

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: P170695

Luminaire Tested: **LDA4A13835D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170695
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: LDA4A13835D010TE 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: 1412.5 lumens
Efficiency: N/A
Efficacy: 63.4 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

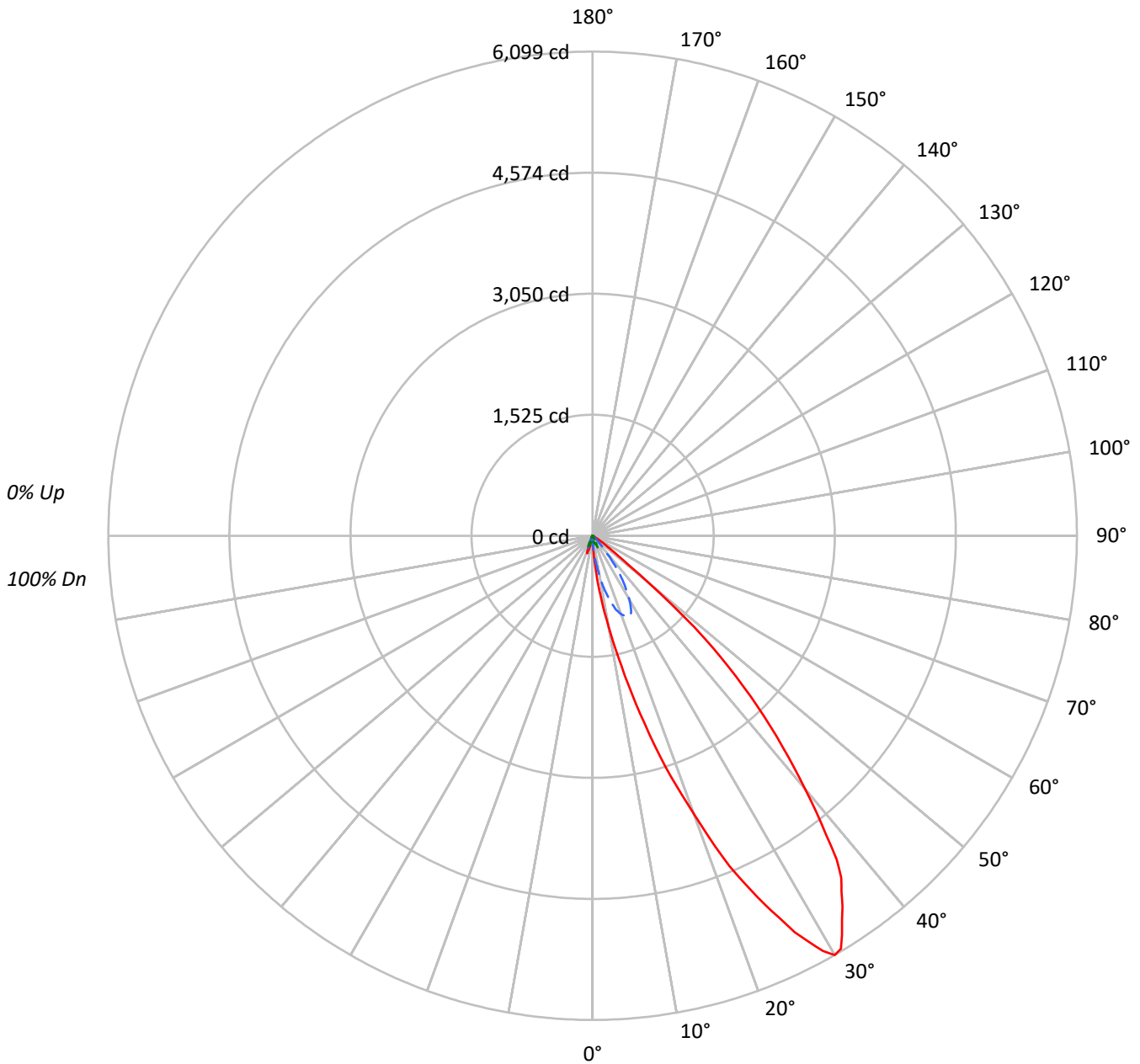
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE LAR25NF 4LA1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE 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	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°	11545	11545	11545
5°	50171	10896	6599
10°	144662	9807	7177
15°	296423	10816	20712
20°	489042	20136	20976
25°	696653	12848	7036
30°	868621	5626	2763
35°	823040	2545	1220
40°	670343	1304	386
45°	469550	698	0
50°	175946	461	0
55°	37483	516	0
60°	7179	395	0
65°	2131	700	0
70°	577	866	0
75°	0	1144	0
80°	0	1705	0
85°	0	3397	0



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE LAR25NF 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.6	1.4
10°-20°	169.2	12.0
20°-30°	432.1	30.6
30°-40°	500.4	35.4
40°-50°	258.2	18.3
50°-60°	26.6	1.9
60°-70°	2.9	0.2
70°-80°	1.8	0.1
80°-90°	1.6	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°	620.9	44.0
0°-40°	1121.3	79.4
0°-60°	1406.2	99.6
0°-90°	1412.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1412.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	94	94	94	94	94	
5°	405	211	88	58	53	63
15°	2321	850	85	113	162	711
25°	5119	1110	94	59	52	2378
35°	5466	607	17	10	8	3347
45°	2692	71	4	2	0	2016
55°	174	10	2	2	0	218
65°	7	2	2	2	0	9
75°	0	2	2	2	0	0
85°	0	2	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	161.4	155.8	151.7	153.4	162.2	152.5	153.4	150.1	148.5	146.9	142.9
5°	405.2	389.0	378.5	379.4	355.9	373.7	372.1	358.4	349.5	332.5	322.9
7.5°	760.3	725.6	713.5	709.5	711.9	694.9	687.7	669.9	646.5	615.8	598.1
10°	1155.0	1134.0	1126.8	1113.8	1113.0	1083.2	1065.4	1042.8	996.0	953.2	921.7
12.5°	1682.9	1618.3	1607.0	1582.8	1576.3	1525.5	1488.3	1455.3	1377.0	1320.5	1270.4
15°	2321.3	2268.8	2280.9	2206.7	2186.5	2103.4	2034.0	1962.9	1836.2	1749.9	1661.1
17.5°	3046.1	2979.1	2987.2	2894.4	2727.3	2742.6	2641.7	2544.1	2365.7	2250.3	2113.1
20°	3725.7	3678.1	3681.3	3557.8	3501.3	3348.0	3213.2	3097.0	2859.7	2712.8	2531.2
22.5°	4507.8	4384.3	4360.9	4193.0	4093.8	3887.9	3699.9	3545.7	3258.4	3092.9	2870.2
25°	5118.8	5034.1	4969.5	4770.9	4632.9	4365.0	4147.0	3918.6	3573.2	3389.9	3125.2
26°	5348.0	5268.1	5185.0	4971.1	4816.1	4532.8	4295.5	4050.2	3680.5	3484.4	3196.2
27°	5607.1	5476.4	5376.3	5136.6	4968.7	4670.9	4389.2	4157.5	3762.0	3544.9	3241.4
28°	5790.3	5659.6	5527.2	5266.5	5084.9	4773.4	4480.4	4227.7	3809.6	3574.0	3260.0
29°	5978.4	5839.6	5646.7	5362.6	5164.8	4837.1	4532.8	4262.4	3823.4	3572.4	3250.3
30°	6098.7	5959.0	5709.6	5416.6	5207.6	4863.0	4547.4	4256.0	3801.6	3540.1	3214.8
31°	6070.4	5942.1	5694.3	5422.3	5203.6	4847.6	4520.7	4210.0	3746.7	3482.8	3150.2
32°	5929.2	5820.2	5632.1	5384.4	5159.2	4795.2	4458.6	4137.3	3667.6	3415.8	3071.9
33°	5765.3	5674.9	5545.0	5307.7	5081.7	4716.1	4373.0	4047.8	3576.4	3324.6	2977.5
34°	5628.1	5546.6	5426.3	5204.4	4976.0	4610.3	4264.9	3934.8	3472.3	3217.2	2866.1
35°	5465.9	5391.6	5280.2	5064.7	4829.1	4468.3	4129.3	3804.0	3349.6	3089.7	2737.0
36°	5324.6	5207.6	5094.6	4884.7	4649.9	4296.3	3969.5	3650.6	3210.8	2943.6	2591.7
37°	5105.9	4988.9	4867.8	4669.2	4437.6	4099.4	3791.9	3486.8	3052.6	2833.8	2436.7
38°	4779.0	4724.9	4603.9	4415.0	4199.5	3882.3	3597.4	3300.4	2874.2	2621.6	2272.1
39°	4473.9	4429.5	4311.7	4139.0	3939.6	3649.0	3381.9	3090.5	2673.2	2434.3	2098.5
40°	4163.2	4118.8	4008.2	3852.4	3673.2	3406.1	3152.6	2866.9	2462.6	2241.4	1924.2
42.5°	3427.1	3381.1	3357.7	3198.7	3009.0	2779.8	2544.9	2286.6	1942.8	1761.2	1512.6
45°	2691.8	2649.8	2561.8	2496.5	2327.0	2136.5	1945.2	1734.5	1481.1	1301.9	1069.4
47.5°	1924.2	1904.0	1907.2	1786.2	1624.8	1474.6	1316.4	1125.9	901.6	676.4	496.4
50°	916.9	922.5	945.1	860.4	739.3	651.4	557.7	437.5	319.6	251.0	194.5
51°	594.0	600.5	619.9	559.3	471.4	411.6	351.9	284.1	226.8	192.9	154.2
52°	402.0	402.0	406.0	370.5	326.9	293.0	258.3	218.7	176.8	151.7	121.9
53°	301.9	301.1	302.7	279.3	249.4	224.4	200.2	171.1	139.6	118.6	94.4
54°	230.8	230.0	231.6	213.9	192.9	174.3	155.8	134.0	108.2	88.8	71.0
55°	174.3	174.3	176.8	163.0	146.9	132.4	118.6	100.1	79.9	64.6	51.7
57.5°	70.2	70.2	72.6	67.8	60.5	54.9	50.0	42.8	35.5	29.9	24.2
60°	29.1	29.9	30.7	28.2	26.6	25.0	23.4	21.0	18.6	15.3	12.9
61°	21.8	21.8	22.6	21.0	20.2	18.6	17.8	16.1	14.5	12.1	10.5
62°	16.1	16.1	16.9	16.1	15.3	14.5	13.7	12.9	11.3	9.7	8.1
63°	12.1	12.1	12.9	12.1	12.1	11.3	10.5	9.7	8.9	7.3	6.5
64°	9.7	9.7	9.7	8.9	8.9	8.9	8.1	8.1	6.5	5.6	4.8
65°	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.6	5.6	4.0	4.0
66°	5.6	5.6	5.6	4.8	4.8	4.8	4.8	4.8	4.0	3.2	2.4



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE 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	0.8	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°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	144.5	143.7	135.6	135.6	138.8	134.0	131.6	125.9	108.2	92.0	77.5
5°	319.6	310.7	283.3	275.2	274.4	251.8	238.9	210.7	123.5	88.0	67.0
7.5°	590.0	563.4	516.6	491.5	460.9	443.1	411.6	363.2	140.4	82.3	60.5
10°	872.5	842.6	773.2	728.8	705.4	648.1	595.7	529.5	157.4	78.3	59.7
12.5°	1196.2	1129.2	1063.0	983.9	913.7	862.8	775.7	698.2	168.7	77.5	65.4
15°	1546.5	1462.5	1349.5	1243.0	1143.7	1071.1	954.0	849.9	172.7	84.7	85.6
17.5°	1938.7	1781.3	1618.3	1473.0	1336.6	1238.9	1093.7	971.0	170.3	104.1	136.4
20°	2306.0	2096.9	1875.8	1674.0	1481.1	1354.4	1186.5	1053.3	171.1	153.4	184.0
22.5°	2597.3	2343.1	2073.5	1827.3	1582.8	1431.0	1247.8	1096.9	192.1	163.8	125.1
25°	2812.0	2512.6	2203.5	1920.2	1662.7	1492.4	1291.4	1109.8	179.2	94.4	71.0
26°	2869.3	2553.8	2227.7	1933.9	1672.4	1492.4	1284.9	1096.1	155.0	75.1	58.9
27°	2901.6	2572.3	2231.7	1927.4	1660.3	1475.4	1261.5	1068.6	126.7	63.0	50.0
28°	2905.7	2564.2	2211.5	1900.8	1626.4	1439.1	1219.6	1026.7	104.9	53.3	41.2
29°	2883.9	2534.4	2172.8	1856.4	1574.7	1385.8	1162.3	975.0	89.6	46.0	34.7
30°	2837.9	2481.9	2113.9	1796.7	1507.7	1321.3	1095.3	917.7	78.3	39.5	29.1
31°	2771.7	2410.1	2050.1	1725.6	1437.5	1256.7	1032.3	859.6	69.4	33.1	24.2
32°	2686.1	2325.3	1967.8	1649.0	1374.5	1195.4	971.8	800.7	62.1	28.2	20.2
33°	2590.9	2229.3	1878.2	1569.1	1314.0	1132.4	908.0	738.5	55.7	23.4	16.9
34°	2481.1	2123.6	1782.9	1489.2	1249.4	1063.0	839.4	674.8	48.4	19.4	14.5
35°	2356.0	2005.7	1680.4	1416.5	1177.6	987.9	767.6	607.0	42.8	16.9	12.1
36°	2220.4	1883.0	1577.1	1333.4	1100.1	909.6	691.7	538.4	37.1	14.5	10.5
37°	2078.4	1755.5	1473.8	1238.9	1014.6	826.5	613.4	464.1	32.3	12.1	8.9
38°	1928.2	1627.2	1373.7	1149.4	924.2	736.9	533.5	382.6	28.2	10.5	8.1
39°	1774.9	1500.5	1274.5	1050.9	831.3	648.9	456.8	297.0	25.0	8.9	7.3
40°	1624.8	1381.0	1169.5	943.5	738.5	562.6	382.6	218.7	21.8	8.1	5.6
42.5°	1286.6	1060.6	839.4	629.6	514.9	356.8	212.3	114.6	15.3	5.6	4.0
45°	841.8	627.1	452.8	306.7	266.4	150.9	98.5	71.0	11.3	4.0	3.2
47.5°	348.7	254.2	176.8	127.5	103.3	80.7	63.0	46.0	8.1	3.2	3.2
50°	153.4	121.1	96.0	75.1	65.4	52.5	40.4	28.2	4.8	2.4	2.4
51°	122.7	97.7	75.1	59.7	53.3	42.8	33.1	22.6	4.8	2.4	2.4
52°	96.9	75.9	58.9	46.0	42.8	34.7	27.4	18.6	4.0	2.4	2.4
53°	74.3	57.3	44.4	36.3	33.9	28.2	22.6	15.3	3.2	2.4	2.4
54°	54.9	43.6	34.7	28.2	27.4	22.6	18.6	12.9	3.2	2.4	2.4
55°	40.4	33.9	26.6	22.6	21.8	18.6	15.3	10.5	3.2	2.4	2.4
57.5°	21.0	17.8	14.5	12.9	12.9	12.1	10.5	6.5	2.4	1.6	2.4
60°	11.3	9.7	8.1	7.3	8.9	8.1	7.3	4.0	2.4	1.6	2.4
61°	8.9	8.1	6.5	5.6	7.3	6.5	6.5	3.2	2.4	2.4	2.4
62°	7.3	6.5	5.6	4.8	6.5	5.6	5.6	3.2	2.4	2.4	2.4
63°	5.6	4.8	4.0	4.0	5.6	5.6	4.8	2.4	2.4	2.4	2.4
64°	4.0	4.0	3.2	3.2	4.8	4.8	4.0	2.4	2.4	2.4	2.4
65°	3.2	3.2	2.4	2.4	4.0	4.0	4.0	2.4	2.4	2.4	2.4
66°	2.4	2.4	2.4	1.6	3.2	4.0	4.0	1.6	2.4	2.4	2.4



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE 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	2.4	3.2	3.2	1.6	2.4	2.4	2.4
75°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	2.4
77.5°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	3.2
80°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	3.2
82.5°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	3.2
85°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	3.2
87.5°	0.8	0.8	0.8	0.8	2.4	3.2	3.2	1.6	2.4	2.4	3.2
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: P170695

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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	93.6	93.6	93.6
2.5°	70.2	66.2	65.4
5°	58.1	54.1	53.3
7.5°	53.3	50.0	49.2
10°	54.9	55.7	57.3
12.5°	70.2	77.5	83.9
15°	113.0	142.1	162.2
17.5°	196.9	217.9	231.6
20°	172.7	159.0	159.8
22.5°	96.9	87.2	86.4
25°	58.9	53.3	51.7
26°	49.2	44.4	42.8
27°	40.4	36.3	34.7
28°	33.1	29.9	29.1
29°	28.2	24.2	23.4
30°	23.4	20.2	19.4
31°	19.4	16.9	16.1
32°	16.9	14.5	12.9
33°	13.7	12.1	11.3
34°	12.1	9.7	8.9
35°	9.7	8.1	8.1
36°	8.9	7.3	6.5
37°	7.3	5.6	5.6
38°	6.5	4.8	4.0
39°	5.6	4.0	3.2
40°	4.8	3.2	2.4
42.5°	3.2	1.6	0.8
45°	2.4	0.8	0.0
47.5°	1.6	0.8	0.0
50°	1.6	0.0	0.0
51°	1.6	0.0	0.0
52°	1.6	0.0	0.0
53°	1.6	0.0	0.0
54°	1.6	0.0	0.0
55°	1.6	0.0	0.0
57.5°	1.6	0.0	0.0
60°	1.6	0.0	0.0
61°	1.6	0.0	0.0
62°	1.6	0.0	0.0
63°	1.6	0.8	0.0
64°	1.6	0.8	0.0
65°	1.6	0.8	0.0
66°	1.6	0.8	0.0



TEST NUMBER: P170695

CATALOG NUMBER: LDA4A13835D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.4	0.8	0.0
75°	2.4	0.8	0.0
77.5°	2.4	0.8	0.0
80°	2.4	0.8	0.0
82.5°	2.4	0.8	0.0
85°	2.4	0.8	0.0
87.5°	1.6	0.8	0.0
90°	0.0	0.0	0.0



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







67.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8





67.5°	1.6	1.6	1.6	1.6	3.2	3.2	3.2	1.6	2.4	2.4	2.4
70°	0.8	0.8	0.8	1.6	2.4	3.2	3.2	1.6	2.4	2.4	2.4





67.5°	1.6	0.8	0.0
70°	1.6	0.8	0.0



(END OF REPORT)