

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: P175469

Luminaire Tested: **LDA6A30935D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175469
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: LDA6A30935D010TE 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: 1821.5 lumens
Efficiency: N/A
Efficacy: 40.9 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

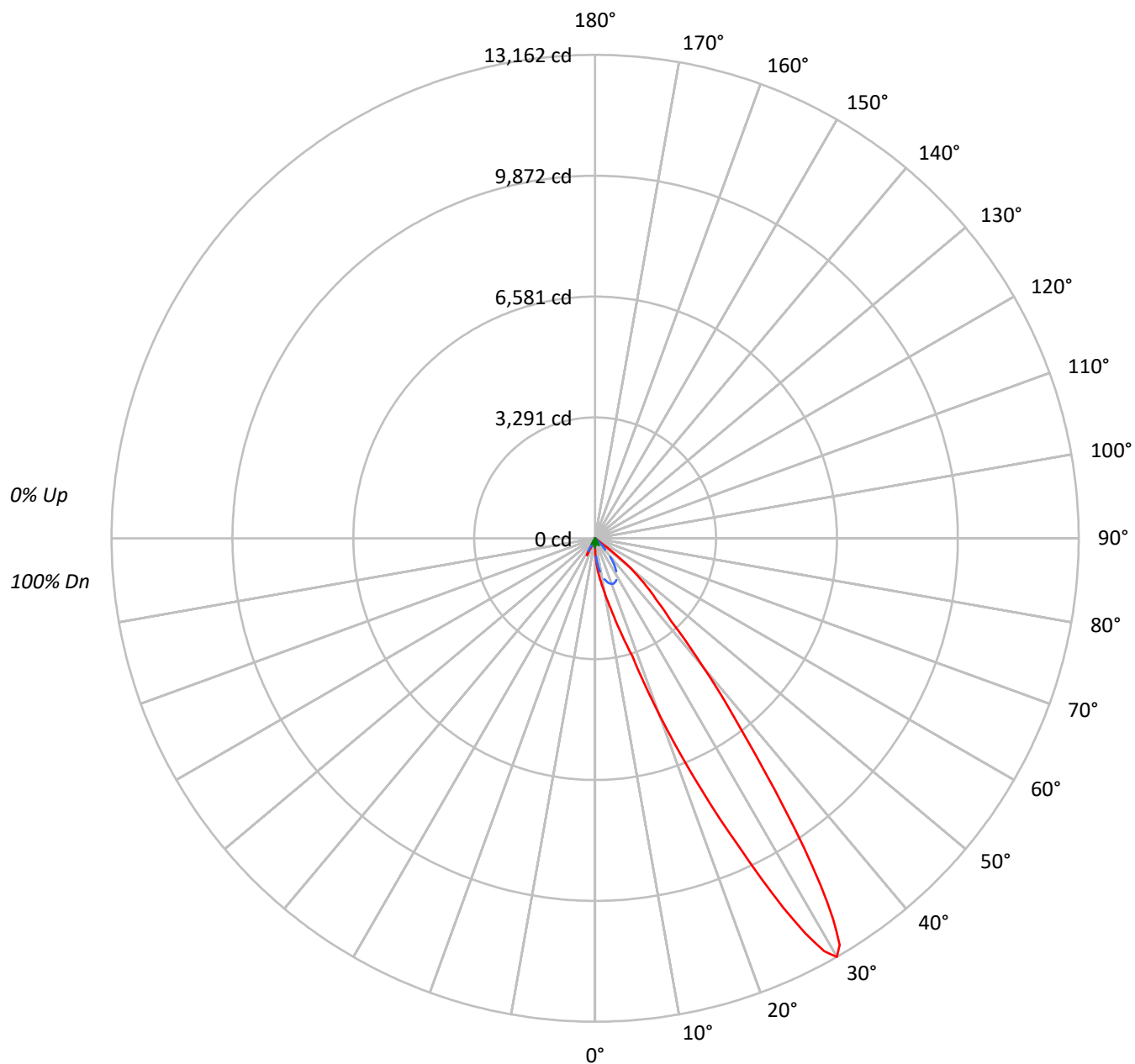
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
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°	14697	14697	14697
5°	50264	12497	1667
10°	84117	6936	824
15°	146113	2560	698
20°	298518	1674	1196
25°	560361	3272	21177
30°	833160	5710	3425
35°	601270	442	274
40°	326583	179	0
45°	181290	194	0
50°	106078	213	0
55°	3374	153	0
60°	1173	274	0
65°	532	324	0
70°	401	401	0
75°	169	699	0
80°	0	1042	0
85°	0	2076	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.5	2.1
10°-20°	195.0	10.7
20°-30°	627.6	34.5
30°-40°	653.4	35.9
40°-50°	278.4	15.3
50°-60°	23.1	1.3
60°-70°	2.4	0.1
70°-80°	2.1	0.1
80°-90°	1.9	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°	860.2	47.2
0°-40°	1513.6	83.1
0°-60°	1815.1	99.6
0°-90°	1821.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1821.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	268	268	268	268	268	
5°	913	666	227	41	30	104
15°	2574	1226	45	16	12	842
25°	9264	1305	54	163	350	4449
35°	8984	932	7	6	4	5562
45°	2338	160	2	2	0	1923
55°	35	5	2	2	0	220
65°	4	2	2	2	0	5
75°	1	2	3	2	0	1
85°	0	2	3	2	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°	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1
2.5°	595.2	564.1	587.9	573.9	564.9	562.5	576.4	560.8	544.4	543.6	538.7
5°	913.4	883.9	908.5	887.1	877.3	869.1	875.7	850.2	823.2	824.0	811.7
7.5°	1190.5	1174.1	1190.5	1167.5	1160.2	1152.0	1149.5	1124.9	1092.9	1095.4	1076.5
10°	1511.1	1463.5	1489.8	1439.7	1427.5	1405.3	1397.9	1357.8	1306.9	1304.5	1277.4
12.5°	1953.0	1934.2	1960.4	1889.9	1875.1	1837.4	1816.9	1753.0	1669.3	1648.0	1585.7
15°	2574.5	2513.8	2540.1	2440.8	2413.0	2347.4	2302.3	2203.1	2123.5	2033.4	1938.2
17.5°	3364.1	3329.6	3363.2	3168.1	3096.0	2968.0	2862.3	2696.7	2527.8	2446.6	2312.9
20°	5117.0	4953.0	4971.1	4608.7	4377.5	4033.1	3757.6	3391.9	3056.6	2863.9	2643.4
22.5°	7062.6	6875.7	6829.8	6364.1	5972.2	5454.8	4971.1	4359.4	3765.0	3334.5	2960.7
25°	9264.1	9142.7	8902.5	8140.0	7466.0	6728.1	6016.4	5216.2	4445.5	3786.3	3225.5
26°	10309.5	10211.9	9851.1	8897.6	8025.2	7142.2	6328.8	5469.6	4638.2	3915.0	3287.8
27°	11302.4	11223.6	10754.7	9644.5	8554.0	7491.4	6555.9	5649.9	4776.8	3997.8	3332.1
28°	12177.2	12096.8	11490.9	10277.5	8973.0	7744.0	6698.6	5762.3	4856.3	4017.5	3329.6
29°	12857.7	12756.0	11973.9	10683.3	9219.0	7865.3	6727.3	5776.2	4844.8	3971.6	3283.7
30°	13161.9	13035.6	12111.6	10770.2	9223.1	7819.4	6646.1	5701.6	4751.3	3863.4	3198.4
31°	12923.3	12815.9	11861.5	10519.4	8973.0	7609.5	6444.4	5529.4	4574.2	3706.8	3085.3
32°	12228.0	12129.6	11249.9	9968.4	8499.9	7254.5	6151.7	5283.5	4338.9	3517.4	2954.1
33°	11274.5	11198.2	10409.5	9211.6	7892.4	6817.5	5801.6	4975.2	4056.1	3305.0	2794.2
34°	10186.5	10126.6	9406.7	8356.4	7229.1	6332.1	5402.3	4531.6	3747.0	3091.0	2674.5
35°	8984.5	8943.5	8356.4	7478.3	6569.1	5827.9	4958.8	4139.7	3435.4	2885.2	2545.8
36°	7842.4	7808.8	7361.1	6673.2	5941.0	5304.8	4478.3	3731.4	3136.9	2699.9	2425.3
37°	6866.7	6842.1	6510.8	5956.6	5337.6	4761.2	3988.8	3349.3	2877.0	2538.4	2301.5
38°	6055.0	6035.3	5766.4	5275.3	4716.1	4198.7	3516.6	3011.5	2655.7	2398.2	2161.3
39°	5298.2	5272.8	5030.9	4586.5	4097.1	3651.0	3203.4	2733.6	2481.8	2252.3	2010.4
40°	4563.6	4530.8	4318.4	3940.5	3532.1	3186.1	2784.4	2563.0	2340.8	2082.6	1856.3
42.5°	3062.3	3044.3	2928.7	2758.2	2585.2	2458.9	2331.8	2134.2	1899.7	1686.5	1519.3
45°	2338.4	2334.3	2277.7	2188.3	2073.5	1966.9	1797.2	1683.3	1525.0	1345.5	1225.8
47.5°	1793.9	1794.8	1742.3	1675.1	1596.4	1527.5	1403.7	1312.7	1199.5	1097.0	1004.4
50°	1243.8	1191.3	1198.7	1145.4	1081.5	1041.3	926.5	856.8	696.1	533.8	417.3
51°	932.2	863.4	872.4	812.5	746.1	710.9	603.4	532.9	382.1	250.9	164.0
52°	569.0	514.9	514.1	468.2	410.8	379.6	294.3	229.6	130.4	68.9	47.6
53°	255.0	218.9	210.7	179.6	141.0	122.2	83.6	61.5	45.9	35.3	27.1
54°	67.2	59.9	57.4	52.5	47.6	45.9	40.2	33.6	26.2	20.5	17.2
55°	35.3	32.8	32.0	30.3	27.9	27.1	23.8	20.5	16.4	14.8	13.1
57.5°	16.4	16.4	15.6	14.8	13.9	13.9	12.3	11.5	10.7	10.7	9.0
60°	10.7	10.7	10.7	9.8	9.8	9.0	8.2	7.4	6.6	7.4	6.6
61°	9.0	9.0	9.0	8.2	7.4	6.6	6.6	6.6	5.7	5.7	4.9
62°	6.6	6.6	5.7	5.7	4.9	4.9	4.9	4.9	4.1	4.9	4.9
63°	4.9	4.9	4.1	4.1	4.1	4.1	3.3	3.3	3.3	4.9	4.9
64°	4.1	4.1	4.1	3.3	3.3	3.3	3.3	3.3	3.3	4.1	3.3
65°	4.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.5	3.3	3.3
66°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.5	2.5	3.3	3.3



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CATALOG NUMBER: LDA6A30935D010TE 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°	0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.8
75°	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
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°	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1	268.1
2.5°	538.7	528.8	508.3	504.2	484.6	473.1	476.4	469.8	364.9	257.4	160.7
5°	802.7	780.5	750.2	739.6	705.9	687.9	682.2	665.8	451.8	227.1	75.4
7.5°	1061.0	1032.3	995.4	978.1	932.2	901.9	882.2	857.6	511.6	180.4	41.8
10°	1252.8	1220.0	1181.5	1159.3	1107.7	1077.4	1045.4	1018.3	543.6	124.6	31.2
12.5°	1508.6	1443.8	1363.5	1315.1	1238.9	1197.1	1160.2	1133.9	555.9	74.6	23.8
15°	1849.7	1745.6	1631.6	1543.9	1414.3	1335.6	1273.3	1225.8	546.1	45.1	20.5
17.5°	2180.1	2032.5	1883.3	1764.4	1616.0	1498.8	1379.1	1285.6	504.2	36.1	18.9
20°	2454.8	2281.8	2091.6	1925.1	1753.8	1614.4	1455.3	1323.3	437.0	28.7	20.5
22.5°	2666.3	2445.8	2230.1	2023.5	1819.4	1659.5	1484.8	1331.5	351.7	29.5	28.7
25°	2818.8	2529.4	2299.8	2064.5	1842.3	1666.9	1469.3	1305.3	259.1	54.1	96.7
26°	2850.0	2546.6	2308.8	2060.4	1834.1	1654.6	1451.2	1288.9	233.7	107.4	213.2
27°	2867.2	2544.2	2302.3	2044.0	1816.9	1636.5	1430.7	1274.1	229.6	183.7	318.1
28°	2851.6	2523.7	2274.4	2014.5	1789.0	1612.7	1407.0	1256.9	227.1	225.5	301.7
29°	2809.0	2487.6	2232.6	1968.6	1746.4	1575.0	1370.9	1232.3	203.3	179.6	182.0
30°	2744.2	2436.8	2171.9	1907.1	1692.3	1520.9	1319.2	1193.0	134.5	90.2	77.1
31°	2663.9	2371.2	2097.3	1835.8	1630.8	1455.3	1265.1	1142.1	69.7	38.5	36.1
32°	2575.3	2292.4	2017.0	1763.6	1568.5	1392.2	1220.0	1097.0	45.9	21.3	20.5
33°	2481.8	2200.6	1928.4	1689.0	1498.8	1321.7	1173.3	1048.7	34.4	13.1	12.3
34°	2390.0	2102.2	1839.0	1608.6	1423.4	1258.6	1130.6	992.9	27.9	9.8	8.2
35°	2285.9	1995.6	1747.2	1523.4	1342.2	1204.4	1088.0	932.2	22.1	6.6	6.6
36°	2164.5	1882.5	1652.1	1434.0	1265.1	1154.4	1041.3	865.8	17.2	4.9	5.7
37°	2035.8	1770.2	1556.2	1345.5	1202.0	1108.5	984.7	797.8	14.8	4.1	4.9
38°	1903.0	1658.7	1452.9	1260.2	1147.0	1058.5	920.8	727.3	12.3	3.3	4.1
39°	1772.6	1544.7	1349.6	1191.3	1095.4	999.5	847.8	655.1	10.7	3.3	4.1
40°	1645.5	1429.9	1257.7	1131.5	1038.0	927.3	772.3	579.7	7.4	2.5	4.1
42.5°	1343.8	1192.1	1083.1	956.8	851.1	726.4	568.2	376.3	5.7	2.5	3.3
45°	1124.9	1000.3	873.2	730.5	626.4	498.5	336.2	159.9	5.7	2.5	3.3
47.5°	889.6	742.8	555.9	375.5	245.2	126.3	39.4	22.1	4.1	2.5	3.3
50°	259.1	150.0	55.8	33.6	25.4	15.6	9.8	9.0	3.3	2.5	3.3
51°	74.6	44.3	29.5	19.7	14.8	9.0	7.4	8.2	3.3	2.5	2.5
52°	35.3	25.4	17.2	13.1	9.8	7.4	6.6	7.4	3.3	2.5	2.5
53°	20.5	15.6	12.3	10.7	7.4	6.6	4.9	6.6	3.3	2.5	2.5
54°	13.9	12.3	10.7	9.0	6.6	4.9	4.9	6.6	3.3	2.5	2.5
55°	12.3	10.7	9.0	8.2	5.7	4.9	4.9	4.9	2.5	1.6	2.5
57.5°	8.2	8.2	6.6	6.6	4.9	3.3	1.6	4.1	3.3	2.5	2.5
60°	5.7	5.7	5.7	4.1	1.6	1.6	0.8	3.3	3.3	2.5	3.3
61°	5.7	5.7	4.1	3.3	1.6	1.6	0.8	3.3	3.3	2.5	3.3
62°	4.9	4.1	3.3	3.3	1.6	1.6	0.8	3.3	3.3	2.5	3.3
63°	4.1	3.3	3.3	3.3	1.6	0.8	0.8	3.3	3.3	2.5	3.3
64°	3.3	3.3	3.3	3.3	0.8	0.8	0.8	3.3	3.3	2.5	3.3
65°	3.3	3.3	3.3	2.5	0.8	0.8	0.8	2.5	3.3	2.5	3.3
66°	3.3	3.3	2.5	2.5	0.8	0.8	0.8	2.5	3.3	2.5	3.3



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CATALOG NUMBER: LDA6A30935D010TE 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°	0.8	1.6	1.6	1.6	0.0	0.0	0.0	2.5	3.3	2.5	3.3
75°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	3.3
77.5°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	4.1
80°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	4.1
82.5°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	4.1
85°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	4.1
87.5°	0.8	0.8	1.6	1.6	0.0	0.0	0.0	2.5	3.3	3.3	4.1
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: P175469

CATALOG NUMBER: LDA6A30935D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	268.1	268.1	268.1
2.5°	102.5	73.8	67.2
5°	41.0	33.6	30.3
7.5°	25.4	21.3	19.7
10°	20.5	15.6	14.8
12.5°	16.4	13.9	13.1
15°	15.6	13.1	12.3
17.5°	15.6	14.8	13.9
20°	19.7	19.7	20.5
22.5°	33.6	39.4	44.3
25°	163.2	264.0	350.1
26°	341.9	482.1	515.7
27°	423.9	438.6	421.4
28°	326.3	292.7	275.5
29°	174.6	145.9	133.6
30°	69.7	57.4	54.1
31°	33.6	28.7	27.9
32°	18.9	15.6	15.6
33°	11.5	9.8	9.0
34°	8.2	6.6	5.7
35°	5.7	4.9	4.1
36°	4.9	3.3	2.5
37°	4.1	2.5	2.5
38°	3.3	2.5	1.6
39°	2.5	1.6	0.8
40°	2.5	0.8	0.0
42.5°	1.6	0.8	0.0
45°	1.6	0.0	0.0
47.5°	2.5	1.6	0.8
50°	1.6	0.8	0.0
51°	1.6	0.0	0.0
52°	1.6	0.0	0.0
53°	1.6	0.0	0.0
54°	1.6	0.0	0.0
55°	1.6	0.0	0.0
57.5°	1.6	0.0	0.0
60°	1.6	0.0	0.0
61°	1.6	0.0	0.0
62°	1.6	0.0	0.0
63°	1.6	0.8	0.0
64°	1.6	0.8	0.0
65°	1.6	0.8	0.0
66°	1.6	0.8	0.0



TEST NUMBER: P175469

CATALOG NUMBER: LDA6A30935D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.5	0.8	0.0
75°	2.5	0.8	0.0
77.5°	2.5	0.8	0.0
80°	2.5	0.8	0.0
82.5°	2.5	0.8	0.0
85°	2.5	0.8	0.0
87.5°	2.5	0.8	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	3.3	2.5	2.5	2.5	2.5	2.5	2.5	1.6	1.6	2.5	2.5
70°	2.5	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6





67.5°	2.5	2.5	2.5	2.5	0.8	0.0	0.0	2.5	3.3	2.5	3.3
70°	1.6	1.6	1.6	1.6	0.0	0.0	0.0	2.5	3.3	2.5	3.3





67.5°	2.5	0.8	0.0
70°	2.5	0.8	0.0



(END OF REPORT)