

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: P170686

Luminaire Tested: **LDA4A09830D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170686
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: LDA4A09830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 905.4 lumens
Efficiency: N/A
Efficacy: 65.4 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

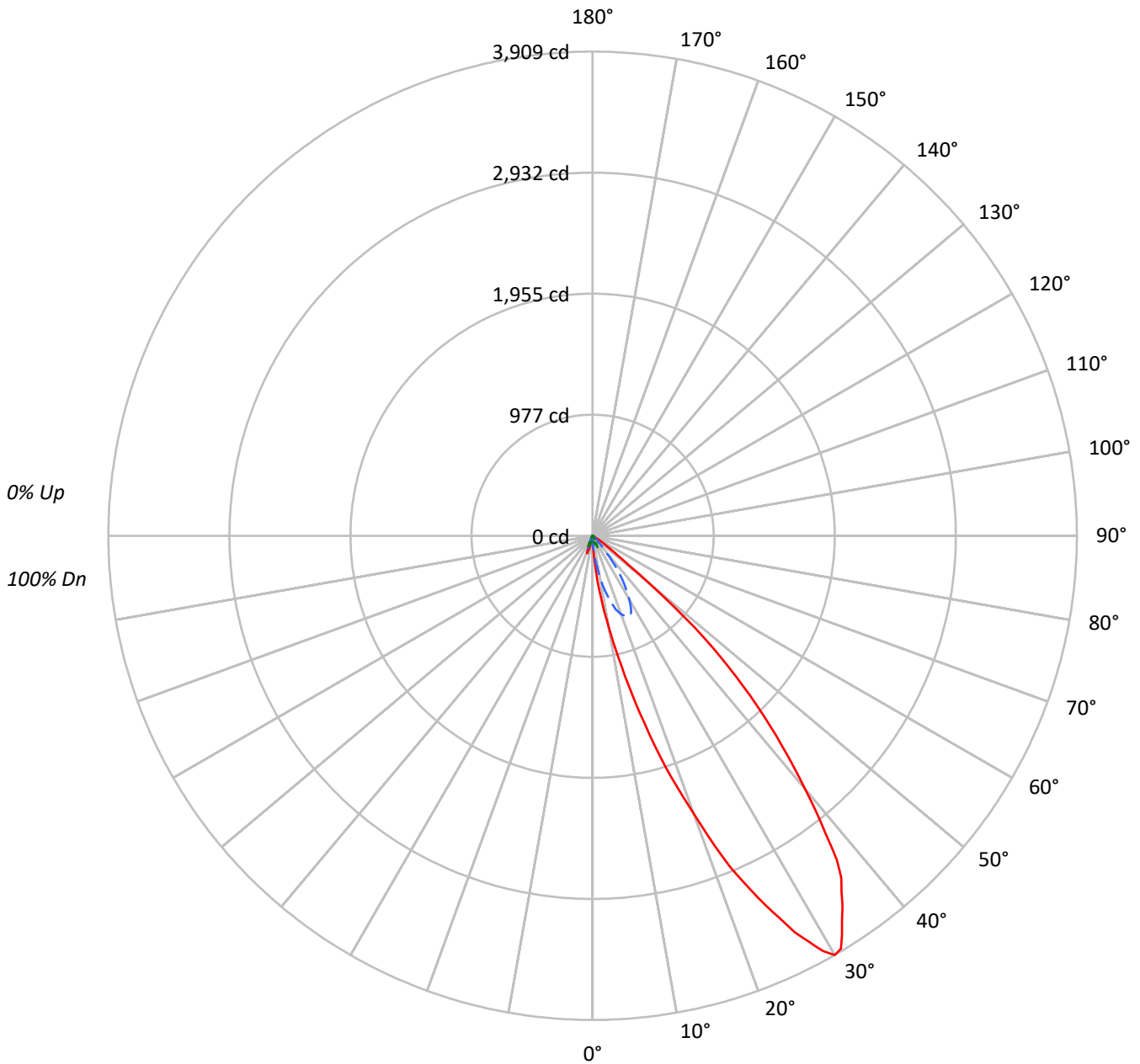
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	57	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	37	48	42	37	47	41	37	46	41	37	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7401	7401	7401
5°	32155	6983	4222
10°	92721	6287	4597
15°	189987	6934	13280
20°	313440	12903	13441
25°	446507	8234	4505
30°	556720	3603	1766
35°	527502	1641	783
40°	429640	837	258
45°	300939	454	0
50°	112775	307	0
55°	24021	344	0
60°	4588	247	0
65°	1372	467	0
70°	361	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°	12.6	1.4
10°-20°	108.4	12.0
20°-30°	276.9	30.6
30°-40°	320.8	35.4
40°-50°	165.5	18.3
50°-60°	17.1	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°	397.9	44.0
0°-40°	718.7	79.4
0°-60°	901.3	99.5
0°-90°	905.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	905.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	60	60	60	60	60	
5°	260	135	56	37	34	40
15°	1488	545	54	72	104	455
25°	3281	711	60	38	33	1524
35°	3503	389	11	6	5	2145
45°	1725	46	3	2	0	1292
55°	112	7	2	1	0	140
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°	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
2.5°	103.5	99.8	97.3	98.3	104.0	97.8	98.3	96.2	95.2	94.2	91.6
5°	259.7	249.3	242.6	243.1	228.1	239.5	238.5	229.7	224.0	213.1	206.9
7.5°	487.3	465.1	457.3	454.7	456.3	445.4	440.7	429.4	414.4	394.7	383.3
10°	740.3	726.8	722.2	713.9	713.4	694.2	682.8	668.4	638.4	610.9	590.8
12.5°	1078.6	1037.2	1030.0	1014.4	1010.3	977.7	953.9	932.7	882.5	846.3	814.2
15°	1487.8	1454.2	1461.9	1414.3	1401.4	1348.1	1303.6	1258.1	1176.9	1121.5	1064.6
17.5°	1952.3	1909.4	1914.6	1855.1	1748.0	1757.8	1693.2	1630.6	1516.2	1442.3	1354.3
20°	2387.9	2357.4	2359.5	2280.3	2244.1	2145.8	2059.4	1984.9	1832.8	1738.7	1622.3
22.5°	2889.2	2810.0	2795.0	2687.4	2623.8	2491.9	2371.4	2272.5	2088.4	1982.3	1839.6
25°	3280.8	3226.5	3185.1	3057.8	2969.4	2797.6	2657.9	2511.5	2290.1	2172.7	2003.0
26°	3427.7	3376.5	3323.2	3186.1	3086.8	2905.2	2753.1	2595.9	2358.9	2233.2	2048.5
27°	3593.8	3510.0	3445.8	3292.2	3184.6	2993.7	2813.1	2664.7	2411.2	2272.0	2077.5
28°	3711.2	3627.4	3542.5	3375.5	3259.1	3059.4	2871.6	2709.7	2441.7	2290.7	2089.4
29°	3831.7	3742.7	3619.1	3437.0	3310.3	3100.2	2905.2	2731.9	2450.5	2289.6	2083.2
30°	3908.8	3819.3	3659.5	3471.7	3337.7	3116.8	2914.5	2727.8	2436.5	2268.9	2060.4
31°	3890.7	3808.4	3649.6	3475.3	3335.1	3107.0	2897.5	2698.3	2401.4	2232.2	2019.1
32°	3800.2	3730.3	3609.8	3451.0	3306.6	3073.3	2857.6	2651.7	2350.7	2189.3	1968.9
33°	3695.1	3637.2	3553.9	3401.8	3257.0	3022.6	2802.8	2594.3	2292.2	2130.8	1908.4
34°	3607.2	3555.0	3477.9	3335.6	3189.2	2954.9	2733.5	2521.9	2225.5	2062.0	1837.0
35°	3503.2	3455.6	3384.2	3246.1	3095.1	2863.8	2646.6	2438.1	2146.8	1980.3	1754.2
36°	3412.7	3337.7	3265.3	3130.8	2980.2	2753.6	2544.1	2339.8	2057.9	1886.6	1661.1
37°	3272.5	3197.5	3119.9	2992.6	2844.2	2627.4	2430.3	2234.8	1956.5	1816.3	1561.8
38°	3063.0	3028.3	2950.7	2829.7	2691.6	2488.3	2305.7	2115.3	1842.1	1680.2	1456.2
39°	2867.5	2839.0	2763.5	2652.8	2525.0	2338.8	2167.5	1980.8	1713.3	1560.2	1345.0
40°	2668.3	2639.8	2569.0	2469.1	2354.3	2183.1	2020.6	1837.5	1578.3	1436.6	1233.3
42.5°	2196.5	2167.0	2152.0	2050.1	1928.5	1781.6	1631.1	1465.5	1245.2	1128.8	969.4
45°	1725.2	1698.3	1641.9	1600.0	1491.4	1369.3	1246.7	1111.7	949.3	834.4	685.4
47.5°	1233.3	1220.3	1222.4	1144.8	1041.3	945.1	843.7	721.6	577.8	433.5	318.1
50°	587.7	591.3	605.8	551.5	473.9	417.5	357.5	280.4	204.9	160.9	124.7
51°	380.7	384.9	397.3	358.5	302.1	263.8	225.5	182.1	145.4	123.6	98.8
52°	257.6	257.6	260.2	237.4	209.5	187.8	165.5	140.2	113.3	97.3	78.1
53°	193.5	193.0	194.0	179.0	159.8	143.8	128.3	109.7	89.5	76.0	60.5
54°	148.0	147.4	148.5	137.1	123.6	111.7	99.8	85.9	69.3	56.9	45.5
55°	111.7	111.7	113.3	104.5	94.2	84.8	76.0	64.1	51.2	41.4	33.1
57.5°	45.0	45.0	46.6	43.5	38.8	35.2	32.1	27.4	22.8	19.1	15.5
60°	18.6	19.1	19.7	18.1	17.1	16.0	15.0	13.5	11.9	9.8	8.3
61°	14.0	14.0	14.5	13.5	12.9	11.9	11.4	10.3	9.3	7.8	6.7
62°	10.3	10.3	10.9	10.3	9.8	9.3	8.8	8.3	7.2	6.2	5.2
63°	7.8	7.8	8.3	7.8	7.8	7.2	6.7	6.2	5.7	4.7	4.1
64°	6.2	6.2	6.2	5.7	5.7	5.7	5.2	5.2	4.1	3.6	3.1
65°	4.7	4.7	4.7	4.7	4.1	4.1	4.1	3.6	3.6	2.6	2.6
66°	3.6	3.6	3.6	3.1	3.1	3.1	3.1	3.1	2.6	2.1	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°	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
2.5°	92.6	92.1	86.9	86.9	89.0	85.9	84.3	80.7	69.3	59.0	49.7
5°	204.9	199.2	181.6	176.4	175.9	161.4	153.1	135.0	79.1	56.4	42.9
7.5°	378.2	361.1	331.1	315.0	295.4	284.0	263.8	232.8	90.0	52.8	38.8
10°	559.2	540.1	495.6	467.1	452.1	415.4	381.8	339.4	100.9	50.2	38.3
12.5°	766.7	723.7	681.3	630.6	585.6	553.0	497.1	447.5	108.1	49.7	41.9
15°	991.2	937.4	864.9	796.7	733.0	686.5	611.5	544.7	110.7	54.3	54.8
17.5°	1242.6	1141.7	1037.2	944.1	856.7	794.1	701.0	622.3	109.2	66.7	87.4
20°	1478.0	1344.0	1202.2	1072.9	949.3	868.0	760.4	675.1	109.7	98.3	117.9
22.5°	1664.7	1501.8	1329.0	1171.2	1014.4	917.2	799.8	703.0	123.1	105.0	80.2
25°	1802.3	1610.4	1412.3	1230.7	1065.7	956.5	827.7	711.3	114.8	60.5	45.5
26°	1839.0	1636.8	1427.8	1239.5	1071.9	956.5	823.6	702.5	99.3	48.1	37.8
27°	1859.7	1648.7	1430.4	1235.3	1064.1	945.6	808.6	684.9	81.2	40.4	32.1
28°	1862.3	1643.5	1417.4	1218.3	1042.4	922.4	781.7	658.0	67.3	34.1	26.4
29°	1848.4	1624.4	1392.6	1189.8	1009.3	888.2	744.9	624.9	57.4	29.5	22.2
30°	1818.9	1590.7	1354.8	1151.5	966.3	846.8	702.0	588.2	50.2	25.3	18.6
31°	1776.4	1544.7	1314.0	1106.0	921.3	805.5	661.6	550.9	44.5	21.2	15.5
32°	1721.6	1490.4	1261.2	1056.9	881.0	766.1	622.8	513.2	39.8	18.1	12.9
33°	1660.6	1428.8	1203.8	1005.7	842.2	725.8	582.0	473.3	35.7	15.0	10.9
34°	1590.2	1361.0	1142.7	954.4	800.8	681.3	538.0	432.5	31.0	12.4	9.3
35°	1510.0	1285.5	1077.0	907.9	754.8	633.2	492.0	389.0	27.4	10.9	7.8
36°	1423.1	1206.9	1010.8	854.6	705.1	583.0	443.3	345.0	23.8	9.3	6.7
37°	1332.1	1125.2	944.6	794.1	650.3	529.7	393.2	297.5	20.7	7.8	5.7
38°	1235.9	1042.9	880.5	736.7	592.3	472.3	341.9	245.2	18.1	6.7	5.2
39°	1137.6	961.7	816.8	673.5	532.8	415.9	292.8	190.4	16.0	5.7	4.7
40°	1041.3	885.1	749.6	604.7	473.3	360.6	245.2	140.2	14.0	5.2	3.6
42.5°	824.6	679.7	538.0	403.5	330.0	228.7	136.1	73.5	9.8	3.6	2.6
45°	539.6	402.0	290.2	196.6	170.7	96.7	63.1	45.5	7.2	2.6	2.1
47.5°	223.5	163.0	113.3	81.7	66.2	51.7	40.4	29.5	5.2	2.1	2.1
50°	98.3	77.6	61.6	48.1	41.9	33.6	25.9	18.1	3.1	1.6	1.6
51°	78.6	62.6	48.1	38.3	34.1	27.4	21.2	14.5	3.1	1.6	1.6
52°	62.1	48.6	37.8	29.5	27.4	22.2	17.6	11.9	2.6	1.6	1.6
53°	47.6	36.7	28.5	23.3	21.7	18.1	14.5	9.8	2.1	1.6	1.6
54°	35.2	27.9	22.2	18.1	17.6	14.5	11.9	8.3	2.1	1.6	1.6
55°	25.9	21.7	17.1	14.5	14.0	11.9	9.8	6.7	2.1	1.6	1.6
57.5°	13.5	11.4	9.3	8.3	8.3	7.8	6.7	4.1	1.6	1.0	1.6
60°	7.2	6.2	5.2	4.7	5.7	5.2	4.7	2.6	1.6	1.0	1.6
61°	5.7	5.2	4.1	3.6	4.7	4.1	4.1	2.1	1.6	1.6	1.6
62°	4.7	4.1	3.6	3.1	4.1	3.6	3.6	2.1	1.6	1.6	1.6
63°	3.6	3.1	2.6	2.6	3.6	3.6	3.1	1.6	1.6	1.6	1.6
64°	2.6	2.6	2.1	2.1	3.1	3.1	2.6	1.6	1.6	1.6	1.6
65°	2.1	2.1	1.6	1.6	2.6	2.6	2.6	1.6	1.6	1.6	1.6
66°	1.6	1.6	1.6	1.0	2.1	2.6	2.6	1.0	1.6	1.6	1.6



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CATALOG NUMBER: LDA4A09830D010TE 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	2.1	2.1	1.0	1.6	1.6	1.6
75°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	1.6
77.5°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	2.1
80°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	2.1
82.5°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	2.1
85°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	2.1
87.5°	0.5	0.5	0.5	0.5	1.6	2.1	2.1	1.0	1.6	1.6	2.1
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°	60.0	60.0	60.0
2.5°	45.0	42.4	41.9
5°	37.2	34.7	34.1
7.5°	34.1	32.1	31.6
10°	35.2	35.7	36.7
12.5°	45.0	49.7	53.8
15°	72.4	91.0	104.0
17.5°	126.2	139.7	148.5
20°	110.7	101.9	102.4
22.5°	62.1	55.9	55.4
25°	37.8	34.1	33.1
26°	31.6	28.5	27.4
27°	25.9	23.3	22.2
28°	21.2	19.1	18.6
29°	18.1	15.5	15.0
30°	15.0	12.9	12.4
31°	12.4	10.9	10.3
32°	10.9	9.3	8.3
33°	8.8	7.8	7.2
34°	7.8	6.2	5.7
35°	6.2	5.2	5.2
36°	5.7	4.7	4.1
37°	4.7	3.6	3.6
38°	4.1	3.1	2.6
39°	3.6	2.6	2.1
40°	3.1	2.1	1.6
42.5°	2.1	1.0	0.5
45°	1.6	0.5	0.0
47.5°	1.0	0.5	0.0
50°	1.0	0.0	0.0
51°	1.0	0.0	0.0
52°	1.0	0.0	0.0
53°	1.0	0.0	0.0
54°	1.0	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.0	0.0	0.0
60°	1.0	0.0	0.0
61°	1.0	0.0	0.0
62°	1.0	0.0	0.0
63°	1.0	0.5	0.0
64°	1.0	0.5	0.0
65°	1.0	0.5	0.0
66°	1.0	0.5	0.0



TEST NUMBER: P170686

CATALOG NUMBER: LDA4A09830D010TE 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°	1.0	0.5	0.0
90°	0.0	0.0	0.0



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







67.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5





67.5°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	1.0	1.6	1.6	1.6
70°	0.5	0.5	0.5	1.0	1.6	2.1	2.1	1.0	1.6	1.6	1.6





67.5°	1.0	0.5	0.0
70°	1.0	0.5	0.0



(END OF REPORT)