

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: P170681

Luminaire Tested: **LDA4A18927D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170681
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: LDA4A18927D010TE 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 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1234.8 lumens
Efficiency: N/A
Efficacy: 42.4 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

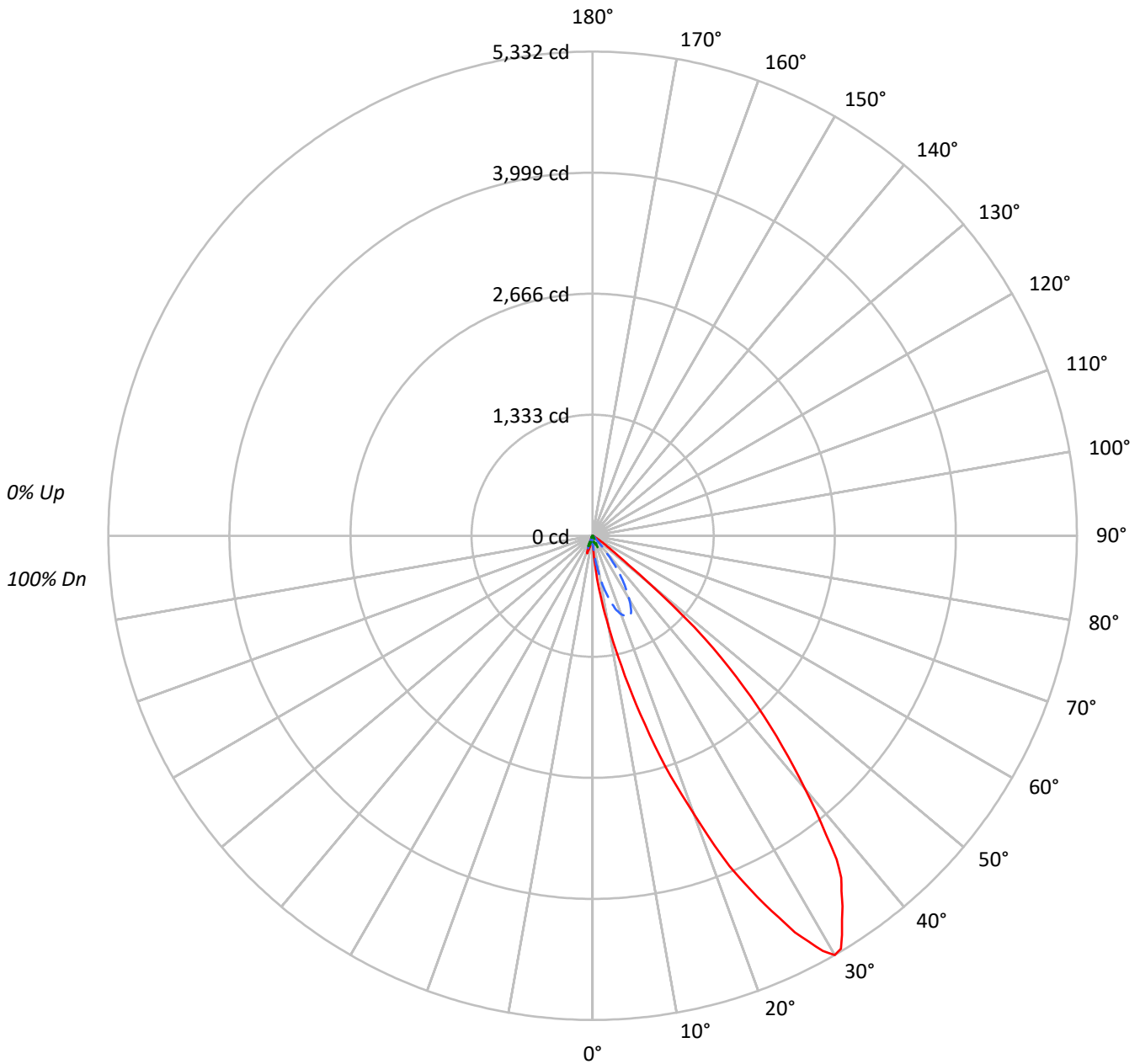
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	10102	10102	10102
5°	43856	9522	5770
10°	126476	8567	6275
15°	259148	9462	18107
20°	427546	17602	18337
25°	609047	11242	6152
30°	759379	4928	2407
35°	719533	2229	1069
40°	586035	1143	338
45°	410503	611	0
50°	153820	403	0
55°	32773	452	0
60°	6266	345	0
65°	1868	613	0
70°	505	757	0
75°	0	1001	0
80°	0	1492	0
85°	0	2972	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.2	1.4
10°-20°	147.9	12.0
20°-30°	377.8	30.6
30°-40°	437.5	35.4
40°-50°	225.7	18.3
50°-60°	23.3	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°	542.8	44.0
0°-40°	980.3	79.4
0°-60°	1229.3	99.6
0°-90°	1234.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1234.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	82	82	82	82	82	
5°	354	184	77	51	47	55
15°	2029	743	74	99	142	621
25°	4475	970	83	52	45	2079
35°	4778	531	15	8	7	2926
45°	2353	62	4	2	0	1762
55°	152	9	2	1	0	191
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	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9
2.5°	141.1	136.2	132.7	134.1	141.8	133.4	134.1	131.2	129.8	128.4	124.9
5°	354.2	340.1	330.9	331.6	311.2	326.7	325.3	313.3	305.5	290.7	282.3
7.5°	664.7	634.4	623.8	620.2	622.4	607.5	601.2	585.7	565.2	538.4	522.9
10°	1009.8	991.4	985.1	973.8	973.1	947.0	931.4	911.7	870.7	833.3	805.8
12.5°	1471.2	1414.8	1404.9	1383.7	1378.1	1333.6	1301.2	1272.2	1203.8	1154.4	1110.7
15°	2029.4	1983.5	1994.1	1929.2	1911.5	1838.9	1778.2	1716.1	1605.3	1529.8	1452.2
17.5°	2663.0	2604.5	2611.5	2530.4	2384.3	2397.7	2309.5	2224.1	2068.2	1967.3	1847.3
20°	3257.2	3215.5	3218.4	3110.4	3061.0	2926.9	2809.1	2707.5	2500.0	2371.6	2212.9
22.5°	3940.9	3833.0	3812.5	3665.7	3578.9	3399.0	3234.6	3099.8	2848.6	2704.0	2509.2
25°	4475.1	4401.0	4344.6	4171.0	4050.3	3816.0	3625.5	3425.8	3123.8	2963.6	2732.2
26°	4675.5	4605.6	4533.0	4346.0	4210.5	3962.8	3755.4	3540.8	3217.7	3046.2	2794.3
27°	4902.0	4787.7	4700.2	4490.6	4343.8	4083.5	3837.2	3634.7	3288.9	3099.1	2833.8
28°	5062.2	4947.9	4832.1	4604.2	4445.5	4173.1	3916.9	3696.1	3330.6	3124.5	2850.0
29°	5226.6	5105.2	4936.6	4688.2	4515.3	4228.8	3962.8	3726.4	3342.6	3123.1	2841.6
30°	5331.7	5209.7	4991.6	4735.5	4552.7	4251.4	3975.5	3720.8	3323.5	3094.9	2810.5
31°	5307.0	5194.8	4978.2	4740.4	4549.2	4238.0	3952.2	3680.6	3275.5	3044.8	2754.1
32°	5183.5	5088.3	4923.9	4707.2	4510.4	4192.1	3897.9	3617.1	3206.4	2986.2	2685.6
33°	5040.3	4961.3	4847.7	4640.2	4442.6	4123.0	3823.1	3538.7	3126.6	2906.5	2603.1
34°	4920.3	4849.1	4743.9	4549.9	4350.2	4030.5	3728.5	3439.9	3035.6	2812.6	2505.7
35°	4778.5	4713.6	4616.2	4427.8	4221.8	3906.4	3610.0	3325.6	2928.4	2701.1	2392.8
36°	4655.0	4552.7	4453.9	4270.5	4065.1	3756.1	3470.3	3191.6	2807.0	2573.4	2265.8
37°	4463.8	4361.5	4255.6	4082.1	3879.5	3583.9	3315.0	3048.3	2668.7	2477.5	2130.3
38°	4178.0	4130.7	4024.9	3859.8	3671.4	3394.1	3145.0	2885.3	2512.7	2291.9	1986.3
39°	3911.3	3872.5	3769.5	3618.5	3444.2	3190.1	2956.6	2701.9	2337.0	2128.2	1834.6
40°	3639.6	3600.8	3504.2	3368.0	3211.3	2977.8	2756.2	2506.4	2152.9	1959.5	1682.2
42.5°	2996.1	2955.9	2935.4	2796.4	2630.6	2430.2	2224.8	1999.0	1698.4	1539.7	1322.3
45°	2353.3	2316.6	2239.7	2182.5	2034.3	1867.8	1700.6	1516.4	1294.8	1138.2	935.0
47.5°	1682.2	1664.6	1667.4	1561.6	1420.4	1289.2	1150.9	984.4	788.2	591.3	434.0
50°	801.6	806.5	826.3	752.2	646.4	569.4	487.6	382.5	279.4	219.5	170.1
51°	519.3	525.0	541.9	489.0	412.1	359.9	307.7	248.4	198.3	168.6	134.8
52°	351.4	351.4	354.9	323.9	285.8	256.1	225.8	191.2	154.5	132.7	106.5
53°	263.9	263.2	264.6	244.1	218.0	196.2	175.0	149.6	122.1	103.7	82.6
54°	201.8	201.1	202.5	187.0	168.6	152.4	136.2	117.1	94.6	77.6	62.1
55°	152.4	152.4	154.5	142.5	128.4	115.7	103.7	87.5	69.9	56.5	45.2
57.5°	61.4	61.4	63.5	59.3	52.9	48.0	43.7	37.4	31.0	26.1	21.2
60°	25.4	26.1	26.8	24.7	23.3	21.9	20.5	18.3	16.2	13.4	11.3
61°	19.1	19.1	19.8	18.3	17.6	16.2	15.5	14.1	12.7	10.6	9.2
62°	14.1	14.1	14.8	14.1	13.4	12.7	12.0	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	5.6
64°	8.5	8.5	8.5	7.8	7.8	7.8	7.1	7.1	5.6	4.9	4.2
65°	6.4	6.4	6.4	6.4	5.6	5.6	5.6	4.9	4.9	3.5	3.5
66°	4.9	4.9	4.9	4.2	4.2	4.2	4.2	4.2	3.5	2.8	2.1



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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	0.7	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°	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9
2.5°	126.3	125.6	118.5	118.5	121.4	117.1	115.0	110.1	94.6	80.4	67.7
5°	279.4	271.7	247.7	240.6	239.9	220.2	208.9	184.2	108.0	76.9	58.6
7.5°	515.8	492.5	451.6	429.7	402.9	387.4	359.9	317.5	122.8	72.0	52.9
10°	762.8	736.7	676.0	637.2	616.7	566.6	520.8	462.9	137.6	68.4	52.2
12.5°	1045.7	987.2	929.3	860.2	798.8	754.3	678.1	610.4	147.5	67.7	57.2
15°	1352.0	1278.6	1179.8	1086.7	999.9	936.4	834.1	743.0	151.0	74.1	74.8
17.5°	1694.9	1557.3	1414.8	1287.8	1168.5	1083.1	956.1	848.9	148.9	91.0	119.3
20°	2016.0	1833.2	1639.9	1463.5	1294.8	1184.0	1037.3	920.8	149.6	134.1	160.9
22.5°	2270.7	2048.4	1812.8	1597.5	1383.7	1251.1	1090.9	958.9	167.9	143.2	109.4
25°	2458.4	2196.6	1926.4	1678.7	1453.6	1304.7	1129.0	970.2	156.6	82.6	62.1
26°	2508.5	2232.6	1947.5	1690.7	1462.1	1304.7	1123.4	958.2	135.5	65.6	51.5
27°	2536.7	2248.8	1951.1	1685.0	1451.5	1289.9	1102.9	934.3	110.8	55.0	43.7
28°	2540.3	2241.8	1933.4	1661.8	1421.8	1258.1	1066.2	897.6	91.7	46.6	36.0
29°	2521.2	2215.7	1899.6	1622.9	1376.7	1211.6	1016.1	852.4	78.3	40.2	30.3
30°	2481.0	2169.8	1848.0	1570.7	1318.1	1155.1	957.5	802.3	68.4	34.6	25.4
31°	2423.1	2107.0	1792.3	1508.6	1256.7	1098.7	902.5	751.5	60.7	28.9	21.2
32°	2348.3	2032.9	1720.3	1441.6	1201.7	1045.0	849.6	700.0	54.3	24.7	17.6
33°	2265.1	1948.9	1642.0	1371.7	1148.8	990.0	793.8	645.7	48.7	20.5	14.8
34°	2169.1	1856.5	1558.7	1301.9	1092.3	929.3	733.9	589.9	42.3	16.9	12.7
35°	2059.7	1753.5	1469.1	1238.4	1029.5	863.7	671.1	530.6	37.4	14.8	10.6
36°	1941.2	1646.2	1378.8	1165.7	961.8	795.2	604.7	470.7	32.5	12.7	9.2
37°	1817.0	1534.7	1288.5	1083.1	887.0	722.6	536.3	405.7	28.2	10.6	7.8
38°	1685.7	1422.5	1201.0	1004.8	807.9	644.2	466.4	334.5	24.7	9.2	7.1
39°	1551.7	1311.8	1114.2	918.7	726.8	567.3	399.4	259.7	21.9	7.8	6.4
40°	1420.4	1207.3	1022.5	824.9	645.7	491.8	334.5	191.2	19.1	7.1	4.9
42.5°	1124.8	927.2	733.9	550.4	450.2	311.9	185.6	100.2	13.4	4.9	3.5
45°	736.0	548.3	395.9	268.1	232.9	132.0	86.1	62.1	9.9	3.5	2.8
47.5°	304.8	222.3	154.5	111.5	90.3	70.6	55.0	40.2	7.1	2.8	2.8
50°	134.1	105.8	84.0	65.6	57.2	45.9	35.3	24.7	4.2	2.1	2.1
51°	107.3	85.4	65.6	52.2	46.6	37.4	28.9	19.8	4.2	2.1	2.1
52°	84.7	66.3	51.5	40.2	37.4	30.3	24.0	16.2	3.5	2.1	2.1
53°	64.9	50.1	38.8	31.8	29.6	24.7	19.8	13.4	2.8	2.1	2.1
54°	48.0	38.1	30.3	24.7	24.0	19.8	16.2	11.3	2.8	2.1	2.1
55°	35.3	29.6	23.3	19.8	19.1	16.2	13.4	9.2	2.8	2.1	2.1
57.5°	18.3	15.5	12.7	11.3	11.3	10.6	9.2	5.6	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	5.6	4.9	6.4	5.6	5.6	2.8	2.1	2.1	2.1
62°	6.4	5.6	4.9	4.2	5.6	4.9	4.9	2.8	2.1	2.1	2.1
63°	4.9	4.2	3.5	3.5	4.9	4.9	4.2	2.1	2.1	2.1	2.1
64°	3.5	3.5	2.8	2.8	4.2	4.2	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



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CATALOG NUMBER: LDA4A18927D010TE 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



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	81.9	81.9	81.9
2.5°	61.4	57.9	57.2
5°	50.8	47.3	46.6
7.5°	46.6	43.7	43.0
10°	48.0	48.7	50.1
12.5°	61.4	67.7	73.4
15°	98.8	124.2	141.8
17.5°	172.2	190.5	202.5
20°	151.0	139.0	139.7
22.5°	84.7	76.2	75.5
25°	51.5	46.6	45.2
26°	43.0	38.8	37.4
27°	35.3	31.8	30.3
28°	28.9	26.1	25.4
29°	24.7	21.2	20.5
30°	20.5	17.6	16.9
31°	16.9	14.8	14.1
32°	14.8	12.7	11.3
33°	12.0	10.6	9.9
34°	10.6	8.5	7.8
35°	8.5	7.1	7.1
36°	7.8	6.4	5.6
37°	6.4	4.9	4.9
38°	5.6	4.2	3.5
39°	4.9	3.5	2.8
40°	4.2	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: P170681

CATALOG NUMBER: LDA4A18927D010TE 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)