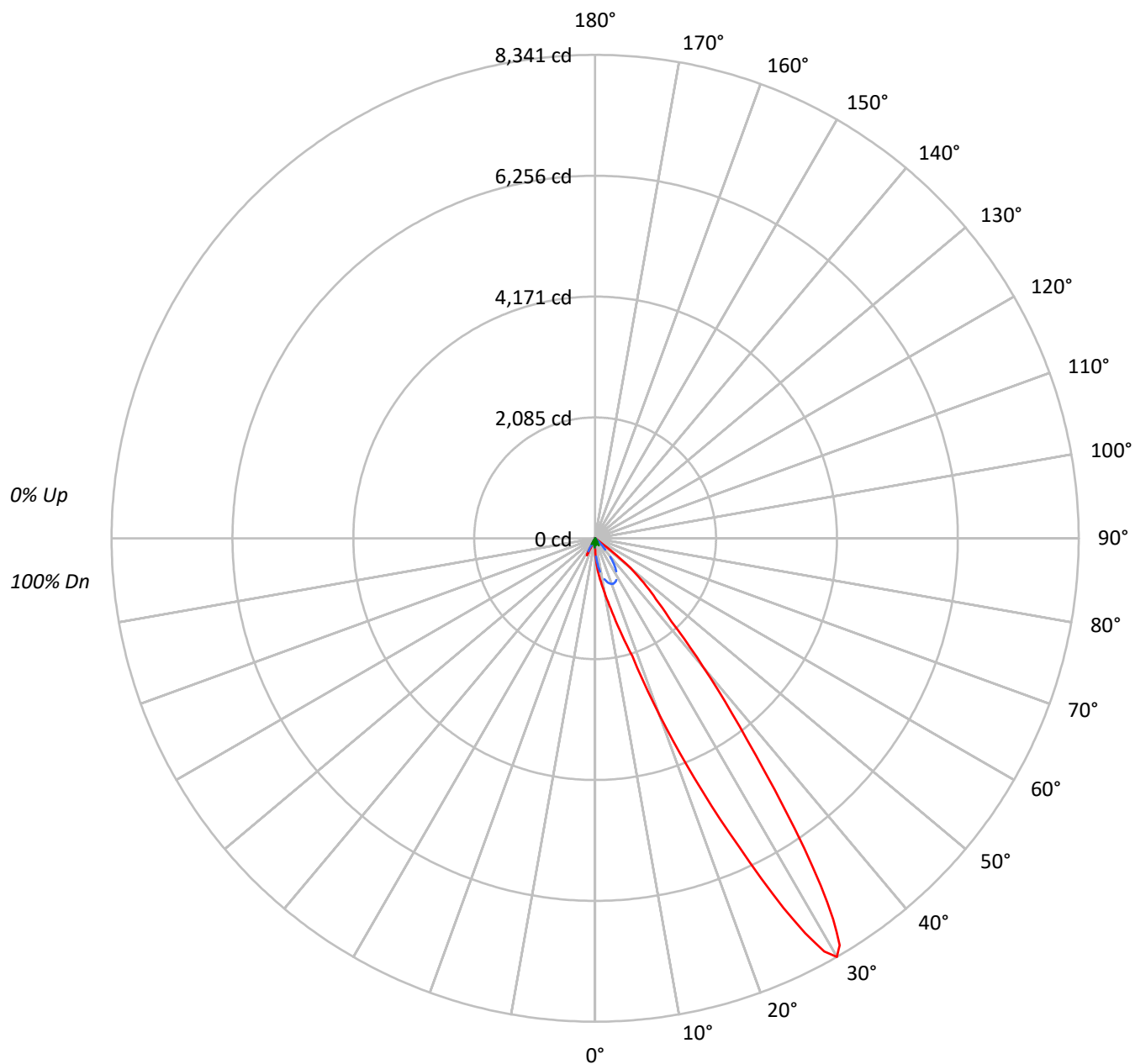
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9314	9314	9314
5°	31851	7919	1057
10°	53306	4398	523
15°	92600	1623	443
20°	189186	1062	758
25°	355127	2075	13422
30°	528012	3621	2171
35°	381053	281	174
40°	206973	115	0
45°	114888	124	0
50°	67230	136	0
55°	2131	96	0
60°	746	175	0
65°	337	208	0
70°	256	256	0
75°	106	445	0
80°	0	663	0
85°	0	1321	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.8	2.1
10°-20°	123.6	10.7
20°-30°	397.8	34.5
30°-40°	414.1	35.9
40°-50°	176.4	15.3
50°-60°	14.7	1.3
60°-70°	1.5	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°	545.1	47.2
0°-40°	959.2	83.1
0°-60°	1150.3	99.6
0°-90°	1154.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1154.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	170	170	170	170	170	
5°	579	422	144	26	19	66
15°	1632	777	29	10	8	533
25°	5871	827	34	103	222	2820
35°	5694	591	4	4	3	3525
45°	1482	101	2	1	0	1219
55°	22	3	1	1	0	140
65°	3	2	2	1	0	3
75°	0	2	2	2	0	0
85°	0	2	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P175444

CATALOG NUMBER: LDA6A20930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9
2.5°	377.2	357.5	372.6	363.7	358.0	356.5	365.3	355.4	345.0	344.5	341.4
5°	578.8	560.1	575.7	562.2	556.0	550.8	554.9	538.8	521.7	522.2	514.4
7.5°	754.5	744.1	754.5	739.9	735.3	730.1	728.5	712.9	692.6	694.2	682.2
10°	957.6	927.5	944.1	912.4	904.6	890.6	885.9	860.5	828.3	826.7	809.6
12.5°	1237.7	1225.8	1242.4	1197.7	1188.4	1164.4	1151.5	1110.9	1057.9	1044.4	1004.9
15°	1631.6	1593.1	1609.8	1546.9	1529.2	1487.6	1459.1	1396.2	1345.8	1288.6	1228.4
17.5°	2132.0	2110.1	2131.4	2007.8	1962.1	1881.0	1814.0	1709.0	1602.0	1550.5	1465.8
20°	3242.9	3139.0	3150.4	2920.7	2774.2	2556.0	2381.4	2149.6	1937.1	1815.0	1675.2
22.5°	4475.9	4357.5	4328.4	4033.2	3784.9	3457.0	3150.4	2762.8	2386.1	2113.3	1876.3
25°	5871.1	5794.2	5641.9	5158.7	4731.6	4263.9	3812.9	3305.8	2817.3	2399.6	2044.2
26°	6533.6	6471.8	6243.1	5638.8	5086.0	4526.3	4010.9	3466.3	2939.4	2481.1	2083.6
27°	7162.8	7113.0	6815.7	6112.2	5421.1	4747.7	4154.8	3580.6	3027.3	2533.6	2111.7
28°	7717.3	7666.3	7282.4	6513.3	5686.6	4907.7	4245.2	3651.8	3077.7	2546.1	2110.1
29°	8148.5	8084.1	7588.4	6770.5	5842.5	4984.6	4263.4	3660.7	3070.4	2517.0	2081.0
30°	8341.3	8261.3	7675.7	6825.6	5845.1	4955.5	4212.0	3613.4	3011.1	2448.4	2027.0
31°	8190.1	8122.0	7517.2	6666.6	5686.6	4822.5	4084.1	3504.3	2898.9	2349.2	1955.3
32°	7749.5	7687.1	7129.6	6317.4	5386.8	4597.5	3898.6	3348.4	2749.8	2229.1	1872.2
33°	7145.2	7096.9	6597.0	5837.8	5001.8	4320.6	3676.8	3153.0	2570.5	2094.6	1770.8
34°	6455.7	6417.7	5961.5	5295.9	4581.4	4013.0	3423.7	2871.9	2374.6	1958.9	1695.0
35°	5693.9	5667.9	5295.9	4739.4	4163.1	3693.4	3142.6	2623.5	2177.2	1828.5	1613.4
36°	4970.1	4948.8	4665.1	4229.1	3765.1	3361.9	2838.1	2364.8	1988.0	1711.1	1537.0
37°	4351.7	4336.2	4126.2	3775.0	3382.7	3017.4	2527.9	2122.6	1823.3	1608.7	1458.5
38°	3837.3	3824.9	3654.4	3343.2	2988.8	2660.9	2228.6	1908.5	1683.0	1519.9	1369.7
39°	3357.7	3341.6	3188.3	2906.7	2596.5	2313.8	2030.1	1732.4	1572.9	1427.4	1274.1
40°	2892.2	2871.4	2736.8	2497.3	2238.5	2019.2	1764.6	1624.3	1483.5	1319.8	1176.4
42.5°	1940.7	1929.3	1856.1	1748.0	1638.3	1558.3	1477.8	1352.5	1203.9	1068.8	962.8
45°	1481.9	1479.3	1443.5	1386.8	1314.1	1246.5	1139.0	1066.8	966.5	852.7	776.8
47.5°	1136.9	1137.4	1104.2	1061.6	1011.7	968.0	889.6	831.9	760.2	695.2	636.5
50°	788.3	755.0	759.7	725.9	685.4	659.9	587.2	543.0	441.2	338.3	264.5
51°	590.8	547.2	552.9	514.9	472.8	450.5	382.4	337.7	242.1	159.0	103.9
52°	360.6	326.3	325.8	296.7	260.3	240.6	186.5	145.5	82.6	43.6	30.1
53°	161.6	138.7	133.5	113.8	89.4	77.4	53.0	39.0	29.1	22.3	17.1
54°	42.6	37.9	36.4	33.3	30.1	29.1	25.5	21.3	16.6	13.0	10.9
55°	22.3	20.8	20.3	19.2	17.7	17.1	15.1	13.0	10.4	9.4	8.3
57.5°	10.4	10.4	9.9	9.4	8.8	8.8	7.8	7.3	6.8	6.8	5.7
60°	6.8	6.8	6.8	6.2	6.2	5.7	5.2	4.7	4.2	4.7	4.2
61°	5.7	5.7	5.7	5.2	4.7	4.2	4.2	4.2	3.6	3.6	3.1
62°	4.2	4.2	3.6	3.6	3.1	3.1	3.1	3.1	2.6	3.1	3.1
63°	3.1	3.1	2.6	2.6	2.6	2.6	2.1	2.1	2.1	3.1	3.1
64°	2.6	2.6	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.1
65°	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	2.1	2.1
66°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6	2.1	2.1



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CATALOG NUMBER: LDA6A20930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
75°	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
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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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9	169.9
2.5°	341.4	335.1	322.2	319.6	307.1	299.8	301.9	297.7	231.2	163.2	101.8
5°	508.7	494.7	475.4	468.7	447.4	436.0	432.3	421.9	286.3	143.9	47.8
7.5°	672.4	654.2	630.8	619.9	590.8	571.6	559.1	543.5	324.2	114.3	26.5
10°	794.0	773.2	748.8	734.7	702.0	682.8	662.5	645.4	344.5	79.0	19.7
12.5°	956.1	915.0	864.1	833.5	785.1	758.6	735.3	718.6	352.3	47.3	15.1
15°	1172.2	1106.3	1034.0	978.4	896.3	846.4	807.0	776.8	346.1	28.6	13.0
17.5°	1381.6	1288.1	1193.5	1118.2	1024.2	949.8	874.0	814.8	319.6	22.9	12.0
20°	1555.7	1446.1	1325.5	1220.0	1111.4	1023.1	922.3	838.7	277.0	18.2	13.0
22.5°	1689.8	1550.0	1413.3	1282.4	1153.0	1051.7	941.0	843.8	222.9	18.7	18.2
25°	1786.4	1603.0	1457.5	1308.4	1167.6	1056.4	931.1	827.2	164.2	34.3	61.3
26°	1806.2	1613.9	1463.2	1305.8	1162.4	1048.6	919.7	816.8	148.1	68.1	135.1
27°	1817.1	1612.4	1459.1	1295.4	1151.5	1037.1	906.7	807.5	145.5	116.4	201.6
28°	1807.2	1599.4	1441.4	1276.7	1133.8	1022.1	891.7	796.6	143.9	142.9	191.2
29°	1780.2	1576.5	1414.9	1247.6	1106.8	998.2	868.8	781.0	128.9	113.8	115.4
30°	1739.1	1544.3	1376.5	1208.6	1072.5	963.9	836.1	756.0	85.2	57.2	48.8
31°	1688.2	1502.7	1329.2	1163.4	1033.5	922.3	801.8	723.8	44.2	24.4	22.9
32°	1632.1	1452.8	1278.2	1117.7	994.0	882.3	773.2	695.2	29.1	13.5	13.0
33°	1572.9	1394.6	1222.1	1070.4	949.8	837.6	743.6	664.6	21.8	8.3	7.8
34°	1514.7	1332.3	1165.5	1019.5	902.0	797.6	716.5	629.2	17.7	6.2	5.2
35°	1448.7	1264.7	1107.3	965.4	850.6	763.3	689.5	590.8	14.0	4.2	4.2
36°	1371.8	1193.0	1047.0	908.8	801.8	731.6	659.9	548.7	10.9	3.1	3.6
37°	1290.2	1121.8	986.2	852.7	761.8	702.5	624.1	505.6	9.4	2.6	3.1
38°	1206.0	1051.2	920.8	798.6	726.9	670.8	583.5	460.9	7.8	2.1	2.6
39°	1123.4	978.9	855.3	755.0	694.2	633.4	537.3	415.2	6.8	2.1	2.6
40°	1042.9	906.2	797.1	717.1	657.8	587.7	489.5	367.4	4.7	1.6	2.6
42.5°	851.6	755.5	686.4	606.4	539.4	460.4	360.1	238.5	3.6	1.6	2.1
45°	712.9	633.9	553.4	463.0	397.0	315.9	213.0	101.3	3.6	1.6	2.1
47.5°	563.8	470.8	352.3	238.0	155.4	80.0	24.9	14.0	2.6	1.6	2.1
50°	164.2	95.1	35.3	21.3	16.1	9.9	6.2	5.7	2.1	1.6	2.1
51°	47.3	28.1	18.7	12.5	9.4	5.7	4.7	5.2	2.1	1.6	1.6
52°	22.3	16.1	10.9	8.3	6.2	4.7	4.2	4.7	2.1	1.6	1.6
53°	13.0	9.9	7.8	6.8	4.7	4.2	3.1	4.2	2.1	1.6	1.6
54°	8.8	7.8	6.8	5.7	4.2	3.1	3.1	4.2	2.1	1.6	1.6
55°	7.8	6.8	5.7	5.2	3.6	3.1	3.1	3.1	1.6	1.0	1.6
57.5°	5.2	5.2	4.2	4.2	3.1	2.1	1.0	2.6	2.1	1.6	1.6
60°	3.6	3.6	3.6	2.6	1.0	1.0	0.5	2.1	2.1	1.6	2.1
61°	3.6	3.6	2.6	2.1	1.0	1.0	0.5	2.1	2.1	1.6	2.1
62°	3.1	2.6	2.1	2.1	1.0	1.0	0.5	2.1	2.1	1.6	2.1
63°	2.6	2.1	2.1	2.1	1.0	0.5	0.5	2.1	2.1	1.6	2.1
64°	2.1	2.1	2.1	2.1	0.5	0.5	0.5	2.1	2.1	1.6	2.1
65°	2.1	2.1	2.1	1.6	0.5	0.5	0.5	1.6	2.1	1.6	2.1
66°	2.1	2.1	1.6	1.6	0.5	0.5	0.5	1.6	2.1	1.6	2.1



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CATALOG NUMBER: LDA6A20930D010TE 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°	0.5	1.0	1.0	1.0	0.0	0.0	0.0	1.6	2.1	1.6	2.1
75°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.1
77.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.6
80°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.6
82.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.6
85°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.6
87.5°	0.5	0.5	1.0	1.0	0.0	0.0	0.0	1.6	2.1	2.1	2.6
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: P175444

CATALOG NUMBER: LDA6A20930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	169.9	169.9	169.9
2.5°	65.0	46.8	42.6
5°	26.0	21.3	19.2
7.5°	16.1	13.5	12.5
10°	13.0	9.9	9.4
12.5°	10.4	8.8	8.3
15°	9.9	8.3	7.8
17.5°	9.9	9.4	8.8
20°	12.5	12.5	13.0
22.5°	21.3	24.9	28.1
25°	103.4	167.3	221.9
26°	216.7	305.5	326.8
27°	268.6	278.0	267.1
28°	206.8	185.5	174.6
29°	110.7	92.5	84.7
30°	44.2	36.4	34.3
31°	21.3	18.2	17.7
32°	12.0	9.9	9.9
33°	7.3	6.2	5.7
34°	5.2	4.2	3.6
35°	3.6	3.1	2.6
36°	3.1	2.1	1.6
37°	2.6	1.6	1.6
38°	2.1	1.6	1.0
39°	1.6	1.0	0.5
40°	1.6	0.5	0.0
42.5°	1.0	0.5	0.0
45°	1.0	0.0	0.0
47.5°	1.6	1.0	0.5
50°	1.0	0.5	0.0
51°	1.0	0.0	0.0
52°	1.0	0.0	0.0
53°	1.0	0.0	0.0
54°	1.0	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.0	0.0	0.0
60°	1.0	0.0	0.0
61°	1.0	0.0	0.0
62°	1.0	0.0	0.0
63°	1.0	0.5	0.0
64°	1.0	0.5	0.0
65°	1.0	0.5	0.0
66°	1.0	0.5	0.0



TEST NUMBER: P175444

CATALOG NUMBER: LDA6A20930D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.6	0.5	0.0
75°	1.6	0.5	0.0
77.5°	1.6	0.5	0.0
80°	1.6	0.5	0.0
82.5°	1.6	0.5	0.0
85°	1.6	0.5	0.0
87.5°	1.6	0.5	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.0	1.0	1.6	1.6
70°	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0





67.5°	1.6	1.6	1.6	1.6	0.5	0.0	0.0	1.6	2.1	1.6	2.1
70°	1.0	1.0	1.0	1.0	0.0	0.0	0.0	1.6	2.1	1.6	2.1





67.5°	1.6	0.5	0.0
70°	1.6	0.5	0.0



(END OF REPORT)