

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: P170852

Luminaire Tested: **LDA4A09940D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170852  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26102)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A09940D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 735.8 lumens  
Efficiency: N/A  
Efficacy: 53.2 lumens/watt  
Spacing Criteria (0/90/45): 2.11 / 1.09 / 1.54  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

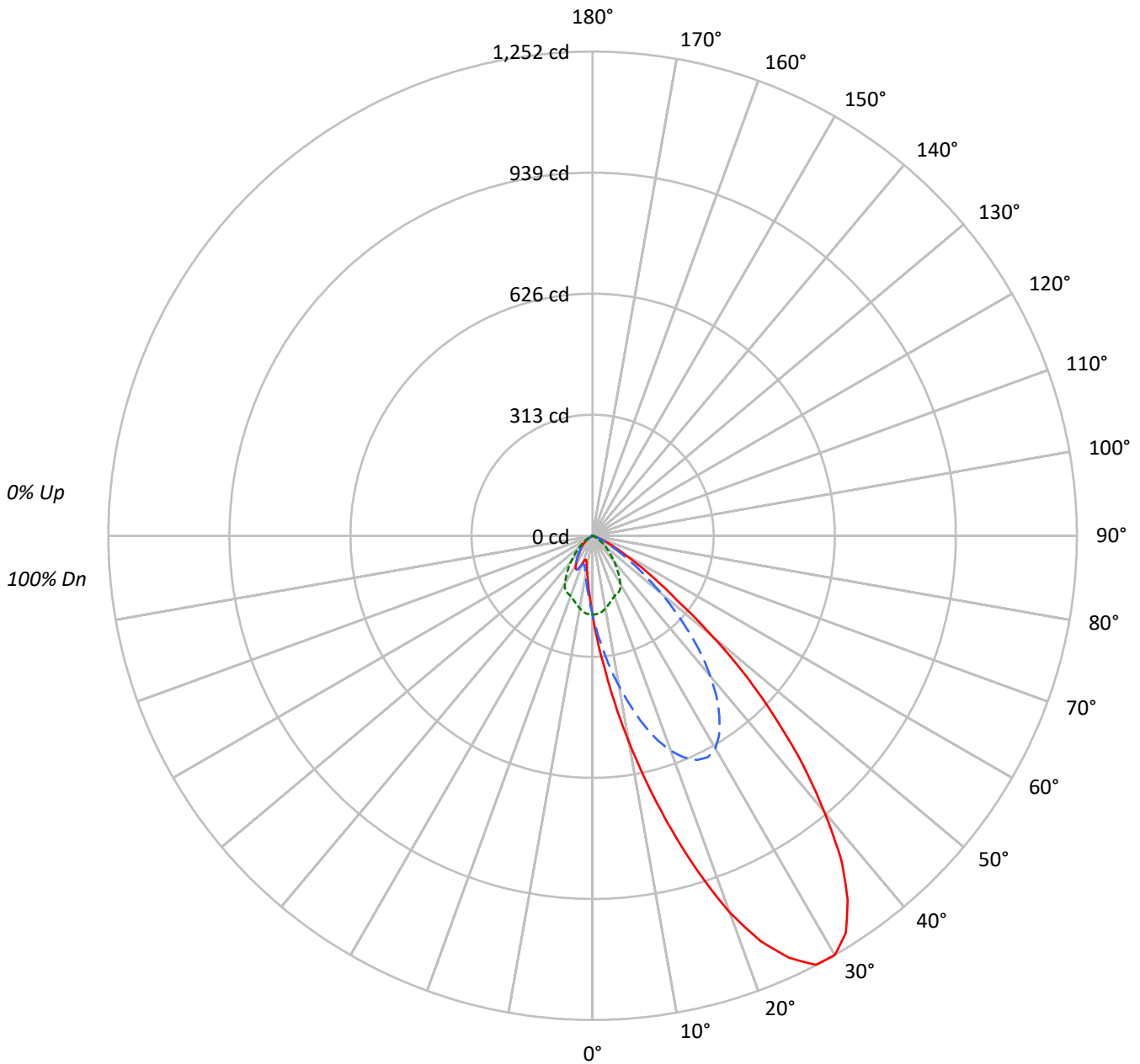
Input Watts (W): 13.84  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

### Luminous Intensity Polar Plot





TEST NUMBER: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80								
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71								
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63								
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56								
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50								
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45								
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40								
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36								
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33								

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

	0°	90°	180°
0°	25163	25163	25163
5°	41862	24961	15712
10°	67772	23872	10621
15°	100216	22628	8249
20°	136145	21750	9740
25°	163901	21830	13229
30°	178333	20453	12348
35°	173119	17226	9878
40°	149954	13880	8099
45°	116943	10693	6925
50°	77543	8002	5335
55°	43246	5871	3183
60°	22794	3898	1307
65°	12287	1955	146
70°	5878	685	180
75°	2049	477	238
80°	710	710	0
85°	1981	1415	0



TEST NUMBER: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	21.8	3.0
10°-20°	85.9	11.7
20°-30°	176.6	24.0
30°-40°	211.0	28.7
40°-50°	155.8	21.2
50°-60°	65.6	8.9
60°-70°	16.1	2.2
70°-80°	2.2	0.3
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°	284.3	38.6
0°-40°	495.2	67.3
0°-60°	716.6	97.4
0°-90°	735.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	735.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	204	204	204	204	204	
5°	338	291	202	145	127	39
15°	785	504	177	80	65	230
25°	1204	640	160	97	97	551
35°	1150	572	114	68	66	705
45°	670	352	61	40	40	515
55°	201	131	27	17	15	192
65°	42	29	7	1	0	46
75°	4	2	1	0	0	6
85°	1	1	1	0	0	1
90°	0	0	0	0	0	



TEST NUMBER: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
2.5°	265.3	261.9	261.9	262.9	265.8	263.4	261.4	259.5	261.4	257.1	258.6
5°	338.1	337.6	337.6	333.7	337.1	337.6	333.7	330.4	331.4	325.1	325.1
7.5°	433.8	430.9	430.0	424.7	428.6	428.1	421.9	416.1	416.1	406.0	403.7
10°	541.1	537.2	535.3	528.6	532.0	530.1	521.0	512.4	510.0	495.6	490.3
12.5°	659.4	657.0	654.1	645.5	648.3	644.5	631.6	619.1	613.9	594.7	585.6
15°	784.8	788.6	783.8	773.8	775.7	769.0	752.2	735.0	726.9	701.0	687.6
17.5°	914.1	918.9	913.6	902.1	901.6	892.5	869.6	848.5	836.5	803.5	785.8
20°	1037.2	1038.6	1031.9	1019.4	1016.6	1004.1	976.3	946.7	935.2	894.5	872.0
22.5°	1133.9	1139.1	1131.0	1121.9	1112.8	1097.0	1064.4	1031.9	1015.6	969.2	941.9
25°	1204.3	1216.2	1206.7	1196.1	1186.1	1167.4	1131.0	1096.0	1075.9	1024.2	993.1
27.5°	1250.7	1262.2	1251.7	1239.7	1229.2	1207.6	1167.9	1134.4	1109.9	1053.4	1019.9
30°	1252.1	1266.0	1255.0	1242.1	1232.0	1210.5	1169.8	1135.3	1108.0	1051.5	1016.6
32.5°	1217.7	1228.7	1217.7	1206.7	1195.2	1174.6	1133.9	1100.8	1072.1	1018.0	983.0
35°	1149.7	1159.3	1148.2	1135.3	1127.2	1109.0	1070.2	1038.6	1009.9	960.1	929.4
37.5°	1055.8	1064.4	1054.4	1047.2	1035.2	1019.0	983.5	955.3	928.0	883.0	855.7
40°	931.3	949.5	939.9	935.2	924.1	910.3	879.1	854.2	829.3	790.1	767.6
42.5°	806.8	824.1	815.5	812.1	802.5	790.6	764.7	743.6	720.6	688.1	668.9
45°	670.4	688.6	680.4	679.0	670.8	661.7	634.0	623.0	602.8	572.2	563.1
47.5°	542.0	545.4	537.7	538.2	532.5	526.2	503.7	497.0	487.0	463.5	453.0
50°	404.1	406.5	400.3	402.2	398.4	394.6	379.2	375.9	369.7	353.9	347.6
52.5°	278.2	289.2	284.9	286.8	284.9	283.5	277.2	271.5	268.6	258.6	255.7
55°	201.1	202.1	198.7	200.6	199.2	198.7	194.9	191.5	190.1	183.9	182.9
57.5°	139.3	140.3	140.3	139.3	138.9	137.9	135.5	133.6	132.6	131.2	128.3
60°	92.4	96.2	94.8	95.8	95.3	95.3	93.4	91.9	91.5	88.6	88.6
62.5°	63.2	65.6	64.6	65.1	64.6	64.6	63.2	62.2	62.2	61.8	60.3
65°	42.1	43.6	42.6	43.1	43.1	43.1	42.1	41.2	41.2	40.7	39.7
67.5°	26.8	27.8	27.3	27.8	27.3	27.8	26.8	26.3	25.9	25.9	25.4
70°	16.3	16.8	16.3	16.8	16.3	16.3	15.8	15.8	15.3	14.8	14.8
72.5°	8.6	9.1	9.1	9.1	9.1	9.1	8.6	8.1	8.1	8.1	7.7
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.8	3.8	3.8
77.5°	1.9	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9	1.4
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.4	1.9	1.9
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: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
2.5°	254.7	252.3	251.4	249.5	247.1	245.6	244.2	244.7	241.3	238.9	235.6
5°	318.9	313.6	310.8	306.5	301.2	296.9	293.0	291.1	284.9	280.6	271.5
7.5°	394.6	385.5	379.7	372.1	363.0	355.3	347.6	342.4	332.8	324.6	310.8
10°	477.4	463.5	453.5	442.0	428.1	415.6	404.1	394.6	380.2	367.7	349.5
12.5°	567.9	548.3	533.9	517.1	497.5	480.3	459.7	448.7	429.0	411.8	388.3
15°	664.1	638.3	618.2	595.2	569.3	546.3	520.0	503.7	477.9	455.8	426.6
17.5°	756.6	724.0	697.7	668.4	636.4	606.7	575.6	552.6	521.0	493.7	458.7
20°	837.0	798.2	766.1	730.7	692.9	656.5	622.5	591.8	555.0	522.9	483.1
22.5°	902.6	857.6	820.7	779.5	736.0	694.8	656.0	621.0	578.9	543.5	499.9
25°	950.0	900.7	859.5	814.0	766.1	719.2	678.0	639.7	593.8	555.9	509.5
27.5°	974.9	922.7	879.1	830.3	779.5	730.7	686.2	645.5	597.1	557.4	509.5
30°	970.6	917.4	872.4	822.2	770.9	722.1	675.6	634.9	585.1	544.9	497.0
32.5°	937.6	885.4	841.3	792.5	742.2	694.8	648.3	609.1	559.3	520.0	473.6
35°	883.0	833.6	792.0	745.5	698.1	653.6	611.5	571.7	523.8	486.5	442.9
37.5°	812.1	767.1	729.3	686.2	642.6	602.4	560.7	526.7	484.1	449.1	406.5
40°	727.3	687.6	654.1	615.8	576.5	541.6	506.6	473.6	431.9	400.8	364.4
42.5°	634.0	600.0	571.2	537.7	503.7	474.0	443.9	415.1	380.7	352.4	318.4
45°	533.4	504.7	481.2	454.4	426.2	398.4	376.4	352.4	320.3	299.3	270.5
47.5°	429.5	407.5	389.8	369.2	346.7	329.4	308.4	289.2	265.8	246.1	222.7
50°	330.9	315.6	303.1	288.7	272.5	256.7	244.2	229.4	211.6	195.8	177.2
52.5°	244.7	234.6	227.0	217.4	206.4	198.2	186.7	175.7	162.3	150.4	136.0
55°	175.3	169.5	164.7	159.0	151.3	144.1	138.4	130.7	121.1	112.0	101.5
57.5°	125.9	119.7	119.2	113.0	110.1	104.9	99.6	93.9	87.1	80.9	73.3
60°	87.1	82.8	80.9	78.5	75.2	71.8	69.4	65.6	60.8	56.5	50.8
62.5°	58.9	56.0	55.1	54.1	51.2	49.8	46.9	44.5	41.2	37.8	34.0
65°	38.8	36.9	35.9	34.5	33.0	32.1	30.6	28.7	25.9	23.9	21.5
67.5°	24.4	23.0	22.0	21.5	20.1	19.6	18.2	17.2	15.3	14.4	12.9
70°	13.9	13.4	12.4	12.4	11.5	10.5	10.1	9.1	8.6	7.7	7.2
72.5°	7.2	7.2	6.7	6.2	5.7	5.7	5.3	4.8	4.3	3.8	3.8
75°	3.4	3.4	3.4	2.9	2.9	2.9	2.4	2.4	2.4	1.9	1.9
77.5°	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
85°	1.4	1.0	1.0	1.0	1.0	1.4	1.4	1.4	1.4	1.4	1.4
87.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
2.5°	233.2	232.2	229.8	229.4	224.1	223.1	220.3	216.0	212.6	211.6	212.6
5°	268.1	263.8	256.7	255.2	246.6	243.7	237.5	230.8	225.1	221.7	220.3
7.5°	304.1	296.9	286.3	281.1	268.6	262.4	253.3	243.7	234.6	228.4	224.6
10°	338.5	327.0	307.9	303.6	288.3	278.2	265.8	252.8	241.3	232.7	226.5
12.5°	371.1	357.2	337.6	325.6	305.5	292.6	276.8	261.0	246.6	235.1	226.5
15°	404.6	386.4	362.0	345.2	322.3	305.0	285.9	267.7	250.9	236.5	226.0
17.5°	432.4	409.9	381.2	361.0	334.2	313.6	291.6	270.5	252.3	236.1	224.1
20°	453.0	426.6	394.1	370.6	340.9	317.9	294.0	271.0	250.9	233.2	220.3
22.5°	466.9	436.7	401.3	375.4	344.3	319.4	293.5	269.6	249.0	230.8	216.9
25°	473.6	441.0	404.1	376.4	343.8	317.9	291.1	266.7	245.6	227.0	213.6
27.5°	472.6	438.1	400.3	371.1	338.1	311.2	283.9	259.5	238.9	220.3	206.4
30°	458.7	424.7	386.4	356.7	324.2	297.4	270.1	246.1	226.0	206.9	193.9
32.5°	437.2	402.2	364.9	331.8	304.1	277.7	251.9	227.4	208.3	189.6	177.2
35°	408.0	374.4	338.5	310.3	280.1	254.7	229.8	206.9	188.7	170.5	159.0
37.5°	374.0	341.9	308.8	279.6	253.3	229.8	206.4	185.8	167.6	151.3	140.3
40°	334.7	305.0	274.8	250.0	224.1	202.5	181.0	160.9	146.0	131.2	121.6
42.5°	292.1	265.8	238.5	216.9	193.4	174.3	153.7	139.3	125.0	111.6	103.9
45°	247.6	224.6	201.6	182.0	162.8	146.0	128.3	114.9	103.9	92.9	86.2
47.5°	203.5	183.9	165.2	149.4	132.6	118.8	106.3	94.3	83.8	74.7	69.4
50°	159.0	146.0	131.2	118.3	104.9	93.4	81.9	73.3	65.1	58.4	55.1
52.5°	124.0	112.0	100.1	89.5	80.0	70.4	62.7	55.5	49.8	45.5	43.1
55°	92.4	82.8	73.7	65.6	57.9	51.7	46.4	42.1	38.3	35.0	34.0
57.5°	66.1	58.9	52.7	46.4	41.7	37.8	34.5	31.6	29.2	26.8	26.3
60°	46.0	40.7	36.9	33.0	30.2	27.3	25.4	23.5	21.5	20.1	19.6
62.5°	30.6	27.8	24.9	23.0	21.5	19.2	18.2	16.8	15.8	14.4	13.9
65°	19.6	17.7	16.3	14.8	13.9	12.9	12.0	11.0	10.1	9.1	9.1
67.5°	12.0	10.5	10.1	9.1	8.1	7.7	7.2	6.2	5.7	5.7	5.3
70°	6.7	5.7	5.3	4.8	4.3	4.3	3.8	3.4	3.4	2.9	2.9
72.5°	3.4	3.4	2.9	2.9	2.4	2.4	1.9	1.9	1.9	1.4	1.4
75°	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.0
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: P170852

CATALOG NUMBER: LDA4A09940D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
2.5°	208.8	204.0	203.0	203.0	182.9	170.9	161.8	159.5
5°	213.6	206.9	203.5	201.6	165.7	144.6	130.7	126.9
7.5°	216.0	206.4	201.1	196.8	148.9	121.6	106.8	102.5
10°	215.0	203.5	196.3	190.6	133.6	103.9	88.6	84.8
12.5°	213.1	200.2	191.1	183.9	120.7	90.0	76.1	72.3
15°	211.2	196.3	185.8	177.2	110.1	80.4	68.0	64.6
17.5°	207.3	192.0	180.0	170.9	103.4	76.6	66.1	64.2
20°	203.0	187.2	174.8	165.7	101.5	80.4	74.2	74.2
22.5°	200.2	183.9	171.9	162.8	104.9	89.5	87.1	88.6
25°	196.3	181.0	169.0	160.4	108.2	96.7	95.3	97.2
27.5°	190.1	174.8	163.3	154.7	106.3	95.8	94.3	95.3
30°	177.6	162.8	152.7	143.6	98.6	88.6	86.2	86.7
32.5°	161.8	147.5	137.9	129.3	87.6	78.0	75.7	75.7
35°	144.6	131.2	122.1	114.4	77.1	68.5	66.1	65.6
37.5°	127.4	114.9	107.3	100.1	67.5	59.9	57.5	57.0
40°	110.1	99.1	91.9	86.2	59.4	53.2	50.8	50.3
42.5°	93.9	84.3	78.0	73.3	51.7	46.9	45.0	44.5
45°	77.6	69.9	65.1	61.3	45.0	40.2	39.7	39.7
47.5°	62.7	56.5	53.2	50.8	38.3	34.5	34.0	34.5
50°	50.3	46.0	43.6	41.7	32.6	29.2	27.8	27.8
52.5°	39.7	36.9	35.4	34.0	26.8	23.5	21.5	21.1
55°	31.6	29.2	28.3	27.3	21.1	17.2	15.3	14.8
57.5°	24.9	23.0	22.0	21.1	15.8	12.0	10.1	9.6
60°	18.7	17.2	16.3	15.8	11.0	7.2	5.7	5.3
62.5°	13.4	12.4	11.5	11.0	6.7	3.8	2.4	1.9
65°	8.1	8.1	7.2	6.7	3.4	1.4	1.0	0.5
67.5°	4.8	4.3	3.8	3.8	1.4	1.0	0.5	0.5
70°	2.4	2.4	1.9	1.9	1.0	0.5	0.5	0.5
72.5°	1.4	1.4	1.4	1.0	1.0	0.5	0.5	0.5
75°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
77.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
80°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
82.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
85°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
87.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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















(END OF REPORT)