

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: P170840

Luminaire Tested: **LDA4A18840D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170840
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: LDA4A18840D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1576.4 lumens
Efficiency: N/A
Efficacy: 54.1 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

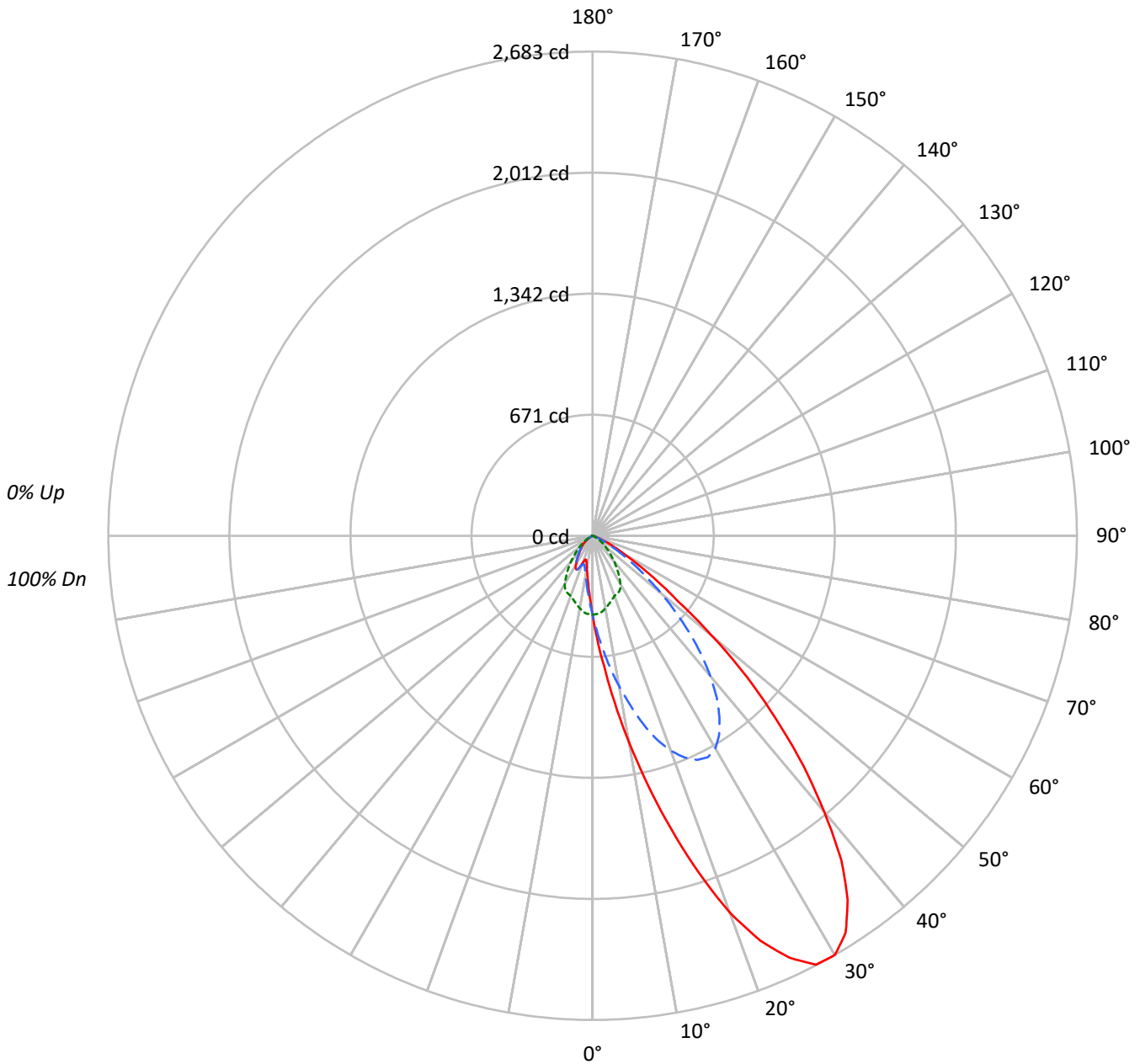
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

Luminous Intensity Polar Plot





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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°	53902	53902	53902
5°	89680	53476	33666
10°	145201	51139	22745
15°	214722	48474	17686
20°	291690	46598	20871
25°	351157	46776	28349
30°	382104	43839	26449
35°	370902	36922	21171
40°	321292	29740	17341
45°	250544	22904	14862
50°	166159	17136	11418
55°	92664	12580	6838
60°	48845	8363	2788
65°	26355	4203	292
70°	12586	1479	361
75°	4384	1001	477
80°	1492	1492	0
85°	4387	2972	0



TEST NUMBER: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.6	3.0
10°-20°	184.0	11.7
20°-30°	378.4	24.0
30°-40°	452.0	28.7
40°-50°	333.8	21.2
50°-60°	140.5	8.9
60°-70°	34.5	2.2
70°-80°	4.7	0.3
80°-90°	1.9	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°	609.0	38.6
0°-40°	1061.0	67.3
0°-60°	1535.3	97.4
0°-90°	1576.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1576.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	437	437	437	437	437	
5°	724	624	432	310	272	83
15°	1682	1079	380	172	138	493
25°	2580	1371	344	207	208	1180
35°	2463	1225	245	147	141	1511
45°	1436	755	131	86	85	1103
55°	431	280	58	37	32	411
65°	90	62	14	3	1	98
75°	9	5	2	1	1	13
85°	3	3	2	1	0	3
90°	0	0	0	0	0	



TEST NUMBER: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0
2.5°	568.4	561.2	561.2	563.2	569.4	564.3	560.2	556.1	560.2	550.9	554.0
5°	724.3	723.3	723.3	715.1	722.3	723.3	715.1	707.9	709.9	696.6	696.6
7.5°	929.5	923.3	921.3	910.0	918.2	917.2	903.8	891.5	891.5	870.0	864.9
10°	1159.3	1151.1	1147.0	1132.6	1139.8	1135.7	1116.2	1097.7	1092.6	1061.8	1050.5
12.5°	1412.7	1407.6	1401.4	1382.9	1389.1	1380.9	1353.2	1326.5	1315.2	1274.2	1254.7
15°	1681.5	1689.7	1679.4	1657.9	1662.0	1647.6	1611.7	1574.8	1557.4	1502.0	1473.2
17.5°	1958.5	1968.8	1957.5	1932.8	1931.8	1912.3	1863.1	1817.9	1792.3	1721.5	1683.5
20°	2222.2	2225.2	2210.9	2184.2	2178.0	2151.4	2091.9	2028.3	2003.6	1916.4	1868.2
22.5°	2429.4	2440.7	2423.2	2403.7	2384.3	2350.4	2280.6	2210.9	2176.0	2076.5	2018.0
25°	2580.2	2605.9	2585.3	2562.8	2541.2	2501.2	2423.2	2348.3	2305.3	2194.5	2127.8
27.5°	2679.7	2704.3	2681.8	2656.1	2633.6	2587.4	2502.2	2430.4	2378.1	2257.0	2185.2
30°	2682.8	2712.5	2689.0	2661.3	2639.7	2593.5	2506.3	2432.5	2374.0	2252.9	2178.0
32.5°	2608.9	2632.5	2608.9	2585.3	2560.7	2516.6	2429.4	2358.6	2297.0	2181.1	2106.2
35°	2463.2	2483.8	2460.2	2432.5	2415.0	2376.0	2292.9	2225.2	2163.7	2057.0	1991.3
37.5°	2262.2	2280.6	2259.1	2243.7	2218.1	2183.2	2107.3	2046.7	1988.2	1891.8	1833.3
40°	1995.4	2034.4	2013.9	2003.6	1980.0	1950.3	1883.6	1830.3	1776.9	1692.8	1644.6
42.5°	1728.7	1765.6	1747.2	1740.0	1719.5	1693.8	1638.4	1593.3	1544.0	1474.3	1433.2
45°	1436.3	1475.3	1457.8	1454.8	1437.3	1417.8	1358.3	1334.7	1291.6	1226.0	1206.5
47.5°	1161.3	1168.5	1152.1	1153.1	1140.8	1127.5	1079.3	1064.9	1043.4	993.1	970.5
50°	865.9	871.0	857.7	861.8	853.6	845.4	812.5	805.4	792.0	758.2	744.8
52.5°	596.1	619.7	610.4	614.5	610.4	607.3	594.0	581.7	575.5	554.0	547.8
55°	430.9	432.9	425.8	429.9	426.8	425.8	417.6	410.4	407.3	394.0	391.9
57.5°	298.5	300.6	300.6	298.5	297.5	295.5	290.3	286.2	284.2	281.1	274.9
60°	198.0	206.2	203.1	205.2	204.2	204.2	200.1	197.0	196.0	189.8	189.8
62.5°	135.4	140.6	138.5	139.5	138.5	138.5	135.4	133.4	133.4	132.3	129.3
65°	90.3	93.4	91.3	92.3	92.3	92.3	90.3	88.2	88.2	87.2	85.2
67.5°	57.5	59.5	58.5	59.5	58.5	59.5	57.5	56.4	55.4	55.4	54.4
70°	34.9	35.9	34.9	35.9	34.9	34.9	33.9	33.9	32.8	31.8	31.8
72.5°	18.5	19.5	19.5	19.5	19.5	19.5	18.5	17.4	17.4	17.4	16.4
75°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.2	8.2	8.2
77.5°	4.1	4.1	4.1	4.1	5.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85°	3.1	3.1	3.1	3.1	3.1	3.1	4.1	4.1	4.1	4.1	3.1
87.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	5.1	5.1	4.1	4.1
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: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0
2.5°	545.8	540.7	538.6	534.5	529.4	526.3	523.2	524.2	517.1	511.9	504.8
5°	683.3	672.0	665.8	656.6	645.3	636.1	627.9	623.8	610.4	601.2	581.7
7.5°	845.4	825.9	813.6	797.1	777.7	761.2	744.8	733.5	713.0	695.6	665.8
10°	1022.8	993.1	971.6	946.9	917.2	890.5	865.9	845.4	814.6	787.9	748.9
12.5°	1216.7	1174.7	1143.9	1108.0	1065.9	1029.0	984.9	961.3	919.2	882.3	832.0
15°	1423.0	1367.6	1324.5	1275.2	1219.8	1170.6	1114.2	1079.3	1023.9	976.7	914.1
17.5°	1621.0	1551.2	1494.8	1432.2	1363.5	1299.8	1233.2	1183.9	1116.2	1057.7	982.8
20°	1793.3	1710.2	1641.5	1565.6	1484.5	1406.5	1333.7	1268.0	1189.0	1120.3	1035.2
22.5°	1933.9	1837.4	1758.4	1670.2	1576.8	1488.6	1405.5	1330.6	1240.3	1164.4	1071.1
25°	2035.4	1929.8	1841.5	1744.1	1641.5	1540.9	1452.7	1370.6	1272.1	1191.1	1091.6
27.5°	2088.8	1977.0	1883.6	1779.0	1670.2	1565.6	1470.2	1382.9	1279.3	1194.2	1091.6
30°	2079.6	1965.7	1869.2	1761.5	1651.7	1547.1	1447.6	1360.4	1253.7	1167.5	1064.9
32.5°	2008.8	1896.9	1802.6	1697.9	1590.2	1488.6	1389.1	1305.0	1198.3	1114.2	1014.6
35°	1891.8	1786.1	1696.9	1597.4	1495.8	1400.4	1310.1	1225.0	1122.4	1042.3	949.0
37.5°	1740.0	1643.5	1562.5	1470.2	1376.8	1290.6	1201.4	1128.5	1037.2	962.3	871.0
40°	1558.4	1473.2	1401.4	1319.3	1235.2	1160.3	1085.4	1014.6	925.4	858.7	780.7
42.5°	1358.3	1285.5	1223.9	1152.1	1079.3	1015.7	951.0	889.5	815.6	755.1	682.2
45°	1142.9	1081.3	1031.1	973.6	913.1	853.6	806.4	755.1	686.3	641.2	579.6
47.5°	920.3	873.1	835.1	791.0	742.8	705.8	660.7	619.7	569.4	527.3	477.1
50°	708.9	676.1	649.4	618.6	583.8	549.9	523.2	491.4	453.5	419.6	379.6
52.5°	524.2	502.7	486.3	465.8	442.2	424.7	400.1	376.5	347.8	322.1	291.4
55°	375.5	363.2	352.9	340.6	324.2	308.8	296.5	280.1	259.6	240.1	217.5
57.5°	269.8	256.5	255.5	242.1	236.0	224.7	213.4	201.1	186.7	173.4	157.0
60°	186.7	177.5	173.4	168.3	161.1	153.9	148.8	140.6	130.3	121.1	108.7
62.5°	126.2	120.0	118.0	115.9	109.8	106.7	100.5	95.4	88.2	81.0	72.8
65°	83.1	79.0	76.9	73.9	70.8	68.7	65.7	61.6	55.4	51.3	46.2
67.5°	52.3	49.2	47.2	46.2	43.1	42.1	39.0	36.9	32.8	30.8	27.7
70°	29.8	28.7	26.7	26.7	24.6	22.6	21.5	19.5	18.5	16.4	15.4
72.5°	15.4	15.4	14.4	13.3	12.3	12.3	11.3	10.3	9.2	8.2	8.2
75°	7.2	7.2	7.2	6.2	6.2	6.2	5.1	5.1	5.1	4.1	4.1
77.5°	4.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.1	2.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	3.1	2.1	2.1	2.1	2.1	3.1	3.1	3.1	3.1	3.1	3.1
87.5°	3.1	3.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
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: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0
2.5°	499.6	497.6	492.4	491.4	480.1	478.1	471.9	462.7	455.5	453.5	455.5
5°	574.5	565.3	549.9	546.8	528.4	522.2	508.9	494.5	482.2	475.0	471.9
7.5°	651.5	636.1	613.5	602.2	575.5	562.2	542.7	522.2	502.7	489.4	481.2
10°	725.3	700.7	659.7	650.4	617.6	596.1	569.4	541.7	517.1	498.6	485.3
12.5°	795.1	765.3	723.3	697.6	654.5	626.8	593.0	559.1	528.4	503.7	485.3
15°	866.9	827.9	775.6	739.7	690.4	653.5	612.5	573.5	537.6	506.8	484.2
17.5°	926.4	878.2	816.6	773.5	716.1	672.0	624.8	579.6	540.7	505.8	480.1
20°	970.5	914.1	844.3	794.1	730.5	681.2	629.9	580.7	537.6	499.6	471.9
22.5°	1000.3	935.6	859.7	804.3	737.6	684.3	628.9	577.6	533.5	494.5	464.7
25°	1014.6	944.9	865.9	806.4	736.6	681.2	623.8	571.4	526.3	486.3	457.6
27.5°	1012.6	938.7	857.7	795.1	724.3	666.9	608.4	556.1	511.9	471.9	442.2
30°	982.8	910.0	827.9	764.3	694.6	637.1	578.6	527.3	484.2	443.2	415.5
32.5°	936.7	861.8	781.8	711.0	651.5	595.0	539.6	487.3	446.3	406.3	379.6
35°	874.1	802.3	725.3	664.8	600.2	545.8	492.4	443.2	404.2	365.2	340.6
37.5°	801.2	732.5	661.7	599.1	542.7	492.4	442.2	398.1	359.1	324.2	300.6
40°	717.1	653.5	588.9	535.5	480.1	434.0	387.8	344.7	312.9	281.1	260.6
42.5°	625.8	569.4	510.9	464.7	414.5	373.4	329.3	298.5	267.8	239.0	222.6
45°	530.4	481.2	431.9	389.9	348.8	312.9	274.9	246.2	222.6	199.0	184.7
47.5°	436.0	394.0	353.9	320.1	284.2	254.4	227.8	202.1	179.5	160.0	148.8
50°	340.6	312.9	281.1	253.4	224.7	200.1	175.4	157.0	139.5	125.2	118.0
52.5°	265.7	240.1	214.4	191.8	171.3	150.8	134.4	119.0	106.7	97.5	92.3
55°	198.0	177.5	158.0	140.6	124.1	110.8	99.5	90.3	82.1	74.9	72.8
57.5°	141.6	126.2	112.9	99.5	89.3	81.0	73.9	67.7	62.6	57.5	56.4
60°	98.5	87.2	79.0	70.8	64.6	58.5	54.4	50.3	46.2	43.1	42.1
62.5°	65.7	59.5	53.3	49.2	46.2	41.0	39.0	35.9	33.9	30.8	29.8
65°	42.1	38.0	34.9	31.8	29.8	27.7	25.6	23.6	21.5	19.5	19.5
67.5°	25.6	22.6	21.5	19.5	17.4	16.4	15.4	13.3	12.3	12.3	11.3
70°	14.4	12.3	11.3	10.3	9.2	9.2	8.2	7.2	7.2	6.2	6.2
72.5°	7.2	7.2	6.2	6.2	5.1	5.1	4.1	4.1	4.1	3.1	3.1
75°	4.1	4.1	3.1	3.1	3.1	3.1	3.1	3.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85°	3.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
87.5°	3.1	3.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1	2.1
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: P170840

CATALOG NUMBER: LDA4A18840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	437.0	437.0	437.0	437.0	437.0	437.0	437.0	437.0
2.5°	447.3	437.0	435.0	435.0	391.9	366.3	346.8	341.6
5°	457.6	443.2	436.0	431.9	355.0	309.8	280.1	271.9
7.5°	462.7	442.2	430.9	421.7	319.1	260.6	228.8	219.5
10°	460.6	436.0	420.6	408.3	286.2	222.6	189.8	181.6
12.5°	456.5	428.8	409.3	394.0	258.5	192.9	163.1	154.9
15°	452.4	420.6	398.1	379.6	236.0	172.4	145.7	138.5
17.5°	444.2	411.4	385.7	366.3	221.6	164.1	141.6	137.5
20°	435.0	401.1	374.5	355.0	217.5	172.4	159.0	159.0
22.5°	428.8	394.0	368.3	348.8	224.7	191.8	186.7	189.8
25°	420.6	387.8	362.2	343.7	231.9	207.2	204.2	208.3
27.5°	407.3	374.5	349.8	331.4	227.8	205.2	202.1	204.2
30°	380.6	348.8	327.3	307.8	211.3	189.8	184.7	185.7
32.5°	346.8	316.0	295.5	277.0	187.7	167.2	162.1	162.1
35°	309.8	281.1	261.6	245.2	165.2	146.7	141.6	140.6
37.5°	272.9	246.2	229.8	214.4	144.7	128.2	123.1	122.1
40°	236.0	212.4	197.0	184.7	127.2	113.9	108.7	107.7
42.5°	201.1	180.6	167.2	157.0	110.8	100.5	96.4	95.4
45°	166.2	149.8	139.5	131.3	96.4	86.2	85.2	85.2
47.5°	134.4	121.1	113.9	108.7	82.1	73.9	72.8	73.9
50°	107.7	98.5	93.4	89.3	69.8	62.6	59.5	59.5
52.5°	85.2	79.0	75.9	72.8	57.5	50.3	46.2	45.1
55°	67.7	62.6	60.5	58.5	45.1	36.9	32.8	31.8
57.5°	53.3	49.2	47.2	45.1	33.9	25.6	21.5	20.5
60°	40.0	36.9	34.9	33.9	23.6	15.4	12.3	11.3
62.5°	28.7	26.7	24.6	23.6	14.4	8.2	5.1	4.1
65°	17.4	17.4	15.4	14.4	7.2	3.1	2.1	1.0
67.5°	10.3	9.2	8.2	8.2	3.1	2.1	1.0	1.0
70°	5.1	5.1	4.1	4.1	2.1	1.0	1.0	1.0
72.5°	3.1	3.1	3.1	2.1	2.1	1.0	1.0	1.0
75°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	1.0
77.5°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	0.0
80°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	0.0
82.5°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	1.0
85°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	0.0
87.5°	2.1	2.1	2.1	2.1	2.1	1.0	1.0	1.0
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)