

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: P170697

Luminaire Tested: **LDA4A13927D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170697
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25649)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13927D010TE LAR25NF 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 25°
Narrow Flood 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: 996.7 lumens
Efficiency: N/A
Efficacy: 44.8 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

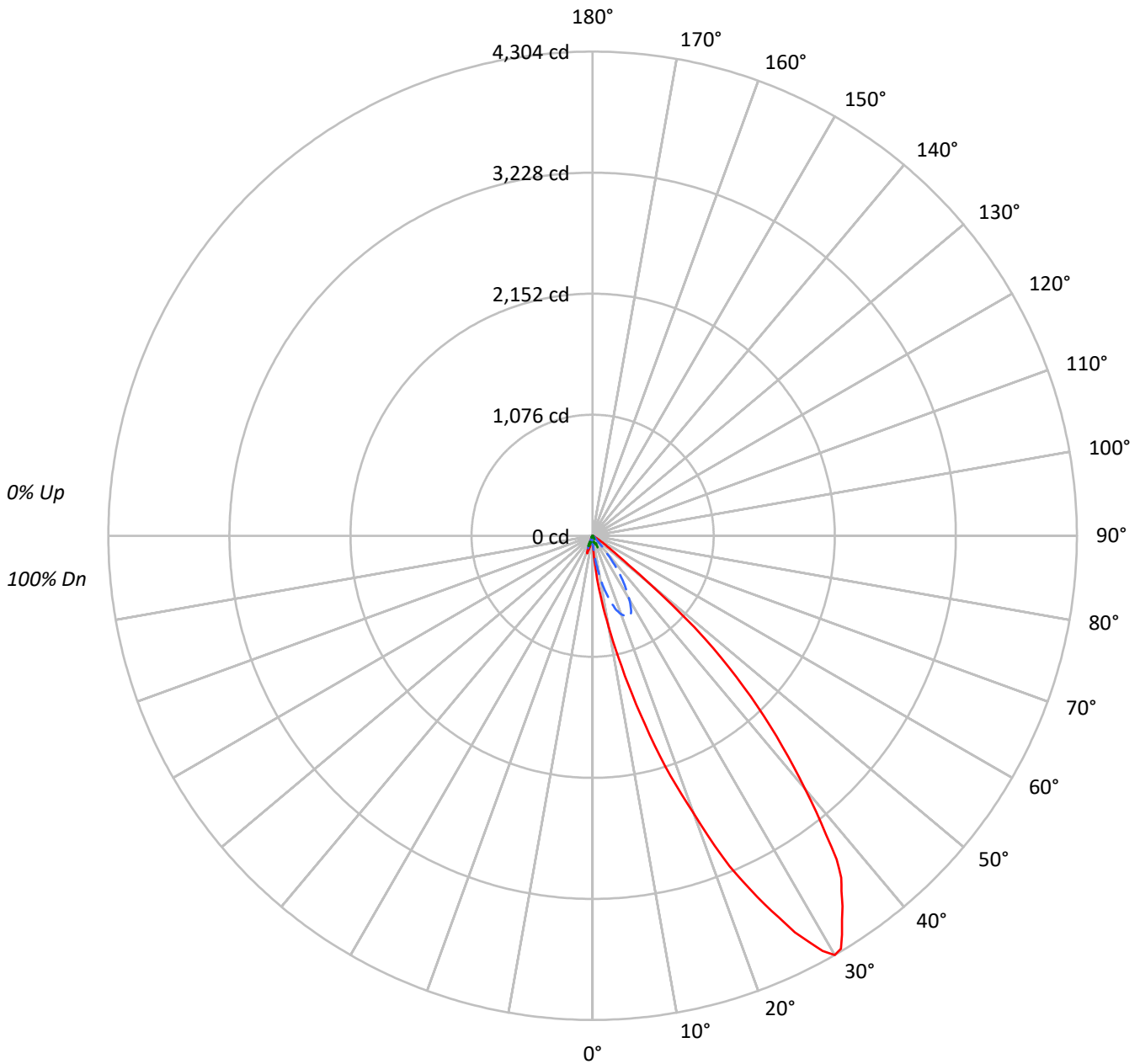
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82																			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74																			
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66																			
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60																			
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43																			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39																			
10	61	49	42	38	60	49	42	38	48	42	37	47	41	37	46	41	37	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8153	8153	8153
5°	35399	7689	4656
10°	102077	6914	5060
15°	209167	7636	14621
20°	345100	14203	14806
25°	491595	9064	4968
30°	612950	3974	1951
35°	580776	1807	858
40°	473034	918	274
45°	331343	488	0
50°	124154	326	0
55°	26451	366	0
60°	5057	271	0
65°	1488	496	0
70°	397	613	0
75°	0	810	0
80°	0	1208	0
85°	0	2406	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.9	1.4
10°-20°	119.4	12.0
20°-30°	304.9	30.6
30°-40°	353.1	35.4
40°-50°	182.2	18.3
50°-60°	18.8	1.9
60°-70°	2.0	0.2
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°	438.1	44.0
0°-40°	791.3	79.4
0°-60°	992.3	99.6
0°-90°	996.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	996.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	66	66	66	66	66	
5°	286	149	62	41	38	45
15°	1638	600	60	80	114	501
25°	3612	783	67	42	36	1678
35°	3857	428	12	7	6	2362
45°	1900	50	3	2	0	1422
55°	123	7	2	1	0	154
65°	5	2	2	1	0	7
75°	0	1	2	2	0	0
85°	0	1	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°	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
2.5°	113.9	109.9	107.1	108.2	114.5	107.6	108.2	105.9	104.8	103.7	100.8
5°	285.9	274.5	267.1	267.7	251.2	263.7	262.6	252.9	246.6	234.7	227.8
7.5°	536.5	512.0	503.5	500.6	502.3	490.4	485.3	472.7	456.2	434.6	422.0
10°	815.0	800.2	795.1	786.0	785.4	764.3	751.8	735.9	702.8	672.6	650.4
12.5°	1187.5	1142.0	1134.0	1116.9	1112.3	1076.5	1050.3	1026.9	971.7	931.8	896.5
15°	1638.0	1601.0	1609.6	1557.2	1542.9	1484.3	1435.3	1385.2	1295.7	1234.8	1172.1
17.5°	2149.5	2102.2	2107.9	2042.4	1924.5	1935.3	1864.2	1795.2	1669.4	1587.9	1491.1
20°	2629.1	2595.5	2597.7	2510.6	2470.7	2362.5	2267.4	2185.4	2017.9	1914.3	1786.1
22.5°	3181.0	3093.8	3077.3	2958.8	2888.8	2743.5	2610.8	2502.1	2299.3	2182.5	2025.3
25°	3612.1	3552.3	3506.7	3366.6	3269.2	3080.2	2926.4	2765.2	2521.4	2392.1	2205.3
26°	3773.9	3717.5	3658.8	3507.9	3398.5	3198.6	3031.2	2858.0	2597.2	2458.8	2255.4
27°	3956.7	3864.4	3793.8	3624.6	3506.2	3296.0	3097.2	2933.8	2654.7	2501.5	2287.3
28°	4086.0	3993.7	3900.3	3716.3	3588.2	3368.3	3161.6	2983.3	2688.3	2522.0	2300.4
29°	4218.7	4120.7	3984.6	3784.1	3644.6	3413.3	3198.6	3007.8	2698.0	2520.8	2293.6
30°	4303.6	4205.0	4029.0	3822.3	3674.8	3431.6	3208.9	3003.3	2682.6	2498.1	2268.5
31°	4283.6	4193.1	4018.2	3826.3	3671.9	3420.7	3190.1	2970.8	2643.9	2457.6	2223.0
32°	4183.9	4107.1	3974.4	3799.5	3640.6	3383.7	3146.2	2919.5	2588.1	2410.4	2167.7
33°	4068.3	4004.5	3912.8	3745.4	3585.9	3327.9	3085.8	2856.3	2523.7	2346.0	2101.1
34°	3971.5	3914.0	3829.1	3672.5	3511.3	3253.3	3009.5	2776.6	2450.2	2270.2	2022.5
35°	3857.0	3804.6	3726.0	3574.0	3407.6	3153.1	2913.8	2684.3	2363.7	2180.3	1931.4
36°	3757.4	3674.8	3595.0	3446.9	3281.2	3031.7	2801.1	2576.1	2265.7	2077.2	1828.8
37°	3603.0	3520.4	3435.0	3294.9	3131.4	2892.8	2675.8	2460.5	2154.1	1999.7	1719.5
38°	3372.3	3334.2	3248.7	3115.5	2963.4	2739.6	2538.5	2328.9	2028.2	1849.9	1603.3
39°	3157.0	3125.7	3042.6	2920.7	2780.0	2575.0	2386.4	2180.8	1886.4	1717.8	1480.8
40°	2937.8	2906.4	2828.4	2718.5	2592.0	2403.5	2224.7	2023.1	1737.7	1581.7	1357.8
42.5°	2418.3	2385.9	2369.3	2257.1	2123.3	1961.5	1795.8	1613.5	1370.9	1242.8	1067.3
45°	1899.5	1869.8	1807.8	1761.6	1642.0	1507.6	1372.6	1224.0	1045.1	918.7	754.7
47.5°	1357.8	1343.6	1345.9	1260.4	1146.5	1040.6	928.9	794.5	636.2	477.3	350.3
50°	647.0	651.0	666.9	607.1	521.7	459.6	393.6	308.7	225.5	177.1	137.3
51°	419.2	423.7	437.4	394.7	332.6	290.5	248.3	200.5	160.0	136.1	108.8
52°	283.6	283.6	286.5	261.4	230.7	206.7	182.3	154.3	124.7	107.1	86.0
53°	213.0	212.4	213.6	197.1	176.0	158.3	141.2	120.7	98.5	83.7	66.6
54°	162.9	162.3	163.5	150.9	136.1	123.0	109.9	94.5	76.3	62.7	50.1
55°	123.0	123.0	124.7	115.1	103.7	93.4	83.7	70.6	56.4	45.6	36.5
57.5°	49.6	49.6	51.3	47.8	42.7	38.7	35.3	30.2	25.1	21.1	17.1
60°	20.5	21.1	21.6	19.9	18.8	17.7	16.5	14.8	13.1	10.8	9.1
61°	15.4	15.4	15.9	14.8	14.2	13.1	12.5	11.4	10.3	8.5	7.4
62°	11.4	11.4	12.0	11.4	10.8	10.3	9.7	9.1	8.0	6.8	5.7
63°	8.5	8.5	9.1	8.5	8.5	8.0	7.4	6.8	6.3	5.1	4.6
64°	6.8	6.8	6.8	6.3	6.3	6.3	5.7	5.7	4.6	4.0	3.4
65°	5.1	5.1	5.1	5.1	4.6	4.6	4.6	4.0	4.0	2.8	2.8
66°	4.0	4.0	4.0	3.4	3.4	3.4	3.4	3.4	2.8	2.3	1.7



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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	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
80°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
85°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	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°	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
2.5°	102.0	101.4	95.7	95.7	98.0	94.5	92.8	88.9	76.3	64.9	54.7
5°	225.5	219.3	199.9	194.2	193.6	177.7	168.6	148.7	87.1	62.1	47.3
7.5°	416.3	397.5	364.5	346.9	325.2	312.7	290.5	256.3	99.1	58.1	42.7
10°	615.7	594.6	545.6	514.3	497.8	457.4	420.3	373.6	111.1	55.2	42.1
12.5°	844.1	796.8	750.1	694.3	644.7	608.9	547.3	492.7	119.0	54.7	46.1
15°	1091.3	1032.0	952.3	877.1	807.1	755.8	673.2	599.7	121.9	59.8	60.4
17.5°	1368.1	1257.0	1142.0	1039.4	943.2	874.3	771.7	685.2	120.2	73.5	96.3
20°	1627.2	1479.7	1323.6	1181.3	1045.1	955.7	837.2	743.3	120.7	108.2	129.9
22.5°	1832.8	1653.4	1463.2	1289.5	1116.9	1009.8	880.5	774.0	135.6	115.6	88.3
25°	1984.3	1773.0	1554.9	1355.0	1173.3	1053.1	911.3	783.1	126.4	66.6	50.1
26°	2024.8	1802.1	1572.0	1364.7	1180.1	1053.1	906.7	773.5	109.4	53.0	41.6
27°	2047.5	1815.2	1574.8	1360.1	1171.6	1041.1	890.2	754.1	89.4	44.4	35.3
28°	2050.4	1809.5	1560.6	1341.3	1147.7	1015.5	860.6	724.5	74.0	37.6	29.0
29°	2035.0	1788.4	1533.2	1310.0	1111.2	977.9	820.2	688.0	63.2	32.5	24.5
30°	2002.6	1751.4	1491.7	1267.8	1063.9	932.4	772.9	647.6	55.2	27.9	20.5
31°	1955.9	1700.7	1446.7	1217.7	1014.4	886.8	728.5	606.6	49.0	23.4	17.1
32°	1895.5	1640.9	1388.6	1163.6	970.0	843.5	685.7	565.0	43.9	19.9	14.2
33°	1828.3	1573.1	1325.4	1107.2	927.2	799.1	640.7	521.1	39.3	16.5	12.0
34°	1750.8	1498.5	1258.1	1050.8	881.7	750.1	592.3	476.1	34.2	13.7	10.3
35°	1662.5	1415.3	1185.8	999.6	831.0	697.1	541.6	428.3	30.2	12.0	8.5
36°	1566.8	1328.8	1112.9	940.9	776.3	641.9	488.1	379.9	26.2	10.3	7.4
37°	1466.6	1238.8	1040.0	874.3	715.9	583.2	432.9	327.5	22.8	8.5	6.3
38°	1360.7	1148.2	969.4	811.0	652.1	520.0	376.5	270.0	19.9	7.4	5.7
39°	1252.5	1058.8	899.3	741.6	586.6	457.9	322.4	209.6	17.7	6.3	5.1
40°	1146.5	974.5	825.3	665.8	521.1	397.0	270.0	154.3	15.4	5.7	4.0
42.5°	907.9	748.4	592.3	444.3	363.4	251.7	149.8	80.9	10.8	4.0	2.8
45°	594.0	442.5	319.5	216.4	188.0	106.5	69.5	50.1	8.0	2.8	2.3
47.5°	246.0	179.4	124.7	90.0	72.9	57.0	44.4	32.5	5.7	2.3	2.3
50°	108.2	85.4	67.8	53.0	46.1	37.0	28.5	19.9	3.4	1.7	1.7
51°	86.6	68.9	53.0	42.1	37.6	30.2	23.4	15.9	3.4	1.7	1.7
52°	68.3	53.5	41.6	32.5	30.2	24.5	19.4	13.1	2.8	1.7	1.7
53°	52.4	40.4	31.3	25.6	23.9	19.9	15.9	10.8	2.3	1.7	1.7
54°	38.7	30.8	24.5	19.9	19.4	15.9	13.1	9.1	2.3	1.7	1.7
55°	28.5	23.9	18.8	15.9	15.4	13.1	10.8	7.4	2.3	1.7	1.7
57.5°	14.8	12.5	10.3	9.1	9.1	8.5	7.4	4.6	1.7	1.1	1.7
60°	8.0	6.8	5.7	5.1	6.3	5.7	5.1	2.8	1.7	1.1	1.7
61°	6.3	5.7	4.6	4.0	5.1	4.6	4.6	2.3	1.7	1.7	1.7
62°	5.1	4.6	4.0	3.4	4.6	4.0	4.0	2.3	1.7	1.7	1.7
63°	4.0	3.4	2.8	2.8	4.0	4.0	3.4	1.7	1.7	1.7	1.7
64°	2.8	2.8	2.3	2.3	3.4	3.4	2.8	1.7	1.7	1.7	1.7
65°	2.3	2.3	1.7	1.7	2.8	2.8	2.8	1.7	1.7	1.7	1.7
66°	1.7	1.7	1.7	1.1	2.3	2.8	2.8	1.1	1.7	1.7	1.7



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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°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	1.7
75°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	1.7
77.5°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	2.3
80°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	2.3
82.5°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	2.3
85°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	2.3
87.5°	0.6	0.6	0.6	0.6	1.7	2.3	2.3	1.1	1.7	1.7	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



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	66.1	66.1	66.1
2.5°	49.6	46.7	46.1
5°	41.0	38.2	37.6
7.5°	37.6	35.3	34.7
10°	38.7	39.3	40.4
12.5°	49.6	54.7	59.2
15°	79.7	100.2	114.5
17.5°	139.0	153.8	163.5
20°	121.9	112.2	112.8
22.5°	68.3	61.5	60.9
25°	41.6	37.6	36.5
26°	34.7	31.3	30.2
27°	28.5	25.6	24.5
28°	23.4	21.1	20.5
29°	19.9	17.1	16.5
30°	16.5	14.2	13.7
31°	13.7	12.0	11.4
32°	12.0	10.3	9.1
33°	9.7	8.5	8.0
34°	8.5	6.8	6.3
35°	6.8	5.7	5.7
36°	6.3	5.1	4.6
37°	5.1	4.0	4.0
38°	4.6	3.4	2.8
39°	4.0	2.8	2.3
40°	3.4	2.3	1.7
42.5°	2.3	1.1	0.6
45°	1.7	0.6	0.0
47.5°	1.1	0.6	0.0
50°	1.1	0.0	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	0.6	0.0
64°	1.1	0.6	0.0
65°	1.1	0.6	0.0
66°	1.1	0.6	0.0



TEST NUMBER: P170697

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.7	0.6	0.0
75°	1.7	0.6	0.0
77.5°	1.7	0.6	0.0
80°	1.7	0.6	0.0
82.5°	1.7	0.6	0.0
85°	1.7	0.6	0.0
87.5°	1.1	0.6	0.0
90°	0.0	0.0	0.0



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







67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.7	1.1
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.6	0.6





67.5°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	1.1	1.7	1.7	1.7
70°	0.6	0.6	0.6	1.1	1.7	2.3	2.3	1.1	1.7	1.7	1.7





67.5°	1.1	0.6	0.0
70°	1.1	0.6	0.0



(END OF REPORT)