

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: P170677

Luminaire Tested: **LDA4A18827D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170677
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: LDA4A18827D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1537.7 lumens
Efficiency: N/A
Efficacy: 52.8 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

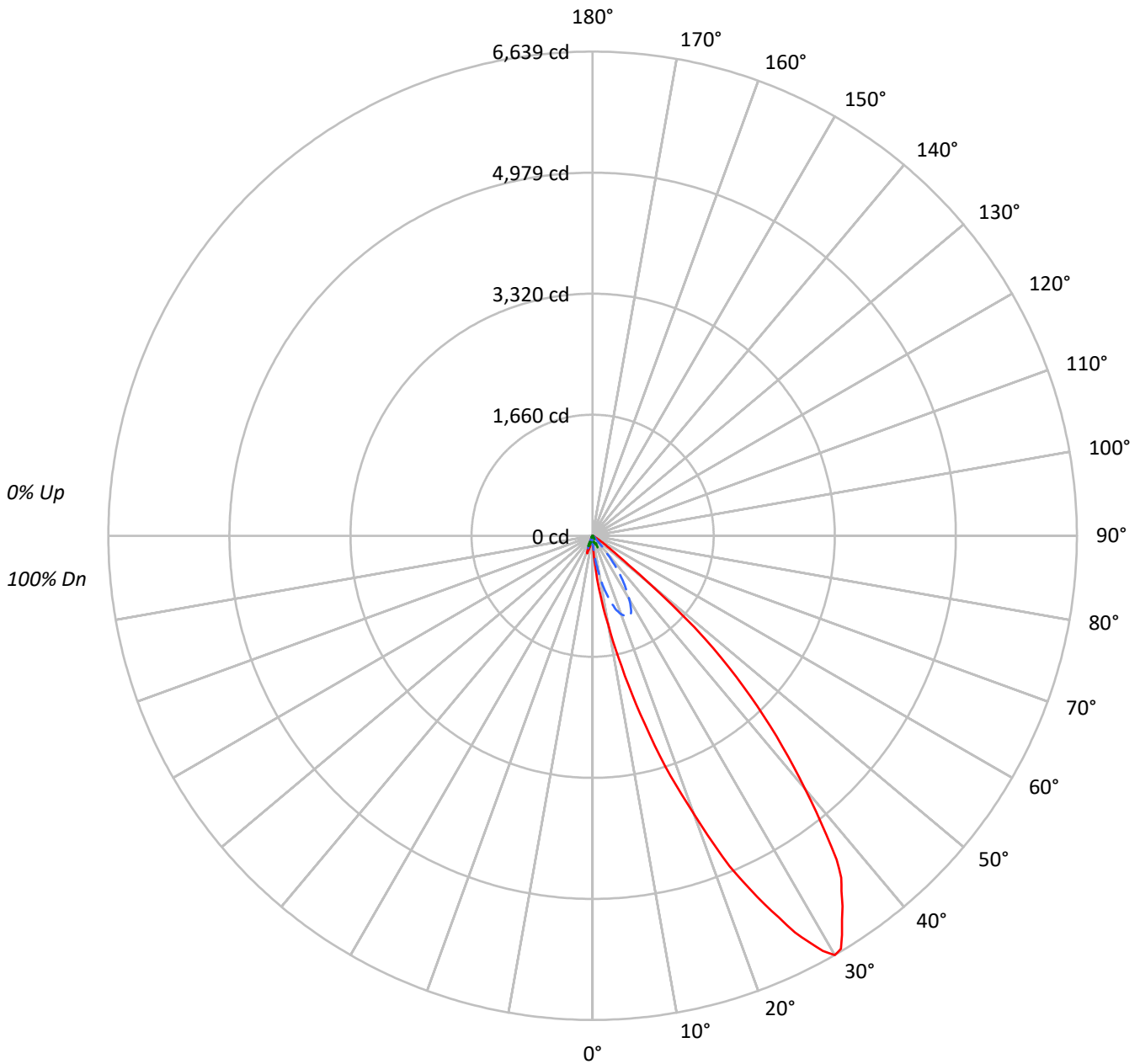
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	12569	12569	12569
5°	54616	11862	7181
10°	157487	10671	7816
15°	322690	11786	22551
20°	532384	21908	22840
25°	758386	13991	7649
30°	945589	6139	3005
35°	895965	2786	1325
40°	729742	1417	419
45°	511153	768	0
50°	191527	499	0
55°	40816	559	0
60°	7795	444	0
65°	2306	759	0
70°	649	938	0
75°	0	1239	0
80°	0	1847	0
85°	0	3680	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.4	1.4
10°-20°	184.1	12.0
20°-30°	470.4	30.6
30°-40°	544.8	35.4
40°-50°	281.1	18.3
50°-60°	29.0	1.9
60°-70°	3.1	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°	675.9	44.0
0°-40°	1220.7	79.4
0°-60°	1530.8	99.6
0°-90°	1537.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1537.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	102	102	102	102	102	
5°	441	229	96	63	58	69
15°	2527	925	92	123	177	774
25°	5572	1208	103	64	56	2589
35°	5950	661	18	10	9	3644
45°	2930	77	4	3	0	2194
55°	190	11	3	2	0	238
65°	8	3	3	2	0	10
75°	0	2	3	3	0	0
85°	0	2	3	3	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°	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9
2.5°	175.7	169.6	165.2	166.9	176.6	166.1	166.9	163.4	161.7	159.9	155.5
5°	441.1	423.5	412.1	413.0	387.5	406.8	405.1	390.1	380.5	362.0	351.5
7.5°	827.7	789.9	776.7	772.3	775.0	756.5	748.6	729.3	703.8	670.4	651.1
10°	1257.4	1234.5	1226.6	1212.5	1211.7	1179.2	1159.8	1135.2	1084.3	1037.7	1003.4
12.5°	1832.0	1761.7	1749.4	1723.0	1716.0	1660.7	1620.2	1584.2	1499.0	1437.5	1383.0
15°	2527.0	2469.9	2483.1	2402.2	2380.3	2289.8	2214.2	2136.9	1998.9	1904.9	1808.3
17.5°	3316.0	3243.1	3251.9	3150.8	2969.0	2985.7	2875.8	2769.5	2575.3	2449.7	2300.3
20°	4055.9	4004.0	4007.5	3873.1	3811.6	3644.7	3497.9	3371.4	3113.1	2953.2	2755.5
22.5°	4907.3	4772.8	4747.4	4564.6	4456.5	4232.5	4027.7	3859.9	3547.1	3367.0	3124.5
25°	5572.4	5480.2	5409.9	5193.7	5043.5	4751.8	4514.5	4265.9	3889.8	3690.3	3402.1
26°	5822.0	5735.0	5644.5	5411.6	5242.9	4934.5	4676.2	4409.1	4006.7	3793.1	3479.5
27°	6104.0	5961.7	5852.7	5591.7	5409.0	5084.8	4778.1	4525.9	4095.4	3859.0	3528.7
28°	6303.5	6161.1	6017.0	5733.2	5535.5	5196.4	4877.4	4602.4	4147.2	3890.7	3548.9
29°	6508.2	6357.0	6147.1	5837.8	5622.5	5265.8	4934.5	4640.2	4162.2	3888.9	3538.3
30°	6639.1	6487.1	6215.6	5896.6	5669.1	5293.9	4950.3	4633.1	4138.5	3853.8	3499.7
31°	6608.3	6468.6	6198.9	5902.8	5664.7	5277.2	4921.3	4583.1	4078.7	3791.4	3429.4
32°	6454.6	6336.0	6131.2	5861.5	5616.3	5220.1	4853.7	4504.0	3992.6	3718.5	3344.2
33°	6276.2	6177.8	6036.3	5778.0	5532.0	5134.0	4760.5	4406.4	3893.3	3619.2	3241.3
34°	6126.8	6038.1	5907.2	5665.6	5416.9	5018.9	4642.8	4283.4	3780.0	3502.3	3120.1
35°	5950.2	5869.4	5748.1	5513.5	5257.0	4864.2	4495.2	4141.1	3646.4	3363.5	2979.5
36°	5796.5	5669.1	5546.1	5317.6	5061.9	4677.1	4321.2	3974.1	3495.3	3204.4	2821.4
37°	5558.4	5431.0	5299.2	5083.0	4830.8	4462.7	4127.9	3795.8	3323.1	3084.9	2652.7
38°	5202.5	5143.6	5011.8	4806.2	4571.6	4226.3	3916.2	3592.8	3128.9	2853.9	2473.4
39°	4870.4	4822.0	4693.8	4505.7	4288.7	3972.4	3681.6	3364.4	2910.1	2650.0	2284.5
40°	4532.1	4483.8	4363.4	4193.8	3998.7	3707.9	3432.0	3121.0	2680.8	2440.0	2094.7
42.5°	3730.8	3680.7	3655.2	3482.1	3275.6	3026.1	2770.4	2489.2	2114.9	1917.2	1646.6
45°	2930.3	2884.6	2788.8	2717.7	2533.2	2325.8	2117.6	1888.2	1612.3	1417.3	1164.2
47.5°	2094.7	2072.7	2076.3	1944.5	1768.7	1605.3	1433.1	1225.7	981.5	736.3	540.4
50°	998.1	1004.3	1028.9	936.6	804.8	709.1	607.1	476.2	347.9	273.3	211.8
51°	646.7	653.7	674.8	608.9	513.1	448.1	383.1	309.3	246.9	210.0	167.8
52°	437.6	437.6	442.0	403.3	355.9	319.0	281.2	238.1	192.4	165.2	132.7
53°	328.6	327.7	329.5	304.0	271.5	244.3	217.9	186.3	152.0	129.2	102.8
54°	251.3	250.4	252.2	232.8	210.0	189.8	169.6	145.9	117.7	96.7	77.3
55°	189.8	189.8	192.4	177.5	159.9	144.1	129.2	109.0	87.0	70.3	56.2
57.5°	76.4	76.4	79.1	73.8	65.9	59.7	54.5	46.6	38.7	32.5	26.4
60°	31.6	32.5	33.4	30.8	29.0	27.2	25.5	22.8	20.2	16.7	14.1
61°	23.7	23.7	24.6	22.8	22.0	20.2	19.3	17.6	15.8	13.2	11.4
62°	17.6	17.6	18.5	17.6	16.7	15.8	14.9	14.1	12.3	10.5	8.8
63°	13.2	13.2	14.1	13.2	13.2	12.3	11.4	10.5	9.7	7.9	7.0
64°	10.5	10.5	10.5	9.7	9.7	9.7	8.8	8.8	7.0	6.2	5.3
65°	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	4.4	4.4
66°	6.2	6.2	6.2	5.3	5.3	5.3	5.3	5.3	4.4	3.5	2.6



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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	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
77.5°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9
2.5°	157.3	156.4	147.6	147.6	151.1	145.9	143.2	137.1	117.7	100.2	84.4
5°	347.9	338.3	308.4	299.6	298.7	274.1	260.1	229.3	134.4	95.8	72.9
7.5°	642.3	613.3	562.3	535.1	501.7	482.4	448.1	395.4	152.9	89.6	65.9
10°	949.8	917.3	841.7	793.4	767.9	705.6	648.4	576.4	171.3	85.2	65.0
12.5°	1302.2	1229.2	1157.2	1071.1	994.6	939.3	844.4	760.0	183.6	84.4	71.2
15°	1683.5	1592.1	1469.1	1353.1	1245.1	1166.0	1038.6	925.2	188.0	92.3	93.1
17.5°	2110.5	1939.2	1761.7	1603.5	1455.0	1348.7	1190.6	1057.0	185.4	113.3	148.5
20°	2510.3	2282.7	2042.0	1822.3	1612.3	1474.4	1291.6	1146.6	186.3	166.9	200.3
22.5°	2827.5	2550.7	2257.3	1989.3	1723.0	1557.9	1358.4	1194.1	209.1	178.4	136.2
25°	3061.2	2735.2	2398.7	2090.3	1810.0	1624.6	1405.8	1208.1	195.1	102.8	77.3
26°	3123.6	2780.1	2425.1	2105.3	1820.6	1624.6	1398.8	1193.2	168.7	81.7	64.1
27°	3158.8	2800.3	2429.5	2098.2	1807.4	1606.2	1373.3	1163.3	137.9	68.5	54.5
28°	3163.1	2791.5	2407.5	2069.2	1770.5	1566.6	1327.6	1117.6	114.2	58.0	44.8
29°	3139.4	2759.0	2365.3	2020.9	1714.3	1508.6	1265.3	1061.4	97.5	50.1	37.8
30°	3089.3	2701.9	2301.2	1955.9	1641.3	1438.4	1192.3	999.0	85.2	43.1	31.6
31°	3017.3	2623.7	2231.8	1878.6	1564.9	1368.1	1123.8	935.8	75.6	36.0	26.4
32°	2924.2	2531.4	2142.2	1795.1	1496.3	1301.3	1057.9	871.6	67.7	30.8	22.0
33°	2820.5	2426.8	2044.6	1708.1	1430.4	1232.7	988.5	804.0	60.6	25.5	18.5
34°	2701.0	2311.7	1940.9	1621.1	1360.2	1157.2	913.8	734.6	52.7	21.1	15.8
35°	2564.8	2183.5	1829.4	1542.0	1282.0	1075.5	835.6	660.7	46.6	18.5	13.2
36°	2417.2	2049.9	1716.9	1451.5	1197.6	990.2	753.0	586.1	40.4	15.8	11.4
37°	2262.5	1911.1	1604.4	1348.7	1104.5	899.7	667.8	505.2	35.1	13.2	9.7
38°	2099.1	1771.4	1495.5	1251.2	1006.1	802.2	580.8	416.5	30.8	11.4	8.8
39°	1932.2	1633.4	1387.4	1144.0	905.0	706.4	497.3	323.3	27.2	9.7	7.9
40°	1768.7	1503.4	1273.2	1027.1	804.0	612.4	416.5	238.1	23.7	8.8	6.2
42.5°	1400.6	1154.5	913.8	685.3	560.6	388.4	231.1	124.8	16.7	6.2	4.4
45°	916.4	682.7	492.9	333.9	290.0	164.3	107.2	77.3	12.3	4.4	3.5
47.5°	379.6	276.8	192.4	138.8	112.5	87.9	68.5	50.1	8.8	3.5	3.5
50°	166.9	131.8	104.6	81.7	71.2	57.1	43.9	30.8	5.3	2.6	2.6
51°	133.6	106.3	81.7	65.0	58.0	46.6	36.0	24.6	5.3	2.6	2.6
52°	105.4	82.6	64.1	50.1	46.6	37.8	29.9	20.2	4.4	2.6	2.6
53°	80.8	62.4	48.3	39.5	36.9	30.8	24.6	16.7	3.5	2.6	2.6
54°	59.7	47.4	37.8	30.8	29.9	24.6	20.2	14.1	3.5	2.6	2.6
55°	43.9	36.9	29.0	24.6	23.7	20.2	16.7	11.4	3.5	2.6	2.6
57.5°	22.8	19.3	15.8	14.1	14.1	13.2	11.4	7.0	2.6	1.8	2.6
60°	12.3	10.5	8.8	7.9	9.7	8.8	7.9	4.4	2.6	1.8	2.6
61°	9.7	8.8	7.0	6.2	7.9	7.0	7.0	3.5	2.6	2.6	2.6
62°	7.9	7.0	6.2	5.3	7.0	6.2	6.2	3.5	2.6	2.6	2.6
63°	6.2	5.3	4.4	4.4	6.2	6.2	5.3	2.6	2.6	2.6	2.6
64°	4.4	4.4	3.5	3.5	5.3	5.3	4.4	2.6	2.6	2.6	2.6
65°	3.5	3.5	2.6	2.6	4.4	4.4	4.4	2.6	2.6	2.6	2.6
66°	2.6	2.6	2.6	1.8	3.5	4.4	4.4	1.8	2.6	2.6	2.6



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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°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	2.6
75°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	2.6
77.5°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	3.5
80°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	3.5
82.5°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	3.5
85°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	3.5
87.5°	0.9	0.9	0.9	0.9	2.6	3.5	3.5	1.8	2.6	2.6	3.5
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):

	135°	157.5°	180°
0°	101.9	101.9	101.9
2.5°	76.4	72.0	71.2
5°	63.3	58.9	58.0
7.5°	58.0	54.5	53.6
10°	59.7	60.6	62.4
12.5°	76.4	84.4	91.4
15°	123.0	154.6	176.6
17.5°	214.4	237.2	252.2
20°	188.0	173.1	174.0
22.5°	105.4	94.9	94.0
25°	64.1	58.0	56.2
26°	53.6	48.3	46.6
27°	43.9	39.5	37.8
28°	36.0	32.5	31.6
29°	30.8	26.4	25.5
30°	25.5	22.0	21.1
31°	21.1	18.5	17.6
32°	18.5	15.8	14.1
33°	14.9	13.2	12.3
34°	13.2	10.5	9.7
35°	10.5	8.8	8.8
36°	9.7	7.9	7.0
37°	7.9	6.2	6.2
38°	7.0	5.3	4.4
39°	6.2	4.4	3.5
40°	5.3	3.5	2.6
42.5°	3.5	1.8	0.9
45°	2.6	0.9	0.0
47.5°	1.8	0.9	0.0
50°	1.8	0.0	0.0
51°	1.8	0.0	0.0
52°	1.8	0.0	0.0
53°	1.8	0.0	0.0
54°	1.8	0.0	0.0
55°	1.8	0.0	0.0
57.5°	1.8	0.0	0.0
60°	1.8	0.0	0.0
61°	1.8	0.0	0.0
62°	1.8	0.0	0.0
63°	1.8	0.9	0.0
64°	1.8	0.9	0.0
65°	1.8	0.9	0.0
66°	1.8	0.9	0.0



TEST NUMBER: P170677

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.6	0.9	0.0
75°	2.6	0.9	0.0
77.5°	2.6	0.9	0.0
80°	2.6	0.9	0.0
82.5°	2.6	0.9	0.0
85°	2.6	0.9	0.0
87.5°	1.8	0.9	0.0
90°	0.0	0.0	0.0



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







67.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.6	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.9	0.9





67.5°	1.8	1.8	1.8	1.8	3.5	3.5	3.5	1.8	2.6	2.6	2.6
70°	0.9	0.9	0.9	1.8	2.6	3.5	3.5	1.8	2.6	2.6	2.6





67.5°	1.8	0.9	0.0
70°	1.8	0.9	0.0



(END OF REPORT)