

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: P175462

Luminaire Tested: **LDA6A15940D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175462
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: LDA6A15940D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1008.2 lumens
Efficiency: N/A
Efficacy: 45.3 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

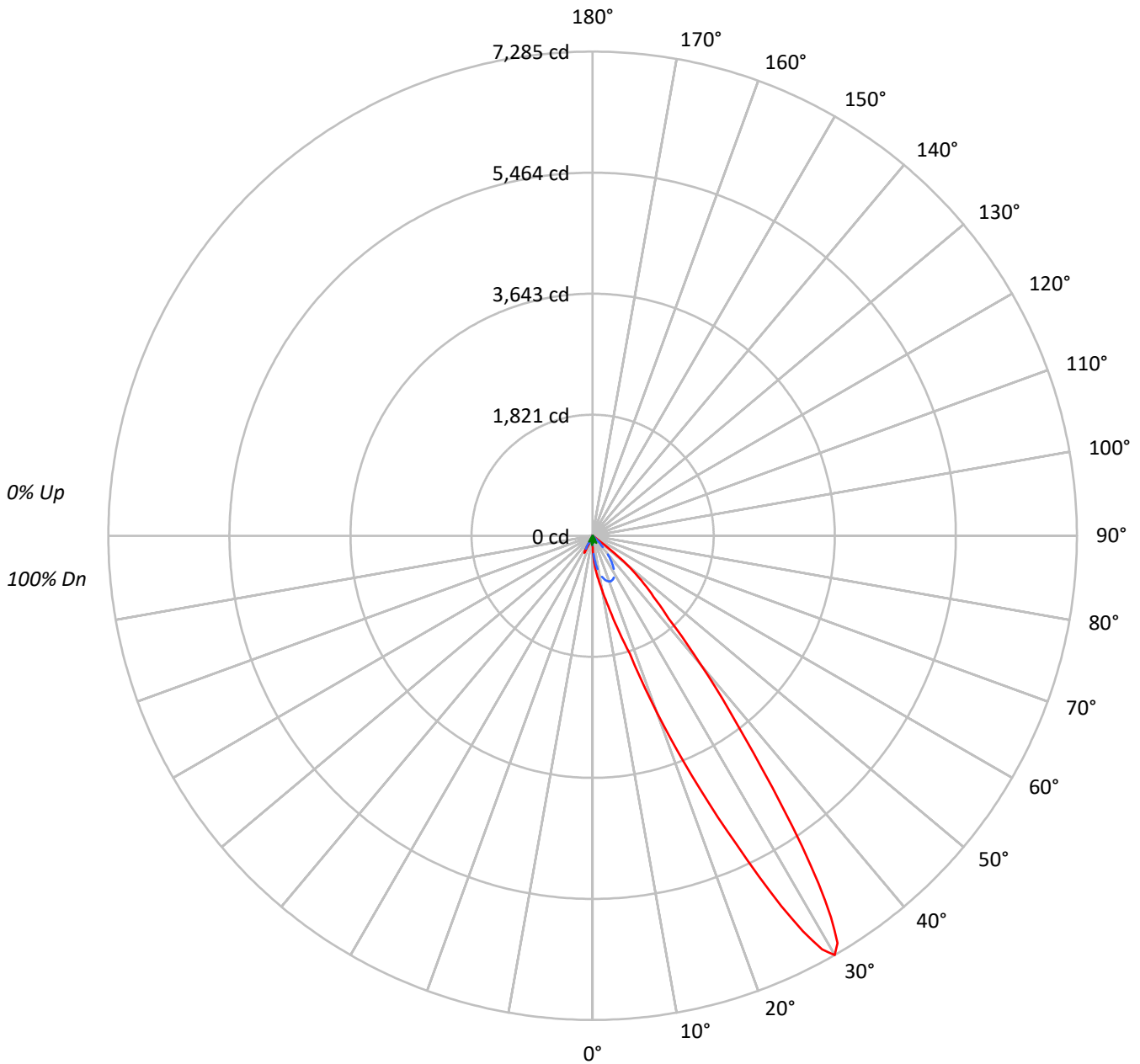
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	8135	8135	8135
5°	27817	6917	924
10°	46559	3841	456
15°	80869	1419	386
20°	165226	928	659
25°	310149	1815	11722
30°	461134	3159	1899
35°	332788	241	154
40°	180753	100	0
45°	100336	109	0
50°	58710	119	0
55°	1864	86	0
60°	647	153	0
65°	298	182	0
70°	224	224	0
75°	106	381	0
80°	0	568	0
85°	0	1132	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.8	2.1
10°-20°	107.9	10.7
20°-30°	347.4	34.5
30°-40°	361.6	35.9
40°-50°	154.1	15.3
50°-60°	12.8	1.3
60°-70°	1.3	0.1
70°-80°	1.2	0.1
80°-90°	1.1	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°	476.1	47.2
0°-40°	837.7	83.1
0°-60°	1004.6	99.6
0°-90°	1008.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1008.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	148	148	148	148	148	
5°	506	368	126	23	17	57
15°	1425	678	25	9	7	466
25°	5128	722	30	90	194	2462
35°	4973	516	4	3	2	3078
45°	1294	88	1	1	0	1064
55°	20	3	1	1	0	122
65°	2	1	1	1	0	3
75°	0	1	2	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P175462

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4
2.5°	329.5	312.2	325.4	317.7	312.7	311.3	319.0	310.4	301.3	300.9	298.1
5°	505.5	489.2	502.8	491.0	485.6	481.0	484.7	470.6	455.6	456.1	449.3
7.5°	658.9	649.8	658.9	646.2	642.1	637.6	636.2	622.6	604.9	606.3	595.8
10°	836.4	810.0	824.6	796.9	790.1	777.8	773.7	751.5	723.4	722.0	707.0
12.5°	1080.9	1070.5	1085.0	1046.0	1037.8	1017.0	1005.6	970.2	923.9	912.1	877.6
15°	1424.9	1391.3	1405.9	1351.0	1335.5	1299.2	1274.3	1219.4	1175.3	1125.4	1072.8
17.5°	1861.9	1842.9	1861.5	1753.5	1713.5	1642.8	1584.2	1492.5	1399.1	1354.1	1280.2
20°	2832.2	2741.4	2751.4	2550.8	2422.8	2232.2	2079.8	1877.4	1691.8	1585.1	1463.0
22.5°	3909.0	3805.6	3780.1	3522.4	3305.5	3019.1	2751.4	2412.9	2083.8	1845.6	1638.7
25°	5127.5	5060.3	4927.4	4505.3	4132.3	3723.9	3330.0	2887.1	2460.5	2095.6	1785.2
26°	5706.1	5652.1	5452.4	4924.6	4441.8	3953.0	3502.9	3027.3	2567.1	2166.9	1819.7
27°	6255.6	6212.1	5952.5	5338.0	4734.5	4146.4	3628.6	3127.1	2643.8	2212.7	1844.2
28°	6739.8	6695.4	6360.0	5688.4	4966.4	4286.1	3707.5	3189.3	2687.9	2223.6	1842.9
29°	7116.5	7060.2	6627.3	5913.0	5102.5	4353.3	3723.4	3197.0	2681.5	2198.2	1817.5
30°	7284.8	7215.0	6703.5	5961.1	5104.8	4327.9	3678.5	3155.7	2629.8	2138.3	1770.3
31°	7152.8	7093.3	6565.1	5822.2	4966.4	4211.7	3566.9	3060.4	2531.7	2051.6	1707.6
32°	6768.0	6713.5	6226.6	5517.3	4704.5	4015.2	3404.9	2924.3	2401.5	1946.8	1635.0
33°	6240.2	6198.0	5761.4	5098.4	4368.3	3773.3	3211.1	2753.7	2244.9	1829.3	1546.5
34°	5638.0	5604.9	5206.4	4625.1	4001.1	3504.7	2990.1	2508.1	2073.9	1710.8	1480.3
35°	4972.7	4950.0	4625.1	4139.1	3635.8	3225.6	2744.6	2291.2	1901.4	1596.9	1409.0
36°	4340.6	4322.0	4074.2	3693.5	3288.2	2936.1	2478.7	2065.2	1736.2	1494.4	1342.3
37°	3800.6	3787.0	3603.6	3296.9	2954.2	2635.2	2207.7	1853.8	1592.4	1405.0	1273.8
38°	3351.3	3340.4	3191.6	2919.7	2610.3	2323.9	1946.3	1666.8	1469.9	1327.4	1196.2
39°	2932.5	2918.4	2784.5	2538.6	2267.6	2020.8	1773.0	1513.0	1373.7	1246.6	1112.7
40°	2525.8	2507.7	2390.2	2181.0	1955.0	1763.5	1541.1	1418.6	1295.6	1152.7	1027.4
42.5°	1694.9	1685.0	1621.0	1526.6	1430.8	1360.9	1290.6	1181.2	1051.5	933.5	840.9
45°	1294.2	1292.0	1260.7	1211.2	1147.7	1088.7	994.7	931.6	844.1	744.7	678.4
47.5°	992.9	993.4	964.3	927.1	883.5	845.4	776.9	726.5	663.9	607.2	555.9
50°	688.4	659.4	663.5	634.0	598.6	576.3	512.8	474.2	385.3	295.4	231.0
51°	516.0	477.9	482.8	449.7	413.0	393.4	334.0	295.0	211.5	138.9	90.8
52°	314.9	285.0	284.5	259.1	227.4	210.1	162.9	127.1	72.2	38.1	26.3
53°	141.1	121.2	116.6	99.4	78.1	67.6	46.3	34.0	25.4	19.5	15.0
54°	37.2	33.1	31.8	29.0	26.3	25.4	22.2	18.6	14.5	11.3	9.5
55°	19.5	18.2	17.7	16.8	15.4	15.0	13.2	11.3	9.1	8.2	7.3
57.5°	9.1	9.1	8.6	8.2	7.7	7.7	6.8	6.4	5.9	5.9	5.0
60°	5.9	5.9	5.9	5.4	5.4	5.0	4.5	4.1	3.6	4.1	3.6
61°	5.0	5.0	5.0	4.5	4.1	3.6	3.6	3.6	3.2	3.2	2.7
62°	3.6	3.6	3.2	3.2	2.7	2.7	2.7	2.7	2.3	2.7	2.7
63°	2.7	2.7	2.3	2.3	2.3	2.3	1.8	1.8	1.8	2.7	2.7
64°	2.3	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	2.3	1.8
65°	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.8	1.8
66°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.4	1.8	1.8



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CATALOG NUMBER: LDA6A15940D010TE 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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CATALOG NUMBER: LDA6A15940D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4	148.4
2.5°	298.1	292.7	281.4	279.1	268.2	261.8	263.7	260.0	201.9	142.5	88.9
5°	444.3	432.0	415.2	409.3	390.7	380.7	377.6	368.5	250.0	125.7	41.7
7.5°	587.2	571.3	550.9	541.4	516.0	499.2	488.3	474.7	283.2	99.8	23.1
10°	693.4	675.3	653.9	641.7	613.1	596.3	578.6	563.6	300.9	69.0	17.2
12.5°	835.0	799.1	754.7	727.9	685.7	662.5	642.1	627.6	307.7	41.3	13.2
15°	1023.8	966.1	903.1	854.5	782.8	739.2	704.8	678.4	302.2	25.0	11.3
17.5°	1206.7	1125.0	1042.4	976.6	894.4	829.5	763.3	711.6	279.1	20.0	10.4
20°	1358.7	1262.9	1157.6	1065.5	970.7	893.5	805.5	732.4	241.9	15.9	11.3
22.5°	1475.8	1353.7	1234.3	1120.0	1007.0	918.5	821.8	737.0	194.7	16.3	15.9
25°	1560.2	1400.0	1272.9	1142.7	1019.7	922.6	813.2	722.4	143.4	30.0	53.5
26°	1577.4	1409.5	1277.9	1140.4	1015.1	915.8	803.2	713.4	129.3	59.4	118.0
27°	1586.9	1408.1	1274.3	1131.3	1005.6	905.8	791.9	705.2	127.1	101.7	176.1
28°	1578.3	1396.8	1258.8	1115.0	990.2	892.6	778.7	695.7	125.7	124.8	167.0
29°	1554.7	1376.8	1235.7	1089.6	966.6	871.7	758.8	682.1	112.5	99.4	100.7
30°	1518.9	1348.7	1202.1	1055.5	936.6	841.8	730.2	660.3	74.4	49.9	42.7
31°	1474.4	1312.4	1160.8	1016.1	902.6	805.5	700.2	632.1	38.6	21.3	20.0
32°	1425.4	1268.8	1116.3	976.1	868.1	770.6	675.3	607.2	25.4	11.8	11.3
33°	1373.7	1218.0	1067.3	934.8	829.5	731.5	649.4	580.4	19.1	7.3	6.8
34°	1322.8	1163.5	1017.9	890.4	787.8	696.6	625.8	549.6	15.4	5.4	4.5
35°	1265.2	1104.5	967.0	843.2	742.9	666.6	602.2	516.0	12.3	3.6	3.6
36°	1198.0	1041.9	914.4	793.7	700.2	638.9	576.3	479.2	9.5	2.7	3.2
37°	1126.8	979.8	861.3	744.7	665.3	613.5	545.0	441.5	8.2	2.3	2.7
38°	1053.3	918.0	804.1	697.5	634.9	585.9	509.6	402.5	6.8	1.8	2.3
39°	981.1	855.0	747.0	659.4	606.3	553.2	469.2	362.6	5.9	1.8	2.3
40°	910.8	791.4	696.1	626.2	574.5	513.2	427.5	320.8	4.1	1.4	2.3
42.5°	743.8	659.8	599.5	529.6	471.0	402.1	314.5	208.3	3.2	1.4	1.8
45°	622.6	553.6	483.3	404.3	346.7	275.9	186.1	88.5	3.2	1.4	1.8
47.5°	492.4	411.1	307.7	207.8	135.7	69.9	21.8	12.3	2.3	1.4	1.8
50°	143.4	83.0	30.9	18.6	14.1	8.6	5.4	5.0	1.8	1.4	1.8
51°	41.3	24.5	16.3	10.9	8.2	5.0	4.1	4.5	1.8	1.4	1.4
52°	19.5	14.1	9.5	7.3	5.4	4.1	3.6	4.1	1.8	1.4	1.4
53°	11.3	8.6	6.8	5.9	4.1	3.6	2.7	3.6	1.8	1.4	1.4
54°	7.7	6.8	5.9	5.0	3.6	2.7	2.7	3.6	1.8	1.4	1.4
55°	6.8	5.9	5.0	4.5	3.2	2.7	2.7	2.7	1.4	0.9	1.4
57.5°	4.5	4.5	3.6	3.6	2.7	1.8	0.9	2.3	1.8	1.4	1.4
60°	3.2	3.2	3.2	2.3	0.9	0.9	0.5	1.8	1.8	1.4	1.8
61°	3.2	3.2	2.3	1.8	0.9	0.9	0.5	1.8	1.8	1.4	1.8
62°	2.7	2.3	1.8	1.8	0.9	0.9	0.5	1.8	1.8	1.4	1.8
63°	2.3	1.8	1.8	1.8	0.9	0.5	0.5	1.8	1.8	1.4	1.8
64°	1.8	1.8	1.8	1.8	0.5	0.5	0.5	1.8	1.8	1.4	1.8
65°	1.8	1.8	1.8	1.4	0.5	0.5	0.5	1.4	1.8	1.4	1.8
66°	1.8	1.8	1.4	1.4	0.5	0.5	0.5	1.4	1.8	1.4	1.8



TEST NUMBER: P175462

CATALOG NUMBER: LDA6A15940D010TE 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	0.9	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.4	1.8
75°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	1.8
77.5°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	2.3
80°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	2.3
82.5°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	2.3
85°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	2.3
87.5°	0.5	0.5	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.8	2.3
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: P175462

CATALOG NUMBER: LDA6A15940D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	148.4	148.4	148.4
2.5°	56.7	40.8	37.2
5°	22.7	18.6	16.8
7.5°	14.1	11.8	10.9
10°	11.3	8.6	8.2
12.5°	9.1	7.7	7.3
15°	8.6	7.3	6.8
17.5°	8.6	8.2	7.7
20°	10.9	10.9	11.3
22.5°	18.6	21.8	24.5
25°	90.3	146.1	193.8
26°	189.2	266.8	285.4
27°	234.6	242.8	233.3
28°	180.6	162.0	152.5
29°	96.7	80.8	74.0
30°	38.6	31.8	30.0
31°	18.6	15.9	15.4
32°	10.4	8.6	8.6
33°	6.4	5.4	5.0
34°	4.5	3.6	3.2
35°	3.2	2.7	2.3
36°	2.7	1.8	1.4
37°	2.3	1.4	1.4
38°	1.8	1.4	0.9
39°	1.4	0.9	0.5
40°	1.4	0.5	0.0
42.5°	0.9	0.5	0.0
45°	0.9	0.0	0.0
47.5°	1.4	0.9	0.5
50°	0.9	0.5	0.0
51°	0.9	0.0	0.0
52°	0.9	0.0	0.0
53°	0.9	0.0	0.0
54°	0.9	0.0	0.0
55°	0.9	0.0	0.0
57.5°	0.9	0.0	0.0
60°	0.9	0.0	0.0
61°	0.9	0.0	0.0
62°	0.9	0.0	0.0
63°	0.9	0.5	0.0
64°	0.9	0.5	0.0
65°	0.9	0.5	0.0
66°	0.9	0.5	0.0



TEST NUMBER: P175462

CATALOG NUMBER: LDA6A15940D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.4	0.5	0.0
75°	1.4	0.5	0.0
77.5°	1.4	0.5	0.0
80°	1.4	0.5	0.0
82.5°	1.4	0.5	0.0
85°	1.4	0.5	0.0
87.5°	1.4	0.5	0.0
90°	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°







67.5°	1.8	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	1.4	1.4
70°	1.4	1.4	1.4	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9





67.5°	1.4	1.4	1.4	1.4	0.5	0.0	0.0	1.4	1.8	1.4	1.8
70°	0.9	0.9	0.9	0.9	0.0	0.0	0.0	1.4	1.8	1.4	1.8





67.5°	1.4	0.5	0.0
70°	1.4	0.5	0.0



(END OF REPORT)