

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: P170691

Luminaire Tested: **LDA4A09935D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170691
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: LDA4A09935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 780.1 lumens
Efficiency: N/A
Efficacy: 56.4 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

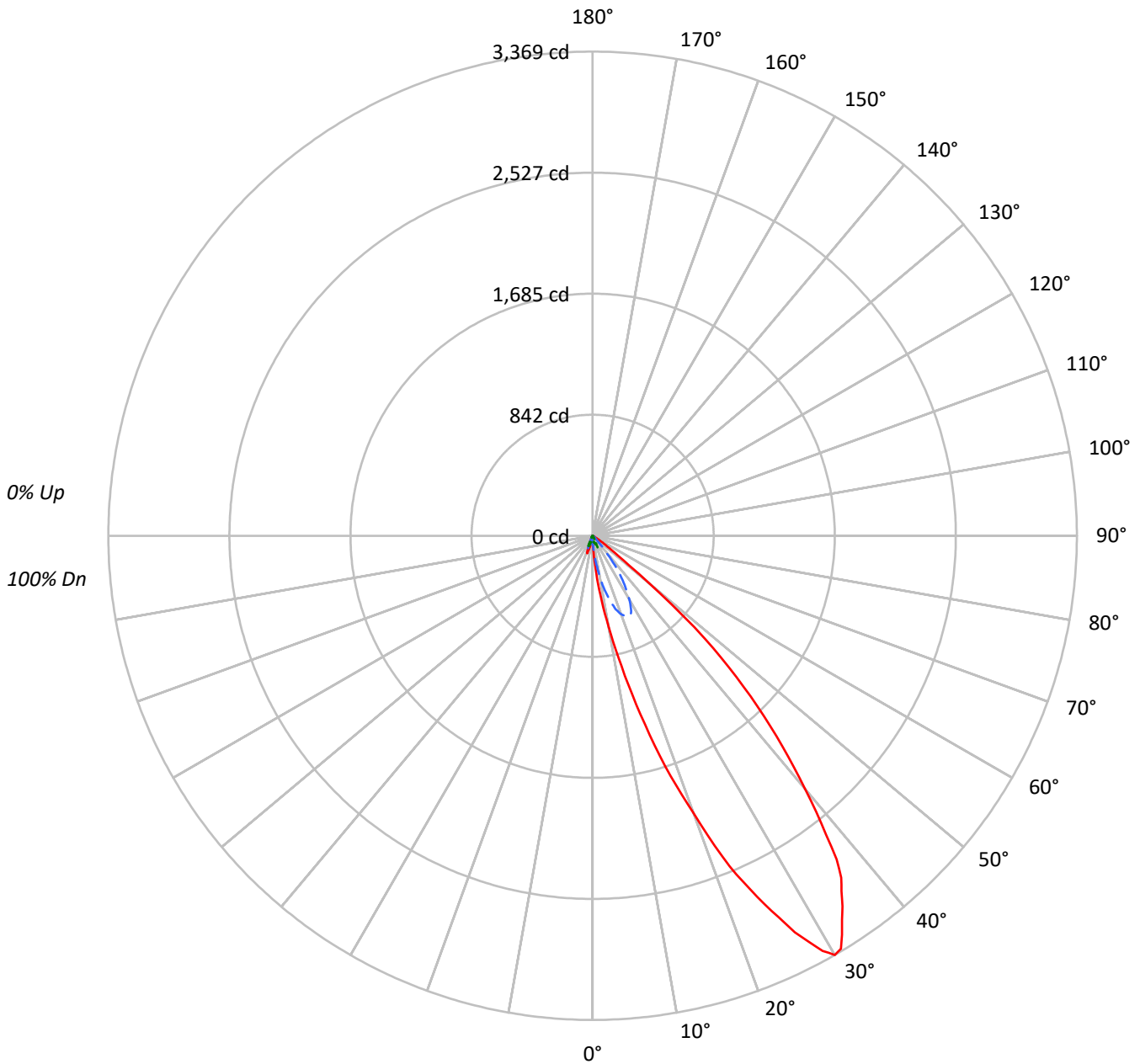
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	6377	6377	6377
5°	27710	6017	3640
10°	79908	5411	3970
15°	163733	5976	11442
20°	270123	11118	11590
25°	384787	7104	3879
30°	479780	3105	1524
35°	454593	1415	678
40°	370257	725	209
45°	259353	384	0
50°	97174	249	0
55°	20709	280	0
60°	3947	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°	93.4	12.0
20°-30°	238.7	30.6
30°-40°	276.4	35.4
40°-50°	142.6	18.3
50°-60°	14.7	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°	342.9	44.0
0°-40°	619.4	79.4
0°-60°	776.7	99.6
0°-90°	780.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	780.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	52	52	52	52	52	
5°	224	116	49	32	29	35
15°	1282	469	47	62	90	392
25°	2827	613	52	32	28	1314
35°	3019	335	9	5	4	1849
45°	1487	39	2	1	0	1113
55°	96	6	1	1	0	121
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°	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
2.5°	89.2	86.0	83.8	84.7	89.6	84.3	84.7	82.9	82.0	81.1	78.9
5°	223.8	214.9	209.1	209.5	196.6	206.4	205.5	197.9	193.0	183.7	178.3
7.5°	420.0	400.8	394.1	391.9	393.2	383.8	379.8	370.0	357.1	340.2	330.3
10°	638.0	626.4	622.4	615.2	614.8	598.3	588.5	576.0	550.1	526.5	509.1
12.5°	929.5	893.9	887.6	874.2	870.7	842.6	822.1	803.8	760.6	729.3	701.7
15°	1282.2	1253.2	1259.9	1218.9	1207.7	1161.8	1123.4	1084.2	1014.2	966.5	917.5
17.5°	1682.5	1645.5	1650.0	1598.7	1506.4	1514.9	1459.1	1405.2	1306.7	1242.9	1167.1
20°	2057.9	2031.6	2033.4	1965.1	1933.9	1849.2	1774.8	1710.6	1579.5	1498.4	1398.1
22.5°	2489.9	2421.7	2408.7	2316.0	2261.2	2147.5	2043.6	1958.5	1799.7	1708.4	1585.3
25°	2827.3	2780.5	2744.9	2635.2	2559.0	2411.0	2290.6	2164.4	1973.6	1872.4	1726.2
26°	2954.0	2909.8	2863.9	2745.8	2660.2	2503.7	2372.6	2237.1	2032.9	1924.6	1765.4
27°	3097.1	3024.8	2969.6	2837.1	2744.4	2579.9	2424.3	2296.4	2077.9	1958.0	1790.4
28°	3198.3	3126.0	3052.9	2908.9	2808.6	2636.5	2474.7	2335.2	2104.2	1974.1	1800.6
29°	3302.1	3225.5	3118.9	2962.0	2852.8	2671.8	2503.7	2354.3	2111.8	1973.2	1795.3
30°	3368.6	3291.4	3153.7	2991.8	2876.4	2686.0	2511.7	2350.8	2099.8	1955.3	1775.7
31°	3353.0	3282.1	3145.2	2995.0	2874.2	2677.5	2497.0	2325.4	2069.5	1923.7	1740.0
32°	3274.9	3214.8	3110.9	2974.0	2849.6	2648.6	2462.7	2285.2	2025.8	1886.7	1696.8
33°	3184.4	3134.5	3062.7	2931.7	2806.8	2604.9	2415.4	2235.7	1975.4	1836.3	1644.6
34°	3108.6	3063.6	2997.2	2874.6	2748.4	2546.5	2355.7	2173.3	1917.9	1777.0	1583.1
35°	3019.0	2978.0	2916.5	2797.5	2667.3	2468.0	2280.8	2101.1	1850.1	1706.6	1511.7
36°	2941.0	2876.4	2814.0	2698.1	2568.3	2373.1	2192.5	2016.4	1773.4	1625.9	1431.5
37°	2820.2	2755.6	2688.7	2579.0	2451.1	2264.3	2094.4	1925.9	1686.1	1565.2	1345.9
38°	2639.7	2609.8	2542.9	2438.6	2319.6	2144.4	1987.0	1822.9	1587.5	1448.0	1255.0
39°	2471.1	2446.6	2381.5	2286.1	2176.0	2015.5	1868.0	1707.0	1476.5	1344.6	1159.1
40°	2299.5	2275.0	2213.9	2127.9	2028.9	1881.3	1741.3	1583.5	1360.2	1238.0	1062.8
42.5°	1892.9	1867.5	1854.6	1766.8	1662.0	1535.4	1405.6	1263.0	1073.1	972.8	835.5
45°	1486.8	1463.6	1415.0	1378.9	1285.3	1180.1	1074.4	958.1	818.1	719.1	590.7
47.5°	1062.8	1051.7	1053.5	986.6	897.4	814.5	727.1	621.9	498.0	373.6	274.2
50°	506.4	509.6	522.0	475.2	408.4	359.8	308.1	241.6	176.5	138.6	107.4
51°	328.1	331.7	342.4	308.9	260.4	227.4	194.4	156.9	125.3	106.5	85.2
52°	222.0	222.0	224.2	204.6	180.6	161.8	142.7	120.8	97.6	83.8	67.3
53°	166.7	166.3	167.2	154.3	137.8	123.9	110.6	94.5	77.1	65.5	52.2
54°	127.5	127.1	127.9	118.1	106.5	96.3	86.0	74.0	59.7	49.0	39.2
55°	96.3	96.3	97.6	90.1	81.1	73.1	65.5	55.3	44.1	35.7	28.5
57.5°	38.8	38.8	40.1	37.4	33.4	30.3	27.6	23.6	19.6	16.5	13.4
60°	16.0	16.5	16.9	15.6	14.7	13.8	12.9	11.6	10.3	8.5	7.1
61°	12.0	12.0	12.5	11.6	11.1	10.3	9.8	8.9	8.0	6.7	5.8
62°	8.9	8.9	9.4	8.9	8.5	8.0	7.6	7.1	6.2	5.3	4.5
63°	6.7	6.7	7.1	6.7	6.7	6.2	5.8	5.3	4.9	4.0	3.6
64°	5.3	5.3	5.3	4.9	4.9	4.9	4.5	4.5	3.6	3.1	2.7
65°	4.0	4.0	4.0	4.0	3.6	3.6	3.6	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°	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
2.5°	79.8	79.4	74.9	74.9	76.7	74.0	72.7	69.5	59.7	50.8	42.8
5°	176.5	171.6	156.5	152.0	151.6	139.1	132.0	116.4	68.2	48.6	37.0
7.5°	325.9	311.2	285.3	271.5	254.6	244.8	227.4	200.6	77.6	45.5	33.4
10°	481.9	465.4	427.1	402.6	389.6	358.0	329.0	292.5	86.9	43.2	33.0
12.5°	660.7	623.7	587.1	543.4	504.7	476.6	428.4	385.6	93.2	42.8	36.1
15°	854.2	807.8	745.4	686.6	631.7	591.6	527.0	469.4	95.4	46.8	47.3
17.5°	1070.8	983.9	893.9	813.6	738.3	684.3	604.1	536.3	94.1	57.5	75.3
20°	1273.7	1158.2	1036.1	924.6	818.1	748.1	655.3	581.8	94.5	84.7	101.6
22.5°	1434.6	1294.2	1145.3	1009.3	874.2	790.4	689.2	605.9	106.1	90.5	69.1
25°	1553.2	1387.8	1217.1	1060.6	918.4	824.3	713.3	613.0	99.0	52.2	39.2
26°	1584.9	1410.6	1230.4	1068.2	923.7	824.3	709.7	605.4	85.6	41.5	32.5
27°	1602.7	1420.8	1232.7	1064.6	917.0	814.9	696.8	590.3	70.0	34.8	27.6
28°	1604.9	1416.3	1221.5	1049.9	898.3	794.9	673.6	567.1	58.0	29.4	22.7
29°	1592.9	1399.9	1200.1	1025.4	869.8	765.5	642.0	538.5	49.5	25.4	19.2
30°	1567.5	1370.9	1167.6	992.4	832.8	729.8	605.0	506.9	43.2	21.8	16.0
31°	1530.9	1331.2	1132.4	953.1	794.0	694.1	570.2	474.8	38.3	18.3	13.4
32°	1483.7	1284.4	1086.9	910.8	759.2	660.2	536.8	442.2	34.3	15.6	11.1
33°	1431.1	1231.3	1037.4	866.7	725.8	625.5	501.5	407.9	30.8	12.9	9.4
34°	1370.4	1172.9	984.8	822.5	690.1	587.1	463.6	372.7	26.7	10.7	8.0
35°	1301.3	1107.8	928.2	782.4	650.4	545.7	424.0	335.3	23.6	9.4	6.7
36°	1226.4	1040.1	871.1	736.5	607.6	502.4	382.1	297.4	20.5	8.0	5.8
37°	1148.0	969.6	814.1	684.3	560.4	456.5	338.8	256.3	17.8	6.7	4.9
38°	1065.0	898.8	758.8	634.8	510.5	407.0	294.7	211.3	15.6	5.8	4.5
39°	980.3	828.8	703.9	580.4	459.2	358.4	252.3	164.1	13.8	4.9	4.0
40°	897.4	762.8	646.0	521.2	407.9	310.7	211.3	120.8	12.0	4.5	3.1
42.5°	710.6	585.8	463.6	347.7	284.4	197.0	117.2	63.3	8.5	3.1	2.2
45°	465.0	346.4	250.1	169.4	147.1	83.4	54.4	39.2	6.2	2.2	1.8
47.5°	192.6	140.4	97.6	70.4	57.1	44.6	34.8	25.4	4.5	1.8	1.8
50°	84.7	66.9	53.1	41.5	36.1	29.0	22.3	15.6	2.7	1.3	1.3
51°	67.8	53.9	41.5	33.0	29.4	23.6	18.3	12.5	2.7	1.3	1.3
52°	53.5	41.9	32.5	25.4	23.6	19.2	15.2	10.3	2.2	1.3	1.3
53°	41.0	31.7	24.5	20.1	18.7	15.6	12.5	8.5	1.8	1.3	1.3
54°	30.3	24.1	19.2	15.6	15.2	12.5	10.3	7.1	1.8	1.3	1.3
55°	22.3	18.7	14.7	12.5	12.0	10.3	8.5	5.8	1.8	1.3	1.3
57.5°	11.6	9.8	8.0	7.1	7.1	6.7	5.8	3.6	1.3	0.9	1.3
60°	6.2	5.3	4.5	4.0	4.9	4.5	4.0	2.2	1.3	0.9	1.3
61°	4.9	4.5	3.6	3.1	4.0	3.6	3.6	1.8	1.3	1.3	1.3
62°	4.0	3.6	3.1	2.7	3.6	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°	51.7	51.7	51.7
2.5°	38.8	36.6	36.1
5°	32.1	29.9	29.4
7.5°	29.4	27.6	27.2
10°	30.3	30.8	31.7
12.5°	38.8	42.8	46.4
15°	62.4	78.5	89.6
17.5°	108.8	120.4	127.9
20°	95.4	87.8	88.3
22.5°	53.5	48.1	47.7
25°	32.5	29.4	28.5
26°	27.2	24.5	23.6
27°	22.3	20.1	19.2
28°	18.3	16.5	16.0
29°	15.6	13.4	12.9
30°	12.9	11.1	10.7
31°	10.7	9.4	8.9
32°	9.4	8.0	7.1
33°	7.6	6.7	6.2
34°	6.7	5.3	4.9
35°	5.3	4.5	4.5
36°	4.9	4.0	3.6
37°	4.0	3.1	3.1
38°	3.6	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: P170691

CATALOG NUMBER: LDA4A09935D010TE 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	1.3	0.9
70°	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)