

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: P170687

Luminaire Tested: **LDA4A09835D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170687
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: LDA4A09835D010TE 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 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 951.7 lumens
Efficiency: N/A
Efficacy: 68.8 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

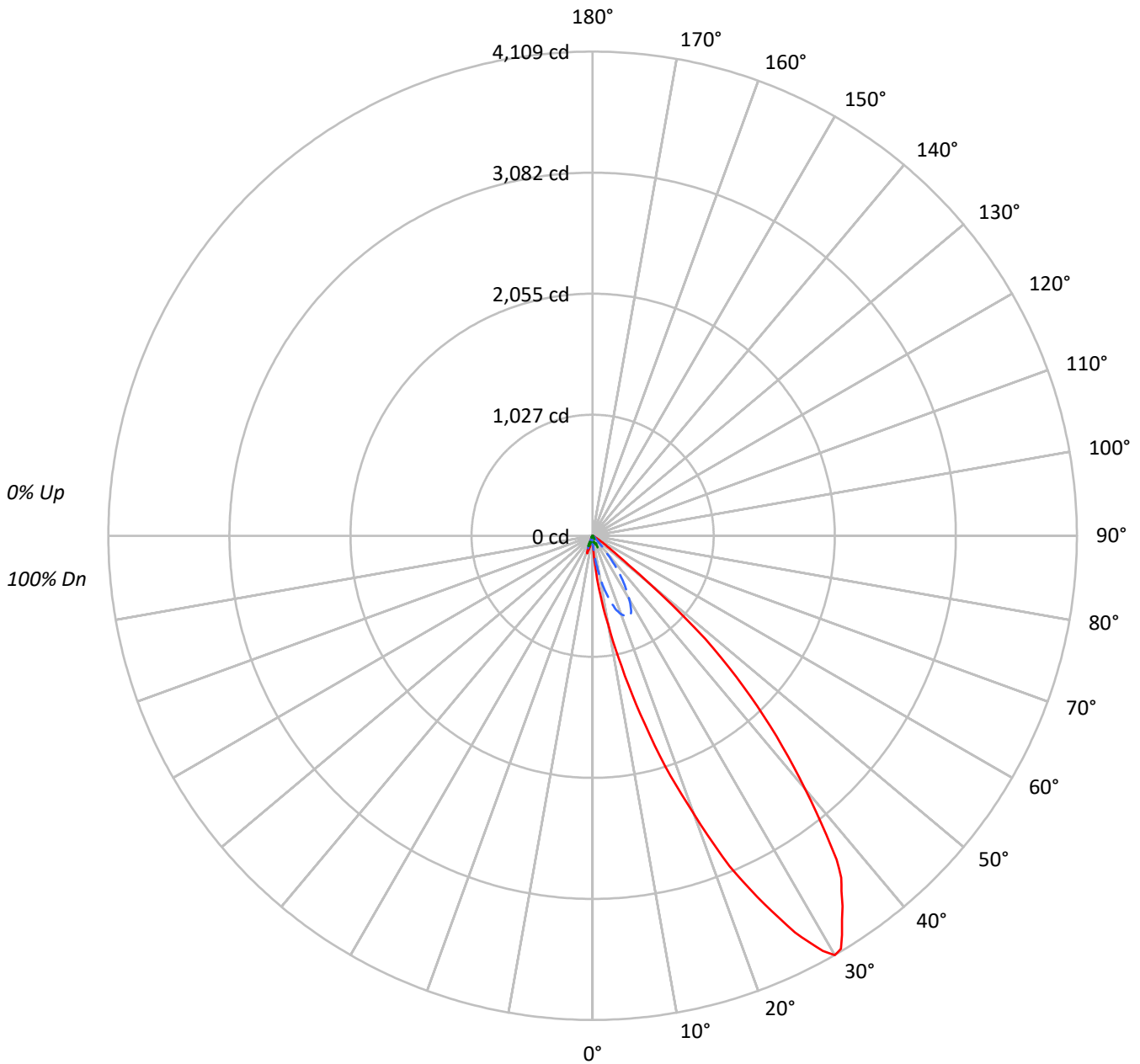
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	7783	7783	7783
5°	33802	7342	4445
10°	97481	6613	4835
15°	199731	7291	13957
20°	329532	13559	14137
25°	469425	8656	4736
30°	585291	3789	1866
35°	554576	1717	813
40°	451683	869	258
45°	316394	471	0
50°	118551	307	0
55°	25268	344	0
60°	4835	271	0
65°	1430	467	0
70°	397	577	0
75°	0	763	0
80°	0	1137	0
85°	0	2264	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.2	1.4
10°-20°	114.0	12.0
20°-30°	291.2	30.6
30°-40°	337.2	35.4
40°-50°	174.0	18.3
50°-60°	18.0	1.9
60°-70°	1.9	0.2
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°	418.4	44.0
0°-40°	755.6	79.4
0°-60°	947.5	99.6
0°-90°	951.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	951.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	63	63	63	63	63	
5°	273	142	59	39	36	43
15°	1564	573	57	76	109	479
25°	3449	748	64	40	35	1602
35°	3683	409	11	6	5	2255
45°	1814	48	3	2	0	1358
55°	118	7	2	1	0	147
65°	5	2	2	1	0	6
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°	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
2.5°	108.8	105.0	102.2	103.3	109.3	102.8	103.3	101.2	100.1	99.0	96.3
5°	273.0	262.1	255.1	255.6	239.8	251.8	250.7	241.5	235.5	224.1	217.5
7.5°	512.3	488.9	480.8	478.1	479.7	468.3	463.4	451.4	435.6	415.0	403.0
10°	778.3	764.1	759.2	750.5	750.0	729.9	717.9	702.7	671.1	642.3	621.1
12.5°	1133.9	1090.4	1082.8	1066.5	1062.2	1027.9	1002.9	980.6	927.8	889.8	856.0
15°	1564.1	1528.8	1536.9	1486.9	1473.3	1417.3	1370.5	1322.7	1237.3	1179.1	1119.3
17.5°	2052.5	2007.4	2012.8	1950.3	1837.7	1848.0	1780.1	1714.2	1594.1	1516.3	1423.8
20°	2510.5	2478.4	2480.5	2397.3	2359.3	2255.9	2165.1	2086.8	1926.9	1827.9	1705.5
22.5°	3037.5	2954.2	2938.5	2825.4	2758.5	2619.8	2493.1	2389.2	2195.6	2084.1	1934.0
25°	3449.2	3392.1	3348.5	3214.8	3121.8	2941.2	2794.4	2640.4	2407.7	2284.2	2105.8
26°	3603.6	3549.8	3493.8	3349.6	3245.2	3054.3	2894.4	2729.1	2480.0	2347.8	2153.7
27°	3778.2	3690.1	3622.6	3461.1	3348.0	3147.3	2957.5	2801.4	2534.9	2388.6	2184.1
28°	3901.6	3813.5	3724.3	3548.7	3426.3	3216.4	3019.0	2848.7	2567.0	2408.2	2196.6
29°	4028.4	3934.8	3804.8	3613.4	3480.2	3259.3	3054.3	2872.1	2576.3	2407.1	2190.1
30°	4109.4	4015.3	3847.3	3649.8	3509.0	3276.8	3064.1	2867.8	2561.6	2385.4	2166.2
31°	4090.4	4003.9	3836.9	3653.6	3506.3	3266.4	3046.2	2836.8	2524.6	2346.8	2122.7
32°	3995.2	3921.8	3795.1	3628.1	3476.3	3231.1	3004.3	2787.8	2471.3	2301.6	2069.9
33°	3884.8	3823.9	3736.3	3576.4	3424.1	3177.8	2946.6	2727.5	2409.8	2240.2	2006.3
34°	3792.3	3737.4	3656.4	3506.8	3352.9	3106.5	2873.8	2651.3	2339.7	2167.8	1931.2
35°	3683.0	3633.0	3557.9	3412.7	3253.9	3010.8	2782.4	2563.2	2257.0	2081.9	1844.2
36°	3587.8	3509.0	3432.8	3291.4	3133.2	2895.0	2674.7	2459.9	2163.5	1983.5	1746.3
37°	3440.5	3361.6	3280.0	3146.2	2990.1	2762.3	2555.1	2349.5	2056.9	1909.5	1641.9
38°	3220.2	3183.8	3102.2	2974.9	2829.7	2616.0	2424.0	2223.8	1936.7	1766.5	1531.0
39°	3014.6	2984.7	2905.3	2788.9	2654.6	2458.8	2278.8	2082.4	1801.3	1640.3	1414.0
40°	2805.2	2775.3	2700.8	2595.8	2475.1	2295.1	2124.3	1931.8	1659.3	1510.3	1296.6
42.5°	2309.2	2278.2	2262.5	2155.3	2027.5	1873.1	1714.8	1540.8	1309.1	1186.7	1019.2
45°	1813.8	1785.5	1726.2	1682.2	1567.9	1439.6	1310.7	1168.8	998.0	877.2	720.6
47.5°	1296.6	1283.0	1285.1	1203.6	1094.8	993.6	887.0	758.7	607.5	455.8	334.5
50°	617.8	621.6	636.9	579.8	498.2	438.9	375.8	294.8	215.4	169.1	131.1
51°	400.3	404.6	417.7	376.9	317.6	277.4	237.1	191.4	152.8	130.0	103.9
52°	270.8	270.8	273.6	249.6	220.3	197.4	174.0	147.4	119.1	102.2	82.1
53°	203.4	202.9	203.9	188.2	168.1	151.2	134.9	115.3	94.1	79.9	63.6
54°	155.5	155.0	156.1	144.1	130.0	117.5	105.0	90.3	72.9	59.8	47.9
55°	117.5	117.5	119.1	109.9	99.0	89.2	79.9	67.4	53.8	43.5	34.8
57.5°	47.3	47.3	48.9	45.7	40.8	37.0	33.7	28.8	23.9	20.1	16.3
60°	19.6	20.1	20.7	19.0	17.9	16.9	15.8	14.1	12.5	10.3	8.7
61°	14.7	14.7	15.2	14.1	13.6	12.5	12.0	10.9	9.8	8.2	7.1
62°	10.9	10.9	11.4	10.9	10.3	9.8	9.2	8.7	7.6	6.5	5.4
63°	8.2	8.2	8.7	8.2	8.2	7.6	7.1	6.5	6.0	4.9	4.4
64°	6.5	6.5	6.5	6.0	6.0	6.0	5.4	5.4	4.4	3.8	3.3
65°	4.9	4.9	4.9	4.9	4.4	4.4	4.4	3.8	3.8	2.7	2.7
66°	3.8	3.8	3.8	3.3	3.3	3.3	3.3	3.3	2.7	2.2	1.6



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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	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	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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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1	63.1
2.5°	97.4	96.8	91.4	91.4	93.5	90.3	88.6	84.8	72.9	62.0	52.2
5°	215.4	209.4	190.9	185.5	184.9	169.7	161.0	141.9	83.2	59.3	45.1
7.5°	397.6	379.6	348.1	331.2	310.5	298.6	277.4	244.7	94.6	55.5	40.8
10°	587.9	567.8	521.0	491.1	475.3	436.7	401.4	356.8	106.1	52.8	40.2
12.5°	806.0	760.9	716.3	663.0	615.6	581.4	522.6	470.4	113.7	52.2	44.1
15°	1042.0	985.5	909.3	837.5	770.6	721.7	642.8	572.7	116.4	57.1	57.6
17.5°	1306.4	1200.3	1090.4	992.5	900.6	834.8	736.9	654.3	114.8	70.2	91.9
20°	1553.8	1412.9	1263.9	1128.0	998.0	912.6	799.5	709.7	115.3	103.3	124.0
22.5°	1750.1	1578.8	1397.2	1231.3	1066.5	964.3	840.8	739.1	129.4	110.4	84.3
25°	1894.8	1693.0	1484.7	1293.8	1120.4	1005.6	870.2	747.8	120.7	63.6	47.9
26°	1933.4	1720.8	1501.1	1303.1	1126.9	1005.6	865.8	738.6	104.4	50.6	39.7
27°	1955.2	1733.3	1503.8	1298.7	1118.7	994.2	850.1	720.1	85.4	42.4	33.7
28°	1957.9	1727.8	1490.2	1280.8	1095.9	969.7	821.8	691.8	70.7	35.9	27.7
29°	1943.2	1707.7	1464.1	1250.9	1061.1	933.8	783.2	657.0	60.4	31.0	23.4
30°	1912.2	1672.4	1424.4	1210.6	1015.9	890.3	738.0	618.4	52.8	26.6	19.6
31°	1867.6	1624.0	1381.4	1162.8	968.6	846.8	695.6	579.2	46.8	22.3	16.3
32°	1810.0	1566.9	1325.9	1111.1	926.2	805.5	654.8	539.5	41.9	19.0	13.6
33°	1745.8	1502.1	1265.6	1057.3	885.4	763.0	611.8	497.6	37.5	15.8	11.4
34°	1671.8	1430.9	1201.4	1003.4	841.9	716.3	565.6	454.7	32.6	13.1	9.8
35°	1587.5	1351.5	1132.3	954.5	793.5	665.7	517.2	409.0	28.8	11.4	8.2
36°	1496.2	1268.8	1062.7	898.5	741.3	612.9	466.1	362.8	25.0	9.8	7.1
37°	1400.4	1182.9	993.1	834.8	683.6	556.9	413.3	312.7	21.8	8.2	6.0
38°	1299.3	1096.4	925.6	774.5	622.7	496.5	359.5	257.8	19.0	7.1	5.4
39°	1195.9	1011.0	858.8	708.1	560.2	437.3	307.8	200.1	16.9	6.0	4.9
40°	1094.8	930.5	788.1	635.8	497.6	379.1	257.8	147.4	14.7	5.4	3.8
42.5°	866.9	714.6	565.6	424.2	347.0	240.4	143.0	77.2	10.3	3.8	2.7
45°	567.2	422.6	305.1	206.7	179.5	101.7	66.4	47.9	7.6	2.7	2.2
47.5°	234.9	171.3	119.1	85.9	69.6	54.4	42.4	31.0	5.4	2.2	2.2
50°	103.3	81.6	64.7	50.6	44.1	35.4	27.2	19.0	3.3	1.6	1.6
51°	82.7	65.8	50.6	40.2	35.9	28.8	22.3	15.2	3.3	1.6	1.6
52°	65.3	51.1	39.7	31.0	28.8	23.4	18.5	12.5	2.7	1.6	1.6
53°	50.0	38.6	29.9	24.5	22.8	19.0	15.2	10.3	2.2	1.6	1.6
54°	37.0	29.4	23.4	19.0	18.5	15.2	12.5	8.7	2.2	1.6	1.6
55°	27.2	22.8	17.9	15.2	14.7	12.5	10.3	7.1	2.2	1.6	1.6
57.5°	14.1	12.0	9.8	8.7	8.7	8.2	7.1	4.4	1.6	1.1	1.6
60°	7.6	6.5	5.4	4.9	6.0	5.4	4.9	2.7	1.6	1.1	1.6
61°	6.0	5.4	4.4	3.8	4.9	4.4	4.4	2.2	1.6	1.6	1.6
62°	4.9	4.4	3.8	3.3	4.4	3.8	3.8	2.2	1.6	1.6	1.6
63°	3.8	3.3	2.7	2.7	3.8	3.8	3.3	1.6	1.6	1.6	1.6
64°	2.7	2.7	2.2	2.2	3.3	3.3	2.7	1.6	1.6	1.6	1.6
65°	2.2	2.2	1.6	1.6	2.7	2.7	2.7	1.6	1.6	1.6	1.6
66°	1.6	1.6	1.6	1.1	2.2	2.7	2.7	1.1	1.6	1.6	1.6



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CATALOG NUMBER: LDA4A09835D010TE LAR25NF 4LA1 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	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	1.6
75°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	1.6
77.5°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	2.2
80°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	2.2
82.5°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	2.2
85°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	2.2
87.5°	0.5	0.5	0.5	0.5	1.6	2.2	2.2	1.1	1.6	1.6	2.2
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°	63.1	63.1	63.1
2.5°	47.3	44.6	44.1
5°	39.2	36.4	35.9
7.5°	35.9	33.7	33.2
10°	37.0	37.5	38.6
12.5°	47.3	52.2	56.6
15°	76.1	95.7	109.3
17.5°	132.7	146.8	156.1
20°	116.4	107.1	107.7
22.5°	65.3	58.7	58.2
25°	39.7	35.9	34.8
26°	33.2	29.9	28.8
27°	27.2	24.5	23.4
28°	22.3	20.1	19.6
29°	19.0	16.3	15.8
30°	15.8	13.6	13.1
31°	13.1	11.4	10.9
32°	11.4	9.8	8.7
33°	9.2	8.2	7.6
34°	8.2	6.5	6.0
35°	6.5	5.4	5.4
36°	6.0	4.9	4.4
37°	4.9	3.8	3.8
38°	4.4	3.3	2.7
39°	3.8	2.7	2.2
40°	3.3	2.2	1.6
42.5°	2.2	1.1	0.5
45°	1.6	0.5	0.0
47.5°	1.1	0.5	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	0.5	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: P170687

CATALOG NUMBER: LDA4A09835D010TE LAR25NF 4LA1 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°	1.1	0.5	0.0
90°	0.0	0.0	0.0



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







67.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.6	1.1
70°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5





67.5°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	1.1	1.6	1.6	1.6
70°	0.5	0.5	0.5	1.1	1.6	2.2	2.2	1.1	1.6	1.6	1.6





67.5°	1.1	0.5	0.0
70°	1.1	0.5	0.0



(END OF REPORT)