

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: P170914

Luminaire Tested: **LDA4A09930D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170914  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A09930D010TE LAR15SP 4LA1 30° Tilt  
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot  
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: 712.7 lumens  
Efficiency: N/A  
Efficacy: 51.5 lumens/watt  
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

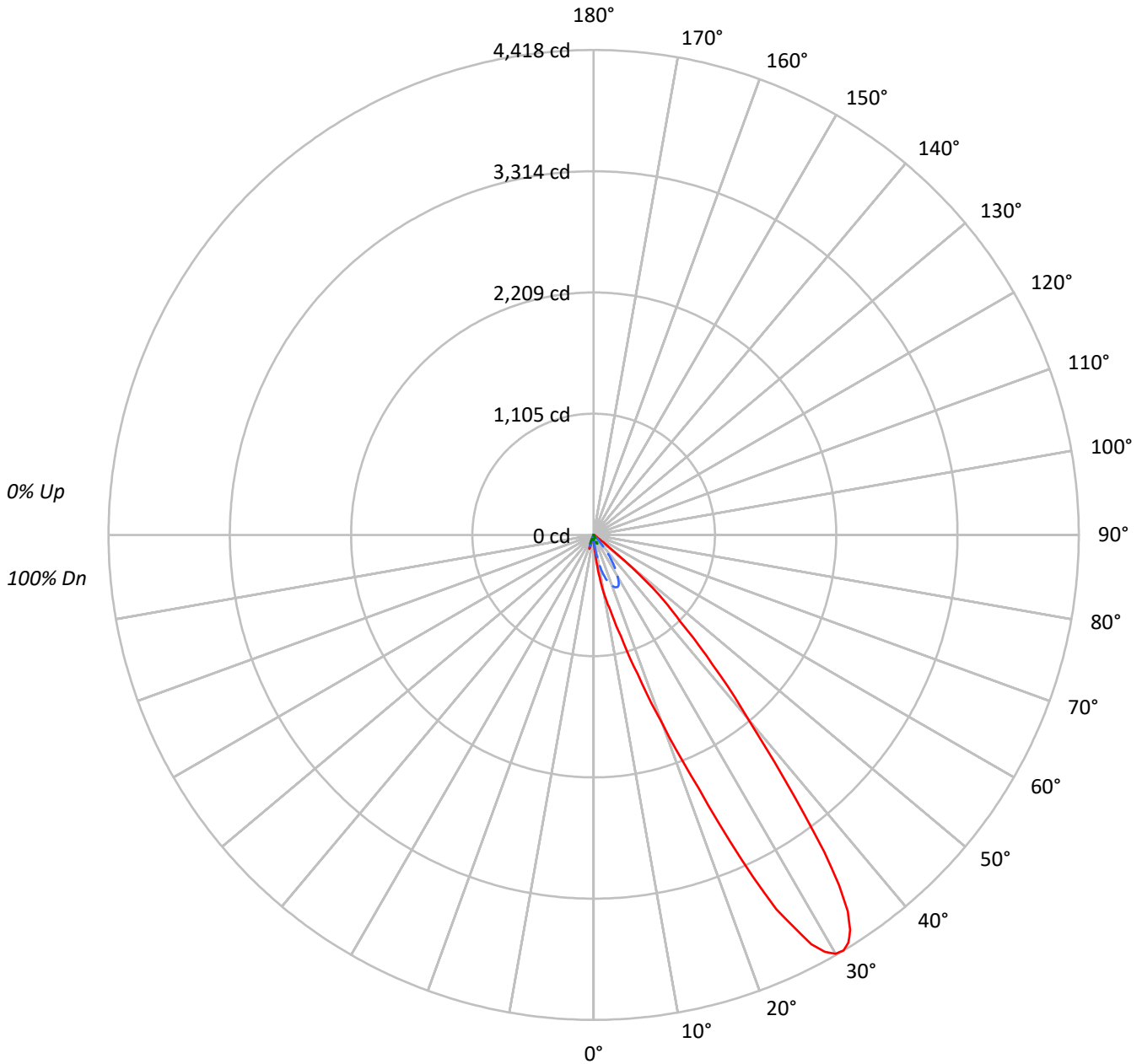
Input Watts (W): 13.84  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	98	96	96	94	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60																			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	56	54																			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	40																			
10	61	49	42	38	60	49	42	38	48	42	38	47	41	37	46	41	37	36																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	5131	5131	5131
5°	23005	4816	3120
10°	68085	4434	3983
15°	121555	5248	11237
20°	240773	10330	12076
25°	468541	6737	3430
30°	627606	2521	1196
35°	587251	1069	467
40°	351917	499	145
45°	195282	314	0
50°	71633	249	0
55°	10946	194	0
60°	2393	222	0
65°	788	263	0
70°	144	325	0
75°	0	620	0
80°	0	923	0
85°	0	1840	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	9.1	1.3
10°-20°	77.0	10.8
20°-30°	229.8	32.2
30°-40°	272.2	38.2
40°-50°	112.9	15.8
50°-60°	8.8	1.2
60°-70°	1.2	0.2
70°-80°	0.9	0.1
80°-90°	0.8	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°	315.9	44.3
0°-40°	588.1	82.5
0°-60°	709.8	99.6
0°-90°	712.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	712.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	42	42	42	42	42	
5°	186	94	39	27	25	29
15°	952	402	41	62	88	314
25°	3443	522	50	29	25	1572
35°	3900	291	7	4	3	2260
45°	1120	26	2	1	0	913
55°	51	4	1	0	0	75
65°	3	1	1	1	0	3
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°	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6
2.5°	72.1	68.6	70.3	67.2	69.0	65.9	63.7	65.9	65.9	64.1	61.5
5°	185.8	184.9	188.4	180.0	182.2	173.0	165.0	167.2	165.4	159.7	149.5
7.5°	353.9	350.3	354.3	342.4	342.8	327.3	315.4	318.0	310.1	300.3	282.6
10°	543.6	538.8	543.2	529.0	526.4	504.7	487.9	490.5	472.4	456.5	429.5
12.5°	708.2	707.7	693.6	696.2	690.9	657.7	647.1	648.0	623.2	605.6	573.3
15°	951.9	961.2	963.8	945.7	913.0	852.8	826.3	816.1	775.8	746.2	699.8
17.5°	1326.6	1339.4	1295.6	1306.2	1252.2	1158.0	1105.4	1074.0	998.3	942.6	858.6
20°	1834.3	1823.3	1760.0	1752.1	1660.1	1538.9	1428.3	1369.0	1252.7	1171.3	1048.8
22.5°	2489.9	2481.5	2373.1	2324.9	2132.5	1961.7	1818.4	1669.8	1496.8	1388.0	1221.7
25°	3442.7	3404.2	3195.4	3058.3	2719.9	2429.7	2190.9	1960.0	1695.0	1576.9	1365.5
26°	3793.4	3784.1	3566.5	3386.0	2978.2	2618.2	2296.1	2064.8	1772.9	1634.9	1406.2
27°	4004.0	4077.9	3875.3	3670.9	3225.0	2793.8	2420.4	2149.3	1833.5	1675.6	1432.3
28°	4222.5	4270.3	4088.9	3832.4	3422.8	2933.5	2514.7	2206.3	1870.6	1695.5	1441.1
29°	4342.8	4388.8	4220.3	3979.7	3552.4	3024.2	2570.4	2231.6	1884.3	1695.0	1433.2
30°	4406.5	4449.4	4284.9	4051.3	3605.9	3052.5	2582.3	2221.4	1871.1	1674.7	1410.6
31°	4418.0	4453.8	4291.5	4049.1	3585.5	3017.6	2548.7	2179.4	1835.7	1637.1	1376.5
32°	4379.1	4406.9	4242.0	3983.6	3494.0	2929.1	2478.8	2114.3	1781.7	1590.2	1332.7
33°	4288.0	4337.9	4136.7	3851.4	3334.7	2798.2	2379.7	2029.4	1714.5	1529.1	1279.2
34°	4137.1	4169.0	3960.6	3644.4	3122.4	2638.9	2258.1	1930.8	1637.5	1457.0	1218.6
35°	3900.0	3928.3	3697.9	3364.8	2880.5	2459.4	2119.2	1822.0	1551.3	1376.1	1151.4
36°	3571.8	3598.8	3357.7	3054.3	2636.3	2272.3	1972.8	1703.4	1457.9	1289.4	1080.2
37°	3188.3	3211.8	2997.2	2749.5	2396.6	2082.9	1824.6	1583.1	1359.3	1200.9	1012.5
38°	2817.7	2838.9	2665.5	2463.8	2165.2	1898.0	1676.9	1458.4	1257.5	1112.0	941.3
39°	2483.2	2501.8	2362.0	2195.7	1944.9	1720.7	1529.6	1334.5	1155.4	1023.1	867.9
40°	2185.6	2201.5	2086.5	1949.8	1745.0	1554.8	1386.3	1214.6	1055.4	936.9	799.3
42.5°	1604.3	1607.9	1539.3	1458.8	1299.6	1190.3	1070.4	946.6	830.3	748.9	661.3
45°	1119.5	1163.3	1118.7	1065.1	951.0	882.5	805.9	731.2	663.9	585.6	498.9
47.5°	805.0	806.8	780.3	746.7	656.4	609.5	546.7	456.0	389.3	278.2	206.6
50°	373.3	352.5	353.9	330.9	295.0	234.4	196.0	139.8	111.5	79.6	64.1
51°	222.1	206.6	208.8	192.4	168.5	131.4	111.5	89.4	77.4	60.2	49.5
52°	129.6	124.3	123.9	116.3	99.1	91.1	80.5	67.2	58.8	46.4	38.5
53°	94.2	90.7	90.7	85.8	73.9	68.6	61.0	51.8	45.1	35.4	29.2
54°	70.3	67.7	67.7	64.6	59.7	51.3	46.0	38.5	33.6	27.4	21.7
55°	50.9	49.1	49.1	46.9	43.3	37.2	33.2	27.9	24.8	19.9	15.9
57.5°	21.2	20.3	20.3	19.5	18.6	15.9	15.0	12.8	11.1	9.7	8.0
60°	9.7	9.3	9.7	9.3	8.4	8.8	7.5	6.6	6.2	5.3	4.4
61°	7.5	7.1	7.1	7.1	6.2	6.2	5.8	5.3	4.9	4.0	3.5
62°	5.8	5.3	5.3	5.3	4.9	4.9	4.4	4.0	4.0	3.1	2.7
63°	4.4	4.0	4.0	4.0	3.5	3.5	3.5	3.1	3.1	2.7	2.2
64°	3.1	3.1	3.1	3.1	3.1	2.7	2.7	2.7	2.2	1.8	1.8
65°	2.7	2.2	2.7	2.2	2.2	2.2	2.2	2.2	1.8	1.3	1.3
66°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.3	0.9



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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	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	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°	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6
2.5°	60.2	61.9	60.6	57.1	58.8	57.9	56.2	54.8	46.9	40.7	34.5
5°	142.0	143.3	135.8	122.5	118.1	111.0	100.9	93.8	53.1	38.9	30.5
7.5°	268.5	259.6	252.6	227.8	217.2	200.8	181.4	167.6	60.6	36.7	28.3
10°	406.5	392.3	377.8	341.5	322.5	297.2	269.4	253.5	68.6	35.4	28.3
12.5°	543.2	524.2	497.6	457.8	430.8	396.8	358.7	330.4	74.3	36.3	32.7
15°	661.7	638.7	609.5	564.4	533.0	490.5	441.0	402.1	77.0	41.1	45.6
17.5°	790.9	749.3	701.1	643.6	609.1	560.0	504.3	456.9	77.0	52.2	73.0
20°	939.5	863.4	786.0	705.5	656.9	605.6	545.8	495.0	80.1	78.7	100.4
22.5°	1078.0	973.1	863.9	759.0	691.4	635.6	575.0	516.6	92.9	86.7	66.8
25°	1185.4	1052.3	923.6	796.2	719.7	657.7	592.7	522.4	84.9	49.5	36.3
26°	1213.3	1069.6	935.5	800.6	721.0	657.3	591.0	516.2	71.2	39.4	29.2
27°	1227.9	1075.3	936.4	796.6	715.7	649.8	581.2	503.4	57.1	31.8	23.9
28°	1227.9	1068.7	927.1	785.6	702.0	635.6	564.4	483.0	46.4	26.1	19.0
29°	1215.5	1051.4	908.5	768.8	683.4	615.7	541.4	459.1	39.4	21.7	15.5
30°	1191.6	1026.2	883.8	747.1	659.5	593.2	516.2	434.4	34.1	17.7	12.4
31°	1158.0	997.9	853.3	723.7	637.4	572.4	493.2	409.2	29.6	14.2	10.2
32°	1117.8	962.5	821.9	699.3	619.3	552.9	469.3	382.6	25.7	11.9	8.8
33°	1071.3	922.7	789.1	675.4	601.6	530.8	443.2	353.9	22.1	9.7	7.5
34°	1020.0	878.9	755.5	649.8	579.9	502.9	412.7	323.3	19.0	8.4	6.2
35°	964.3	829.8	721.0	623.7	555.6	472.0	380.0	291.1	16.4	7.1	5.3
36°	904.1	783.8	687.4	597.6	525.5	438.4	344.1	257.9	14.2	5.8	4.9
37°	844.0	740.5	654.2	569.7	490.5	400.3	306.5	223.4	12.4	4.9	4.0
38°	786.9	698.4	621.5	537.4	449.9	358.3	267.6	188.9	10.6	4.4	3.5
39°	733.4	657.7	587.9	498.9	407.8	317.6	230.0	153.0	9.3	4.0	3.1
40°	685.2	619.3	551.1	456.0	364.5	276.0	192.0	114.1	8.0	3.1	2.7
42.5°	583.4	513.5	423.8	318.0	246.4	160.1	89.4	42.5	5.8	2.2	2.2
45°	385.3	296.4	201.3	119.9	80.9	48.7	36.3	25.7	4.4	1.8	1.8
47.5°	128.7	81.8	59.7	42.9	36.7	29.2	23.4	15.9	3.1	1.3	1.3
50°	49.1	39.8	32.7	24.8	22.1	17.7	14.2	9.3	2.2	1.3	1.3
51°	38.5	31.4	25.7	19.5	17.7	14.2	11.5	8.0	1.8	1.3	1.3
52°	29.6	24.3	19.9	15.0	14.2	11.5	9.7	6.6	1.8	0.9	1.3
53°	22.6	18.6	15.0	11.5	11.1	9.3	8.0	5.3	1.3	0.9	1.3
54°	16.8	14.2	11.9	9.3	9.3	8.0	6.6	4.4	1.3	0.9	1.3
55°	12.8	10.6	9.3	7.1	7.5	6.6	5.8	3.5	1.3	0.9	1.3
57.5°	6.6	6.2	5.3	4.4	4.9	4.4	4.0	2.2	1.3	0.9	1.3
60°	4.0	3.5	3.1	2.7	3.1	3.1	3.1	1.3	1.3	0.9	1.3
61°	3.1	2.7	2.2	2.2	2.7	2.7	2.7	1.3	1.3	0.9	1.3
62°	2.2	2.2	1.8	1.8	2.7	2.2	2.2	1.3	1.3	0.9	1.3
63°	1.8	1.8	1.8	1.3	2.2	2.2	2.2	1.3	1.3	0.9	1.3
64°	1.3	1.3	1.3	1.3	1.8	2.2	2.2	0.9	1.3	0.9	1.3
65°	1.3	1.3	0.9	0.9	1.8	1.8	1.8	0.9	1.3	0.9	1.3
66°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	0.9	1.3	0.9	1.3





TEST NUMBER: P170914

CATALOG NUMBER: LDA4A09930D010TE LAR15SP 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°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.3
75°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.3
77.5°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.8
80°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.8
82.5°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.8
85°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.8
87.5°	0.4	0.4	0.4	0.4	1.3	1.3	1.8	0.9	1.3	1.3	1.3
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: P170914

CATALOG NUMBER: LDA4A09930D010TE LAR15SP 4LA1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	41.6	41.6	41.6
2.5°	31.4	30.1	29.2
5°	27.0	25.7	25.2
7.5°	25.2	24.8	25.2
10°	27.9	29.6	31.8
12.5°	37.2	43.8	47.3
15°	61.5	80.1	88.0
17.5°	108.4	123.4	132.3
20°	95.5	87.1	92.0
22.5°	51.8	45.1	46.4
25°	28.8	24.8	25.2
26°	23.0	19.9	19.9
27°	18.6	15.9	15.9
28°	15.0	12.8	12.8
29°	11.9	10.2	10.2
30°	9.7	8.4	8.4
31°	8.0	6.6	6.6
32°	6.6	5.8	5.3
33°	5.8	4.9	4.4
34°	4.9	4.0	3.5
35°	4.0	3.1	3.1
36°	3.5	2.7	2.7
37°	3.1	2.2	2.2
38°	2.7	1.8	1.8
39°	2.2	1.8	1.3
40°	1.8	1.3	0.9
42.5°	1.3	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°	0.4	0.0	0.0
54°	0.9	0.0	0.0
55°	0.4	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	0.0	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: P170914

CATALOG NUMBER: LDA4A09930D010TE LAR15SP 4LA1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
72.5°	0.9	0.4	0.0
75°	0.9	0.4	0.0
77.5°	0.9	0.4	0.0
80°	0.9	0.4	0.0
82.5°	0.9	0.4	0.0
85°	0.9	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°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.9	0.9
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.9	0.9	0.4	0.4





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





67.5°	0.9	0.4	0.0
70°	0.9	0.4	0.0



(END OF REPORT)