

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: P170922

Luminaire Tested: **LDA4A13930D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170922
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: LDA4A13930D010TE 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: 1057.8 lumens
Efficiency: N/A
Efficacy: 47.5 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

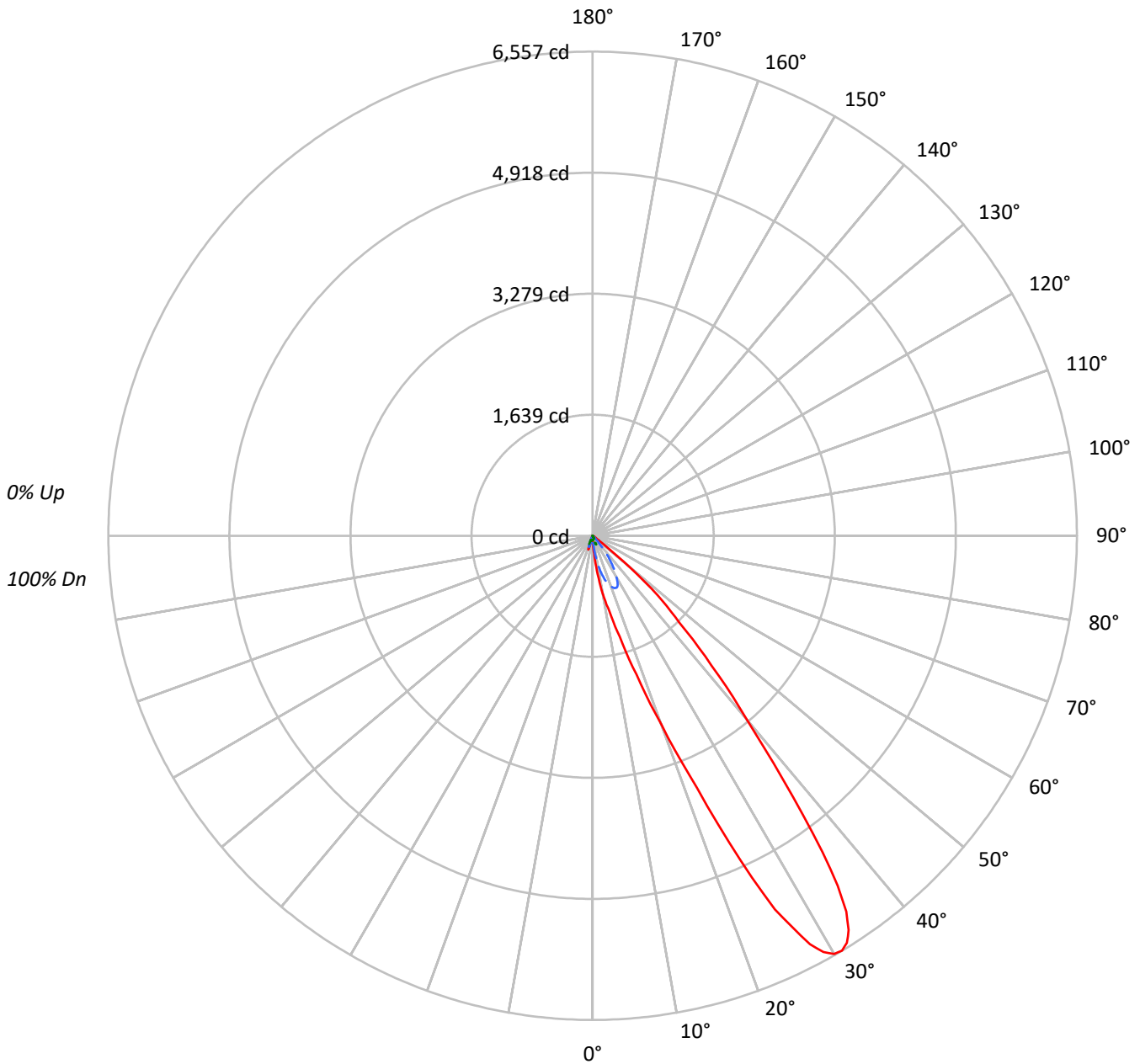
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	7610	7610	7610
5°	34136	7157	4631
10°	101050	6576	5924
15°	180397	7802	16677
20°	357334	15331	17917
25°	695346	10003	5090
30°	931417	3746	1780
35°	871541	1581	693
40°	522256	741	209
45°	289827	454	0
50°	106308	384	0
55°	16236	280	0
60°	3552	321	0
65°	1138	379	0
70°	252	469	0
75°	0	953	0
80°	0	1421	0
85°	0	2830	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.6	1.3
10°-20°	114.3	10.8
20°-30°	341.0	32.2
30°-40°	403.9	38.2
40°-50°	167.6	15.8
50°-60°	13.0	1.2
60°-70°	1.8	0.2
70°-80°	1.4	0.1
80°-90°	1.3	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°	468.8	44.3
0°-40°	872.8	82.5
0°-60°	1053.4	99.6
0°-90°	1057.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1057.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	62	62	62	62	62	
5°	276	139	58	40	37	44
15°	1413	597	61	91	131	466
25°	5109	775	74	43	37	2334
35°	5788	432	10	6	5	3354
45°	1662	38	3	2	0	1354
55°	76	5	1	1	0	111
65°	4	1	1	1	0	5
75°	0	1	2	1	0	0
85°	0	1	2	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°	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
2.5°	107.0	101.8	104.4	99.8	102.4	97.8	94.5	97.8	97.8	95.2	91.2
5°	275.7	274.4	279.6	267.2	270.5	256.7	244.9	248.1	245.5	237.0	221.9
7.5°	525.2	519.9	525.8	508.1	508.8	485.8	468.1	472.0	460.2	445.7	419.5
10°	806.8	799.6	806.1	785.1	781.2	749.0	724.1	728.0	701.1	677.5	637.4
12.5°	1051.0	1050.3	1029.3	1033.3	1025.4	976.1	960.4	961.7	924.9	898.7	850.8
15°	1412.7	1426.5	1430.4	1403.5	1354.9	1265.6	1226.3	1211.2	1151.4	1107.4	1038.5
17.5°	1968.7	1987.7	1922.8	1938.5	1858.4	1718.6	1640.5	1593.9	1481.6	1398.9	1274.2
20°	2722.3	2705.9	2612.0	2600.2	2463.7	2283.8	2119.7	2031.7	1859.1	1738.3	1556.5
22.5°	3695.2	3682.7	3521.9	3450.3	3164.8	2911.4	2698.7	2478.1	2221.4	2060.0	1813.1
25°	5109.2	5052.1	4742.2	4538.7	4036.5	3605.9	3251.4	2908.7	2515.5	2340.3	2026.5
26°	5629.7	5616.0	5293.0	5025.2	4419.9	3885.5	3407.7	3064.3	2631.1	2426.3	2086.9
27°	5942.2	6051.8	5751.2	5447.9	4786.2	4146.2	3592.1	3189.7	2721.0	2486.6	2125.6
28°	6266.5	6337.4	6068.3	5687.5	5079.6	4353.6	3731.9	3274.4	2776.1	2516.2	2138.7
29°	6445.1	6513.3	6263.2	5906.1	5272.0	4488.2	3814.7	3311.8	2796.5	2515.5	2126.9
30°	6539.6	6603.3	6359.1	6012.5	5351.4	4530.2	3832.4	3296.7	2776.8	2485.3	2093.4
31°	6556.7	6609.8	6368.9	6009.2	5321.2	4478.3	3782.5	3234.3	2724.3	2429.5	2042.9
32°	6498.9	6540.2	6295.4	5912.0	5185.3	4347.0	3678.8	3137.8	2644.2	2360.0	1977.9
33°	6363.7	6437.8	6139.2	5715.7	4949.0	4152.7	3531.7	3011.8	2544.4	2269.4	1898.5
34°	6139.8	6187.1	5877.9	5408.5	4633.9	3916.4	3351.2	2865.4	2430.2	2162.4	1808.5
35°	5788.0	5830.0	5488.0	4993.6	4274.8	3649.9	3145.1	2703.9	2302.2	2042.2	1708.7
36°	5300.9	5340.9	4983.1	4532.8	3912.5	3372.2	2927.8	2528.0	2163.7	1913.6	1603.1
37°	4731.7	4766.5	4448.1	4080.5	3556.7	3091.2	2707.9	2349.4	2017.3	1782.3	1502.6
38°	4181.6	4213.1	3955.8	3656.4	3213.3	2816.8	2488.6	2164.3	1866.3	1650.3	1396.9
39°	3685.3	3712.9	3505.5	3258.6	2886.4	2553.6	2270.0	1980.5	1714.7	1518.4	1288.0
40°	3243.5	3267.2	3096.5	2893.6	2589.7	2307.4	2057.3	1802.6	1566.3	1390.4	1186.2
42.5°	2381.0	2386.2	2284.5	2165.0	1928.7	1766.5	1588.6	1404.8	1232.2	1111.4	981.4
45°	1661.5	1726.5	1660.2	1580.7	1411.4	1309.6	1196.1	1085.1	985.3	869.1	740.5
47.5°	1194.7	1197.4	1158.0	1108.1	974.2	904.6	811.4	676.8	577.7	412.9	306.6
50°	554.0	523.2	525.2	491.0	437.9	347.9	290.8	207.4	165.4	118.2	95.2
51°	329.5	306.6	309.8	285.6	250.1	195.0	165.4	132.6	114.9	89.3	73.5
52°	192.3	184.5	183.8	172.6	147.0	135.2	119.5	99.8	87.3	68.9	57.1
53°	139.8	134.6	134.6	127.4	109.6	101.8	90.6	76.8	67.0	52.5	43.3
54°	104.4	100.4	100.4	95.8	88.6	76.1	68.3	57.1	49.9	40.7	32.2
55°	75.5	72.9	72.9	69.6	64.3	55.1	49.2	41.4	36.8	29.5	23.6
57.5°	31.5	30.2	30.2	28.9	27.6	23.6	22.3	19.0	16.4	14.4	11.8
60°	14.4	13.8	14.4	13.8	12.5	13.1	11.2	9.8	9.2	7.9	6.6
61°	11.2	10.5	10.5	10.5	9.2	9.2	8.5	7.9	7.2	5.9	5.3
62°	8.5	7.9	7.9	7.9	7.2	7.2	6.6	5.9	5.9	4.6	3.9
63°	6.6	5.9	5.9	5.9	5.3	5.3	5.3	4.6	4.6	3.9	3.3
64°	4.6	4.6	4.6	4.6	4.6	3.9	3.9	3.9	3.3	2.6	2.6
65°	3.9	3.3	3.9	3.3	3.3	3.3	3.3	3.3	2.6	2.0	2.0
66°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0	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	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7
75°	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	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°	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
2.5°	89.3	91.9	89.9	84.7	87.3	86.0	83.4	81.4	69.6	60.4	51.2
5°	210.7	212.7	201.5	181.8	175.3	164.8	149.7	139.2	78.8	57.8	45.3
7.5°	398.5	385.3	374.8	338.1	322.3	298.0	269.1	248.8	89.9	54.5	42.0
10°	603.3	582.3	560.6	506.8	478.6	441.1	399.8	376.1	101.8	52.5	42.0
12.5°	806.1	777.9	738.5	679.4	639.4	588.8	532.4	490.4	110.3	53.8	48.6
15°	982.1	947.9	904.6	837.6	791.0	728.0	654.5	596.7	114.2	61.1	67.6
17.5°	1173.7	1112.0	1040.5	955.1	903.9	831.1	748.4	678.1	114.2	77.5	108.3
20°	1394.3	1281.4	1166.5	1047.0	974.8	898.7	810.1	734.6	118.8	116.8	149.0
22.5°	1599.8	1444.2	1282.1	1126.5	1026.0	943.3	853.4	766.7	137.9	128.7	99.1
25°	1759.3	1561.7	1370.7	1181.6	1068.1	976.1	879.6	775.3	126.0	73.5	53.8
26°	1800.7	1587.3	1388.4	1188.2	1070.0	975.5	877.0	766.1	105.7	58.4	43.3
27°	1822.3	1595.8	1389.7	1182.3	1062.1	964.3	862.6	747.0	84.7	47.3	35.4
28°	1822.3	1586.0	1375.9	1165.9	1041.8	943.3	837.6	716.8	68.9	38.7	28.2
29°	1803.9	1560.4	1348.4	1140.9	1014.2	913.8	803.5	681.4	58.4	32.2	23.0
30°	1768.5	1523.0	1311.6	1108.8	978.8	880.3	766.1	644.6	50.5	26.3	18.4
31°	1718.6	1481.0	1266.3	1074.0	945.9	849.5	731.9	607.2	44.0	21.0	15.1
32°	1658.9	1428.4	1219.7	1037.9	919.0	820.6	696.5	567.8	38.1	17.7	13.1
33°	1589.9	1369.4	1171.1	1002.4	892.8	787.7	657.8	525.2	32.8	14.4	11.2
34°	1513.8	1304.4	1121.2	964.3	860.6	746.4	612.5	479.9	28.2	12.5	9.2
35°	1431.1	1231.5	1070.0	925.6	824.5	700.4	563.9	431.9	24.3	10.5	7.9
36°	1341.8	1163.2	1020.1	886.9	779.9	650.5	510.7	382.7	21.0	8.5	7.2
37°	1252.5	1098.9	970.9	845.5	728.0	594.1	454.9	331.5	18.4	7.2	5.9
38°	1167.8	1036.5	922.3	797.6	667.6	531.7	397.2	280.3	15.8	6.6	5.3
39°	1088.4	976.1	872.4	740.5	605.3	471.3	341.4	227.1	13.8	5.9	4.6
40°	1016.8	919.0	817.9	676.8	540.9	409.6	284.9	169.4	11.8	4.6	3.9
42.5°	865.9	762.1	628.9	472.0	365.6	237.6	132.6	63.0	8.5	3.3	3.3
45°	571.8	439.8	298.7	177.9	120.1	72.2	53.8	38.1	6.6	2.6	2.6
47.5°	191.0	121.4	88.6	63.7	54.5	43.3	34.8	23.6	4.6	2.0	2.0
50°	72.9	59.1	48.6	36.8	32.8	26.3	21.0	13.8	3.3	2.0	2.0
51°	57.1	46.6	38.1	28.9	26.3	21.0	17.1	11.8	2.6	2.0	2.0
52°	44.0	36.1	29.5	22.3	21.0	17.1	14.4	9.8	2.6	1.3	2.0
53°	33.5	27.6	22.3	17.1	16.4	13.8	11.8	7.9	2.0	1.3	2.0
54°	24.9	21.0	17.7	13.8	13.8	11.8	9.8	6.6	2.0	1.3	2.0
55°	19.0	15.8	13.8	10.5	11.2	9.8	8.5	5.3	2.0	1.3	2.0
57.5°	9.8	9.2	7.9	6.6	7.2	6.6	5.9	3.3	2.0	1.3	2.0
60°	5.9	5.3	4.6	3.9	4.6	4.6	4.6	2.0	2.0	1.3	2.0
61°	4.6	3.9	3.3	3.3	3.9	3.9	3.9	2.0	2.0	1.3	2.0
62°	3.3	3.3	2.6	2.6	3.9	3.3	3.3	2.0	2.0	1.3	2.0
63°	2.6	2.6	2.6	2.0	3.3	3.3	3.3	2.0	2.0	1.3	2.0
64°	2.0	2.0	2.0	2.0	2.6	3.3	3.3	1.3	2.0	1.3	2.0
65°	2.0	2.0	1.3	1.3	2.6	2.6	2.6	1.3	2.0	1.3	2.0
66°	1.3	1.3	1.3	1.3	2.6	2.6	2.6	1.3	2.0	1.3	2.0



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CATALOG NUMBER: LDA4A13930D010TE 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°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.0
75°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.0
77.5°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.6
80°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.6
82.5°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.6
85°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.6
87.5°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	2.0	2.0
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: P170922

CATALOG NUMBER: LDA4A13930D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	61.7	61.7	61.7
2.5°	46.6	44.6	43.3
5°	40.0	38.1	37.4
7.5°	37.4	36.8	37.4
10°	41.4	44.0	47.3
12.5°	55.1	65.0	70.2
15°	91.2	118.8	130.6
17.5°	160.8	183.2	196.3
20°	141.8	129.3	136.5
22.5°	76.8	67.0	68.9
25°	42.7	36.8	37.4
26°	34.1	29.5	29.5
27°	27.6	23.6	23.6
28°	22.3	19.0	19.0
29°	17.7	15.1	15.1
30°	14.4	12.5	12.5
31°	11.8	9.8	9.8
32°	9.8	8.5	7.9
33°	8.5	7.2	6.6
34°	7.2	5.9	5.3
35°	5.9	4.6	4.6
36°	5.3	3.9	3.9
37°	4.6	3.3	3.3
38°	3.9	2.6	2.6
39°	3.3	2.6	2.0
40°	2.6	2.0	1.3
42.5°	2.0	1.3	0.7
45°	2.0	0.7	0.0
47.5°	1.3	0.7	0.0
50°	1.3	0.0	0.0
51°	1.3	0.0	0.0
52°	1.3	0.0	0.0
53°	0.7	0.0	0.0
54°	1.3	0.0	0.0
55°	0.7	0.0	0.0
57.5°	1.3	0.0	0.0
60°	1.3	0.0	0.0
61°	1.3	0.0	0.0
62°	1.3	0.0	0.0
63°	1.3	0.0	0.0
64°	1.3	0.7	0.0
65°	1.3	0.7	0.0
66°	1.3	0.7	0.0



TEST NUMBER: P170922

CATALOG NUMBER: LDA4A13930D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.3	0.7	0.0
75°	1.3	0.7	0.0
77.5°	1.3	0.7	0.0
80°	1.3	0.7	0.0
82.5°	1.3	0.7	0.0
85°	1.3	0.7	0.0
87.5°	1.3	0.7	0.0
90°	0.0	0.0	0.0



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







67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3
70°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3	1.3	0.7	0.7





67.5°	1.3	0.7	1.3	1.3	2.0	2.6	2.6	1.3	2.0	1.3	2.0
70°	0.7	0.7	0.7	0.7	2.0	2.0	2.6	1.3	2.0	1.3	2.0





67.5°	1.3	0.7	0.0
70°	1.3	0.7	0.0



(END OF REPORT)