

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: P170698

Luminaire Tested: **LDA4A13930D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170698
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: LDA4A13930D010TE 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: 1149.1 lumens
Efficiency: N/A
Efficacy: 51.6 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

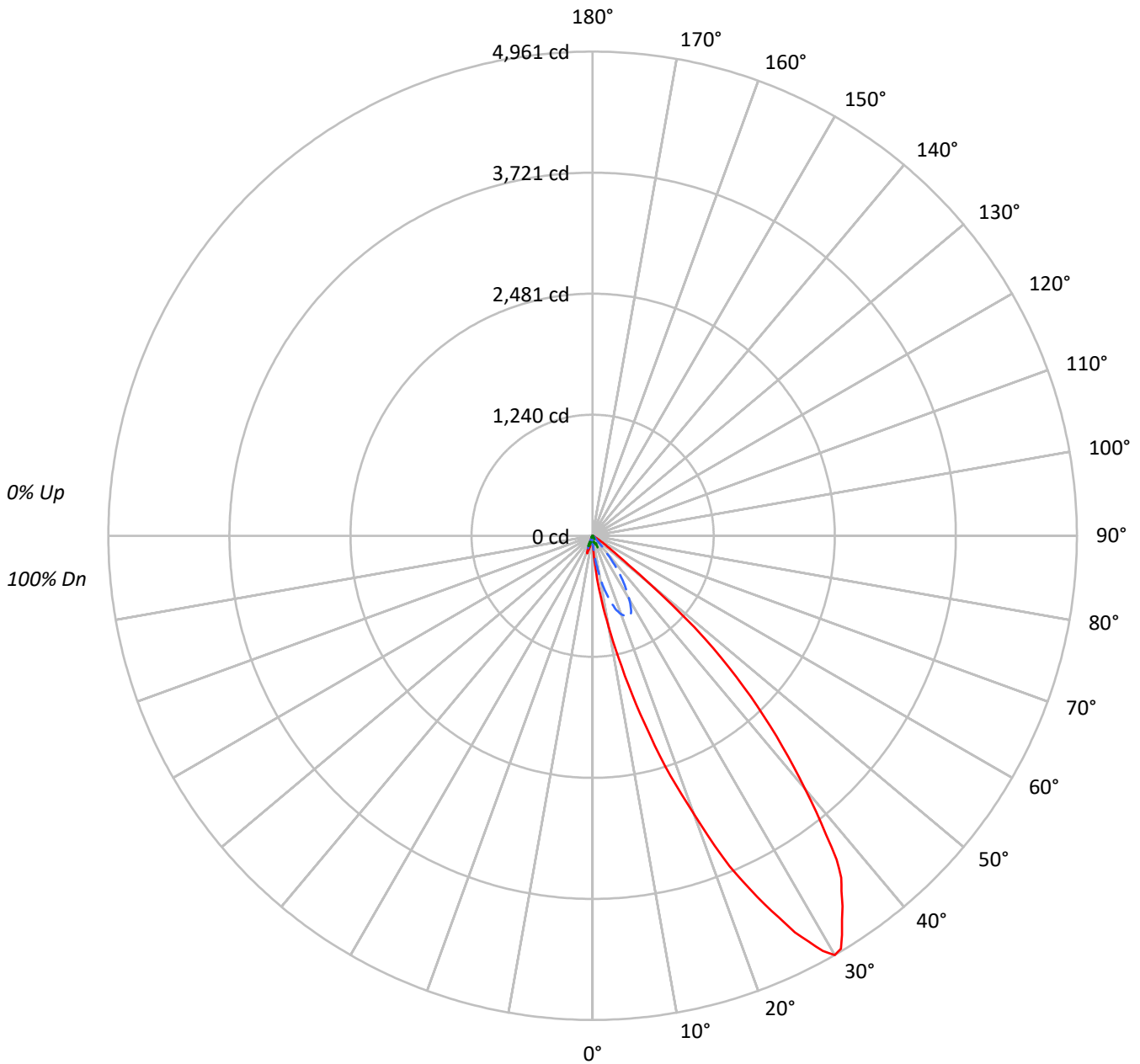
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	57	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	37	48	42	37	47	41	37	46	41	37	36					36			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9399	9399	9399
5°	40810	8865	5361
10°	117671	7978	5837
15°	241117	8798	16856
20°	397802	16368	17064
25°	566680	10452	5716
30°	706567	4586	2250
35°	669481	2078	994
40°	545282	1063	322
45°	381947	576	0
50°	143113	384	0
55°	30494	430	0
60°	5822	321	0
65°	1722	584	0
70°	469	721	0
75°	0	953	0
80°	0	1421	0
85°	0	2830	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	16.0	1.4
10°-20°	137.6	12.0
20°-30°	351.5	30.6
30°-40°	407.1	35.4
40°-50°	210.0	18.3
50°-60°	21.7	1.9
60°-70°	2.3	0.2
70°-80°	1.5	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°	505.1	44.0
0°-40°	912.1	79.4
0°-60°	1143.9	99.5
0°-90°	1149.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1149.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	76	76	76	76	76	
5°	330	171	72	47	43	51
15°	1888	691	69	92	132	578
25°	4164	903	77	48	42	1934
35°	4446	494	14	8	7	2723
45°	2190	58	3	2	0	1640
55°	142	8	2	1	0	178
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°	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
2.5°	131.3	126.7	123.4	124.7	132.0	124.1	124.7	122.1	120.8	119.5	116.2
5°	329.6	316.5	307.9	308.6	289.5	304.0	302.7	291.5	284.3	270.5	262.6
7.5°	618.5	590.2	580.4	577.1	579.1	565.3	559.4	544.9	525.9	500.9	486.5
10°	939.5	922.5	916.5	906.0	905.4	881.1	866.6	848.3	810.2	775.4	749.8
12.5°	1368.9	1316.4	1307.2	1287.5	1282.2	1240.9	1210.7	1183.8	1120.1	1074.1	1033.4
15°	1888.2	1845.6	1855.4	1795.0	1778.6	1711.0	1654.5	1596.7	1493.6	1423.4	1351.2
17.5°	2477.8	2423.3	2429.9	2354.4	2218.5	2231.0	2148.9	2069.4	1924.3	1830.5	1718.8
20°	3030.6	2991.9	2994.5	2894.1	2848.1	2723.4	2613.7	2519.2	2326.2	2206.7	2058.9
22.5°	3666.8	3566.4	3547.3	3410.8	3330.0	3162.6	3009.6	2884.2	2650.5	2515.9	2334.7
25°	4163.8	4094.9	4042.4	3880.9	3768.6	3550.6	3373.3	3187.5	2906.5	2757.5	2542.2
26°	4350.3	4285.3	4217.7	4043.7	3917.6	3687.2	3494.1	3294.6	2993.9	2834.3	2599.9
27°	4561.0	4454.7	4373.3	4178.3	4041.7	3799.4	3570.3	3381.9	3060.2	2883.6	2636.7
28°	4710.1	4603.7	4496.0	4284.0	4136.3	3882.8	3644.5	3439.0	3098.9	2907.2	2651.8
29°	4863.1	4750.1	4593.2	4362.1	4201.3	3934.7	3687.2	3467.2	3110.1	2905.9	2643.9
30°	4960.9	4847.3	4644.4	4406.1	4236.0	3955.7	3699.0	3462.0	3092.3	2879.6	2615.0
31°	4937.9	4833.5	4631.9	4410.7	4232.8	3943.2	3677.3	3424.6	3047.7	2833.0	2562.5
32°	4823.0	4734.4	4581.4	4379.8	4196.7	3900.6	3626.8	3365.5	2983.4	2778.5	2498.8
33°	4689.7	4616.2	4510.5	4317.5	4133.6	3836.2	3557.2	3292.6	2909.2	2704.3	2422.0
34°	4578.1	4511.8	4414.0	4233.4	4047.6	3750.2	3469.2	3200.7	2824.5	2617.0	2331.4
35°	4446.1	4385.7	4295.1	4119.8	3928.1	3634.7	3358.9	3094.3	2724.7	2513.3	2226.4
36°	4331.2	4236.0	4144.1	3973.4	3782.4	3494.8	3228.9	2969.6	2611.7	2394.4	2108.2
37°	4153.3	4058.1	3959.6	3798.1	3609.7	3334.6	3084.5	2836.3	2483.1	2305.1	1982.1
38°	3887.4	3843.4	3745.0	3591.3	3416.0	3158.0	2926.2	2684.6	2338.0	2132.5	1848.2
39°	3639.2	3603.1	3507.3	3366.8	3204.6	2968.3	2750.9	2513.9	2174.5	1980.1	1707.0
40°	3386.5	3350.4	3260.4	3133.7	2988.0	2770.6	2564.5	2332.1	2003.1	1823.2	1565.2
42.5°	2787.7	2750.3	2731.2	2601.9	2447.6	2261.2	2070.1	1860.0	1580.3	1432.6	1230.4
45°	2189.6	2155.4	2083.9	2030.7	1892.8	1737.9	1582.3	1410.9	1204.8	1059.0	869.9
47.5°	1565.2	1548.8	1551.4	1452.9	1321.6	1199.5	1070.8	915.9	733.4	550.2	403.8
50°	745.8	750.4	768.8	699.9	601.4	529.8	453.7	355.8	260.0	204.2	158.2
51°	483.2	488.5	504.2	455.0	383.4	334.8	286.3	231.1	184.5	156.9	125.4
52°	327.0	327.0	330.2	301.4	265.9	238.3	210.1	177.9	143.8	123.4	99.1
53°	245.5	244.9	246.2	227.2	202.9	182.5	162.8	139.2	113.6	96.5	76.8
54°	187.8	187.1	188.4	174.0	156.9	141.8	126.7	109.0	88.0	72.2	57.8
55°	141.8	141.8	143.8	132.6	119.5	107.7	96.5	81.4	65.0	52.5	42.0
57.5°	57.1	57.1	59.1	55.2	49.2	44.6	40.7	34.8	28.9	24.3	19.7
60°	23.6	24.3	24.9	23.0	21.7	20.4	19.0	17.1	15.1	12.5	10.5
61°	17.7	17.7	18.4	17.1	16.4	15.1	14.4	13.1	11.8	9.8	8.5
62°	13.1	13.1	13.8	13.1	12.5	11.8	11.2	10.5	9.2	7.9	6.6
63°	9.8	9.8	10.5	9.8	9.8	9.2	8.5	7.9	7.2	5.9	5.3
64°	7.9	7.9	7.9	7.2	7.2	7.2	6.6	6.6	5.3	4.6	3.9
65°	5.9	5.9	5.9	5.9	5.3	5.3	5.3	4.6	4.6	3.3	3.3
66°	4.6	4.6	4.6	3.9	3.9	3.9	3.9	3.9	3.3	2.6	2.0



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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°	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
2.5°	117.5	116.9	110.3	110.3	112.9	109.0	107.0	102.4	88.0	74.8	63.0
5°	260.0	252.8	230.4	223.9	223.2	204.8	194.3	171.4	100.5	71.6	54.5
7.5°	479.9	458.3	420.2	399.8	374.9	360.4	334.8	295.4	114.2	67.0	49.2
10°	709.7	685.4	629.0	592.9	573.8	527.2	484.5	430.7	128.0	63.7	48.6
12.5°	973.0	918.5	864.7	800.3	743.2	701.9	630.9	567.9	137.2	63.0	53.2
15°	1257.9	1189.7	1097.7	1011.1	930.3	871.2	776.0	691.3	140.5	68.9	69.6
17.5°	1577.0	1449.0	1316.4	1198.2	1087.2	1007.8	889.6	789.8	138.5	84.7	111.0
20°	1875.8	1705.7	1525.8	1361.7	1204.8	1101.7	965.1	856.8	139.2	124.7	149.7
22.5°	2112.8	1906.0	1686.7	1486.4	1287.5	1164.1	1015.0	892.2	156.3	133.3	101.8
25°	2287.4	2043.8	1792.4	1561.9	1352.5	1214.0	1050.5	902.8	145.8	76.8	57.8
26°	2334.0	2077.3	1812.1	1573.1	1360.4	1214.0	1045.2	891.6	126.1	61.1	47.9
27°	2360.3	2092.4	1815.4	1567.8	1350.5	1200.2	1026.2	869.3	103.1	51.2	40.7
28°	2363.6	2085.9	1798.9	1546.2	1322.9	1170.6	992.0	835.1	85.4	43.3	33.5
29°	2345.8	2061.6	1767.4	1510.1	1280.9	1127.3	945.4	793.1	72.9	37.4	28.2
30°	2308.4	2018.9	1719.5	1461.5	1226.4	1074.8	890.9	746.5	63.7	32.2	23.6
31°	2254.6	1960.5	1667.6	1403.7	1169.3	1022.2	839.7	699.2	56.5	26.9	19.7
32°	2185.0	1891.5	1600.7	1341.3	1118.1	972.3	790.5	651.3	50.6	23.0	16.4
33°	2107.5	1813.4	1527.8	1276.3	1068.9	921.1	738.6	600.7	45.3	19.0	13.8
34°	2018.2	1727.4	1450.3	1211.3	1016.3	864.7	682.8	548.9	39.4	15.8	11.8
35°	1916.5	1631.5	1366.9	1152.2	957.9	803.6	624.4	493.7	34.8	13.8	9.8
36°	1806.2	1531.7	1282.9	1084.6	894.9	739.9	562.7	437.9	30.2	11.8	8.5
37°	1690.6	1428.0	1198.9	1007.8	825.3	672.3	499.0	377.5	26.3	9.8	7.2
38°	1568.5	1323.6	1117.4	934.9	751.7	599.4	434.0	311.2	23.0	8.5	6.6
39°	1443.7	1220.5	1036.7	854.8	676.2	527.9	371.6	241.6	20.4	7.2	5.9
40°	1321.6	1123.4	951.3	767.5	600.7	457.6	311.2	177.9	17.7	6.6	4.6
42.5°	1046.5	862.7	682.8	512.1	418.9	290.2	172.7	93.2	12.5	4.6	3.3
45°	684.8	510.1	368.3	249.5	216.7	122.8	80.1	57.8	9.2	3.3	2.6
47.5°	283.6	206.8	143.8	103.7	84.0	65.7	51.2	37.4	6.6	2.6	2.6
50°	124.7	98.5	78.1	61.1	53.2	42.7	32.8	23.0	3.9	2.0	2.0
51°	99.8	79.4	61.1	48.6	43.3	34.8	26.9	18.4	3.9	2.0	2.0
52°	78.8	61.7	47.9	37.4	34.8	28.2	22.3	15.1	3.3	2.0	2.0
53°	60.4	46.6	36.1	29.5	27.6	23.0	18.4	12.5	2.6	2.0	2.0
54°	44.6	35.5	28.2	23.0	22.3	18.4	15.1	10.5	2.6	2.0	2.0
55°	32.8	27.6	21.7	18.4	17.7	15.1	12.5	8.5	2.6	2.0	2.0
57.5°	17.1	14.4	11.8	10.5	10.5	9.8	8.5	5.3	2.0	1.3	2.0
60°	9.2	7.9	6.6	5.9	7.2	6.6	5.9	3.3	2.0	1.3	2.0
61°	7.2	6.6	5.3	4.6	5.9	5.3	5.3	2.6	2.0	2.0	2.0
62°	5.9	5.3	4.6	3.9	5.3	4.6	4.6	2.6	2.0	2.0	2.0
63°	4.6	3.9	3.3	3.3	4.6	4.6	3.9	2.0	2.0	2.0	2.0
64°	3.3	3.3	2.6	2.6	3.9	3.9	3.3	2.0	2.0	2.0	2.0
65°	2.6	2.6	2.0	2.0	3.3	3.3	3.3	2.0	2.0	2.0	2.0
66°	2.0	2.0	2.0	1.3	2.6	3.3	3.3	1.3	2.0	2.0	2.0



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CATALOG NUMBER: LDA4A13930D010TE 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	2.0	2.6	2.6	1.3	2.0	2.0	2.0
75°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.0
77.5°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.6
80°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.6
82.5°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.6
85°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.6
87.5°	0.7	0.7	0.7	0.7	2.0	2.6	2.6	1.3	2.0	2.0	2.6
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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CATALOG NUMBER: LDA4A13930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	76.2	76.2	76.2
2.5°	57.1	53.8	53.2
5°	47.3	44.0	43.3
7.5°	43.3	40.7	40.0
10°	44.6	45.3	46.6
12.5°	57.1	63.0	68.3
15°	91.9	115.6	132.0
17.5°	160.2	177.3	188.4
20°	140.5	129.3	130.0
22.5°	78.8	70.9	70.3
25°	47.9	43.3	42.0
26°	40.0	36.1	34.8
27°	32.8	29.5	28.2
28°	26.9	24.3	23.6
29°	23.0	19.7	19.0
30°	19.0	16.4	15.8
31°	15.8	13.8	13.1
32°	13.8	11.8	10.5
33°	11.2	9.8	9.2
34°	9.8	7.9	7.2
35°	7.9	6.6	6.6
36°	7.2	5.9	5.3
37°	5.9	4.6	4.6
38°	5.3	3.9	3.3
39°	4.6	3.3	2.6
40°	3.9	2.6	2.0
42.5°	2.6	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°	1.3	0.0	0.0
54°	1.3	0.0	0.0
55°	1.3	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	0.7	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: P170698

CATALOG NUMBER: LDA4A13930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.0	0.7	0.0
75°	2.0	0.7	0.0
77.5°	2.0	0.7	0.0
80°	2.0	0.7	0.0
82.5°	2.0	0.7	0.0
85°	2.0	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°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0	1.3
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.7	0.7





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





67.5°	1.3	0.7	0.0
70°	1.3	0.7	0.0



(END OF REPORT)