

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: P170690

Luminaire Tested: **LDA4A09930D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170690
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: LDA4A09930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 774.2 lumens
Efficiency: N/A
Efficacy: 55.9 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

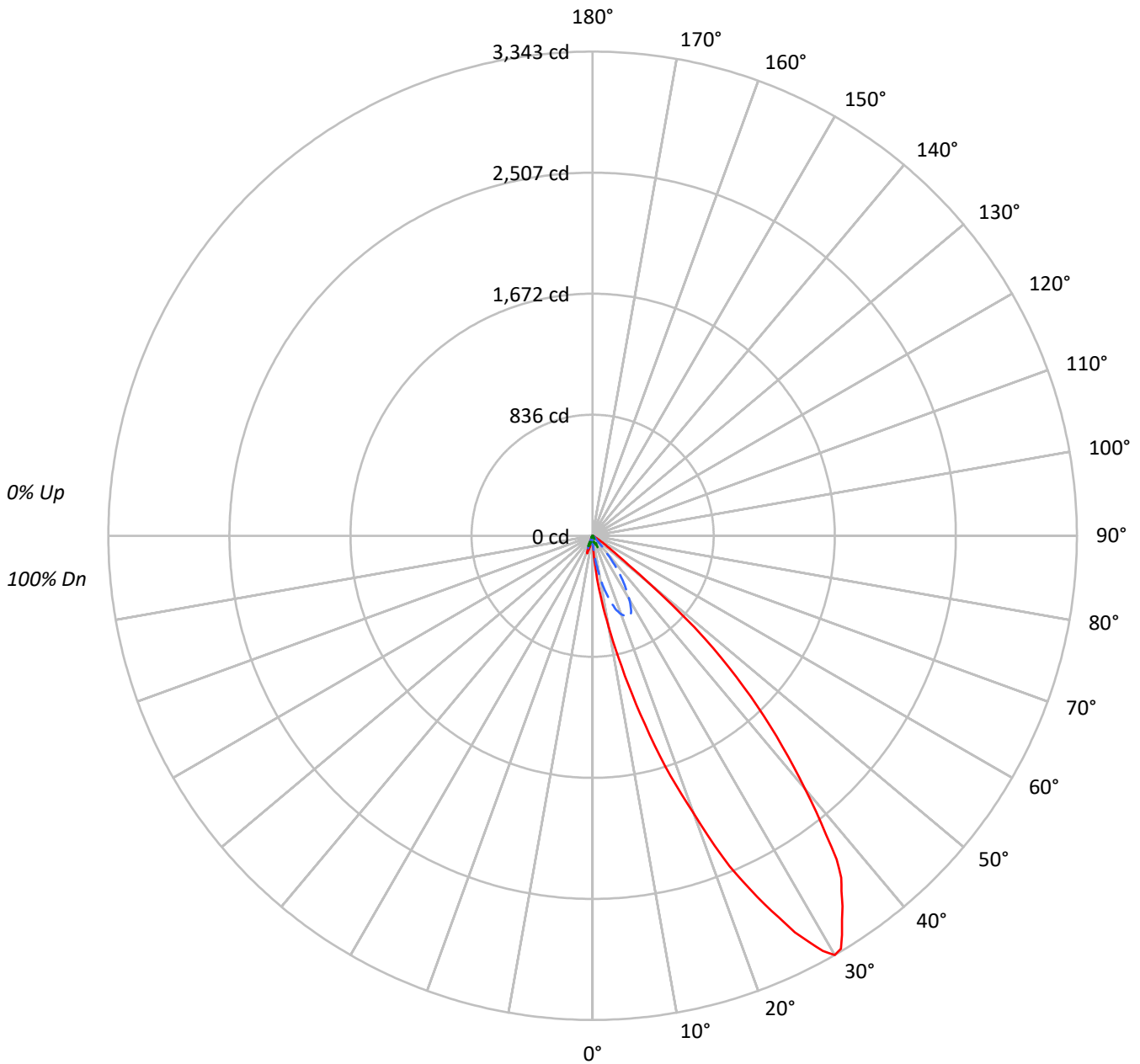
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	6328	6328	6328
5°	27500	5968	3615
10°	79295	5373	3933
15°	162469	5938	11352
20°	268049	11039	11499
25°	381847	7050	3852
30°	476092	3091	1510
35°	451114	1400	663
40°	367423	708	209
45°	257364	384	0
50°	96445	249	0
55°	20558	280	0
60°	3922	222	0
65°	1167	379	0
70°	325	469	0
75°	0	620	0
80°	0	923	0
85°	0	1840	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	10.8	1.4
10°-20°	92.7	12.0
20°-30°	236.8	30.6
30°-40°	274.3	35.4
40°-50°	141.5	18.3
50°-60°	14.6	1.9
60°-70°	1.6	0.2
70°-80°	1.0	0.1
80°-90°	0.9	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°	340.3	44.0
0°-40°	614.6	79.4
0°-60°	770.7	99.6
0°-90°	774.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	774.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	51	51	51	51	51	
5°	222	116	48	32	29	35
15°	1272	466	46	62	89	389
25°	2806	608	52	32	28	1303
35°	2996	333	9	5	4	1835
45°	1475	39	2	1	0	1105
55°	96	6	1	1	0	120
65°	4	1	1	1	0	5
75°	0	1	1	1	0	0
85°	0	1	1	1	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°	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3
2.5°	88.5	85.4	83.2	84.1	88.9	83.6	84.1	82.3	81.4	80.5	78.3
5°	222.1	213.2	207.5	207.9	195.1	204.8	203.9	196.4	191.6	182.3	177.0
7.5°	416.7	397.7	391.1	388.9	390.2	380.9	376.9	367.2	354.4	337.5	327.8
10°	633.1	621.6	617.6	610.5	610.1	593.7	584.0	571.6	545.9	522.5	505.2
12.5°	922.4	887.0	880.8	867.5	864.0	836.1	815.8	797.6	754.7	723.8	696.3
15°	1272.3	1243.6	1250.2	1209.5	1198.4	1152.9	1114.8	1075.9	1006.4	959.1	910.4
17.5°	1669.6	1632.9	1637.3	1586.4	1494.9	1503.3	1448.0	1394.4	1296.7	1233.4	1158.2
20°	2042.1	2016.0	2017.8	1950.1	1919.1	1835.1	1761.2	1697.5	1567.4	1486.9	1387.4
22.5°	2470.8	2403.1	2390.3	2298.2	2243.8	2131.0	2027.9	1943.4	1785.9	1695.3	1573.2
25°	2805.7	2759.2	2723.8	2615.0	2539.3	2392.5	2273.0	2147.8	1958.5	1858.1	1713.0
26°	2931.3	2887.5	2841.9	2724.7	2639.8	2484.5	2354.4	2219.9	2017.3	1909.8	1751.9
27°	3073.3	3001.7	2946.8	2815.4	2723.4	2560.1	2405.7	2278.8	2062.0	1943.0	1776.7
28°	3173.7	3102.1	3029.5	2886.6	2787.1	2616.3	2455.7	2317.3	2088.1	1958.9	1786.8
29°	3276.8	3200.7	3095.0	2939.3	2830.9	2651.3	2484.5	2336.3	2095.6	1958.0	1781.5
30°	3342.7	3266.2	3129.5	2968.9	2854.3	2665.4	2492.5	2332.7	2083.7	1940.3	1762.1
31°	3327.3	3256.9	3121.1	2972.0	2852.1	2657.0	2477.9	2307.5	2053.6	1908.9	1726.7
32°	3249.8	3190.1	3087.0	2951.2	2827.8	2628.3	2443.8	2267.7	2010.2	1872.2	1683.8
33°	3160.0	3110.5	3039.3	2909.2	2785.3	2584.9	2396.9	2218.6	1960.3	1822.2	1632.0
34°	3084.8	3040.1	2974.2	2852.6	2727.4	2527.0	2337.6	2156.7	1903.2	1763.4	1570.9
35°	2995.9	2955.2	2894.1	2776.0	2646.9	2449.1	2263.3	2085.0	1835.9	1693.5	1500.2
36°	2918.5	2854.3	2792.4	2677.4	2548.6	2354.9	2175.7	2001.0	1759.8	1613.4	1420.5
37°	2798.6	2734.4	2668.1	2559.3	2432.3	2246.9	2078.4	1911.1	1673.1	1553.2	1335.6
38°	2619.4	2589.8	2523.4	2419.9	2301.8	2127.9	1971.8	1809.0	1575.4	1436.9	1245.3
39°	2452.2	2427.9	2363.3	2268.6	2159.3	2000.1	1853.6	1693.9	1465.2	1334.3	1150.2
40°	2281.9	2257.5	2196.9	2111.6	2013.3	1866.9	1728.0	1571.4	1349.7	1228.5	1054.7
42.5°	1878.4	1853.2	1840.4	1753.2	1649.2	1523.6	1394.9	1253.3	1064.8	965.3	829.0
45°	1475.4	1452.4	1404.2	1368.3	1275.4	1171.0	1066.2	950.7	811.8	713.6	586.2
47.5°	1054.7	1043.6	1045.4	979.0	890.5	808.3	721.5	617.1	494.2	370.7	272.1
50°	502.6	505.7	518.0	471.6	405.2	357.0	305.7	239.8	175.2	137.6	106.6
51°	325.6	329.1	339.8	306.6	258.4	225.6	192.9	155.7	124.3	105.7	84.5
52°	220.3	220.3	222.5	203.1	179.2	160.6	141.6	119.9	96.9	83.2	66.8
53°	165.5	165.0	165.9	153.1	136.7	123.0	109.7	93.8	76.5	65.0	51.8
54°	126.5	126.1	127.0	117.2	105.7	95.6	85.4	73.4	59.3	48.7	38.9
55°	95.6	95.6	96.9	89.4	80.5	72.6	65.0	54.9	43.8	35.4	28.3
57.5°	38.5	38.5	39.8	37.2	33.2	30.1	27.4	23.4	19.5	16.4	13.3
60°	15.9	16.4	16.8	15.5	14.6	13.7	12.8	11.5	10.2	8.4	7.1
61°	11.9	11.9	12.4	11.5	11.1	10.2	9.7	8.8	8.0	6.6	5.8
62°	8.8	8.8	9.3	8.8	8.4	8.0	7.5	7.1	6.2	5.3	4.4
63°	6.6	6.6	7.1	6.6	6.6	6.2	5.8	5.3	4.9	4.0	3.5
64°	5.3	5.3	5.3	4.9	4.9	4.9	4.4	4.4	3.5	3.1	2.7
65°	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.1	3.1	2.2	2.2
66°	3.1	3.1	3.1	2.7	2.7	2.7	2.7	2.7	2.2	1.8	1.3



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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	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4
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°	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3	51.3
2.5°	79.2	78.7	74.3	74.3	76.1	73.4	72.1	69.0	59.3	50.4	42.5
5°	175.2	170.3	155.3	150.9	150.4	138.0	130.9	115.5	67.7	48.2	36.7
7.5°	323.4	308.8	283.1	269.4	252.6	242.9	225.6	199.1	77.0	45.1	33.2
10°	478.2	461.9	423.8	399.5	386.7	355.2	326.5	290.2	86.3	42.9	32.7
12.5°	655.6	618.9	582.6	539.3	500.8	472.9	425.1	382.7	92.5	42.5	35.8
15°	847.6	801.6	739.7	681.3	626.9	587.1	522.9	465.8	94.7	46.5	46.9
17.5°	1062.6	976.4	887.0	807.4	732.6	679.1	599.4	532.2	93.3	57.1	74.8
20°	1263.9	1149.3	1028.1	917.5	811.8	742.3	650.3	577.3	93.8	84.1	100.9
22.5°	1423.6	1284.3	1136.5	1001.6	867.5	784.4	683.9	601.2	105.3	89.8	68.6
25°	1541.3	1377.2	1207.7	1052.5	911.3	818.0	707.8	608.3	98.2	51.8	38.9
26°	1572.7	1399.7	1221.0	1060.0	916.6	818.0	704.3	600.8	84.9	41.1	32.3
27°	1590.4	1409.9	1223.2	1056.4	910.0	808.7	691.5	585.7	69.5	34.5	27.4
28°	1592.6	1405.5	1212.2	1041.8	891.4	788.8	668.5	562.7	57.5	29.2	22.6
29°	1580.7	1389.1	1190.9	1017.5	863.1	759.6	637.0	534.4	49.1	25.2	19.0
30°	1555.5	1360.4	1158.6	984.8	826.4	724.2	600.3	503.0	42.9	21.7	15.9
31°	1519.2	1321.0	1123.7	945.8	787.9	688.8	565.8	471.2	38.0	18.1	13.3
32°	1472.3	1274.5	1078.6	903.8	753.4	655.2	532.6	438.9	34.1	15.5	11.1
33°	1420.1	1221.9	1029.5	860.0	720.2	620.7	497.7	404.8	30.5	12.8	9.3
34°	1359.9	1163.9	977.3	816.2	684.8	582.6	460.1	369.8	26.5	10.6	8.0
35°	1291.4	1099.4	921.1	776.4	645.5	541.5	420.7	332.7	23.4	9.3	6.6
36°	1217.0	1032.1	864.4	730.8	603.0	498.6	379.1	295.1	20.4	8.0	5.8
37°	1139.2	962.2	807.8	679.1	556.1	453.0	336.2	254.4	17.7	6.6	4.9
38°	1056.9	891.9	753.0	630.0	506.5	403.9	292.4	209.7	15.5	5.8	4.4
39°	972.8	822.4	698.5	576.0	455.7	355.7	250.4	162.8	13.7	4.9	4.0
40°	890.5	756.9	641.0	517.2	404.8	308.3	209.7	119.9	11.9	4.4	3.1
42.5°	705.2	581.3	460.1	345.1	282.2	195.5	116.3	62.8	8.4	3.1	2.2
45°	461.4	343.7	248.2	168.1	146.0	82.7	54.0	38.9	6.2	2.2	1.8
47.5°	191.1	139.4	96.9	69.9	56.6	44.2	34.5	25.2	4.4	1.8	1.8
50°	84.1	66.4	52.6	41.1	35.8	28.8	22.1	15.5	2.7	1.3	1.3
51°	67.2	53.5	41.1	32.7	29.2	23.4	18.1	12.4	2.7	1.3	1.3
52°	53.1	41.6	32.3	25.2	23.4	19.0	15.0	10.2	2.2	1.3	1.3
53°	40.7	31.4	24.3	19.9	18.6	15.5	12.4	8.4	1.8	1.3	1.3
54°	30.1	23.9	19.0	15.5	15.0	12.4	10.2	7.1	1.8	1.3	1.3
55°	22.1	18.6	14.6	12.4	11.9	10.2	8.4	5.8	1.8	1.3	1.3
57.5°	11.5	9.7	8.0	7.1	7.1	6.6	5.8	3.5	1.3	0.9	1.3
60°	6.2	5.3	4.4	4.0	4.9	4.4	4.0	2.2	1.3	0.9	1.3
61°	4.9	4.4	3.5	3.1	4.0	3.5	3.5	1.8	1.3	1.3	1.3
62°	4.0	3.5	3.1	2.7	3.5	3.1	3.1	1.8	1.3	1.3	1.3
63°	3.1	2.7	2.2	2.2	3.1	3.1	2.7	1.3	1.3	1.3	1.3
64°	2.2	2.2	1.8	1.8	2.7	2.7	2.2	1.3	1.3	1.3	1.3
65°	1.8	1.8	1.3	1.3	2.2	2.2	2.2	1.3	1.3	1.3	1.3
66°	1.3	1.3	1.3	0.9	1.8	2.2	2.2	0.9	1.3	1.3	1.3



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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°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.3
75°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.3
77.5°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.8
80°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.8
82.5°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.8
85°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.8
87.5°	0.4	0.4	0.4	0.4	1.3	1.8	1.8	0.9	1.3	1.3	1.8
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°	51.3	51.3	51.3
2.5°	38.5	36.3	35.8
5°	31.9	29.6	29.2
7.5°	29.2	27.4	27.0
10°	30.1	30.5	31.4
12.5°	38.5	42.5	46.0
15°	61.9	77.9	88.9
17.5°	107.9	119.4	127.0
20°	94.7	87.2	87.6
22.5°	53.1	47.8	47.3
25°	32.3	29.2	28.3
26°	27.0	24.3	23.4
27°	22.1	19.9	19.0
28°	18.1	16.4	15.9
29°	15.5	13.3	12.8
30°	12.8	11.1	10.6
31°	10.6	9.3	8.8
32°	9.3	8.0	7.1
33°	7.5	6.6	6.2
34°	6.6	5.3	4.9
35°	5.3	4.4	4.4
36°	4.9	4.0	3.5
37°	4.0	3.1	3.1
38°	3.5	2.7	2.2
39°	3.1	2.2	1.8
40°	2.7	1.8	1.3
42.5°	1.8	0.9	0.4
45°	1.3	0.4	0.0
47.5°	0.9	0.4	0.0
50°	0.9	0.0	0.0
51°	0.9	0.0	0.0
52°	0.9	0.0	0.0
53°	0.9	0.0	0.0
54°	0.9	0.0	0.0
55°	0.9	0.0	0.0
57.5°	0.9	0.0	0.0
60°	0.9	0.0	0.0
61°	0.9	0.0	0.0
62°	0.9	0.0	0.0
63°	0.9	0.4	0.0
64°	0.9	0.4	0.0
65°	0.9	0.4	0.0
66°	0.9	0.4	0.0



TEST NUMBER: P170690

CATALOG NUMBER: LDA4A09930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.3	0.4	0.0
75°	1.3	0.4	0.0
77.5°	1.3	0.4	0.0
80°	1.3	0.4	0.0
82.5°	1.3	0.4	0.0
85°	1.3	0.4	0.0
87.5°	0.9	0.4	0.0
90°	0.0	0.0	0.0



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







67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.3	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.4	0.4





67.5°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	0.9	1.3	1.3	1.3
70°	0.4	0.4	0.4	0.9	1.3	1.8	1.8	0.9	1.3	1.3	1.3





67.5°	0.9	0.4	0.0
70°	0.9	0.4	0.0



(END OF REPORT)