

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: P170682

Luminaire Tested: **LDA4A18930D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170682
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: LDA4A18930D010TE 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: 1423.5 lumens
Efficiency: N/A
Efficacy: 48.9 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

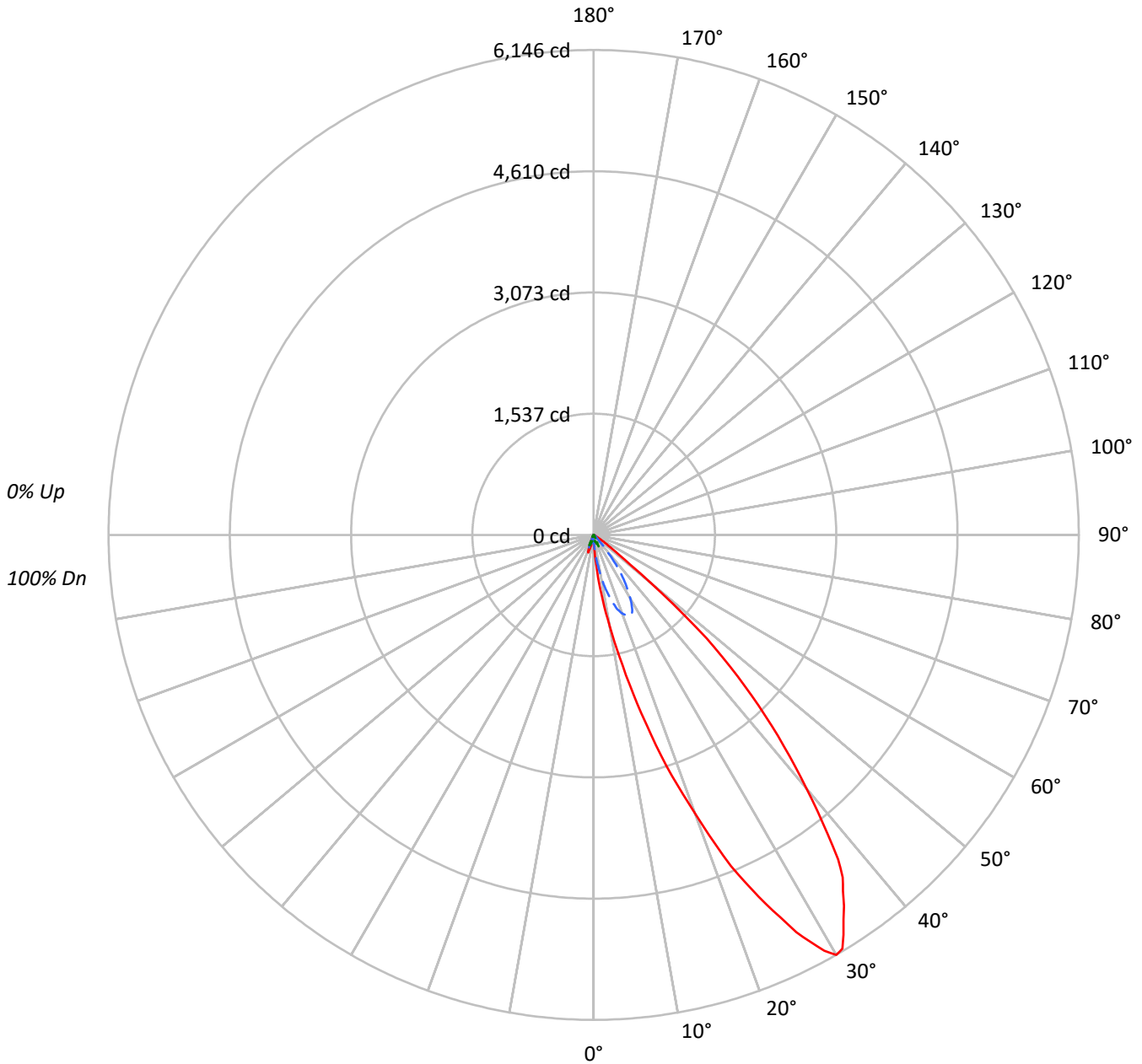
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11644	11644	11644
5°	50554	10983	6649
10°	145789	9882	7239
15°	298734	10905	20878
20°	492848	20280	21146
25°	702069	12956	7091
30°	875372	5683	2777
35°	829439	2575	1220
40°	675544	1304	386
45°	473195	715	0
50°	177308	461	0
55°	37784	516	0
60°	7228	395	0
65°	2131	700	0
70°	577	866	0
75°	0	1144	0
80°	0	1705	0
85°	0	3397	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.8	1.4
10°-20°	170.5	12.0
20°-30°	435.5	30.6
30°-40°	504.3	35.4
40°-50°	260.2	18.3
50°-60°	26.9	1.9
60°-70°	2.9	0.2
70°-80°	1.8	0.1
80°-90°	1.6	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°	625.7	44.0
0°-40°	1130.1	79.4
0°-60°	1417.1	99.6
0°-90°	1423.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1423.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	94	94	94	94	94	
5°	408	212	89	59	54	64
15°	2339	856	85	114	164	716
25°	5159	1118	95	59	52	2397
35°	5508	612	17	10	8	3373
45°	2713	72	4	2	0	2031
55°	176	11	2	2	0	220
65°	7	2	2	2	0	10
75°	0	2	2	2	0	0
85°	0	2	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°	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4
2.5°	162.7	157.0	152.9	154.5	163.5	153.7	154.5	151.3	149.7	148.0	144.0
5°	408.3	392.1	381.5	382.3	358.7	376.6	375.0	361.2	352.2	335.1	325.4
7.5°	766.2	731.3	719.1	715.0	717.4	700.3	693.0	675.1	651.5	620.6	602.7
10°	1164.0	1142.8	1135.5	1122.5	1121.7	1091.6	1073.7	1050.9	1003.7	960.6	928.9
12.5°	1696.0	1630.9	1619.5	1595.1	1588.6	1537.3	1499.9	1466.6	1387.7	1330.7	1280.3
15°	2339.4	2286.5	2298.7	2223.9	2203.5	2119.7	2049.8	1978.2	1850.5	1763.5	1674.0
17.5°	3069.8	3002.3	3010.4	2916.9	2748.5	2764.0	2662.3	2563.9	2384.1	2267.8	2129.5
20°	3754.7	3706.7	3709.9	3585.5	3528.6	3374.0	3238.2	3121.0	2881.9	2733.9	2550.8
22.5°	4542.9	4418.4	4394.8	4225.6	4125.6	3918.2	3728.7	3573.3	3283.7	3117.0	2892.5
25°	5158.6	5073.2	5008.1	4808.0	4668.9	4398.9	4179.3	3949.1	3600.9	3416.3	3149.5
26°	5389.6	5309.1	5225.3	5009.8	4853.6	4568.1	4328.9	4081.7	3709.1	3511.5	3221.1
27°	5650.7	5519.0	5418.1	5176.5	5007.3	4707.2	4423.3	4189.9	3791.3	3572.5	3266.6
28°	5835.4	5703.6	5570.2	5307.5	5124.5	4810.5	4515.2	4260.6	3839.3	3601.8	3285.3
29°	6024.9	5885.0	5690.6	5404.3	5205.0	4874.7	4568.1	4295.6	3853.1	3600.1	3275.6
30°	6146.1	6005.4	5754.0	5458.8	5248.1	4900.8	4582.7	4289.1	3831.1	3567.6	3239.8
31°	6117.6	5988.3	5738.6	5464.5	5244.0	4885.3	4555.9	4242.7	3775.8	3509.8	3174.7
32°	5975.3	5865.5	5675.9	5426.2	5199.3	4832.4	4493.3	4169.5	3696.1	3442.3	3095.8
33°	5810.2	5719.1	5588.1	5349.0	5121.2	4752.7	4407.0	4079.2	3604.2	3350.4	3000.7
34°	5671.9	5589.7	5468.5	5244.8	5014.6	4646.2	4298.0	3965.4	3499.3	3242.2	2888.4
35°	5508.4	5433.6	5321.3	5104.1	4866.6	4503.0	4161.4	3833.6	3375.6	3113.7	2758.3
36°	5366.0	5248.1	5134.2	4922.7	4686.0	4329.8	4000.3	3679.0	3235.7	2966.5	2611.8
37°	5145.6	5027.7	4905.7	4705.6	4472.1	4131.3	3821.4	3513.9	3076.3	2855.9	2455.7
38°	4816.2	4761.7	4639.7	4449.3	4232.2	3912.5	3625.4	3326.0	2896.5	2641.9	2289.7
39°	4508.7	4464.0	4345.2	4171.1	3970.2	3677.4	3408.2	3114.5	2694.0	2453.2	2114.9
40°	4195.5	4150.8	4039.4	3882.4	3701.8	3432.6	3177.2	2889.2	2481.7	2258.8	1939.2
42.5°	3453.7	3407.4	3383.8	3223.5	3032.4	2801.4	2564.7	2304.4	1957.9	1774.9	1524.3
45°	2712.7	2670.4	2581.8	2515.9	2345.0	2153.1	1960.3	1748.0	1492.6	1312.0	1077.8
47.5°	1939.2	1918.8	1922.1	1800.1	1637.4	1486.1	1326.7	1134.7	908.6	681.6	500.2
50°	924.0	929.7	952.5	867.1	745.1	656.4	562.1	440.9	322.1	253.0	196.0
51°	598.7	605.2	624.7	563.7	475.0	414.8	354.6	286.3	228.6	194.4	155.4
52°	405.1	405.1	409.1	373.4	329.4	295.3	260.3	220.4	178.1	152.9	122.8
53°	304.2	303.4	305.0	281.4	251.3	226.1	201.7	172.4	140.7	119.6	95.2
54°	232.6	231.8	233.4	215.6	194.4	175.7	157.0	135.0	109.0	89.5	71.6
55°	175.7	175.7	178.1	164.3	148.0	133.4	119.6	100.9	80.5	65.1	52.1
57.5°	70.8	70.8	73.2	68.3	61.0	55.3	50.4	43.1	35.8	30.1	24.4
60°	29.3	30.1	30.9	28.5	26.8	25.2	23.6	21.1	18.7	15.5	13.0
61°	22.0	22.0	22.8	21.1	20.3	18.7	17.9	16.3	14.6	12.2	10.6
62°	16.3	16.3	17.1	16.3	15.5	14.6	13.8	13.0	11.4	9.8	8.1
63°	12.2	12.2	13.0	12.2	12.2	11.4	10.6	9.8	8.9	7.3	6.5
64°	9.8	9.8	9.8	8.9	8.9	8.9	8.1	8.1	6.5	5.7	4.9
65°	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.1	4.1
66°	5.7	5.7	5.7	4.9	4.9	4.9	4.9	4.9	4.1	3.3	2.4



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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	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
85°	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4
2.5°	145.6	144.8	136.7	136.7	139.9	135.0	132.6	126.9	109.0	92.7	78.1
5°	322.1	313.2	285.5	277.4	276.6	253.8	240.8	212.3	124.5	88.7	67.5
7.5°	594.6	567.8	520.6	495.4	464.5	446.6	414.8	366.0	141.5	83.0	61.0
10°	879.3	849.2	779.2	734.5	710.9	653.2	600.3	533.6	158.6	78.9	60.2
12.5°	1205.5	1138.0	1071.3	991.5	920.8	869.5	781.7	703.6	170.0	78.1	65.9
15°	1558.5	1473.9	1360.0	1252.6	1152.6	1079.4	961.4	856.5	174.1	85.4	86.2
17.5°	1953.8	1795.2	1630.9	1484.5	1347.0	1248.6	1102.2	978.5	171.6	104.9	137.5
20°	2323.9	2113.2	1890.4	1687.0	1492.6	1364.9	1195.7	1061.5	172.4	154.5	185.5
22.5°	2617.5	2361.3	2089.6	1841.6	1595.1	1442.2	1257.5	1105.4	193.6	165.1	126.1
25°	2833.9	2532.1	2220.6	1935.1	1675.6	1504.0	1301.4	1118.4	180.6	95.2	71.6
26°	2891.7	2573.6	2245.0	1948.9	1685.4	1504.0	1294.9	1104.6	156.2	75.6	59.4
27°	2924.2	2592.3	2249.1	1942.4	1673.2	1486.9	1271.4	1076.9	127.7	63.4	50.4
28°	2928.3	2584.2	2228.7	1915.6	1639.0	1450.3	1229.1	1034.7	105.7	53.7	41.5
29°	2906.3	2554.1	2189.7	1870.8	1587.0	1396.6	1171.3	982.6	90.3	46.4	35.0
30°	2859.9	2501.2	2130.3	1810.6	1519.4	1331.5	1103.8	924.8	78.9	39.9	29.3
31°	2793.2	2428.8	2066.1	1739.1	1448.7	1266.5	1040.3	866.3	70.0	33.3	24.4
32°	2707.0	2343.4	1983.1	1661.8	1385.2	1204.7	979.3	806.9	62.6	28.5	20.3
33°	2611.0	2246.6	1892.8	1581.3	1324.2	1141.2	915.1	744.3	56.1	23.6	17.1
34°	2500.4	2140.1	1796.8	1500.7	1259.2	1071.3	845.9	680.0	48.8	19.5	14.6
35°	2374.3	2021.3	1693.5	1427.5	1186.8	995.6	773.5	611.7	43.1	17.1	12.2
36°	2237.7	1897.7	1589.4	1343.7	1108.7	916.7	697.1	542.5	37.4	14.6	10.6
37°	2094.5	1769.2	1485.3	1248.6	1022.5	832.9	618.2	467.7	32.5	12.2	8.9
38°	1943.2	1639.8	1384.4	1158.3	931.3	742.6	537.7	385.6	28.5	10.6	8.1
39°	1788.7	1512.1	1284.4	1059.1	837.8	654.0	460.4	299.3	25.2	8.9	7.3
40°	1637.4	1391.7	1178.6	950.9	744.3	566.9	385.6	220.4	22.0	8.1	5.7
42.5°	1296.6	1068.8	845.9	634.5	519.0	359.5	213.9	115.5	15.5	5.7	4.1
45°	848.4	632.0	456.3	309.1	268.4	152.1	99.2	71.6	11.4	4.1	3.3
47.5°	351.4	256.2	178.1	128.5	104.1	81.3	63.4	46.4	8.1	3.3	3.3
50°	154.5	122.0	96.8	75.6	65.9	52.9	40.7	28.5	4.9	2.4	2.4
51°	123.6	98.4	75.6	60.2	53.7	43.1	33.3	22.8	4.9	2.4	2.4
52°	97.6	76.5	59.4	46.4	43.1	35.0	27.7	18.7	4.1	2.4	2.4
53°	74.8	57.8	44.7	36.6	34.2	28.5	22.8	15.5	3.3	2.4	2.4
54°	55.3	43.9	35.0	28.5	27.7	22.8	18.7	13.0	3.3	2.4	2.4
55°	40.7	34.2	26.8	22.8	22.0	18.7	15.5	10.6	3.3	2.4	2.4
57.5°	21.1	17.9	14.6	13.0	13.0	12.2	10.6	6.5	2.4	1.6	2.4
60°	11.4	9.8	8.1	7.3	8.9	8.1	7.3	4.1	2.4	1.6	2.4
61°	8.9	8.1	6.5	5.7	7.3	6.5	6.5	3.3	2.4	2.4	2.4
62°	7.3	6.5	5.7	4.9	6.5	5.7	5.7	3.3	2.4	2.4	2.4
63°	5.7	4.9	4.1	4.1	5.7	5.7	4.9	2.4	2.4	2.4	2.4
64°	4.1	4.1	3.3	3.3	4.9	4.9	4.1	2.4	2.4	2.4	2.4
65°	3.3	3.3	2.4	2.4	4.1	4.1	4.1	2.4	2.4	2.4	2.4
66°	2.4	2.4	2.4	1.6	3.3	4.1	4.1	1.6	2.4	2.4	2.4



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CATALOG NUMBER: LDA4A18930D010TE 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°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	2.4
75°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	2.4
77.5°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	3.3
80°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	3.3
82.5°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	3.3
85°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	3.3
87.5°	0.8	0.8	0.8	0.8	2.4	3.3	3.3	1.6	2.4	2.4	3.3
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°	94.4	94.4	94.4
2.5°	70.8	66.7	65.9
5°	58.6	54.5	53.7
7.5°	53.7	50.4	49.6
10°	55.3	56.1	57.8
12.5°	70.8	78.1	84.6
15°	113.9	143.2	163.5
17.5°	198.5	219.6	233.4
20°	174.1	160.2	161.1
22.5°	97.6	87.8	87.0
25°	59.4	53.7	52.1
26°	49.6	44.7	43.1
27°	40.7	36.6	35.0
28°	33.3	30.1	29.3
29°	28.5	24.4	23.6
30°	23.6	20.3	19.5
31°	19.5	17.1	16.3
32°	17.1	14.6	13.0
33°	13.8	12.2	11.4
34°	12.2	9.8	8.9
35°	9.8	8.1	8.1
36°	8.9	7.3	6.5
37°	7.3	5.7	5.7
38°	6.5	4.9	4.1
39°	5.7	4.1	3.3
40°	4.9	3.3	2.4
42.5°	3.3	1.6	0.8
45°	2.4	0.8	0.0
47.5°	1.6	0.8	0.0
50°	1.6	0.0	0.0
51°	1.6	0.0	0.0
52°	1.6	0.0	0.0
53°	1.6	0.0	0.0
54°	1.6	0.0	0.0
55°	1.6	0.0	0.0
57.5°	1.6	0.0	0.0
60°	1.6	0.0	0.0
61°	1.6	0.0	0.0
62°	1.6	0.0	0.0
63°	1.6	0.8	0.0
64°	1.6	0.8	0.0
65°	1.6	0.8	0.0
66°	1.6	0.8	0.0



TEST NUMBER: P170682

CATALOG NUMBER: LDA4A18930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.4	0.8	0.0
75°	2.4	0.8	0.0
77.5°	2.4	0.8	0.0
80°	2.4	0.8	0.0
82.5°	2.4	0.8	0.0
85°	2.4	0.8	0.0
87.5°	1.6	0.8	0.0
90°	0.0	0.0	0.0



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







67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.4	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8





67.5°	1.6	1.6	1.6	1.6	3.3	3.3	3.3	1.6	2.4	2.4	2.4
70°	0.8	0.8	0.8	1.6	2.4	3.3	3.3	1.6	2.4	2.4	2.4





67.5°	1.6	0.8	0.0
70°	1.6	0.8	0.0



(END OF REPORT)