

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: P170696

Luminaire Tested: **LDA4A13840D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170696
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: LDA4A13840D010TE 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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1448.7 lumens
Efficiency: N/A
Efficacy: 65.1 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

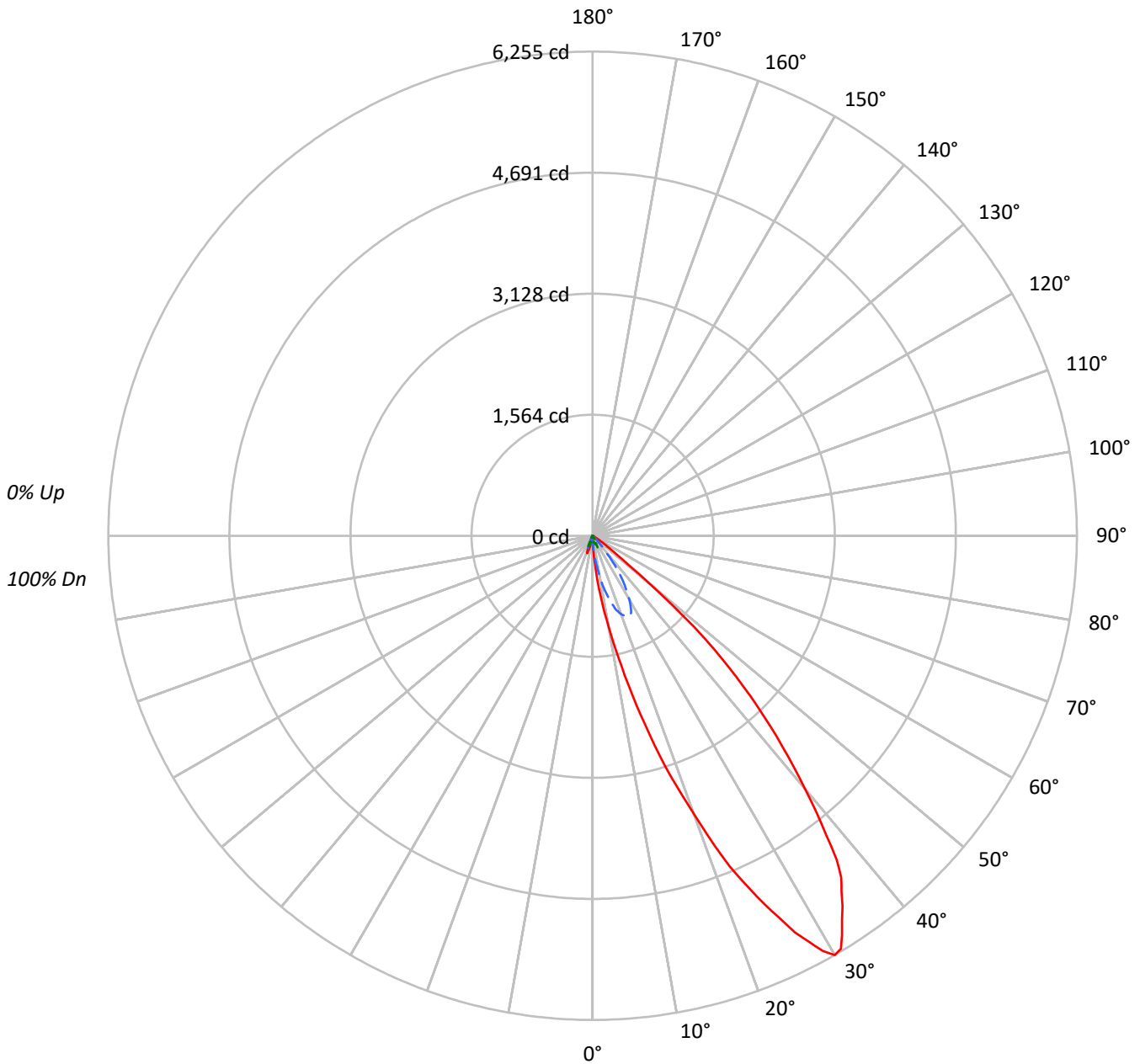
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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°	11841	11841	11841
5°	51458	11168	6760
10°	148369	10057	7365
15°	304021	11097	21249
20°	501564	20647	21514
25°	714495	13188	7213
30°	890868	5783	2834
35°	844121	2620	1250
40°	687507	1336	403
45°	481568	715	0
50°	180455	480	0
55°	38450	538	0
60°	7351	419	0
65°	2189	730	0
70°	613	902	0
75°	0	1191	0
80°	0	1776	0
85°	0	3538	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.1	1.4
10°-20°	173.5	12.0
20°-30°	443.2	30.6
30°-40°	513.3	35.4
40°-50°	264.8	18.3
50°-60°	27.3	1.9
60°-70°	3.0	0.2
70°-80°	1.9	0.1
80°-90°	1.7	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°	636.8	44.0
0°-40°	1150.1	79.4
0°-60°	1442.2	99.6
0°-90°	1448.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1448.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	96	96	96	96	96	
5°	416	216	90	60	55	65
15°	2381	872	87	116	166	729
25°	5250	1138	97	60	53	2439
35°	5606	622	17	10	8	3433
45°	2761	73	4	2	0	2067
55°	179	11	2	2	0	224
65°	8	2	2	2	0	10
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°	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
2.5°	165.6	159.8	155.6	157.3	166.4	156.5	157.3	154.0	152.3	150.7	146.5
5°	415.6	399.0	388.2	389.1	365.1	383.3	381.6	367.5	358.4	341.1	331.1
7.5°	779.8	744.2	731.8	727.6	730.1	712.7	705.3	687.1	663.1	631.6	613.4
10°	1184.6	1163.1	1155.6	1142.4	1141.5	1110.9	1092.7	1069.5	1021.5	977.6	945.4
12.5°	1726.0	1659.7	1648.2	1623.3	1616.7	1564.6	1526.5	1492.5	1412.2	1354.3	1303.0
15°	2380.8	2327.0	2339.4	2263.2	2242.5	2157.3	2086.1	2013.2	1883.3	1794.7	1703.6
17.5°	3124.1	3055.4	3063.7	2968.5	2797.2	2812.9	2709.4	2609.2	2426.3	2307.9	2167.2
20°	3821.1	3772.3	3775.6	3649.0	3591.0	3433.7	3295.5	3176.3	2932.9	2782.3	2596.0
22.5°	4623.3	4496.6	4472.6	4300.4	4198.6	3987.5	3794.7	3636.5	3341.8	3172.1	2943.7
25°	5249.9	5163.0	5096.8	4893.2	4751.6	4476.8	4253.3	4019.0	3664.7	3476.8	3205.3
26°	5485.0	5403.1	5317.8	5098.4	4939.5	4649.0	4405.6	4153.9	3774.8	3573.6	3278.1
27°	5750.8	5616.7	5514.0	5268.1	5096.0	4790.5	4501.6	4264.0	3858.4	3635.7	3324.5
28°	5938.7	5804.6	5668.8	5401.4	5215.2	4895.6	4595.1	4336.0	3907.2	3665.5	3343.5
29°	6131.5	5989.2	5791.3	5499.9	5297.1	4961.0	4649.0	4371.6	3921.3	3663.9	3333.6
30°	6254.9	6111.7	5855.9	5555.4	5341.0	4987.5	4663.9	4365.0	3899.0	3630.8	3297.1
31°	6225.9	6094.3	5840.2	5561.2	5336.9	4971.8	4636.5	4317.8	3842.7	3572.0	3230.9
32°	6081.1	5969.3	5776.4	5522.3	5291.3	4918.0	4572.8	4243.3	3761.5	3503.3	3150.6
33°	5913.0	5820.3	5687.0	5443.6	5211.9	4836.9	4485.0	4151.4	3668.0	3409.7	3053.8
34°	5772.3	5688.7	5565.3	5337.7	5103.4	4728.4	4374.1	4035.5	3561.2	3299.6	2939.5
35°	5605.9	5529.7	5415.5	5194.5	4952.8	4582.7	4235.0	3901.4	3435.4	3168.8	2807.1
36°	5461.0	5341.0	5225.1	5009.9	4769.0	4406.4	4071.1	3744.2	3293.0	3019.0	2658.1
37°	5236.7	5116.7	4992.5	4788.9	4551.3	4204.4	3889.0	3576.1	3130.8	2906.4	2499.1
38°	4901.4	4846.0	4721.8	4528.1	4307.1	3981.7	3689.5	3384.9	2947.8	2688.7	2330.3
39°	4588.5	4543.0	4422.1	4245.0	4040.5	3742.5	3468.5	3169.7	2741.7	2496.7	2152.3
40°	4269.8	4224.3	4110.9	3951.1	3767.3	3493.3	3233.4	2940.4	2525.6	2298.8	1973.5
42.5°	3514.9	3467.7	3443.7	3280.6	3086.1	2851.0	2610.1	2345.2	1992.5	1806.3	1551.3
45°	2760.7	2717.7	2627.5	2560.4	2386.6	2191.2	1995.0	1779.0	1519.0	1335.2	1096.8
47.5°	1973.5	1952.8	1956.1	1831.9	1666.4	1512.4	1350.1	1154.8	924.7	693.7	509.1
50°	940.4	946.2	969.4	882.4	758.3	668.0	572.0	448.7	327.8	257.4	199.5
51°	609.3	615.9	635.8	573.7	483.4	422.2	360.9	291.4	232.6	197.8	158.1
52°	412.2	412.2	416.4	380.0	335.3	300.5	264.9	224.3	181.3	155.6	125.0
53°	309.6	308.8	310.4	286.4	255.8	230.1	205.3	175.5	143.2	121.7	96.9
54°	236.8	235.9	237.6	219.4	197.8	178.8	159.8	137.4	110.9	91.1	72.8
55°	178.8	178.8	181.3	167.2	150.7	135.8	121.7	102.6	82.0	66.2	53.0
57.5°	72.0	72.0	74.5	69.5	62.1	56.3	51.3	43.9	36.4	30.6	24.8
60°	29.8	30.6	31.5	29.0	27.3	25.7	24.0	21.5	19.0	15.7	13.2
61°	22.4	22.4	23.2	21.5	20.7	19.0	18.2	16.6	14.9	12.4	10.8
62°	16.6	16.6	17.4	16.6	15.7	14.9	14.1	13.2	11.6	9.9	8.3
63°	12.4	12.4	13.2	12.4	12.4	11.6	10.8	9.9	9.1	7.5	6.6
64°	9.9	9.9	9.9	9.1	9.1	9.1	8.3	8.3	6.6	5.8	5.0
65°	7.5	7.5	7.5	7.5	6.6	6.6	6.6	5.8	5.8	4.1	4.1
66°	5.8	5.8	5.8	5.0	5.0	5.0	5.0	5.0	4.1	3.3	2.5



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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	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
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°	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0
2.5°	148.2	147.3	139.1	139.1	142.4	137.4	134.9	129.1	110.9	94.4	79.5
5°	327.8	318.7	290.6	282.3	281.5	258.3	245.0	216.1	126.7	90.2	68.7
7.5°	605.1	577.8	529.8	504.1	472.7	454.5	422.2	372.5	144.0	84.4	62.1
10°	894.9	864.2	793.0	747.5	723.5	664.7	610.9	543.0	161.4	80.3	61.3
12.5°	1226.8	1158.1	1090.2	1009.1	937.1	884.9	795.5	716.1	173.0	79.5	67.1
15°	1586.1	1500.0	1384.1	1274.8	1173.0	1098.5	978.5	871.7	177.2	86.9	87.7
17.5°	1988.4	1827.0	1659.7	1510.7	1370.8	1270.7	1121.7	995.8	174.7	106.8	139.9
20°	2365.0	2150.6	1923.8	1716.9	1519.0	1389.1	1216.9	1080.3	175.5	157.3	188.7
22.5°	2663.9	2403.1	2126.6	1874.1	1623.3	1467.7	1279.8	1125.0	197.0	168.0	128.3
25°	2884.1	2577.0	2259.9	1969.3	1705.3	1530.6	1324.5	1138.2	183.8	96.9	72.8
26°	2942.8	2619.2	2284.7	1983.4	1715.2	1530.6	1317.9	1124.2	158.9	77.0	60.4
27°	2976.0	2638.2	2288.9	1976.8	1702.8	1513.2	1293.9	1096.0	130.0	64.6	51.3
28°	2980.1	2629.9	2268.2	1949.5	1668.0	1476.0	1250.8	1053.0	107.6	54.6	42.2
29°	2957.7	2599.3	2228.5	1904.0	1615.0	1421.3	1192.0	1000.0	91.9	47.2	35.6
30°	2910.6	2545.5	2168.0	1842.7	1546.3	1355.1	1123.3	941.2	80.3	40.6	29.8
31°	2842.7	2471.8	2102.6	1769.8	1474.3	1288.9	1058.8	881.6	71.2	33.9	24.8
32°	2754.9	2384.9	2018.2	1691.2	1409.8	1226.0	996.7	821.2	63.7	29.0	20.7
33°	2657.3	2286.4	1926.3	1609.3	1347.7	1161.4	931.3	757.4	57.1	24.0	17.4
34°	2544.7	2178.0	1828.6	1527.3	1281.4	1090.2	860.9	692.0	49.7	19.9	14.9
35°	2416.4	2057.1	1723.5	1452.8	1207.8	1013.2	787.2	622.5	43.9	17.4	12.4
36°	2277.3	1931.3	1617.5	1367.5	1128.3	932.9	709.4	552.1	38.1	14.9	10.8
37°	2131.6	1800.5	1511.6	1270.7	1040.6	847.7	629.1	476.0	33.1	12.4	9.1
38°	1977.6	1668.9	1408.9	1178.8	947.8	755.8	547.2	392.4	29.0	10.8	8.3
39°	1820.3	1538.9	1307.1	1077.8	852.6	665.6	468.5	304.6	25.7	9.1	7.5
40°	1666.4	1416.4	1199.5	967.7	757.4	577.0	392.4	224.3	22.4	8.3	5.8
42.5°	1319.5	1087.7	860.9	645.7	528.1	365.9	217.7	117.5	15.7	5.8	4.1
45°	863.4	643.2	464.4	314.6	273.2	154.8	101.0	72.8	11.6	4.1	3.3
47.5°	357.6	260.8	181.3	130.8	106.0	82.8	64.6	47.2	8.3	3.3	3.3
50°	157.3	124.2	98.5	77.0	67.1	53.8	41.4	29.0	5.0	2.5	2.5
51°	125.8	100.2	77.0	61.3	54.6	43.9	33.9	23.2	5.0	2.5	2.5
52°	99.3	77.8	60.4	47.2	43.9	35.6	28.1	19.0	4.1	2.5	2.5
53°	76.2	58.8	45.5	37.3	34.8	29.0	23.2	15.7	3.3	2.5	2.5
54°	56.3	44.7	35.6	29.0	28.1	23.2	19.0	13.2	3.3	2.5	2.5
55°	41.4	34.8	27.3	23.2	22.4	19.0	15.7	10.8	3.3	2.5	2.5
57.5°	21.5	18.2	14.9	13.2	13.2	12.4	10.8	6.6	2.5	1.7	2.5
60°	11.6	9.9	8.3	7.5	9.1	8.3	7.5	4.1	2.5	1.7	2.5
61°	9.1	8.3	6.6	5.8	7.5	6.6	6.6	3.3	2.5	2.5	2.5
62°	7.5	6.6	5.8	5.0	6.6	5.8	5.8	3.3	2.5	2.5	2.5
63°	5.8	5.0	4.1	4.1	5.8	5.8	5.0	2.5	2.5	2.5	2.5
64°	4.1	4.1	3.3	3.3	5.0	5.0	4.1	2.5	2.5	2.5	2.5
65°	3.3	3.3	2.5	2.5	4.1	4.1	4.1	2.5	2.5	2.5	2.5
66°	2.5	2.5	2.5	1.7	3.3	4.1	4.1	1.7	2.5	2.5	2.5



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CATALOG NUMBER: LDA4A13840D010TE 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°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	2.5
75°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	2.5
77.5°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	3.3
80°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	3.3
82.5°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	3.3
85°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	3.3
87.5°	0.8	0.8	0.8	0.8	2.5	3.3	3.3	1.7	2.5	2.5	3.3
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°	96.0	96.0	96.0
2.5°	72.0	67.9	67.1
5°	59.6	55.5	54.6
7.5°	54.6	51.3	50.5
10°	56.3	57.1	58.8
12.5°	72.0	79.5	86.1
15°	115.9	145.7	166.4
17.5°	202.0	223.5	237.6
20°	177.2	163.1	163.9
22.5°	99.3	89.4	88.6
25°	60.4	54.6	53.0
26°	50.5	45.5	43.9
27°	41.4	37.3	35.6
28°	33.9	30.6	29.8
29°	29.0	24.8	24.0
30°	24.0	20.7	19.9
31°	19.9	17.4	16.6
32°	17.4	14.9	13.2
33°	14.1	12.4	11.6
34°	12.4	9.9	9.1
35°	9.9	8.3	8.3
36°	9.1	7.5	6.6
37°	7.5	5.8	5.8
38°	6.6	5.0	4.1
39°	5.8	4.1	3.3
40°	5.0	3.3	2.5
42.5°	3.3	1.7	0.8
45°	2.5	0.8	0.0
47.5°	1.7	0.8	0.0
50°	1.7	0.0	0.0
51°	1.7	0.0	0.0
52°	1.7	0.0	0.0
53°	1.7	0.0	0.0
54°	1.7	0.0	0.0
55°	1.7	0.0	0.0
57.5°	1.7	0.0	0.0
60°	1.7	0.0	0.0
61°	1.7	0.0	0.0
62°	1.7	0.0	0.0
63°	1.7	0.8	0.0
64°	1.7	0.8	0.0
65°	1.7	0.8	0.0
66°	1.7	0.8	0.0



TEST NUMBER: P170696

CATALOG NUMBER: LDA4A13840D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.5	0.8	0.0
75°	2.5	0.8	0.0
77.5°	2.5	0.8	0.0
80°	2.5	0.8	0.0
82.5°	2.5	0.8	0.0
85°	2.5	0.8	0.0
87.5°	1.7	0.8	0.0
90°	0.0	0.0	0.0



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







67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.5	1.7
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.8	0.8





67.5°	1.7	1.7	1.7	1.7	3.3	3.3	3.3	1.7	2.5	2.5	2.5
70°	0.8	0.8	0.8	1.7	2.5	3.3	3.3	1.7	2.5	2.5	2.5





67.5°	1.7	0.8	0.0
70°	1.7	0.8	0.0



(END OF REPORT)