

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: P170905

Luminaire Tested: **LDA4A18927D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170905
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A18927D010TE LAR15SP 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1136.8 lumens
Efficiency: N/A
Efficacy: 39.0 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

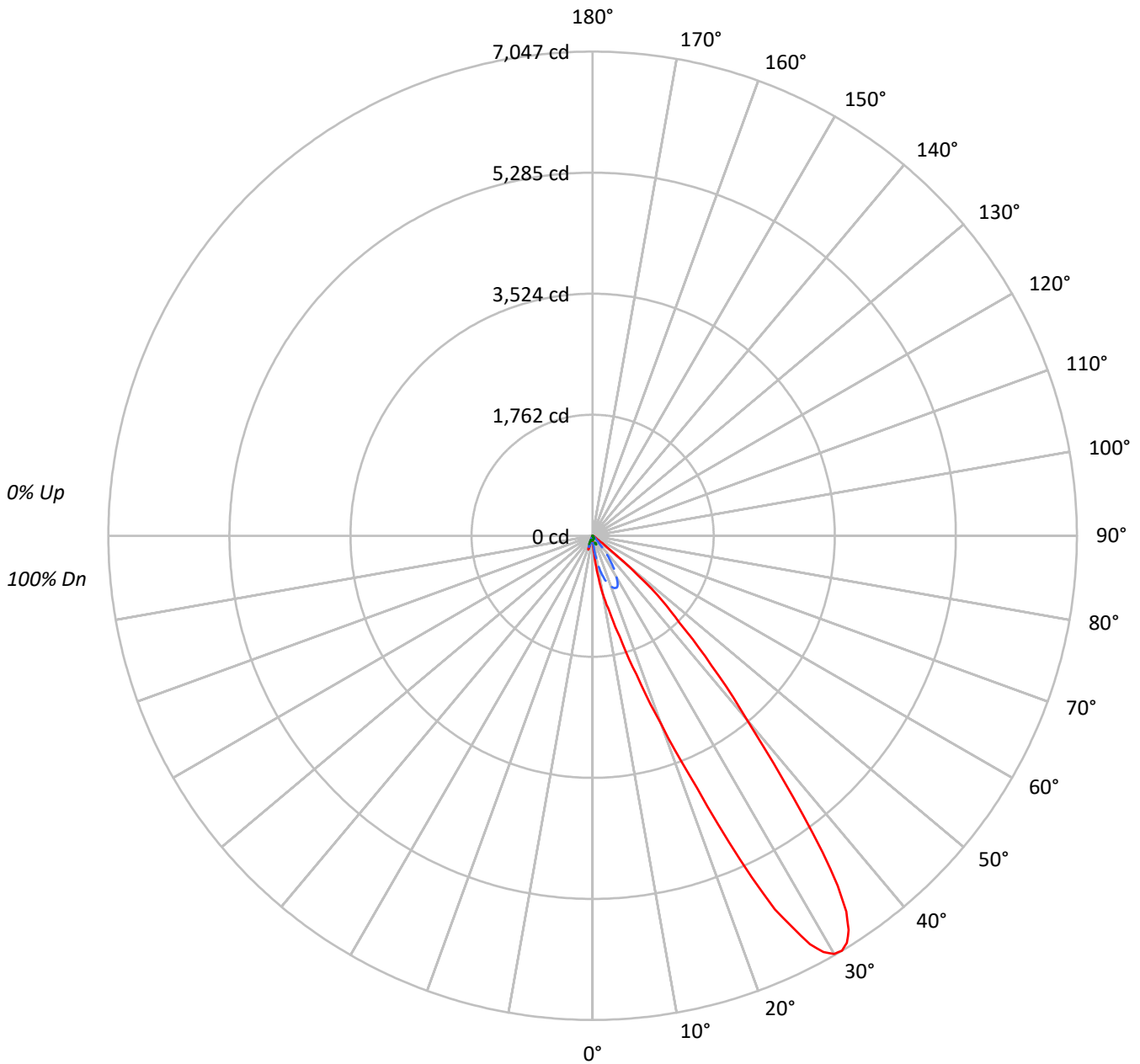
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60																			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	56	54																			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	40																			
10	61	49	42	38	60	49	42	38	48	42	38	47	41	37	46	41	37	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8178	8178	8178
5°	36687	7689	4977
10°	108603	7064	6363
15°	193882	8377	17929
20°	384045	16486	19256
25°	747321	10752	5471
30°	1001050	4016	1909
35°	936681	1702	738
40°	561303	789	225
45°	311492	488	0
50°	114272	403	0
55°	17440	301	0
60°	3824	345	0
65°	1226	409	0
70°	252	505	0
75°	0	1001	0
80°	0	1492	0
85°	0	2972	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.6	1.3
10°-20°	122.8	10.8
20°-30°	366.5	32.2
30°-40°	434.1	38.2
40°-50°	180.1	15.8
50°-60°	14.0	1.2
60°-70°	1.9	0.2
70°-80°	1.5	0.1
80°-90°	1.3	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°	503.9	44.3
0°-40°	938.0	82.5
0°-60°	1132.1	99.6
0°-90°	1136.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1136.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	66	66	66	66	66	
5°	296	150	62	43	40	47
15°	1518	641	66	98	140	501
25°	5491	833	79	46	40	2508
35°	6221	464	11	6	5	3605
45°	1786	41	3	2	0	1456
55°	81	6	1	1	0	119
65°	4	1	1	1	0	5
75°	0	1	2	1	0	0
85°	0	1	2	1	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°	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3
2.5°	115.0	109.4	112.2	107.2	110.1	105.1	101.6	105.1	105.1	102.3	98.1
5°	296.3	294.9	300.6	287.1	290.7	275.9	263.2	266.7	263.9	254.7	238.5
7.5°	564.4	558.8	565.1	546.1	546.8	522.1	503.0	507.3	494.6	479.1	450.8
10°	867.1	859.3	866.4	843.8	839.6	805.0	778.2	782.4	753.5	728.1	685.1
12.5°	1129.5	1128.8	1106.3	1110.5	1102.0	1049.1	1032.2	1033.6	994.1	965.9	914.4
15°	1518.3	1533.1	1537.3	1508.4	1456.2	1360.3	1317.9	1301.7	1237.5	1190.2	1116.1
17.5°	2115.9	2136.3	2066.5	2083.4	1997.3	1847.1	1763.1	1713.0	1592.4	1503.5	1369.4
20°	2925.8	2908.2	2807.3	2794.6	2647.8	2454.5	2278.1	2183.6	1998.1	1868.2	1672.8
22.5°	3971.4	3958.0	3785.2	3708.2	3401.3	3129.0	2900.4	2663.4	2387.5	2213.9	1948.7
25°	5491.1	5429.7	5096.7	4878.0	4338.3	3875.5	3494.5	3126.2	2703.6	2515.2	2178.0
26°	6050.6	6035.8	5688.7	5400.8	4750.3	4176.0	3662.4	3293.4	2827.8	2607.6	2242.9
27°	6386.4	6504.3	6181.1	5855.2	5144.0	4456.1	3860.6	3428.2	2924.4	2672.5	2284.5
28°	6735.0	6811.2	6521.9	6112.7	5459.4	4679.1	4010.9	3519.2	2983.7	2704.3	2298.6
29°	6926.9	7000.2	6731.4	6347.6	5666.1	4823.7	4099.8	3559.4	3005.5	2703.6	2285.9
30°	7028.5	7096.9	6834.4	6461.9	5751.5	4868.8	4118.9	3543.2	2984.4	2671.1	2249.9
31°	7046.8	7103.9	6845.0	6458.4	5719.0	4813.1	4065.2	3476.1	2927.9	2611.2	2195.6
32°	6984.7	7029.2	6766.0	6354.0	5573.0	4672.0	3953.8	3372.4	2841.9	2536.4	2125.8
33°	6839.4	6919.1	6598.1	6143.0	5319.0	4463.2	3795.7	3237.0	2734.6	2439.0	2040.4
34°	6598.8	6649.6	6317.3	5812.8	4980.3	4209.2	3601.7	3079.6	2611.9	2324.0	1943.7
35°	6220.6	6265.8	5898.2	5366.9	4594.4	3922.7	3380.2	2906.1	2474.3	2194.9	1836.5
36°	5697.1	5740.2	5355.7	4871.7	4204.9	3624.3	3146.6	2717.0	2325.4	2056.6	1722.9
37°	5085.4	5122.8	4780.6	4385.6	3822.5	3322.3	2910.3	2525.1	2168.1	1915.5	1615.0
38°	4494.2	4528.1	4251.5	3929.8	3453.6	3027.4	2674.7	2326.1	2005.8	1773.7	1501.4
39°	3960.8	3990.5	3767.5	3502.2	3102.2	2744.5	2439.7	2128.6	1842.8	1631.9	1384.2
40°	3486.0	3511.4	3328.0	3110.0	2783.3	2479.9	2211.1	1937.4	1683.4	1494.3	1274.9
42.5°	2558.9	2564.6	2455.2	2326.8	2072.8	1898.6	1707.4	1509.8	1324.3	1194.5	1054.8
45°	1785.7	1855.5	1784.3	1698.9	1516.9	1407.5	1285.5	1166.2	1059.0	934.1	795.8
47.5°	1284.1	1286.9	1244.5	1190.9	1047.0	972.2	872.0	727.4	620.9	443.8	329.5
50°	595.5	562.3	564.4	527.7	470.6	373.9	312.5	222.9	177.8	127.0	102.3
51°	354.2	329.5	333.0	306.9	268.8	209.5	177.8	142.5	123.5	96.0	79.0
52°	206.7	198.3	197.5	185.6	158.0	145.3	128.4	107.2	93.8	74.1	61.4
53°	150.3	144.6	144.6	136.9	117.8	109.4	97.4	82.5	72.0	56.4	46.6
54°	112.2	107.9	107.9	103.0	95.2	81.8	73.4	61.4	53.6	43.7	34.6
55°	81.1	78.3	78.3	74.8	69.1	59.3	52.9	44.4	39.5	31.7	25.4
57.5°	33.9	32.5	32.5	31.0	29.6	25.4	24.0	20.5	17.6	15.5	12.7
60°	15.5	14.8	15.5	14.8	13.4	14.1	12.0	10.6	9.9	8.5	7.1
61°	12.0	11.3	11.3	11.3	9.9	9.9	9.2	8.5	7.8	6.3	5.6
62°	9.2	8.5	8.5	8.5	7.8	7.8	7.1	6.3	6.3	4.9	4.2
63°	7.1	6.3	6.3	6.3	5.6	5.6	5.6	4.9	4.9	4.2	3.5
64°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	4.2	3.5	2.8	2.8
65°	4.2	3.5	4.2	3.5	3.5	3.5	3.5	3.5	2.8	2.1	2.1
66°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.1	1.4



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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°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
75°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
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°	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3	66.3
2.5°	96.0	98.8	96.7	91.0	93.8	92.4	89.6	87.5	74.8	64.9	55.0
5°	226.5	228.6	216.6	195.4	188.4	177.1	160.9	149.6	84.7	62.1	48.7
7.5°	428.3	414.1	402.9	363.3	346.4	320.3	289.3	267.4	96.7	58.6	45.2
10°	648.4	625.8	602.5	544.7	514.3	474.1	429.7	404.3	109.4	56.4	45.2
12.5°	866.4	836.0	793.7	730.2	687.2	632.9	572.2	527.0	118.5	57.9	52.2
15°	1055.5	1018.8	972.2	900.3	850.2	782.4	703.4	641.3	122.8	65.6	72.7
17.5°	1261.5	1195.2	1118.3	1026.5	971.5	893.2	804.3	728.8	122.8	83.3	116.4
20°	1498.5	1377.2	1253.7	1125.3	1047.7	965.9	870.6	789.5	127.7	125.6	160.2
22.5°	1719.4	1552.2	1377.9	1210.7	1102.7	1013.8	917.2	824.1	148.2	138.3	106.5
25°	1890.8	1678.4	1473.1	1269.9	1147.9	1049.1	945.4	833.2	135.5	79.0	57.9
26°	1935.3	1706.0	1492.2	1277.0	1150.0	1048.4	942.6	823.3	113.6	62.8	46.6
27°	1958.5	1715.1	1493.6	1270.7	1141.5	1036.4	927.1	802.9	91.0	50.8	38.1
28°	1958.5	1704.6	1478.8	1253.0	1119.7	1013.8	900.3	770.4	74.1	41.6	30.3
29°	1938.8	1677.0	1449.2	1226.2	1090.0	982.1	863.6	732.3	62.8	34.6	24.7
30°	1900.7	1636.8	1409.6	1191.6	1051.9	946.1	823.3	692.8	54.3	28.2	19.8
31°	1847.1	1591.7	1361.0	1154.2	1016.7	913.0	786.7	652.6	47.3	22.6	16.2
32°	1782.9	1535.2	1310.9	1115.4	987.7	881.9	748.6	610.3	40.9	19.0	14.1
33°	1708.8	1471.7	1258.7	1077.3	959.5	846.6	706.9	564.4	35.3	15.5	12.0
34°	1626.9	1401.9	1205.0	1036.4	924.9	802.2	658.3	515.7	30.3	13.4	9.9
35°	1538.0	1323.6	1150.0	994.8	886.1	752.8	606.0	464.2	26.1	11.3	8.5
36°	1442.1	1250.2	1096.4	953.2	838.2	699.2	548.9	411.3	22.6	9.2	7.8
37°	1346.1	1181.1	1043.5	908.7	782.4	638.5	488.9	356.3	19.8	7.8	6.3
38°	1255.1	1114.0	991.3	857.2	717.5	571.5	426.8	301.3	16.9	7.1	5.6
39°	1169.8	1049.1	937.6	795.8	650.5	506.6	366.9	244.1	14.8	6.3	4.9
40°	1092.9	987.7	879.1	727.4	581.4	440.2	306.2	182.0	12.7	4.9	4.2
42.5°	930.6	819.1	675.9	507.3	393.0	255.4	142.5	67.7	9.2	3.5	3.5
45°	614.5	472.7	321.0	191.2	129.1	77.6	57.9	40.9	7.1	2.8	2.8
47.5°	205.3	130.5	95.2	68.4	58.6	46.6	37.4	25.4	4.9	2.1	2.1
50°	78.3	63.5	52.2	39.5	35.3	28.2	22.6	14.8	3.5	2.1	2.1
51°	61.4	50.1	40.9	31.0	28.2	22.6	18.3	12.7	2.8	2.1	2.1
52°	47.3	38.8	31.7	24.0	22.6	18.3	15.5	10.6	2.8	1.4	2.1
53°	36.0	29.6	24.0	18.3	17.6	14.8	12.7	8.5	2.1	1.4	2.1
54°	26.8	22.6	19.0	14.8	14.8	12.7	10.6	7.1	2.1	1.4	2.1
55°	20.5	16.9	14.8	11.3	12.0	10.6	9.2	5.6	2.1	1.4	2.1
57.5°	10.6	9.9	8.5	7.1	7.8	7.1	6.3	3.5	2.1	1.4	2.1
60°	6.3	5.6	4.9	4.2	4.9	4.9	4.9	2.1	2.1	1.4	2.1
61°	4.9	4.2	3.5	3.5	4.2	4.2	4.2	2.1	2.1	1.4	2.1
62°	3.5	3.5	2.8	2.8	4.2	3.5	3.5	2.1	2.1	1.4	2.1
63°	2.8	2.8	2.8	2.1	3.5	3.5	3.5	2.1	2.1	1.4	2.1
64°	2.1	2.1	2.1	2.1	2.8	3.5	3.5	1.4	2.1	1.4	2.1
65°	2.1	2.1	1.4	1.4	2.8	2.8	2.8	1.4	2.1	1.4	2.1
66°	1.4	1.4	1.4	1.4	2.8	2.8	2.8	1.4	2.1	1.4	2.1



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.1
75°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.1
77.5°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.8
80°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.8
82.5°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.8
85°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.8
87.5°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	2.1	2.1
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):

	135°	157.5°	180°
0°	66.3	66.3	66.3
2.5°	50.1	48.0	46.6
5°	43.0	40.9	40.2
7.5°	40.2	39.5	40.2
10°	44.4	47.3	50.8
12.5°	59.3	69.8	75.5
15°	98.1	127.7	140.4
17.5°	172.9	196.8	211.0
20°	152.4	139.0	146.7
22.5°	82.5	72.0	74.1
25°	45.9	39.5	40.2
26°	36.7	31.7	31.7
27°	29.6	25.4	25.4
28°	24.0	20.5	20.5
29°	19.0	16.2	16.2
30°	15.5	13.4	13.4
31°	12.7	10.6	10.6
32°	10.6	9.2	8.5
33°	9.2	7.8	7.1
34°	7.8	6.3	5.6
35°	6.3	4.9	4.9
36°	5.6	4.2	4.2
37°	4.9	3.5	3.5
38°	4.2	2.8	2.8
39°	3.5	2.8	2.1
40°	2.8	2.1	1.4
42.5°	2.1	1.4	0.7
45°	2.1	0.7	0.0
47.5°	1.4	0.7	0.0
50°	1.4	0.0	0.0
51°	1.4	0.0	0.0
52°	1.4	0.0	0.0
53°	0.7	0.0	0.0
54°	1.4	0.0	0.0
55°	0.7	0.0	0.0
57.5°	1.4	0.0	0.0
60°	1.4	0.0	0.0
61°	1.4	0.0	0.0
62°	1.4	0.0	0.0
63°	1.4	0.0	0.0
64°	1.4	0.7	0.0
65°	1.4	0.7	0.0
66°	1.4	0.7	0.0



TEST NUMBER: P170905

CATALOG NUMBER: LDA4A18927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.4	0.7	0.0
75°	1.4	0.7	0.0
77.5°	1.4	0.7	0.0
80°	1.4	0.7	0.0
82.5°	1.4	0.7	0.0
85°	1.4	0.7	0.0
87.5°	1.4	0.7	0.0
90°	0.0	0.0	0.0



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







67.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4
70°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.4	1.4	0.7	0.7





67.5°	1.4	0.7	1.4	1.4	2.1	2.8	2.8	1.4	2.1	1.4	2.1
70°	0.7	0.7	0.7	0.7	2.1	2.1	2.8	1.4	2.1	1.4	2.1





67.5°	1.4	0.7	0.0
70°	1.4	0.7	0.0



(END OF REPORT)