

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: P170837

Luminaire Tested: **LDA4A18827D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170837  
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: LDA4A18827D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1350.6 lumens  
Efficiency: N/A  
Efficacy: 46.4 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

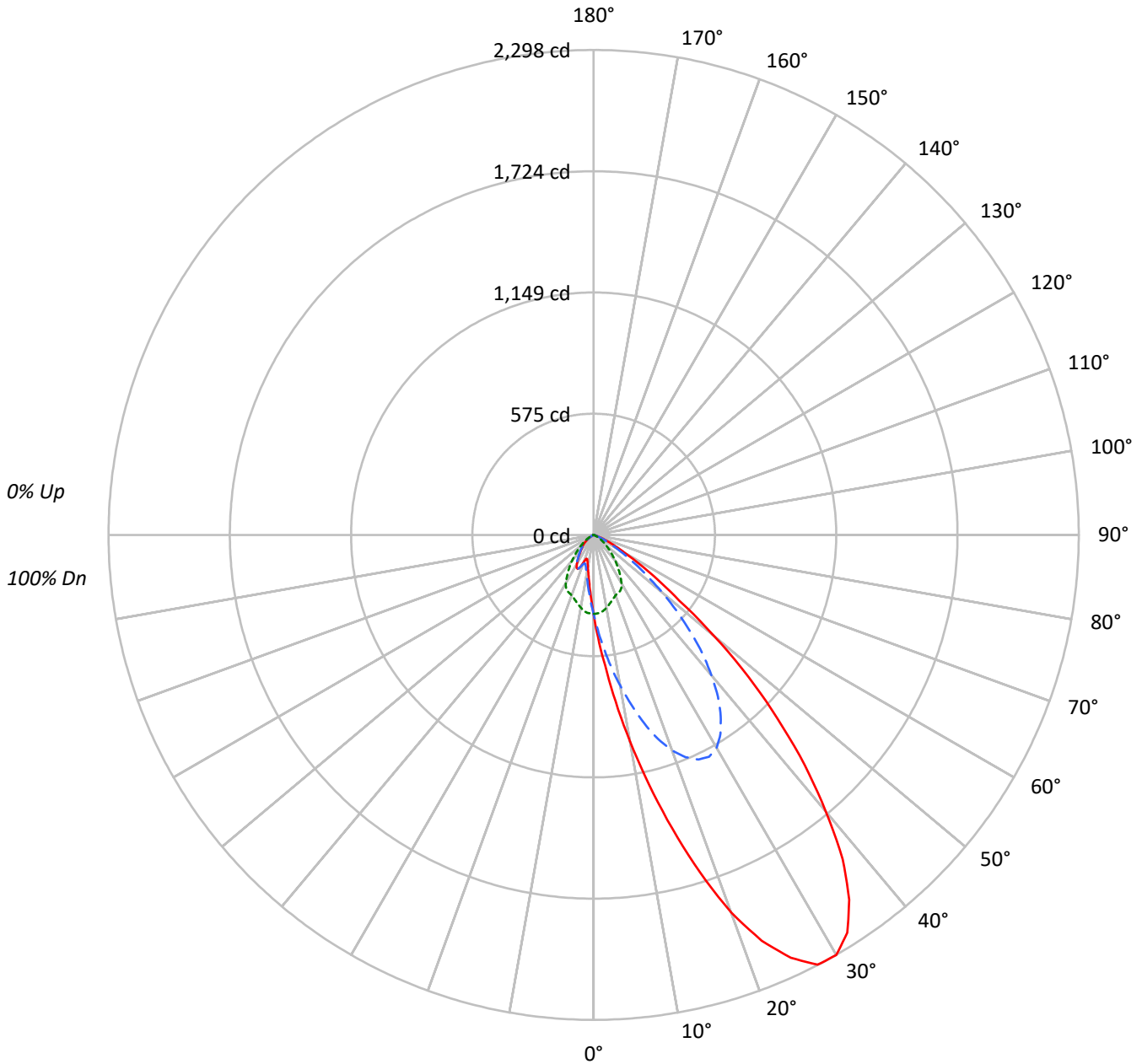
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

### Luminous Intensity Polar Plot





TEST NUMBER: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**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	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°	46181	46181	46181
5°	76828	45812	28837
10°	124397	43812	19489
15°	183960	41527	15158
20°	249896	39917	17878
25°	300856	40067	24280
30°	327369	37558	22660
35°	317778	31636	18129
40°	275273	25473	14862
45°	214645	19624	12734
50°	142345	14680	9786
55°	79395	10774	5849
60°	41839	7154	2393
65°	22561	3590	263
70°	10783	1262	325
75°	3765	858	429
80°	1279	1279	0
85°	3680	2547	0



TEST NUMBER: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.9	3.0
10°-20°	157.6	11.7
20°-30°	324.2	24.0
30°-40°	387.2	28.7
40°-50°	285.9	21.2
50°-60°	120.3	8.9
60°-70°	29.6	2.2
70°-80°	4.1	0.3
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°	521.8	38.6
0°-40°	909.0	67.3
0°-60°	1315.3	97.4
0°-90°	1350.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1350.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	374	374	374	374	374	
5°	620	534	370	265	233	71
15°	1441	925	325	148	119	423
25°	2211	1174	294	178	178	1011
35°	2110	1050	210	126	120	1294
45°	1230	647	112	74	73	945
55°	369	240	50	32	27	352
65°	77	53	12	3	1	84
75°	8	4	2	1	1	11
85°	3	3	2	1	0	2
90°	0	0	0	0	0	



TEST NUMBER: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4
2.5°	486.9	480.8	480.8	482.5	487.8	483.4	479.9	476.4	479.9	472.0	474.6
5°	620.5	619.7	619.7	612.6	618.8	619.7	612.6	606.5	608.2	596.8	596.8
7.5°	796.3	791.1	789.3	779.6	786.7	785.8	774.4	763.8	763.8	745.3	741.0
10°	993.2	986.2	982.7	970.4	976.5	973.0	956.3	940.5	936.1	909.7	900.0
12.5°	1210.3	1205.9	1200.6	1184.8	1190.1	1183.1	1159.3	1136.5	1126.8	1091.7	1075.0
15°	1440.6	1447.6	1438.8	1420.4	1423.9	1411.6	1380.8	1349.2	1334.2	1286.8	1262.2
17.5°	1677.9	1686.7	1677.0	1655.9	1655.1	1638.4	1596.2	1557.5	1535.5	1474.9	1442.4
20°	1903.8	1906.4	1894.1	1871.3	1866.0	1843.2	1792.2	1737.7	1716.6	1641.9	1600.6
22.5°	2081.4	2091.0	2076.1	2059.4	2042.7	2013.7	1953.9	1894.1	1864.3	1779.0	1728.9
25°	2210.6	2232.5	2215.0	2195.6	2177.2	2142.9	2076.1	2011.9	1975.0	1880.1	1822.9
27.5°	2295.8	2316.9	2297.6	2275.6	2256.3	2216.7	2143.8	2082.2	2037.4	1933.7	1872.2
30°	2298.5	2323.9	2303.7	2280.0	2261.5	2222.0	2147.3	2084.0	2033.9	1930.2	1866.0
32.5°	2235.2	2255.4	2235.2	2215.0	2193.9	2156.1	2081.4	2020.7	1968.0	1868.6	1804.5
35°	2110.4	2127.9	2107.7	2084.0	2069.0	2035.6	1964.5	1906.4	1853.7	1762.3	1706.0
37.5°	1938.1	1953.9	1935.4	1922.3	1900.3	1870.4	1805.4	1753.5	1703.4	1620.8	1570.7
40°	1709.6	1743.0	1725.4	1716.6	1696.4	1670.9	1613.8	1568.0	1522.3	1450.3	1409.0
42.5°	1481.0	1512.7	1496.9	1490.7	1473.1	1451.1	1403.7	1365.0	1322.8	1263.1	1227.9
45°	1230.5	1263.9	1249.0	1246.4	1231.4	1214.7	1163.7	1143.5	1106.6	1050.3	1033.6
47.5°	995.0	1001.1	987.1	987.9	977.4	966.0	924.7	912.4	893.9	850.8	831.5
50°	741.8	746.2	734.8	738.3	731.3	724.3	696.1	690.0	678.5	649.5	638.1
52.5°	510.7	530.9	523.0	526.5	523.0	520.3	508.9	498.4	493.1	474.6	469.4
55°	369.2	370.9	364.8	368.3	365.6	364.8	357.7	351.6	348.9	337.5	335.8
57.5°	255.8	257.5	257.5	255.8	254.9	253.1	248.7	245.2	243.5	240.8	235.6
60°	169.6	176.7	174.0	175.8	174.9	174.9	171.4	168.8	167.9	162.6	162.6
62.5°	116.0	120.4	118.7	119.5	118.7	118.7	116.0	114.3	114.3	113.4	110.7
65°	77.3	80.0	78.2	79.1	79.1	79.1	77.3	75.6	75.6	74.7	73.0
67.5°	49.2	51.0	50.1	51.0	50.1	51.0	49.2	48.3	47.5	47.5	46.6
70°	29.9	30.8	29.9	30.8	29.9	29.9	29.0	29.0	28.1	27.2	27.2
72.5°	15.8	16.7	16.7	16.7	16.7	16.7	15.8	14.9	14.9	14.9	14.1
75°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0
77.5°	3.5	3.5	3.5	3.5	4.4	3.5	3.5	3.5	3.5	3.5	3.5
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5	2.6
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.4	4.4	3.5	3.5
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: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4
2.5°	467.6	463.2	461.4	457.9	453.5	450.9	448.3	449.1	443.0	438.6	432.4
5°	585.4	575.7	570.4	562.5	552.9	544.9	537.9	534.4	523.0	515.1	498.4
7.5°	724.3	707.6	697.0	682.9	666.2	652.2	638.1	628.4	610.9	595.9	570.4
10°	876.3	850.8	832.4	811.3	785.8	762.9	741.8	724.3	697.9	675.0	641.6
12.5°	1042.4	1006.4	980.0	949.3	913.2	881.6	843.8	823.6	787.5	755.9	712.8
15°	1219.1	1171.6	1134.7	1092.5	1045.1	1002.9	954.5	924.7	877.2	836.8	783.1
17.5°	1388.7	1329.0	1280.6	1227.0	1168.1	1113.6	1056.5	1014.3	956.3	906.2	842.0
20°	1536.4	1465.2	1406.3	1341.3	1271.8	1205.0	1142.6	1086.4	1018.7	959.8	886.9
22.5°	1656.8	1574.2	1506.5	1430.9	1350.9	1275.4	1204.2	1140.0	1062.7	997.6	917.6
25°	1743.8	1653.3	1577.7	1494.2	1406.3	1320.2	1244.6	1174.3	1089.9	1020.5	935.2
27.5°	1789.5	1693.7	1613.8	1524.1	1430.9	1341.3	1259.5	1184.8	1096.1	1023.1	935.2
30°	1781.6	1684.1	1601.4	1509.2	1415.1	1325.5	1240.2	1165.5	1074.1	1000.2	912.4
32.5°	1721.0	1625.2	1544.3	1454.7	1362.4	1275.4	1190.1	1118.0	1026.6	954.5	869.3
35°	1620.8	1530.3	1453.8	1368.5	1281.5	1199.8	1122.4	1049.5	961.6	893.0	813.0
37.5°	1490.7	1408.1	1338.6	1259.5	1179.6	1105.7	1029.3	966.8	888.6	824.5	746.2
40°	1335.1	1262.2	1200.6	1130.3	1058.3	994.1	929.9	869.3	792.8	735.7	668.9
42.5°	1163.7	1101.3	1048.6	987.1	924.7	870.2	814.8	762.0	698.8	646.9	584.5
45°	979.2	926.4	883.3	834.1	782.3	731.3	690.9	646.9	588.0	549.3	496.6
47.5°	788.4	748.0	715.5	677.7	636.4	604.7	566.0	530.9	487.8	451.8	408.7
50°	607.4	579.2	556.4	530.0	500.1	471.1	448.3	421.0	388.5	359.5	325.2
52.5°	449.1	430.7	416.6	399.0	378.8	363.9	342.8	322.6	298.0	276.0	249.6
55°	321.7	311.1	302.4	291.8	277.7	264.6	254.0	240.0	222.4	205.7	186.3
57.5°	231.2	219.7	218.9	207.4	202.2	192.5	182.8	172.3	160.0	148.5	134.5
60°	160.0	152.1	148.5	144.1	138.0	131.8	127.4	120.4	111.6	103.7	93.2
62.5°	108.1	102.8	101.1	99.3	94.0	91.4	86.1	81.7	75.6	69.4	62.4
65°	71.2	67.7	65.9	63.3	60.6	58.9	56.3	52.7	47.5	43.9	39.6
67.5°	44.8	42.2	40.4	39.6	36.9	36.0	33.4	31.6	28.1	26.4	23.7
70°	25.5	24.6	22.9	22.9	21.1	19.3	18.5	16.7	15.8	14.1	13.2
72.5°	13.2	13.2	12.3	11.4	10.5	10.5	9.7	8.8	7.9	7.0	7.0
75°	6.2	6.2	6.2	5.3	5.3	5.3	4.4	4.4	4.4	3.5	3.5
77.5°	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.8	1.8
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	2.6	1.8	1.8	1.8	1.8	2.6	2.6	2.6	2.6	2.6	2.6
87.5°	2.6	2.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4
2.5°	428.0	426.3	421.9	421.0	411.3	409.6	404.3	396.4	390.3	388.5	390.3
5°	492.2	484.3	471.1	468.5	452.7	447.4	436.0	423.7	413.1	407.0	404.3
7.5°	558.1	544.9	525.6	515.9	493.1	481.7	465.0	447.4	430.7	419.3	412.2
10°	621.4	600.3	565.2	557.3	529.1	510.7	487.8	464.1	443.0	427.2	415.7
12.5°	681.2	655.7	619.7	597.7	560.8	537.0	508.0	479.0	452.7	431.6	415.7
15°	742.7	709.3	664.5	633.7	591.5	559.9	524.7	491.3	460.6	434.2	414.9
17.5°	793.7	752.4	699.6	662.7	613.5	575.7	535.3	496.6	463.2	433.3	411.3
20°	831.5	783.1	723.4	680.3	625.8	583.6	539.7	497.5	460.6	428.0	404.3
22.5°	857.0	801.6	736.6	689.1	632.0	586.3	538.8	494.8	457.1	423.7	398.2
25°	869.3	809.5	741.8	690.9	631.1	583.6	534.4	489.6	450.9	416.6	392.0
27.5°	867.5	804.2	734.8	681.2	620.5	571.3	521.2	476.4	438.6	404.3	378.8
30°	842.0	779.6	709.3	654.8	595.0	545.8	495.7	451.8	414.9	379.7	356.0
32.5°	802.5	738.3	669.8	609.1	558.1	509.8	462.3	417.5	382.3	348.1	325.2
35°	748.9	687.3	621.4	569.6	514.2	467.6	421.9	379.7	346.3	312.9	291.8
37.5°	686.5	627.6	566.9	513.3	465.0	421.9	378.8	341.0	307.6	277.7	257.5
40°	614.4	559.9	504.5	458.8	411.3	371.8	332.2	295.3	268.1	240.8	223.3
42.5°	536.2	487.8	437.7	398.2	355.1	319.9	282.1	255.8	229.4	204.8	190.7
45°	454.4	412.2	370.0	334.0	298.8	268.1	235.6	210.9	190.7	170.5	158.2
47.5°	373.6	337.5	303.2	274.2	243.5	218.0	195.1	173.2	153.8	137.1	127.4
50°	291.8	268.1	240.8	217.1	192.5	171.4	150.3	134.5	119.5	107.2	101.1
52.5°	227.6	205.7	183.7	164.4	146.8	129.2	115.1	102.0	91.4	83.5	79.1
55°	169.6	152.1	135.4	120.4	106.4	94.9	85.3	77.3	70.3	64.2	62.4
57.5°	121.3	108.1	96.7	85.3	76.5	69.4	63.3	58.0	53.6	49.2	48.3
60°	84.4	74.7	67.7	60.6	55.4	50.1	46.6	43.1	39.6	36.9	36.0
62.5°	56.3	51.0	45.7	42.2	39.6	35.2	33.4	30.8	29.0	26.4	25.5
65°	36.0	32.5	29.9	27.2	25.5	23.7	22.0	20.2	18.5	16.7	16.7
67.5°	22.0	19.3	18.5	16.7	14.9	14.1	13.2	11.4	10.5	10.5	9.7
70°	12.3	10.5	9.7	8.8	7.9	7.9	7.0	6.2	6.2	5.3	5.3
72.5°	6.2	6.2	5.3	5.3	4.4	4.4	3.5	3.5	3.5	2.6	2.6
75°	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6	1.8	1.8	1.8
77.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	2.6	2.6	2.6	2.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8
87.5°	2.6	2.6	2.6	2.6	2.6	1.8	1.8	1.8	1.8	1.8	1.8
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: P170837

CATALOG NUMBER: LDA4A18827D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	374.4	374.4	374.4	374.4	374.4	374.4	374.4	374.4
2.5°	383.2	374.4	372.7	372.7	335.8	313.8	297.1	292.7
5°	392.0	379.7	373.6	370.0	304.1	265.4	240.0	232.9
7.5°	396.4	378.8	369.2	361.2	273.4	223.3	196.0	188.1
10°	394.6	373.6	360.4	349.8	245.2	190.7	162.6	155.6
12.5°	391.1	367.4	350.7	337.5	221.5	165.2	139.8	132.7
15°	387.6	360.4	341.0	325.2	202.2	147.7	124.8	118.7
17.5°	380.6	352.5	330.5	313.8	189.9	140.6	121.3	117.8
20°	372.7	343.7	320.8	304.1	186.3	147.7	136.2	136.2
22.5°	367.4	337.5	315.5	298.8	192.5	164.4	160.0	162.6
25°	360.4	332.2	310.3	294.4	198.6	177.5	174.9	178.4
27.5°	348.9	320.8	299.7	283.9	195.1	175.8	173.2	174.9
30°	326.1	298.8	280.4	263.7	181.1	162.6	158.2	159.1
32.5°	297.1	270.7	253.1	237.3	160.8	143.3	138.9	138.9
35°	265.4	240.8	224.1	210.1	141.5	125.7	121.3	120.4
37.5°	233.8	210.9	196.9	183.7	123.9	109.9	105.5	104.6
40°	202.2	181.9	168.8	158.2	109.0	97.6	93.2	92.3
42.5°	172.3	154.7	143.3	134.5	94.9	86.1	82.6	81.7
45°	142.4	128.3	119.5	112.5	82.6	73.8	73.0	73.0
47.5°	115.1	103.7	97.6	93.2	70.3	63.3	62.4	63.3
50°	92.3	84.4	80.0	76.5	59.8	53.6	51.0	51.0
52.5°	73.0	67.7	65.0	62.4	49.2	43.1	39.6	38.7
55°	58.0	53.6	51.9	50.1	38.7	31.6	28.1	27.2
57.5°	45.7	42.2	40.4	38.7	29.0	22.0	18.5	17.6
60°	34.3	31.6	29.9	29.0	20.2	13.2	10.5	9.7
62.5°	24.6	22.9	21.1	20.2	12.3	7.0	4.4	3.5
65°	14.9	14.9	13.2	12.3	6.2	2.6	1.8	0.9
67.5°	8.8	7.9	7.0	7.0	2.6	1.8	0.9	0.9
70°	4.4	4.4	3.5	3.5	1.8	0.9	0.9	0.9
72.5°	2.6	2.6	2.6	1.8	1.8	0.9	0.9	0.9
75°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9
77.5°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.0
80°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.0
82.5°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9
85°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.0
87.5°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9
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)