

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: P170693

Luminaire Tested: **LDA4A13827D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170693
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: LDA4A13827D010TE 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: 1241.1 lumens
Efficiency: N/A
Efficacy: 55.7 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

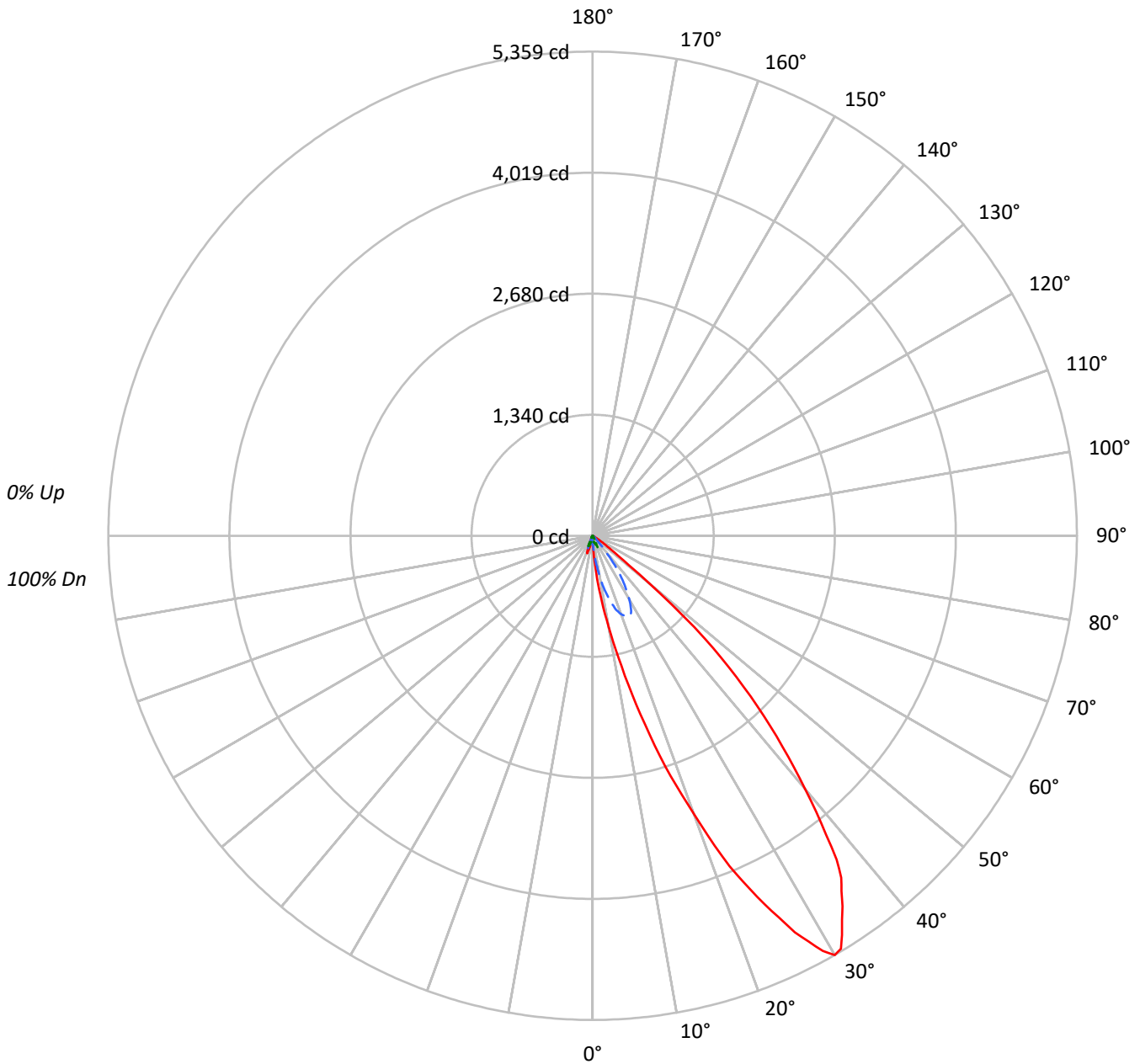
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82					82			
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74					74			
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66					66			
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60					60			
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53					53			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48					48			
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43					43			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39					39			
10	61	49	42	38	60	49	42	38	48	42	37	47	41	37	46	41	37	36					36			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10151	10151	10151
5°	44079	9571	5795
10°	127115	8617	6313
15°	260463	9513	18210
20°	429711	17694	18429
25°	612136	11296	6179
30°	763239	4956	2421
35°	723192	2244	1069
40°	589014	1143	338
45°	412579	611	0
50°	154607	403	0
55°	32945	452	0
60°	6291	345	0
65°	1868	613	0
70°	505	757	0
75°	0	1001	0
80°	0	1492	0
85°	0	2972	0



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.2	1.4
10°-20°	148.6	12.0
20°-30°	379.7	30.6
30°-40°	439.7	35.4
40°-50°	226.9	18.3
50°-60°	23.4	1.9
60°-70°	2.5	0.2
70°-80°	1.6	0.1
80°-90°	1.4	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°	545.6	44.0
0°-40°	985.3	79.4
0°-60°	1235.6	99.6
0°-90°	1241.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1241.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	82	82	82	82	82	
5°	356	185	77	51	47	56
15°	2040	747	74	99	143	624
25°	4498	975	83	52	45	2090
35°	4803	533	15	8	7	2941
45°	2365	62	4	2	0	1771
55°	153	9	2	1	0	192
65°	6	2	2	1	0	8
75°	0	1	2	2	0	0
85°	0	1	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
2.5°	141.8	136.9	133.3	134.8	142.6	134.0	134.8	131.9	130.5	129.1	125.5
5°	356.0	341.8	332.6	333.3	312.8	328.4	326.9	314.9	307.1	292.2	283.7
7.5°	668.1	637.6	626.9	623.4	625.5	610.6	604.2	588.6	568.1	541.1	525.5
10°	1014.9	996.4	990.1	978.7	978.0	951.8	936.2	916.3	875.2	837.6	809.9
12.5°	1478.7	1422.0	1412.0	1390.8	1385.1	1340.4	1307.8	1278.7	1209.9	1160.3	1116.3
15°	2039.7	1993.6	2004.2	1939.0	1921.3	1848.2	1787.2	1724.8	1613.5	1537.6	1459.6
17.5°	2676.6	2617.7	2624.8	2543.2	2396.4	2409.9	2321.3	2235.4	2078.7	1977.3	1856.7
20°	3273.7	3231.9	3234.7	3126.2	3076.6	2941.8	2823.4	2721.2	2512.7	2383.7	2224.1
22.5°	3961.0	3852.4	3831.9	3684.4	3597.1	3416.3	3251.0	3115.6	2863.1	2717.7	2522.0
25°	4497.8	4423.4	4366.6	4192.2	4070.9	3835.4	3643.9	3443.2	3139.7	2978.7	2746.1
26°	4699.2	4629.0	4556.0	4368.0	4231.9	3982.9	3774.4	3558.8	3234.0	3061.7	2808.5
27°	4926.9	4812.0	4724.1	4513.4	4365.9	4104.2	3856.7	3653.2	3305.6	3114.9	2848.2
28°	5087.9	4973.0	4856.7	4627.6	4468.0	4194.3	3936.8	3714.9	3347.5	3140.4	2864.5
29°	5253.1	5131.2	4961.7	4712.0	4538.3	4250.3	3982.9	3745.4	3359.5	3139.0	2856.0
30°	5358.8	5236.1	5017.0	4759.5	4575.8	4273.0	3995.7	3739.7	3340.4	3110.6	2824.8
31°	5334.0	5221.2	5003.5	4764.5	4572.3	4259.5	3972.3	3699.3	3292.2	3060.3	2768.1
32°	5209.9	5114.1	4948.9	4731.2	4533.3	4213.4	3917.7	3635.4	3222.7	3001.4	2699.3
33°	5065.9	4986.5	4872.3	4663.8	4465.2	4143.9	3842.5	3556.7	3142.5	2921.2	2616.3
34°	4945.3	4873.7	4768.0	4573.0	4372.3	4051.0	3747.5	3457.4	3051.0	2826.9	2518.4
35°	4802.8	4737.5	4639.7	4450.3	4243.2	3926.2	3628.3	3342.5	2943.2	2714.9	2404.9
36°	4678.7	4575.8	4476.5	4292.2	4085.8	3775.1	3487.9	3207.8	2821.2	2586.5	2277.3
37°	4486.5	4383.6	4277.3	4102.8	3899.3	3602.1	3331.9	3063.8	2682.2	2490.0	2141.1
38°	4199.2	4151.7	4045.3	3879.4	3690.0	3411.3	3161.0	2900.0	2525.5	2303.5	1996.4
39°	3931.2	3892.2	3788.6	3636.8	3461.7	3206.3	2971.6	2715.6	2348.9	2139.0	1844.0
40°	3658.1	3619.1	3521.9	3385.1	3227.6	2992.9	2770.2	2519.1	2163.8	1969.5	1690.8
42.5°	3011.3	2970.9	2950.3	2810.6	2643.9	2442.5	2236.1	2009.2	1707.1	1547.5	1329.1
45°	2365.2	2328.3	2251.0	2193.6	2044.7	1877.3	1709.2	1524.1	1301.4	1144.0	939.7
47.5°	1690.8	1673.0	1675.9	1569.5	1427.6	1295.7	1156.7	989.4	792.2	594.3	436.2
50°	805.7	810.6	830.5	756.0	649.6	572.3	490.1	384.4	280.8	220.6	170.9
51°	522.0	527.7	544.7	491.5	414.2	361.7	309.2	249.6	199.3	169.5	135.5
52°	353.2	353.2	356.7	325.5	287.2	257.4	226.9	192.2	155.3	133.3	107.1
53°	265.2	264.5	266.0	245.4	219.1	197.2	175.9	150.4	122.7	104.3	83.0
54°	202.8	202.1	203.5	187.9	169.5	153.2	136.9	117.7	95.0	78.0	62.4
55°	153.2	153.2	155.3	143.3	129.1	116.3	104.3	87.9	70.2	56.7	45.4
57.5°	61.7	61.7	63.8	59.6	53.2	48.2	44.0	37.6	31.2	26.2	21.3
60°	25.5	26.2	27.0	24.8	23.4	22.0	20.6	18.4	16.3	13.5	11.3
61°	19.1	19.1	19.9	18.4	17.7	16.3	15.6	14.2	12.8	10.6	9.2
62°	14.2	14.2	14.9	14.2	13.5	12.8	12.1	11.3	9.9	8.5	7.1
63°	10.6	10.6	11.3	10.6	10.6	9.9	9.2	8.5	7.8	6.4	5.7
64°	8.5	8.5	8.5	7.8	7.8	7.8	7.1	7.1	5.7	5.0	4.3
65°	6.4	6.4	6.4	6.4	5.7	5.7	5.7	5.0	5.0	3.5	3.5
66°	5.0	5.0	5.0	4.3	4.3	4.3	4.3	4.3	3.5	2.8	2.1



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

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	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
75°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
77.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
80°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
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°	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
2.5°	126.9	126.2	119.1	119.1	122.0	117.7	115.6	110.6	95.0	80.9	68.1
5°	280.8	273.0	248.9	241.8	241.1	221.3	209.9	185.1	108.5	77.3	58.9
7.5°	518.4	495.0	453.9	431.9	405.0	389.4	361.7	319.1	123.4	72.3	53.2
10°	766.7	740.4	679.4	640.4	619.9	569.5	523.4	465.2	138.3	68.8	52.5
12.5°	1051.1	992.2	934.0	864.5	802.8	758.1	681.6	613.5	148.2	68.1	57.4
15°	1358.9	1285.1	1185.8	1092.2	1005.0	941.1	838.3	746.8	151.8	74.5	75.2
17.5°	1703.5	1565.2	1422.0	1294.3	1174.5	1088.6	961.0	853.2	149.6	91.5	119.9
20°	2026.2	1842.5	1648.2	1470.9	1301.4	1190.1	1042.5	925.5	150.4	134.8	161.7
22.5°	2282.2	2058.8	1822.0	1605.7	1390.8	1257.4	1096.4	963.8	168.8	144.0	109.9
25°	2470.9	2207.8	1936.2	1687.2	1461.0	1311.3	1134.7	975.2	157.4	83.0	62.4
26°	2521.3	2243.9	1957.4	1699.3	1469.5	1311.3	1129.1	963.1	136.2	66.0	51.8
27°	2549.6	2260.3	1961.0	1693.6	1458.9	1296.4	1108.5	939.0	111.3	55.3	44.0
28°	2553.2	2253.2	1943.2	1670.2	1429.1	1264.5	1071.6	902.1	92.2	46.8	36.2
29°	2534.0	2226.9	1909.2	1631.2	1383.7	1217.7	1021.3	856.7	78.7	40.4	30.5
30°	2493.6	2180.8	1857.4	1578.7	1324.8	1161.0	962.4	806.4	68.8	34.8	25.5
31°	2435.4	2117.7	1801.4	1516.3	1263.1	1104.2	907.1	755.3	61.0	29.1	21.3
32°	2360.3	2043.2	1729.1	1448.9	1207.8	1050.3	853.9	703.5	54.6	24.8	17.7
33°	2276.6	1958.8	1650.3	1378.7	1154.6	995.0	797.9	648.9	48.9	20.6	14.9
34°	2180.1	1865.9	1566.7	1308.5	1097.9	934.0	737.6	592.9	42.6	17.0	12.8
35°	2070.2	1762.4	1476.6	1244.7	1034.7	868.1	674.5	533.3	37.6	14.9	10.6
36°	1951.0	1654.6	1385.8	1171.6	966.7	799.3	607.8	473.0	32.6	12.8	9.2
37°	1826.2	1542.5	1295.0	1088.6	891.5	726.2	539.0	407.8	28.4	10.6	7.8
38°	1694.3	1429.8	1207.1	1009.9	812.0	647.5	468.8	336.2	24.8	9.2	7.1
39°	1559.6	1318.4	1119.8	923.4	730.5	570.2	401.4	261.0	22.0	7.8	6.4
40°	1427.6	1213.5	1027.6	829.1	648.9	494.3	336.2	192.2	19.1	7.1	5.0
42.5°	1130.5	931.9	737.6	553.2	452.5	313.5	186.5	100.7	13.5	5.0	3.5
45°	739.7	551.1	397.9	269.5	234.0	132.6	86.5	62.4	9.9	3.5	2.8
47.5°	306.4	223.4	155.3	112.1	90.8	70.9	55.3	40.4	7.1	2.8	2.8
50°	134.8	106.4	84.4	66.0	57.4	46.1	35.5	24.8	4.3	2.1	2.1
51°	107.8	85.8	66.0	52.5	46.8	37.6	29.1	19.9	4.3	2.1	2.1
52°	85.1	66.7	51.8	40.4	37.6	30.5	24.1	16.3	3.5	2.1	2.1
53°	65.2	50.4	39.0	31.9	29.8	24.8	19.9	13.5	2.8	2.1	2.1
54°	48.2	38.3	30.5	24.8	24.1	19.9	16.3	11.3	2.8	2.1	2.1
55°	35.5	29.8	23.4	19.9	19.1	16.3	13.5	9.2	2.8	2.1	2.1
57.5°	18.4	15.6	12.8	11.3	11.3	10.6	9.2	5.7	2.1	1.4	2.1
60°	9.9	8.5	7.1	6.4	7.8	7.1	6.4	3.5	2.1	1.4	2.1
61°	7.8	7.1	5.7	5.0	6.4	5.7	5.7	2.8	2.1	2.1	2.1
62°	6.4	5.7	5.0	4.3	5.7	5.0	5.0	2.8	2.1	2.1	2.1
63°	5.0	4.3	3.5	3.5	5.0	5.0	4.3	2.1	2.1	2.1	2.1
64°	3.5	3.5	2.8	2.8	4.3	4.3	3.5	2.1	2.1	2.1	2.1
65°	2.8	2.8	2.1	2.1	3.5	3.5	3.5	2.1	2.1	2.1	2.1
66°	2.1	2.1	2.1	1.4	2.8	3.5	3.5	1.4	2.1	2.1	2.1



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE 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°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.1
75°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.1
77.5°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.8
80°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.8
82.5°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.8
85°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.8
87.5°	0.7	0.7	0.7	0.7	2.1	2.8	2.8	1.4	2.1	2.1	2.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P170693

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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	82.3	82.3	82.3
2.5°	61.7	58.2	57.4
5°	51.1	47.5	46.8
7.5°	46.8	44.0	43.3
10°	48.2	48.9	50.4
12.5°	61.7	68.1	73.8
15°	99.3	124.8	142.6
17.5°	173.0	191.5	203.5
20°	151.8	139.7	140.4
22.5°	85.1	76.6	75.9
25°	51.8	46.8	45.4
26°	43.3	39.0	37.6
27°	35.5	31.9	30.5
28°	29.1	26.2	25.5
29°	24.8	21.3	20.6
30°	20.6	17.7	17.0
31°	17.0	14.9	14.2
32°	14.9	12.8	11.3
33°	12.1	10.6	9.9
34°	10.6	8.5	7.8
35°	8.5	7.1	7.1
36°	7.8	6.4	5.7
37°	6.4	5.0	5.0
38°	5.7	4.3	3.5
39°	5.0	3.5	2.8
40°	4.3	2.8	2.1
42.5°	2.8	1.4	0.7
45°	2.1	0.7	0.0
47.5°	1.4	0.7	0.0
50°	1.4	0.0	0.0
51°	1.4	0.0	0.0
52°	1.4	0.0	0.0
53°	1.4	0.0	0.0
54°	1.4	0.0	0.0
55°	1.4	0.0	0.0
57.5°	1.4	0.0	0.0
60°	1.4	0.0	0.0
61°	1.4	0.0	0.0
62°	1.4	0.0	0.0
63°	1.4	0.7	0.0
64°	1.4	0.7	0.0
65°	1.4	0.7	0.0
66°	1.4	0.7	0.0



TEST NUMBER: P170693

CATALOG NUMBER: LDA4A13827D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.1	0.7	0.0
75°	2.1	0.7	0.0
77.5°	2.1	0.7	0.0
80°	2.1	0.7	0.0
82.5°	2.1	0.7	0.0
85°	2.1	0.7	0.0
87.5°	1.4	0.7	0.0
90°	0.0	0.0	0.0



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







67.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.1	1.4
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.7	0.7





67.5°	1.4	1.4	1.4	1.4	2.8	2.8	2.8	1.4	2.1	2.1	2.1
70°	0.7	0.7	0.7	1.4	2.1	2.8	2.8	1.4	2.1	2.1	2.1





67.5°	1.4	0.7	0.0
70°	1.4	0.7	0.0



(END OF REPORT)