

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: P175458

Luminaire Tested: **LDA6A15840D010TE LARL15SP 6LAL1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P175458
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: LDA6A15840D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1174.7 lumens
Efficiency: N/A
Efficacy: 52.7 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

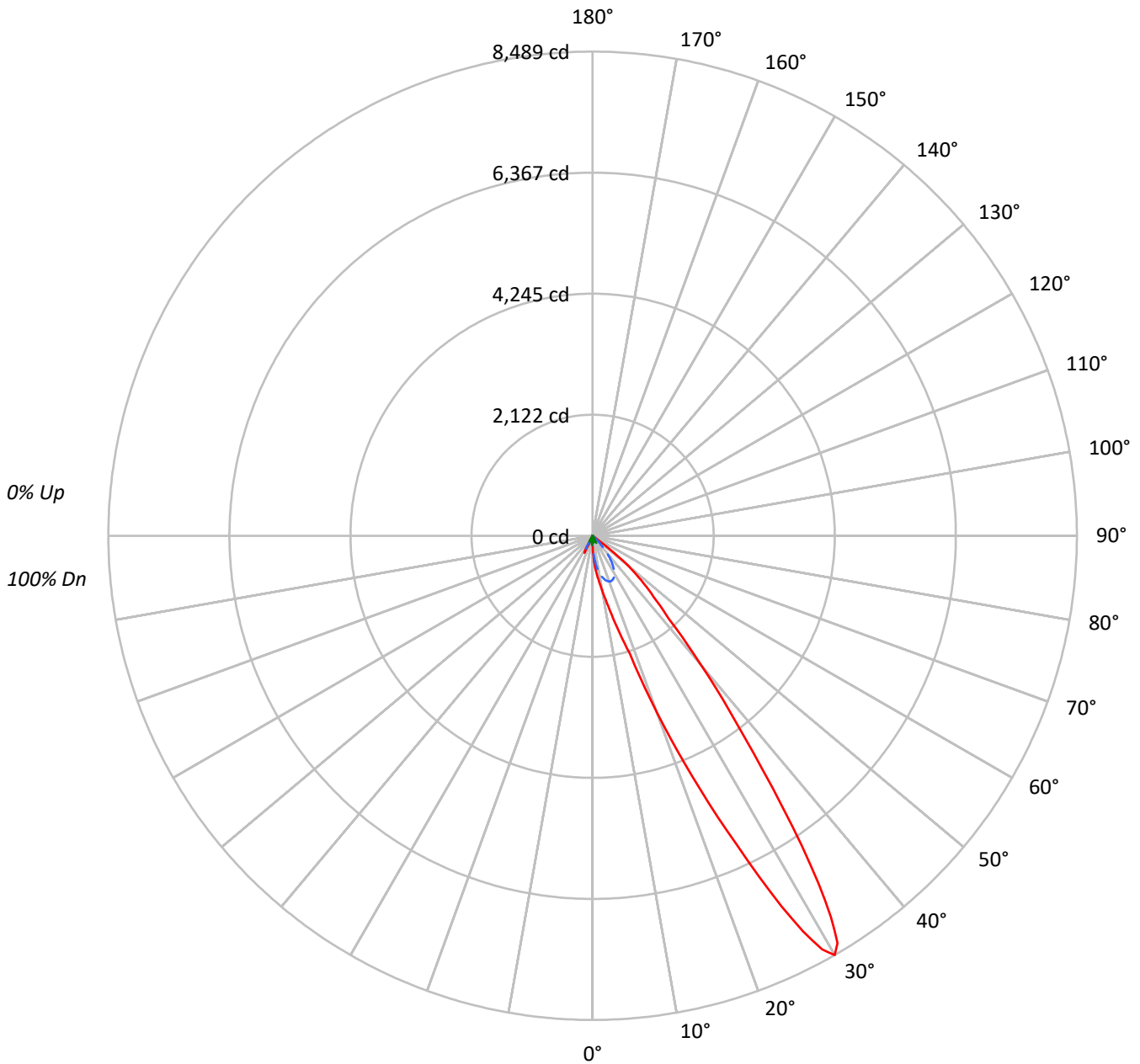
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	9478	9478	9478
5°	32418	8062	1079
10°	54252	4476	529
15°	94240	1652	448
20°	192534	1079	770
25°	361412	2111	13658
30°	537361	3684	2209
35°	387799	281	174
40°	210637	115	0
45°	116927	124	0
50°	68416	136	0
55°	2170	105	0
60°	757	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°	24.2	2.1
10°-20°	125.8	10.7
20°-30°	404.8	34.5
30°-40°	421.4	35.9
40°-50°	179.5	15.3
50°-60°	14.9	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°	554.8	47.2
0°-40°	976.2	83.1
0°-60°	1170.7	99.7
0°-90°	1174.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1174.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	173	173	173	173	173	
5°	589	429	146	26	20	67
15°	1660	791	29	10	8	543
25°	5975	842	35	105	226	2870
35°	5795	601	4	4	3	3587
45°	1508	103	2	1	0	1240
55°	23	3	1	1	0	142
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	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9
2.5°	383.9	363.8	379.2	370.2	364.3	362.8	371.8	361.7	351.1	350.6	347.4
5°	589.1	570.1	585.9	572.2	565.8	560.5	564.8	548.4	530.9	531.5	523.5
7.5°	767.8	757.3	767.8	753.0	748.3	743.0	741.4	725.5	704.9	706.5	694.3
10°	974.6	943.9	960.8	928.6	920.7	906.4	901.6	875.7	842.9	841.3	823.9
12.5°	1259.6	1247.5	1264.4	1218.9	1209.4	1185.1	1171.8	1130.6	1076.7	1062.9	1022.7
15°	1660.5	1621.3	1638.3	1574.3	1556.3	1514.0	1484.9	1420.9	1369.6	1311.4	1250.1
17.5°	2169.7	2147.5	2169.2	2043.3	1996.8	1914.3	1846.1	1739.3	1630.3	1578.0	1491.8
20°	3300.3	3194.5	3206.2	2972.4	2823.3	2601.2	2423.5	2187.7	1971.4	1847.1	1704.9
22.5°	4555.2	4434.6	4405.0	4104.6	3851.8	3518.2	3206.2	2811.7	2428.3	2150.7	1909.5
25°	5975.0	5896.8	5741.8	5250.0	4815.3	4339.4	3880.4	3364.3	2867.2	2442.0	2080.3
26°	6649.3	6586.3	6353.6	5738.6	5176.0	4606.5	4081.9	3527.7	2991.5	2525.1	2120.5
27°	7289.6	7238.9	6936.4	6220.4	5517.1	4831.7	4228.4	3644.0	3080.8	2578.5	2149.1
28°	7853.9	7802.1	7411.3	6628.6	5787.3	4994.6	4320.4	3716.5	3132.1	2591.2	2147.5
29°	8292.8	8227.2	7722.7	6890.4	5945.9	5072.9	4338.9	3725.5	3124.7	2561.6	2117.9
30°	8489.0	8407.5	7811.6	6946.4	5948.6	5043.3	4286.5	3677.3	3064.5	2491.8	2062.9
31°	8335.1	8265.8	7650.3	6784.6	5787.3	4907.9	4156.4	3566.3	2950.2	2390.7	1989.9
32°	7886.7	7823.2	7255.8	6429.3	5482.2	4678.9	3967.7	3407.6	2798.5	2268.6	1905.3
33°	7271.7	7222.5	6713.8	5941.2	5090.3	4397.1	3741.9	3208.8	2616.0	2131.6	1802.2
34°	6569.9	6531.3	6067.0	5389.6	4662.5	4084.0	3484.3	2922.7	2416.7	1993.6	1725.0
35°	5794.7	5768.3	5389.6	4823.3	4236.8	3758.8	3198.2	2670.0	2215.7	1860.9	1642.0
36°	5058.1	5036.4	4747.7	4304.0	3831.8	3421.4	2888.4	2406.6	2023.2	1741.4	1564.2
37°	4428.8	4412.9	4199.3	3841.8	3442.6	3070.8	2572.7	2160.2	1855.6	1637.2	1484.4
38°	3905.3	3892.6	3719.1	3402.4	3041.7	2708.0	2268.1	1942.3	1712.8	1546.8	1393.9
39°	3417.2	3400.8	3244.8	2958.2	2642.5	2354.8	2066.1	1763.1	1600.7	1452.6	1296.6
40°	2943.4	2922.2	2785.2	2541.5	2278.1	2055.0	1795.8	1653.1	1509.8	1343.2	1197.2
42.5°	1975.1	1963.5	1888.9	1778.9	1667.3	1585.9	1503.9	1376.5	1225.3	1087.8	979.9
45°	1508.2	1505.5	1469.0	1411.4	1337.4	1268.6	1159.2	1085.6	983.6	867.8	790.6
47.5°	1157.0	1157.6	1123.7	1080.4	1029.6	985.2	905.3	846.6	773.6	707.5	647.8
50°	802.2	768.4	773.1	738.7	697.5	671.6	597.6	552.6	449.0	344.3	269.2
51°	601.3	556.8	562.7	524.1	481.2	458.5	389.2	343.7	246.4	161.8	105.8
52°	367.0	332.1	331.6	302.0	264.9	244.8	189.8	148.1	84.1	44.4	30.7
53°	164.5	141.2	135.9	115.8	91.0	78.8	53.9	39.7	29.6	22.7	17.5
54°	43.4	38.6	37.0	33.8	30.7	29.6	25.9	21.7	16.9	13.2	11.1
55°	22.7	21.2	20.6	19.6	18.0	17.5	15.3	13.2	10.6	9.5	8.5
57.5°	10.6	10.6	10.0	9.5	9.0	9.0	7.9	7.4	6.9	6.9	5.8
60°	6.9	6.9	6.9	6.3	6.3	5.8	5.3	4.8	4.2	4.8	4.2
61°	5.8	5.8	5.8	5.3	4.8	4.2	4.2	4.2	3.7	3.7	3.2
62°	4.2	4.2	3.7	3.7	3.2	3.2	3.2	3.2	2.6	3.2	3.2
63°	3.2	3.2	2.6	2.6	2.6	2.6	2.1	2.1	2.1	3.2	3.2
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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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: LDA6A15840D010TE 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°	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9	172.9
2.5°	347.4	341.1	327.9	325.2	312.5	305.1	307.2	303.0	235.3	166.0	103.6
5°	517.7	503.4	483.9	477.0	455.3	443.7	440.0	429.4	291.4	146.5	48.7
7.5°	684.3	665.8	642.0	630.9	601.3	581.7	569.0	553.1	330.0	116.3	27.0
10°	808.0	786.9	762.0	747.7	714.4	694.9	674.2	656.8	350.6	80.4	20.1
12.5°	973.0	931.2	879.4	848.2	799.0	772.1	748.3	731.3	358.5	48.1	15.3
15°	1193.0	1125.8	1052.3	995.7	912.2	861.4	821.2	790.6	352.2	29.1	13.2
17.5°	1406.1	1310.9	1214.7	1138.0	1042.3	966.7	889.5	829.2	325.2	23.3	12.2
20°	1583.3	1471.7	1349.0	1241.6	1131.1	1041.2	938.6	853.5	281.9	18.5	13.2
22.5°	1719.7	1577.4	1438.4	1305.1	1173.4	1070.3	957.7	858.8	226.9	19.0	18.5
25°	1818.0	1631.4	1483.3	1331.5	1188.2	1075.1	947.6	841.9	167.1	34.9	62.4
26°	1838.1	1642.5	1489.1	1328.9	1182.9	1067.1	936.0	831.3	150.7	69.3	137.5
27°	1849.2	1640.9	1484.9	1318.3	1171.8	1055.5	922.8	821.8	148.1	118.5	205.2
28°	1839.2	1627.7	1466.9	1299.3	1153.9	1040.2	907.4	810.7	146.5	145.4	194.6
29°	1811.7	1604.4	1439.9	1269.7	1126.4	1015.8	884.2	794.8	131.1	115.8	117.4
30°	1769.9	1571.6	1400.8	1230.0	1091.5	980.9	850.9	769.4	86.7	58.2	49.7
31°	1718.1	1529.3	1352.7	1184.0	1051.8	938.6	816.0	736.6	44.9	24.9	23.3
32°	1661.0	1478.6	1300.9	1137.5	1011.6	897.9	786.9	707.5	29.6	13.7	13.2
33°	1600.7	1419.3	1243.8	1089.3	966.7	852.4	756.7	676.3	22.2	8.5	7.9
34°	1541.5	1355.9	1186.1	1037.5	918.0	811.7	729.2	640.4	18.0	6.3	5.3
35°	1474.3	1287.1	1126.9	982.5	865.7	776.8	701.7	601.3	14.3	4.2	4.2
36°	1396.1	1214.1	1065.6	924.9	816.0	744.6	671.6	558.4	11.1	3.2	3.7
37°	1313.0	1141.7	1003.7	867.8	775.2	715.0	635.1	514.5	9.5	2.6	3.2
38°	1227.4	1069.8	937.1	812.8	739.8	682.7	593.9	469.1	7.9	2.1	2.6
39°	1143.3	996.3	870.4	768.4	706.5	644.6	546.8	422.5	6.9	2.1	2.6
40°	1061.3	922.2	811.2	729.8	669.5	598.1	498.1	373.9	4.8	1.6	2.6
42.5°	866.7	768.9	698.6	617.1	548.9	468.5	366.5	242.7	3.7	1.6	2.1
45°	725.5	645.1	563.2	471.2	404.0	321.5	216.8	103.1	3.7	1.6	2.1
47.5°	573.8	479.1	358.5	242.2	158.1	81.4	25.4	14.3	2.6	1.6	2.1
50°	167.1	96.8	36.0	21.7	16.4	10.0	6.3	5.8	2.1	1.6	2.1
51°	48.1	28.6	19.0	12.7	9.5	5.8	4.8	5.3	2.1	1.6	1.6
52°	22.7	16.4	11.1	8.5	6.3	4.8	4.2	4.8	2.1	1.6	1.6
53°	13.2	10.0	7.9	6.9	4.8	4.2	3.2	4.2	2.1	1.6	1.6
54°	9.0	7.9	6.9	5.8	4.2	3.2	3.2	4.2	2.1	1.6	1.6
55°	7.9	6.9	5.8	5.3	3.7	3.2	3.2	3.2	1.6	1.1	1.6
57.5°	5.3	5.3	4.2	4.2	3.2	2.1	1.1	2.6	2.1	1.6	1.6
60°	3.7	3.7	3.7	2.6	1.1	1.1	0.5	2.1	2.1	1.6	2.1
61°	3.7	3.7	2.6	2.1	1.1	1.1	0.5	2.1	2.1	1.6	2.1
62°	3.2	2.6	2.1	2.1	1.1	1.1	0.5	2.1	2.1	1.6	2.1
63°	2.6	2.1	2.1	2.1	1.1	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: LDA6A15840D010TE 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	1.1	1.1	1.1	0.0	0.0	0.0	1.6	2.1	1.6	2.1
75°	0.5	0.5	1.1	1.1	0.0	0.0	0.0	1.6	2.1	2.1	2.1
77.5°	0.5	0.5	1.1	1.1	0.0	0.0	0.0	1.6	2.1	2.1	2.6
80°	0.5	0.5	1.1	1.1	0.0	0.0	0.0	1.6	2.1	2.1	2.6
82.5°	0.5	0.5	1.1	1.1	0.0	0.0	0.0	1.6	2.1	2.1	2.6
85°	0.5	0.5	1.1	1.1	0.0	0.0	0.0	1.6	2.1	2.1	2.6
87.5°	0.5	0.5	1.1	1.1	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: P175458

CATALOG NUMBER: LDA6A15840D010TE LARL15SP 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	172.9	172.9	172.9
2.5°	66.1	47.6	43.4
5°	26.4	21.7	19.6
7.5°	16.4	13.7	12.7
10°	13.2	10.0	9.5
12.5°	10.6	9.0	8.5
15°	10.0	8.5	7.9
17.5°	10.0	9.5	9.0
20°	12.7	12.7	13.2
22.5°	21.7	25.4	28.6
25°	105.2	170.3	225.8
26°	220.5	310.9	332.6
27°	273.4	282.9	271.8
28°	210.5	188.8	177.7
29°	112.6	94.1	86.2
30°	44.9	37.0	34.9
31°	21.7	18.5	18.0
32°	12.2	10.0	10.0
33°	7.4	6.3	5.8
34°	5.3	4.2	3.7
35°	3.7	3.2	2.6
36°	3.2	2.1	1.6
37°	2.6	1.6	1.6
38°	2.1	1.6	1.1
39°	1.6	1.1	0.5
40°	1.6	0.5	0.0
42.5°	1.1	0.5	0.0
45°	1.1	0.0	0.0
47.5°	1.6	1.1	0.5
50°	1.1	0.5	0.0
51°	1.1	0.0	0.0
52°	1.1	0.0	0.0
53°	1.1	0.0	0.0
54°	1.1	0.0	0.0
55°	1.1	0.0	0.0
57.5°	1.1	0.0	0.0
60°	1.1	0.0	0.0
61°	1.1	0.0	0.0
62°	1.1	0.0	0.0
63°	1.1	0.5	0.0
64°	1.1	0.5	0.0
65°	1.1	0.5	0.0
66°	1.1	0.5	0.0



TEST NUMBER: P175458

CATALOG NUMBER: LDA6A15840D010TE 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	1.1	1.1	1.6	1.6
70°	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1





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°	1.1	1.1	1.1	1.1	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)