

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: P170902

Luminaire Tested: **LDA4A18830D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170902
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: LDA4A18830D010TE 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 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1532.5 lumens
Efficiency: N/A
Efficacy: 52.6 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

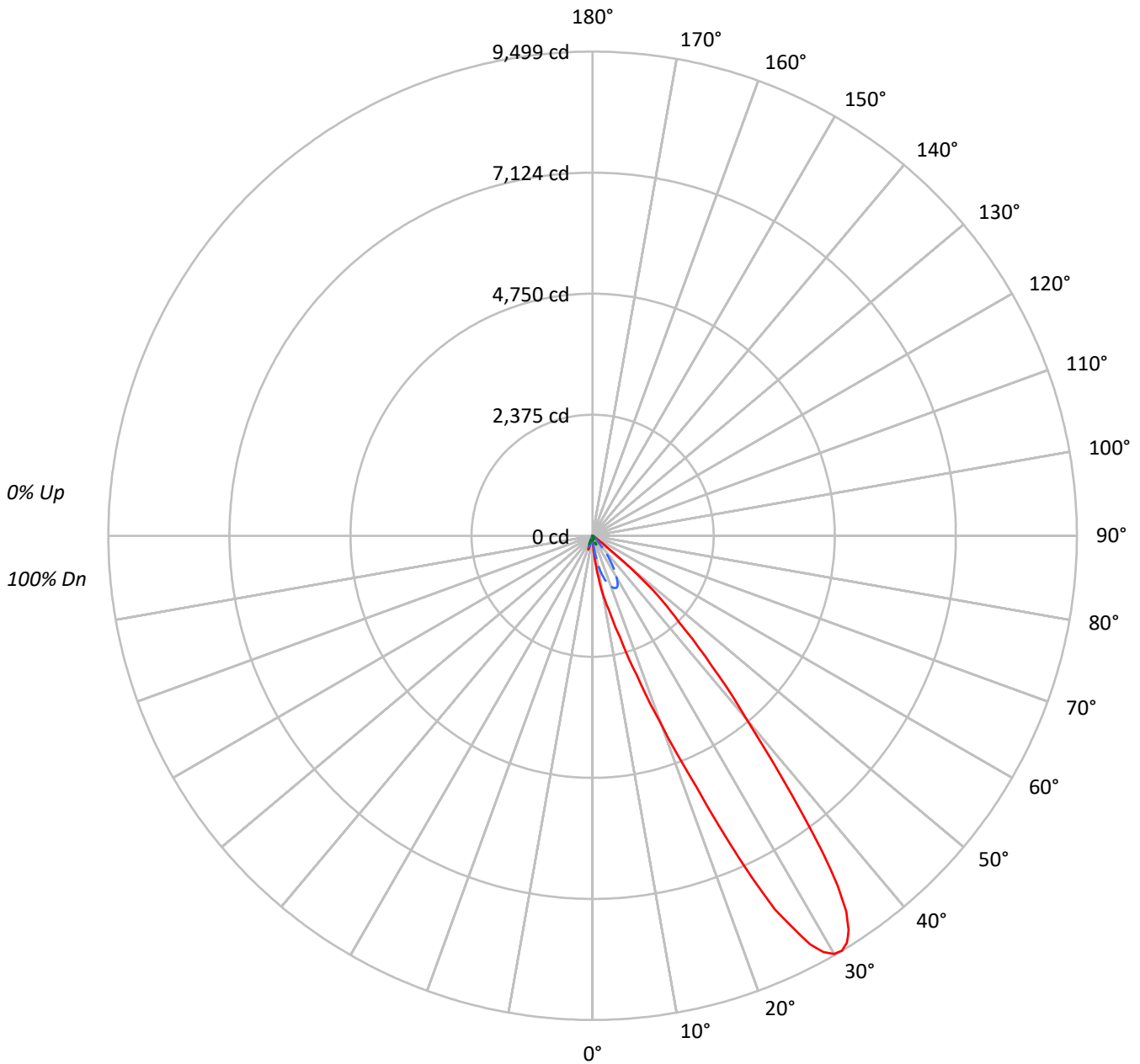
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11027	11027	11027
5°	49452	10363	6711
10°	146390	9531	8580
15°	261344	11288	24173
20°	517670	22223	25964
25°	1007348	14494	7376
30°	1349356	5412	2578
35°	1262605	2289	1009
40°	756599	1079	306
45°	419870	663	0
50°	154031	556	0
55°	23526	409	0
60°	5156	469	0
65°	1664	555	0
70°	361	685	0
75°	0	1382	0
80°	0	2060	0
85°	0	4104	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.6	1.3
10°-20°	165.5	10.8
20°-30°	494.1	32.2
30°-40°	585.1	38.2
40°-50°	242.8	15.8
50°-60°	18.9	1.2
60°-70°	2.6	0.2
70°-80°	2.0	0.1
80°-90°	1.8	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°	679.2	44.3
0°-40°	1264.4	82.5
0°-60°	1526.0	99.6
0°-90°	1532.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1532.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	89	89	89	89	89	
5°	399	202	84	58	54	63
15°	2047	864	88	132	189	676
25°	7402	1123	106	62	54	3381
35°	8385	626	15	9	7	4859
45°	2407	55	4	3	0	1962
55°	109	8	2	1	0	160
65°	6	2	2	2	0	7
75°	0	2	3	2	0	0
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°	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4
2.5°	155.0	147.4	151.2	144.6	148.4	141.7	136.9	141.7	141.7	137.9	132.2
5°	399.4	397.5	405.1	387.1	391.8	371.8	354.7	359.5	355.7	343.3	321.4
7.5°	760.8	753.2	761.8	736.1	737.0	703.7	678.1	683.8	666.7	645.7	607.7
10°	1168.8	1158.3	1167.8	1137.4	1131.7	1085.1	1049.0	1054.7	1015.7	981.4	923.4
12.5°	1522.6	1521.6	1491.2	1496.9	1485.5	1414.2	1391.3	1393.2	1340.0	1301.9	1232.5
15°	2046.6	2066.5	2072.3	2033.3	1962.9	1833.6	1776.5	1754.6	1668.1	1604.4	1504.5
17.5°	2852.1	2879.7	2785.5	2808.3	2692.3	2489.7	2376.6	2309.1	2146.4	2026.6	1845.9
20°	3943.8	3920.1	3784.1	3767.0	3569.1	3308.6	3070.8	2943.4	2693.3	2518.3	2254.8
22.5°	5353.2	5335.2	5102.2	4998.5	4584.8	4217.7	3909.6	3590.1	3218.2	2984.3	2626.7
25°	7401.7	7319.0	6870.1	6575.3	5847.8	5223.9	4710.4	4213.9	3644.3	3390.4	2935.8
26°	8155.9	8135.9	7668.0	7280.0	6403.2	5629.0	4936.7	4439.3	3811.7	3514.9	3023.3
27°	8608.6	8767.4	8331.8	7892.4	6933.8	6006.6	5203.9	4621.0	3941.9	3602.4	3079.4
28°	9078.4	9181.1	8791.2	8239.6	7358.9	6307.1	5406.5	4743.6	4021.8	3645.2	3098.4
29°	9337.0	9435.9	9073.6	8556.3	7637.6	6502.1	5526.3	4797.9	4051.3	3644.3	3081.3
30°	9474.0	9566.2	9212.4	8710.3	7752.6	6562.9	5552.0	4776.0	4022.8	3600.5	3032.8
31°	9498.7	9575.7	9226.7	8705.6	7708.9	6487.8	5479.7	4685.6	3946.7	3519.7	2959.5
32°	9415.0	9474.9	9120.2	8564.8	7512.0	6297.6	5329.5	4545.8	3830.7	3418.9	2865.4
33°	9219.1	9326.6	8893.9	8280.5	7169.7	6016.1	5116.4	4363.2	3686.1	3287.6	2750.3
34°	8894.8	8963.3	8515.4	7835.4	6713.2	5673.7	4854.9	4151.2	3520.6	3132.6	2620.0
35°	8385.1	8445.9	7950.5	7234.3	6193.0	5287.6	4556.3	3917.2	3335.2	2958.6	2475.5
36°	7679.4	7737.4	7219.1	6566.7	5668.0	4885.3	4241.5	3662.3	3134.5	2772.2	2322.4
37°	6854.9	6905.3	6444.1	5911.5	5152.6	4478.3	3922.9	3403.7	2922.5	2582.0	2176.9
38°	6057.9	6103.6	5730.8	5297.1	4655.2	4080.8	3605.3	3135.5	2703.7	2390.8	2023.8
39°	5339.0	5378.9	5078.4	4720.8	4181.6	3699.4	3288.6	2869.2	2484.0	2199.7	1865.9
40°	4698.9	4733.2	4485.9	4192.1	3751.7	3342.8	2980.5	2611.5	2269.1	2014.2	1718.5
42.5°	3449.3	3456.9	3309.5	3136.4	2794.1	2559.2	2301.4	2035.2	1785.0	1610.1	1421.8
45°	2407.0	2501.2	2405.1	2290.0	2044.7	1897.3	1732.7	1572.0	1427.5	1259.1	1072.7
47.5°	1730.8	1734.6	1677.6	1605.3	1411.3	1310.5	1175.5	980.5	836.9	598.2	444.1
50°	802.7	758.0	760.8	711.4	634.3	504.0	421.3	300.5	239.7	171.2	137.9
51°	477.4	444.1	448.9	413.7	362.3	282.5	239.7	192.1	166.4	129.3	106.5
52°	278.6	267.2	266.3	250.1	213.0	195.9	173.1	144.6	126.5	99.9	82.7
53°	202.6	195.0	195.0	184.5	158.8	147.4	131.2	111.3	97.0	76.1	62.8
54°	151.2	145.5	145.5	138.8	128.4	110.3	98.9	82.7	72.3	59.0	46.6
55°	109.4	105.6	105.6	100.8	93.2	79.9	71.3	59.9	53.3	42.8	34.2
57.5°	45.6	43.7	43.7	41.8	39.9	34.2	32.3	27.6	23.8	20.9	17.1
60°	20.9	20.0	20.9	20.0	18.1	19.0	16.2	14.3	13.3	11.4	9.5
61°	16.2	15.2	15.2	15.2	13.3	13.3	12.4	11.4	10.5	8.6	7.6
62°	12.4	11.4	11.4	11.4	10.5	10.5	9.5	8.6	8.6	6.7	5.7
63°	9.5	8.6	8.6	8.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8
64°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	5.7	4.8	3.8	3.8
65°	5.7	4.8	5.7	4.8	4.8	4.8	4.8	4.8	3.8	2.9	2.9
66°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	2.9	1.9



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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	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
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°	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4	89.4
2.5°	129.3	133.1	130.3	122.7	126.5	124.6	120.8	117.9	100.8	87.5	74.2
5°	305.3	308.1	292.0	263.4	253.9	238.7	216.8	201.6	114.1	83.7	65.6
7.5°	577.3	558.2	543.0	489.8	466.9	431.8	389.9	360.4	130.3	78.9	60.9
10°	874.0	843.5	812.2	734.2	693.3	639.1	579.2	544.9	147.4	76.1	60.9
12.5°	1167.8	1126.9	1069.9	984.3	926.3	853.1	771.3	710.4	159.8	78.0	70.4
15°	1422.7	1373.3	1310.5	1213.5	1146.0	1054.7	948.2	864.5	165.5	88.4	98.0
17.5°	1700.4	1611.0	1507.4	1383.7	1309.5	1204.0	1084.2	982.4	165.5	112.2	156.9
20°	2019.9	1856.4	1689.9	1516.9	1412.3	1301.9	1173.5	1064.2	172.1	169.3	215.9
22.5°	2317.6	2092.2	1857.3	1631.9	1486.4	1366.6	1236.3	1110.8	199.7	186.4	143.6
25°	2548.7	2262.5	1985.7	1711.8	1547.3	1414.2	1274.4	1123.1	182.6	106.5	78.0
26°	2608.6	2299.5	2011.4	1721.3	1550.1	1413.2	1270.6	1109.8	153.1	84.6	62.8
27°	2640.0	2311.9	2013.3	1712.8	1538.7	1397.0	1249.6	1082.3	122.7	68.5	51.4
28°	2640.0	2297.6	1993.3	1689.0	1509.3	1366.6	1213.5	1038.5	99.9	56.1	40.9
29°	2613.4	2260.6	1953.4	1652.9	1469.3	1323.8	1164.0	987.1	84.6	46.6	33.3
30°	2562.0	2206.3	1900.1	1606.3	1418.0	1275.3	1109.8	933.9	73.2	38.0	26.6
31°	2489.7	2145.5	1834.5	1555.9	1370.4	1230.6	1060.4	879.7	63.7	30.4	21.9
32°	2403.2	2069.4	1767.0	1503.5	1331.4	1188.8	1009.0	822.6	55.2	25.7	19.0
33°	2303.3	1983.8	1696.6	1452.2	1293.4	1141.2	952.9	760.8	47.6	20.9	16.2
34°	2193.0	1889.7	1624.3	1397.0	1246.8	1081.3	887.3	695.2	40.9	18.1	13.3
35°	2073.2	1784.1	1550.1	1340.9	1194.5	1014.7	816.9	625.8	35.2	15.2	11.4
36°	1943.9	1685.2	1477.9	1284.8	1129.8	942.5	739.9	554.4	30.4	12.4	10.5
37°	1814.5	1592.0	1406.5	1224.9	1054.7	860.7	659.1	480.3	26.6	10.5	8.6
38°	1691.8	1501.6	1336.2	1155.5	967.2	770.3	575.4	406.1	22.8	9.5	7.6
39°	1576.8	1414.2	1263.9	1072.7	876.8	682.8	494.5	329.0	20.0	8.6	6.7
40°	1473.1	1331.4	1185.0	980.5	783.6	593.4	412.7	245.4	17.1	6.7	5.7
42.5°	1254.4	1104.1	911.1	683.8	529.7	344.3	192.1	91.3	12.4	4.8	4.8
45°	828.3	637.2	432.7	257.7	174.0	104.6	78.0	55.2	9.5	3.8	3.8
47.5°	276.7	175.9	128.4	92.2	78.9	62.8	50.4	34.2	6.7	2.9	2.9
50°	105.6	85.6	70.4	53.3	47.6	38.0	30.4	20.0	4.8	2.9	2.9
51°	82.7	67.5	55.2	41.8	38.0	30.4	24.7	17.1	3.8	2.9	2.9
52°	63.7	52.3	42.8	32.3	30.4	24.7	20.9	14.3	3.8	1.9	2.9
53°	48.5	39.9	32.3	24.7	23.8	20.0	17.1	11.4	2.9	1.9	2.9
54°	36.1	30.4	25.7	20.0	20.0	17.1	14.3	9.5	2.9	1.9	2.9
55°	27.6	22.8	20.0	15.2	16.2	14.3	12.4	7.6	2.9	1.9	2.9
57.5°	14.3	13.3	11.4	9.5	10.5	9.5	8.6	4.8	2.9	1.9	2.9
60°	8.6	7.6	6.7	5.7	6.7	6.7	6.7	2.9	2.9	1.9	2.9
61°	6.7	5.7	4.8	4.8	5.7	5.7	5.7	2.9	2.9	1.9	2.9
62°	4.8	4.8	3.8	3.8	5.7	4.8	4.8	2.9	2.9	1.9	2.9
63°	3.8	3.8	3.8	2.9	4.8	4.8	4.8	2.9	2.9	1.9	2.9
64°	2.9	2.9	2.9	2.9	3.8	4.8	4.8	1.9	2.9	1.9	2.9
65°	2.9	2.9	1.9	1.9	3.8	3.8	3.8	1.9	2.9	1.9	2.9
66°	1.9	1.9	1.9	1.9	3.8	3.8	3.8	1.9	2.9	1.9	2.9



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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°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	2.9
75°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	2.9
77.5°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	3.8
80°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	3.8
82.5°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	3.8
85°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	3.8
87.5°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	2.9	2.9
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°	89.4	89.4	89.4
2.5°	67.5	64.7	62.8
5°	58.0	55.2	54.2
7.5°	54.2	53.3	54.2
10°	59.9	63.7	68.5
12.5°	79.9	94.2	101.8
15°	132.2	172.1	189.3
17.5°	233.0	265.3	284.4
20°	205.4	187.3	197.8
22.5°	111.3	97.0	99.9
25°	61.8	53.3	54.2
26°	49.5	42.8	42.8
27°	39.9	34.2	34.2
28°	32.3	27.6	27.6
29°	25.7	21.9	21.9
30°	20.9	18.1	18.1
31°	17.1	14.3	14.3
32°	14.3	12.4	11.4
33°	12.4	10.5	9.5
34°	10.5	8.6	7.6
35°	8.6	6.7	6.7
36°	7.6	5.7	5.7
37°	6.7	4.8	4.8
38°	5.7	3.8	3.8
39°	4.8	3.8	2.9
40°	3.8	2.9	1.9
42.5°	2.9	1.9	1.0
45°	2.9	1.0	0.0
47.5°	1.9	1.0	0.0
50°	1.9	0.0	0.0
51°	1.9	0.0	0.0
52°	1.9	0.0	0.0
53°	1.0	0.0	0.0
54°	1.9	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.9	0.0	0.0
60°	1.9	0.0	0.0
61°	1.9	0.0	0.0
62°	1.9	0.0	0.0
63°	1.9	0.0	0.0
64°	1.9	1.0	0.0
65°	1.9	1.0	0.0
66°	1.9	1.0	0.0



TEST NUMBER: P170902

CATALOG NUMBER: LDA4A18830D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.9	1.0	0.0
75°	1.9	1.0	0.0
77.5°	1.9	1.0	0.0
80°	1.9	1.0	0.0
82.5°	1.9	1.0	0.0
85°	1.9	1.0	0.0
87.5°	1.9	1.0	0.0
90°	0.0	0.0	0.0



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







67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.9	1.9
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.0	1.0





67.5°	1.9	1.0	1.9	1.9	2.9	3.8	3.8	1.9	2.9	1.9	2.9
70°	1.0	1.0	1.0	1.0	2.9	2.9	3.8	1.9	2.9	1.9	2.9





67.5°	1.9	1.0	0.0
70°	1.9	1.0	0.0



(END OF REPORT)