

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: P170841

Luminaire Tested: **LDA4A18927D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170841  
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: LDA4A18927D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1084.6 lumens  
Efficiency: N/A  
Efficacy: 37.2 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

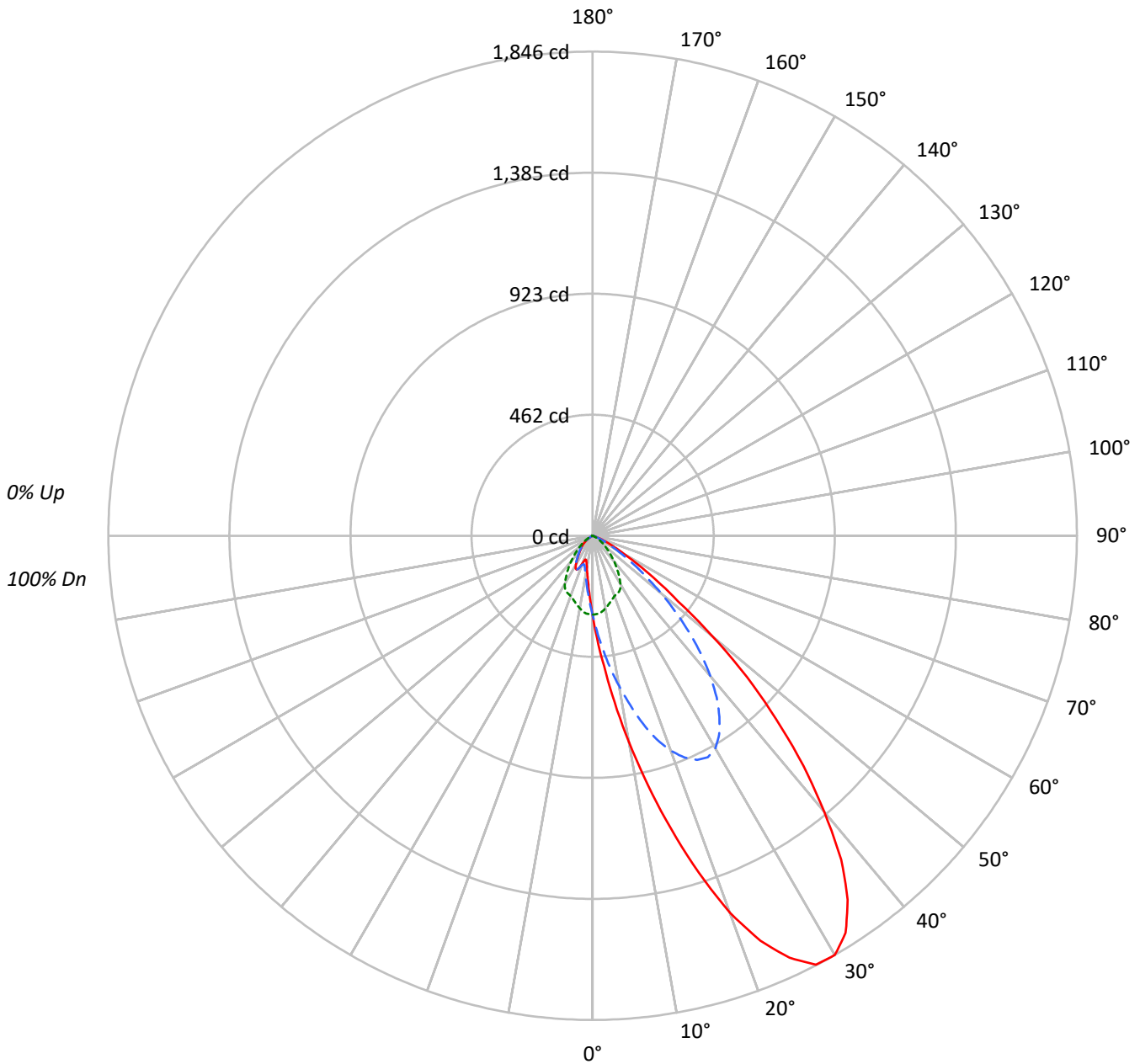
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80					80			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71					71			
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63					63			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56					56			
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50					50			
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45					45			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40					40			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36					36			
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33					33			

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

	0°	90°	180°
0°	37090	37090	37090
5°	61698	36798	23166
10°	99898	35182	15644
15°	147732	33354	12170
20°	200686	32054	14360
25°	241613	32187	19503
30°	262892	30166	18202
35°	255198	25402	14561
40°	221059	20465	11931
45°	172379	15769	10222
50°	114329	11782	7848
55°	63761	8645	4710
60°	33599	5748	1924
65°	18125	2889	204
70°	8655	1010	252
75°	3050	667	334
80°	994	994	0
85°	2972	1981	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.1	3.0
10°-20°	126.6	11.7
20°-30°	260.4	24.0
30°-40°	311.0	28.7
40°-50°	229.6	21.2
50°-60°	96.6	8.9
60°-70°	23.7	2.2
70°-80°	3.2	0.3
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°	419.0	38.6
0°-40°	730.0	67.3
0°-60°	1056.3	97.4
0°-90°	1084.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1084.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	301	301	301	301	301	
5°	498	429	297	213	187	57
15°	1157	743	261	119	95	339
25°	1775	943	236	143	143	812
35°	1695	843	169	101	97	1039
45°	988	520	90	59	59	759
55°	296	193	40	25	22	283
65°	62	42	10	2	1	68
75°	6	4	1	1	1	9
85°	2	2	1	1	0	2
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°	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7
2.5°	391.1	386.1	386.1	387.5	391.8	388.2	385.4	382.6	385.4	379.1	381.2
5°	498.3	497.6	497.6	492.0	496.9	497.6	492.0	487.0	488.5	479.3	479.3
7.5°	639.5	635.3	633.9	626.1	631.8	631.0	621.9	613.4	613.4	598.6	595.0
10°	797.6	792.0	789.2	779.3	784.2	781.4	768.0	755.3	751.7	730.6	722.8
12.5°	972.0	968.5	964.2	951.5	955.7	950.1	931.0	912.7	904.9	876.7	863.3
15°	1156.9	1162.6	1155.5	1140.7	1143.5	1133.6	1108.9	1083.5	1071.5	1033.4	1013.6
17.5°	1347.5	1354.6	1346.8	1329.9	1329.1	1315.7	1281.9	1250.8	1233.2	1184.4	1158.3
20°	1528.9	1531.0	1521.1	1502.8	1498.6	1480.2	1439.3	1395.5	1378.6	1318.6	1285.4
22.5°	1671.5	1679.3	1667.3	1653.8	1640.4	1617.1	1569.1	1521.1	1497.1	1428.7	1388.4
25°	1775.3	1792.9	1778.8	1763.3	1748.4	1720.9	1667.3	1615.7	1586.1	1509.9	1464.0
27.5°	1843.7	1860.7	1845.1	1827.5	1812.0	1780.2	1721.6	1672.2	1636.2	1552.9	1503.5
30°	1845.8	1866.3	1850.1	1831.0	1816.2	1784.4	1724.4	1673.6	1633.4	1550.1	1498.6
32.5°	1795.0	1811.3	1795.0	1778.8	1761.8	1731.5	1671.5	1622.8	1580.4	1500.7	1449.1
35°	1694.8	1708.9	1692.7	1673.6	1661.6	1634.8	1577.6	1531.0	1488.7	1415.3	1370.1
37.5°	1556.4	1569.1	1554.3	1543.7	1526.1	1502.1	1449.9	1408.2	1368.0	1301.6	1261.4
40°	1372.9	1399.7	1385.6	1378.6	1362.3	1341.9	1296.0	1259.3	1222.6	1164.7	1131.5
42.5°	1189.4	1214.8	1202.1	1197.2	1183.0	1165.4	1127.3	1096.2	1062.3	1014.3	986.1
45°	988.2	1015.0	1003.0	1000.9	988.9	975.5	934.6	918.3	888.7	843.5	830.1
47.5°	799.0	804.0	792.7	793.4	784.9	775.7	742.6	732.7	717.9	683.3	667.8
50°	595.8	599.3	590.1	592.9	587.3	581.6	559.0	554.1	544.9	521.6	512.5
52.5°	410.1	426.3	420.0	422.8	420.0	417.9	408.7	400.2	396.0	381.2	376.9
55°	296.5	297.9	292.9	295.8	293.6	292.9	287.3	282.3	280.2	271.1	269.6
57.5°	205.4	206.8	206.8	205.4	204.7	203.3	199.8	196.9	195.5	193.4	189.2
60°	136.2	141.9	139.8	141.2	140.5	140.5	137.6	135.5	134.8	130.6	130.6
62.5°	93.2	96.7	95.3	96.0	95.3	95.3	93.2	91.8	91.8	91.1	88.9
65°	62.1	64.2	62.8	63.5	63.5	63.5	62.1	60.7	60.7	60.0	58.6
67.5°	39.5	40.9	40.2	40.9	40.2	40.9	39.5	38.8	38.1	38.1	37.4
70°	24.0	24.7	24.0	24.7	24.0	24.0	23.3	23.3	22.6	21.9	21.9
72.5°	12.7	13.4	13.4	13.4	13.4	13.4	12.7	12.0	12.0	12.0	11.3
75°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	5.6	5.6	5.6
77.5°	2.8	2.8	2.8	2.8	3.5	2.8	2.8	2.8	2.8	2.8	2.8
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8	2.1
87.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.5	3.5	2.8	2.8
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°	47.5°	50°	52.5°
0°	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7
2.5°	375.5	372.0	370.6	367.8	364.2	362.1	360.0	360.7	355.8	352.2	347.3
5°	470.1	462.3	458.1	451.8	444.0	437.6	432.0	429.2	420.0	413.6	400.2
7.5°	581.6	568.2	559.8	548.5	535.0	523.8	512.5	504.7	490.6	478.6	458.1
10°	703.7	683.3	668.5	651.5	631.0	612.7	595.8	581.6	560.5	542.1	515.3
12.5°	837.2	808.2	787.0	762.3	733.4	708.0	677.6	661.4	632.5	607.0	572.5
15°	979.0	940.9	911.3	877.4	839.3	805.4	766.6	742.6	704.5	672.0	628.9
17.5°	1115.3	1067.3	1028.4	985.4	938.1	894.3	848.5	814.6	768.0	727.7	676.2
20°	1233.9	1176.7	1129.4	1077.2	1021.4	967.7	917.6	872.5	818.1	770.8	712.2
22.5°	1330.6	1264.2	1209.9	1149.2	1084.9	1024.2	967.0	915.5	853.4	801.2	736.9
25°	1400.4	1327.7	1267.0	1200.0	1129.4	1060.2	999.5	943.0	875.3	819.5	751.0
27.5°	1437.1	1360.2	1296.0	1224.0	1149.2	1077.2	1011.5	951.5	880.2	821.6	751.0
30°	1430.8	1352.4	1286.1	1212.0	1136.4	1064.4	996.0	936.0	862.6	803.3	732.7
32.5°	1382.1	1305.1	1240.2	1168.2	1094.1	1024.2	955.7	897.9	824.5	766.6	698.1
35°	1301.6	1228.9	1167.5	1099.0	1029.2	963.5	901.4	842.8	772.2	717.2	652.9
37.5°	1197.2	1130.8	1075.0	1011.5	947.3	888.0	826.6	776.5	713.6	662.1	599.3
40°	1072.2	1013.6	964.2	907.7	849.9	798.3	746.8	698.1	636.7	590.8	537.2
42.5°	934.6	884.5	842.1	792.7	742.6	698.8	654.3	612.0	561.2	519.5	469.4
45°	786.3	744.0	709.4	669.9	628.2	587.3	554.8	519.5	472.2	441.2	398.8
47.5°	633.2	600.7	574.6	544.2	511.0	485.6	454.6	426.3	391.8	362.8	328.2
50°	487.8	465.2	446.8	425.6	401.6	378.3	360.0	338.1	312.0	288.7	261.2
52.5°	360.7	345.9	334.6	320.5	304.2	292.2	275.3	259.1	239.3	221.6	200.5
55°	258.3	249.9	242.8	234.3	223.1	212.5	204.0	192.7	178.6	165.2	149.6
57.5°	185.6	176.5	175.8	166.6	162.3	154.6	146.8	138.4	128.5	119.3	108.0
60°	128.5	122.1	119.3	115.8	110.8	105.9	102.4	96.7	89.6	83.3	74.8
62.5°	86.8	82.6	81.2	79.8	75.5	73.4	69.2	65.6	60.7	55.8	50.1
65°	57.2	54.4	52.9	50.8	48.7	47.3	45.2	42.4	38.1	35.3	31.8
67.5°	36.0	33.9	32.5	31.8	29.6	28.9	26.8	25.4	22.6	21.2	19.1
70°	20.5	19.8	18.4	18.4	16.9	15.5	14.8	13.4	12.7	11.3	10.6
72.5°	10.6	10.6	9.9	9.2	8.5	8.5	7.8	7.1	6.4	5.6	5.6
75°	4.9	4.9	4.9	4.2	4.2	4.2	3.5	3.5	3.5	2.8	2.8
77.5°	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	2.1	1.4	1.4	1.4	1.4	2.1	2.1	2.1	2.1	2.1	2.1
87.5°	2.1	2.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7
2.5°	343.8	342.3	338.8	338.1	330.3	328.9	324.7	318.3	313.4	312.0	313.4
5°	395.3	388.9	378.3	376.2	363.5	359.3	350.1	340.2	331.8	326.8	324.7
7.5°	448.2	437.6	422.1	414.3	396.0	386.8	373.4	359.3	345.9	336.7	331.1
10°	499.0	482.1	453.9	447.5	424.9	410.1	391.8	372.7	355.8	343.1	333.9
12.5°	547.0	526.6	497.6	480.0	450.3	431.3	408.0	384.7	363.5	346.6	333.9
15°	596.5	569.6	533.6	508.9	475.0	449.6	421.4	394.6	369.9	348.7	333.2
17.5°	637.4	604.2	561.9	532.2	492.7	462.3	429.9	398.8	372.0	348.0	330.3
20°	667.8	628.9	580.9	546.3	502.6	468.7	433.4	399.5	369.9	343.8	324.7
22.5°	688.2	643.8	591.5	553.4	507.5	470.8	432.7	397.4	367.1	340.2	319.8
25°	698.1	650.1	595.8	554.8	506.8	468.7	429.2	393.2	362.1	334.6	314.8
27.5°	696.7	645.9	590.1	547.0	498.3	458.8	418.6	382.6	352.2	324.7	304.2
30°	676.2	626.1	569.6	525.9	477.9	438.3	398.1	362.8	333.2	304.9	285.9
32.5°	644.5	592.9	537.9	489.2	448.2	409.4	371.3	335.3	307.1	279.5	261.2
35°	601.4	552.0	499.0	457.4	412.9	375.5	338.8	304.9	278.1	251.3	234.3
37.5°	551.3	504.0	455.3	412.2	373.4	338.8	304.2	273.9	247.1	223.1	206.8
40°	493.4	449.6	405.2	368.5	330.3	298.6	266.8	237.2	215.3	193.4	179.3
42.5°	430.6	391.8	351.5	319.8	285.2	256.9	226.6	205.4	184.2	164.5	153.2
45°	364.9	331.1	297.2	268.2	240.0	215.3	189.2	169.4	153.2	136.9	127.1
47.5°	300.0	271.1	243.5	220.2	195.5	175.1	156.7	139.1	123.5	110.1	102.4
50°	234.3	215.3	193.4	174.3	154.6	137.6	120.7	108.0	96.0	86.1	81.2
52.5°	182.8	165.2	147.5	132.0	117.9	103.8	92.5	81.9	73.4	67.1	63.5
55°	136.2	122.1	108.7	96.7	85.4	76.2	68.5	62.1	56.5	51.5	50.1
57.5°	97.4	86.8	77.6	68.5	61.4	55.8	50.8	46.6	43.1	39.5	38.8
60°	67.8	60.0	54.4	48.7	44.5	40.2	37.4	34.6	31.8	29.6	28.9
62.5°	45.2	40.9	36.7	33.9	31.8	28.2	26.8	24.7	23.3	21.2	20.5
65°	28.9	26.1	24.0	21.9	20.5	19.1	17.6	16.2	14.8	13.4	13.4
67.5°	17.6	15.5	14.8	13.4	12.0	11.3	10.6	9.2	8.5	8.5	7.8
70°	9.9	8.5	7.8	7.1	6.4	6.4	5.6	4.9	4.9	4.2	4.2
72.5°	4.9	4.9	4.2	4.2	3.5	3.5	2.8	2.8	2.8	2.1	2.1
75°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	2.1	2.1	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4
87.5°	2.1	2.1	2.1	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.4
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: P170841

CATALOG NUMBER: LDA4A18927D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	300.7	300.7	300.7	300.7	300.7	300.7	300.7	300.7
2.5°	307.8	300.7	299.3	299.3	269.6	252.0	238.6	235.1
5°	314.8	304.9	300.0	297.2	244.2	213.2	192.7	187.1
7.5°	318.3	304.2	296.5	290.1	219.5	179.3	157.4	151.1
10°	316.9	300.0	289.4	280.9	196.9	153.2	130.6	124.9
12.5°	314.1	295.1	281.6	271.1	177.9	132.7	112.2	106.6
15°	311.3	289.4	273.9	261.2	162.3	118.6	100.2	95.3
17.5°	305.6	283.1	265.4	252.0	152.5	112.9	97.4	94.6
20°	299.3	276.0	257.6	244.2	149.6	118.6	109.4	109.4
22.5°	295.1	271.1	253.4	240.0	154.6	132.0	128.5	130.6
25°	289.4	266.8	249.2	236.5	159.5	142.6	140.5	143.3
27.5°	280.2	257.6	240.7	228.0	156.7	141.2	139.1	140.5
30°	261.9	240.0	225.2	211.8	145.4	130.6	127.1	127.8
32.5°	238.6	217.4	203.3	190.6	129.2	115.1	111.5	111.5
35°	213.2	193.4	180.0	168.7	113.6	100.9	97.4	96.7
37.5°	187.8	169.4	158.1	147.5	99.5	88.2	84.7	84.0
40°	162.3	146.1	135.5	127.1	87.5	78.4	74.8	74.1
42.5°	138.4	124.2	115.1	108.0	76.2	69.2	66.4	65.6
45°	114.4	103.1	96.0	90.4	66.4	59.3	58.6	58.6
47.5°	92.5	83.3	78.4	74.8	56.5	50.8	50.1	50.8
50°	74.1	67.8	64.2	61.4	48.0	43.1	40.9	40.9
52.5°	58.6	54.4	52.2	50.1	39.5	34.6	31.8	31.1
55°	46.6	43.1	41.6	40.2	31.1	25.4	22.6	21.9
57.5°	36.7	33.9	32.5	31.1	23.3	17.6	14.8	14.1
60°	27.5	25.4	24.0	23.3	16.2	10.6	8.5	7.8
62.5°	19.8	18.4	16.9	16.2	9.9	5.6	3.5	2.8
65°	12.0	12.0	10.6	9.9	4.9	2.1	1.4	0.7
67.5°	7.1	6.4	5.6	5.6	2.1	1.4	0.7	0.7
70°	3.5	3.5	2.8	2.8	1.4	0.7	0.7	0.7
72.5°	2.1	2.1	2.1	1.4	1.4	0.7	0.7	0.7
75°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.7
77.5°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.0
80°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.0
82.5°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.7
85°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.0
87.5°	1.4	1.4	1.4	1.4	1.4	0.7	0.7	0.7
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)