

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: P175440

Luminaire Tested: **LDA6A20830D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175440
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: LDA6A20830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1349.7 lumens
Efficiency: N/A
Efficacy: 46.4 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

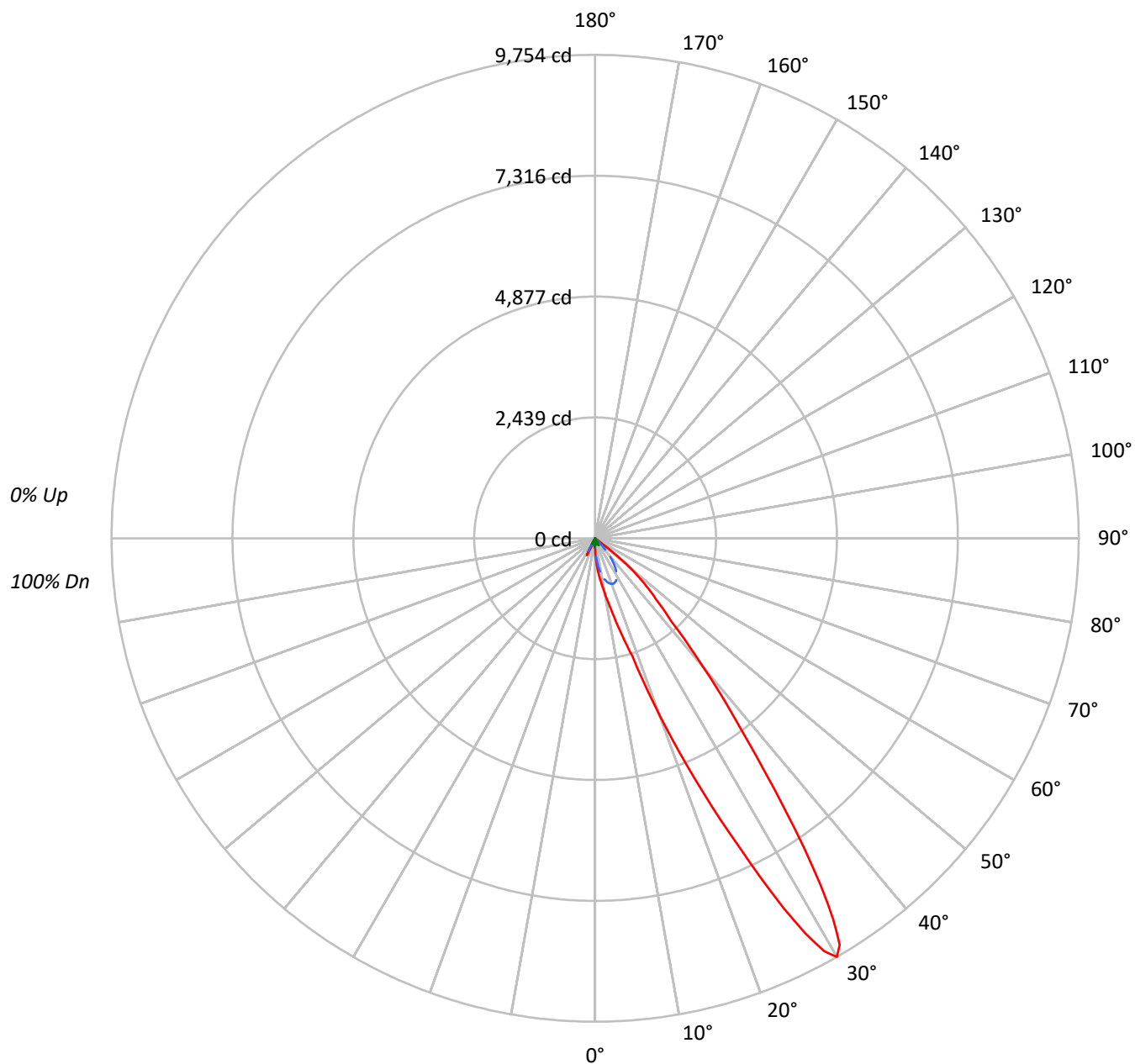
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	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	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°	10893	10893	10893
5°	37250	9261	1238
10°	62335	5144	607
15°	108281	1896	516
20°	221219	1243	887
25°	415264	2426	15690
30°	617424	4228	2538
35°	445580	328	201
40°	242018	129	0
45°	134347	140	0
50°	78607	154	0
55°	2495	115	0
60°	866	197	0
65°	389	233	0
70°	289	289	0
75°	127	508	0
80°	0	758	0
85°	0	1510	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.8	2.1
10°-20°	144.5	10.7
20°-30°	465.1	34.5
30°-40°	484.2	35.9
40°-50°	206.3	15.3
50°-60°	17.1	1.3
60°-70°	1.7	0.1
70°-80°	1.5	0.1
80°-90°	1.4	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°	637.5	47.2
0°-40°	1121.7	83.1
0°-60°	1345.1	99.7
0°-90°	1349.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1349.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	199	199	199	199	199	
5°	677	493	168	30	22	77
15°	1908	908	33	12	9	624
25°	6865	967	40	121	259	3297
35°	6658	691	5	4	3	4122
45°	1733	118	2	1	0	1425
55°	26	4	1	1	0	163
65°	3	2	2	1	0	3
75°	1	2	2	2	0	1
85°	0	2	2	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°	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7
2.5°	441.1	418.0	435.7	425.3	418.6	416.8	427.1	415.6	403.4	402.8	399.2
5°	676.9	655.0	673.2	657.4	650.1	644.1	648.9	630.1	610.0	610.6	601.5
7.5°	882.2	870.1	882.2	865.2	859.8	853.7	851.9	833.6	809.9	811.8	797.8
10°	1119.8	1084.6	1104.0	1067.0	1057.8	1041.4	1036.0	1006.2	968.5	966.7	946.6
12.5°	1447.3	1433.3	1452.8	1400.5	1389.6	1361.6	1346.4	1299.1	1237.1	1221.3	1175.1
15°	1907.9	1862.9	1882.4	1808.8	1788.2	1739.6	1706.1	1632.6	1573.7	1506.9	1436.4
17.5°	2493.0	2467.5	2492.4	2347.8	2294.3	2199.5	2121.1	1998.4	1873.2	1813.1	1714.0
20°	3792.0	3670.5	3683.9	3415.3	3244.0	2988.8	2784.6	2513.7	2265.1	2122.4	1958.9
22.5°	5233.9	5095.4	5061.3	4716.2	4425.8	4042.4	3683.9	3230.6	2790.1	2471.1	2194.1
25°	6865.3	6775.4	6597.4	6032.3	5532.8	4986.0	4458.6	3865.6	3294.4	2805.9	2390.3
26°	7640.0	7567.7	7300.3	6593.7	5947.2	5292.8	4690.1	4053.3	3437.2	2901.3	2436.5
27°	8375.8	8317.5	7969.9	7147.2	6339.1	5551.7	4858.4	4187.0	3539.9	2962.7	2469.3
28°	9024.1	8964.6	8515.6	7616.3	6649.6	5738.8	4964.1	4270.2	3598.8	2977.3	2467.5
29°	9528.4	9453.1	8873.4	7917.1	6831.9	5828.7	4985.4	4280.6	3590.3	2943.2	2433.4
30°	9753.8	9660.3	8975.5	7981.5	6834.9	5794.7	4925.2	4225.3	3521.1	2863.0	2370.3
31°	9577.0	9497.4	8790.2	7795.5	6649.6	5639.2	4775.8	4097.7	3389.8	2747.0	2286.4
32°	9061.8	8988.9	8336.9	7387.2	6299.0	5376.1	4558.8	3915.4	3215.4	2606.6	2189.2
33°	8355.1	8298.6	7714.1	6826.4	5848.8	5052.2	4299.4	3686.9	3005.8	2449.2	2070.7
34°	7548.9	7504.5	6971.0	6192.7	5357.2	4692.5	4003.5	3358.2	2776.7	2290.7	1982.0
35°	6658.1	6627.7	6192.7	5541.9	4868.1	4318.8	3674.8	3067.8	2545.9	2138.2	1886.6
36°	5811.7	5786.8	5455.1	4945.3	4402.7	3931.2	3318.7	2765.2	2324.7	2000.8	1797.3
37°	5088.7	5070.4	4825.0	4414.2	3955.5	3528.3	2956.0	2482.1	2132.1	1881.1	1705.5
38°	4487.1	4472.6	4273.3	3909.3	3494.9	3111.5	2606.0	2231.7	1968.0	1777.2	1601.6
39°	3926.3	3907.5	3728.3	3398.9	3036.2	2705.7	2373.9	2025.7	1839.2	1669.1	1489.8
40°	3381.9	3357.6	3200.2	2920.1	2617.6	2361.1	2063.4	1899.4	1734.7	1543.3	1375.6
42.5°	2269.4	2256.0	2170.4	2044.0	1915.8	1822.2	1728.0	1581.6	1407.8	1249.8	1125.9
45°	1732.9	1729.8	1687.9	1621.7	1536.6	1457.6	1331.9	1247.4	1130.1	997.1	908.4
47.5°	1329.4	1330.0	1291.2	1241.3	1183.0	1132.0	1040.2	972.8	888.9	813.0	744.3
50°	921.7	882.8	888.3	848.8	801.4	771.7	686.6	634.9	515.9	395.5	309.3
51°	690.8	639.8	646.5	602.1	552.9	526.8	447.2	394.9	283.1	185.9	121.5
52°	421.7	381.6	381.0	346.9	304.4	281.3	218.1	170.1	96.6	51.0	35.2
53°	189.0	162.2	156.2	133.1	104.5	90.5	62.0	45.6	34.0	26.1	20.1
54°	49.8	44.4	42.5	38.9	35.2	34.0	29.8	24.9	19.4	15.2	12.8
55°	26.1	24.3	23.7	22.5	20.7	20.1	17.6	15.2	12.2	10.9	9.7
57.5°	12.2	12.2	11.5	10.9	10.3	10.3	9.1	8.5	7.9	7.9	6.7
60°	7.9	7.9	7.9	7.3	7.3	6.7	6.1	5.5	4.9	5.5	4.9
61°	6.7	6.7	6.7	6.1	5.5	4.9	4.9	4.9	4.3	4.3	3.6
62°	4.9	4.9	4.3	4.3	3.6	3.6	3.6	3.6	3.0	3.6	3.6
63°	3.6	3.6	3.0	3.0	3.0	3.0	2.4	2.4	2.4	3.6	3.6
64°	3.0	3.0	3.0	2.4	2.4	2.4	2.4	2.4	2.4	3.0	2.4
65°	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	2.4	2.4
66°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	1.8	2.4	2.4



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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°	0.6	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.6
75°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
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°	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7
2.5°	399.2	391.9	376.7	373.7	359.1	350.6	353.0	348.2	270.4	190.8	119.1
5°	594.8	578.4	556.0	548.1	523.1	509.8	505.5	493.4	334.8	168.3	55.9
7.5°	786.2	765.0	737.6	724.9	690.8	668.4	653.8	635.6	379.1	133.7	31.0
10°	928.4	904.1	875.6	859.2	820.9	798.4	774.7	754.6	402.8	92.4	23.1
12.5°	1118.0	1070.0	1010.4	974.6	918.1	887.1	859.8	840.3	412.0	55.3	17.6
15°	1370.8	1293.6	1209.1	1144.1	1048.1	989.8	943.6	908.4	404.7	33.4	15.2
17.5°	1615.6	1506.2	1395.7	1307.6	1197.6	1110.7	1022.0	952.7	373.7	26.7	14.0
20°	1819.2	1691.0	1550.0	1426.7	1299.7	1196.4	1078.5	980.7	323.9	21.3	15.2
22.5°	1975.9	1812.5	1652.7	1499.6	1348.3	1229.8	1100.4	986.7	260.7	21.9	21.3
25°	2088.9	1874.5	1704.3	1529.9	1365.3	1235.3	1088.8	967.3	192.0	40.1	71.7
26°	2112.0	1887.2	1711.0	1526.9	1359.2	1226.1	1075.5	955.2	173.2	79.6	158.0
27°	2124.8	1885.4	1706.1	1514.8	1346.4	1212.8	1060.3	944.2	170.1	136.1	235.7
28°	2113.2	1870.2	1685.5	1492.9	1325.8	1195.2	1042.6	931.5	168.3	167.1	223.6
29°	2081.6	1843.5	1654.5	1458.9	1294.2	1167.2	1015.9	913.2	150.7	133.1	134.9
30°	2033.6	1805.8	1609.5	1413.3	1254.1	1127.1	977.6	884.1	99.6	66.8	57.1
31°	1974.1	1757.2	1554.2	1360.4	1208.5	1078.5	937.5	846.4	51.6	28.6	26.7
32°	1908.5	1698.9	1494.7	1307.0	1162.3	1031.7	904.1	813.0	34.0	15.8	15.2
33°	1839.2	1630.8	1429.1	1251.7	1110.7	979.5	869.5	777.1	25.5	9.7	9.1
34°	1771.2	1557.9	1362.9	1192.1	1054.8	932.7	837.9	735.8	20.7	7.3	6.1
35°	1694.0	1478.9	1294.8	1128.9	994.6	892.6	806.3	690.8	16.4	4.9	4.9
36°	1604.1	1395.1	1224.3	1062.7	937.5	855.5	771.7	641.6	12.8	3.6	4.3
37°	1508.7	1311.8	1153.2	997.1	890.7	821.5	729.7	591.2	10.9	3.0	3.6
38°	1410.2	1229.2	1076.7	933.9	850.0	784.4	682.3	538.9	9.1	2.4	3.0
39°	1313.6	1144.7	1000.1	882.8	811.8	740.7	628.3	485.5	7.9	2.4	3.0
40°	1219.5	1059.7	932.1	838.5	769.2	687.2	572.4	429.6	5.5	1.8	3.0
42.5°	995.9	883.5	802.6	709.1	630.7	538.3	421.1	278.9	4.3	1.8	2.4
45°	833.6	741.3	647.1	541.4	464.2	369.4	249.1	118.5	4.3	1.8	2.4
47.5°	659.2	550.5	412.0	278.3	181.7	93.6	29.2	16.4	3.0	1.8	2.4
50°	192.0	111.2	41.3	24.9	18.8	11.5	7.3	6.7	2.4	1.8	2.4
51°	55.3	32.8	21.9	14.6	10.9	6.7	5.5	6.1	2.4	1.8	1.8
52°	26.1	18.8	12.8	9.7	7.3	5.5	4.9	5.5	2.4	1.8	1.8
53°	15.2	11.5	9.1	7.9	5.5	4.9	3.6	4.9	2.4	1.8	1.8
54°	10.3	9.1	7.9	6.7	4.9	3.6	3.6	4.9	2.4	1.8	1.8
55°	9.1	7.9	6.7	6.1	4.3	3.6	3.6	3.6	1.8	1.2	1.8
57.5°	6.1	6.1	4.9	4.9	3.6	2.4	1.2	3.0	2.4	1.8	1.8
60°	4.3	4.3	4.3	3.0	1.2	1.2	0.6	2.4	2.4	1.8	2.4
61°	4.3	4.3	3.0	2.4	1.2	1.2	0.6	2.4	2.4	1.8	2.4
62°	3.6	3.0	2.4	2.4	1.2	1.2	0.6	2.4	2.4	1.8	2.4
63°	3.0	2.4	2.4	2.4	1.2	0.6	0.6	2.4	2.4	1.8	2.4
64°	2.4	2.4	2.4	2.4	0.6	0.6	0.6	2.4	2.4	1.8	2.4
65°	2.4	2.4	2.4	1.8	0.6	0.6	0.6	1.8	2.4	1.8	2.4
66°	2.4	2.4	1.8	1.8	0.6	0.6	0.6	1.8	2.4	1.8	2.4



TEST NUMBER: P175440

CATALOG NUMBER: LDA6A20830D010TE 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°	0.6	1.2	1.2	1.2	0.0	0.0	0.0	1.8	2.4	1.8	2.4
75°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	2.4
77.5°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	3.0
80°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	3.0
82.5°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	3.0
85°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	3.0
87.5°	0.6	0.6	1.2	1.2	0.0	0.0	0.0	1.8	2.4	2.4	3.0
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: P175440

CATALOG NUMBER: LDA6A20830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	198.7	198.7	198.7
2.5°	76.0	54.7	49.8
5°	30.4	24.9	22.5
7.5°	18.8	15.8	14.6
10°	15.2	11.5	10.9
12.5°	12.2	10.3	9.7
15°	11.5	9.7	9.1
17.5°	11.5	10.9	10.3
20°	14.6	14.6	15.2
22.5°	24.9	29.2	32.8
25°	120.9	195.6	259.4
26°	253.4	357.3	382.2
27°	314.1	325.1	312.3
28°	241.8	216.9	204.2
29°	129.4	108.2	99.0
30°	51.6	42.5	40.1
31°	24.9	21.3	20.7
32°	14.0	11.5	11.5
33°	8.5	7.3	6.7
34°	6.1	4.9	4.3
35°	4.3	3.6	3.0
36°	3.6	2.4	1.8
37°	3.0	1.8	1.8
38°	2.4	1.8	1.2
39°	1.8	1.2	0.6
40°	1.8	0.6	0.0
42.5°	1.2	0.6	0.0
45°	1.2	0.0	0.0
47.5°	1.8	1.2	0.6
50°	1.2	0.6	0.0
51°	1.2	0.0	0.0
52°	1.2	0.0	0.0
53°	1.2	0.0	0.0
54°	1.2	0.0	0.0
55°	1.2	0.0	0.0
57.5°	1.2	0.0	0.0
60°	1.2	0.0	0.0
61°	1.2	0.0	0.0
62°	1.2	0.0	0.0
63°	1.2	0.6	0.0
64°	1.2	0.6	0.0
65°	1.2	0.6	0.0
66°	1.2	0.6	0.0



TEST NUMBER: P175440

CATALOG NUMBER: LDA6A20830D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.8	0.6	0.0
75°	1.8	0.6	0.0
77.5°	1.8	0.6	0.0
80°	1.8	0.6	0.0
82.5°	1.8	0.6	0.0
85°	1.8	0.6	0.0
87.5°	1.8	0.6	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°







67.5°	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.8	1.8
70°	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2





67.5°	1.8	1.8	1.8	1.8	0.6	0.0	0.0	1.8	2.4	1.8	2.4
70°	1.2	1.2	1.2	1.2	0.0	0.0	0.0	1.8	2.4	1.8	2.4





67.5°	1.8	0.6	0.0
70°	1.8	0.6	0.0



(END OF REPORT)