

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: P170862

Luminaire Tested: **LDA4A28830D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170862
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: LDA4A28830D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2289.2 lumens
Efficiency: N/A
Efficacy: 51.5 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

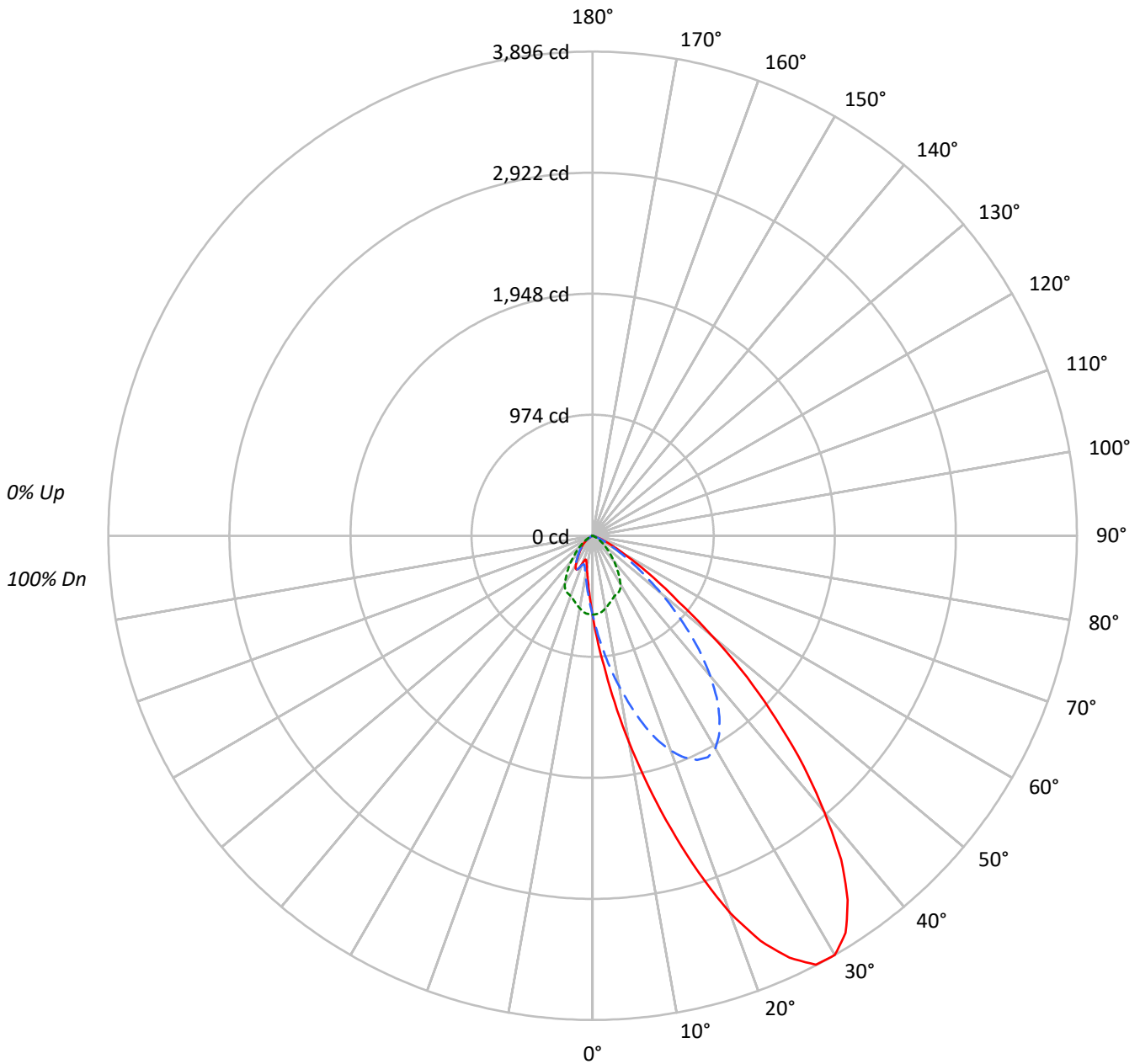
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170862

CATALOG NUMBER: LDA4A28830D010TE 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°	78287	78287	78287
5°	130230	77658	48883
10°	210856	74272	33028
15°	311810	70386	25680
20°	423581	67665	30308
25°	509941	67926	41156
30°	554882	63651	38413
35°	538630	53621	30733
40°	466577	43185	25183
45°	363841	33265	21578
50°	241285	24869	16579
55°	134555	18257	9935
60°	70924	12137	4046
65°	38263	6100	438
70°	18284	2164	541
75°	6386	1430	715
80°	2131	2131	0
85°	6369	4246	0



TEST NUMBER: P170862

CATALOG NUMBER: LDA4A28830D010TE LAR25NF 4LLWW1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.7	3.0
10°-20°	267.2	11.7
20°-30°	549.5	24.0
30°-40°	656.4	28.7
40°-50°	484.7	21.2
50°-60°	204.0	8.9
60°-70°	50.1	2.2
70°-80°	6.9	0.3
80°-90°	2.7	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°	884.4	38.6
0°-40°	1540.8	67.3
0°-60°	2229.5	97.4
0°-90°	2289.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2289.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	635	635	635	635	635	
5°	1052	906	627	450	395	120
15°	2442	1567	551	250	201	716
25°	3747	1990	499	301	302	1714
35°	3577	1779	356	213	204	2194
45°	2086	1096	191	125	124	1601
55°	626	407	85	54	46	597
65°	131	89	21	4	2	143
75°	13	7	3	2	2	19
85°	4	4	3	2	0	4
90°	0	0	0	0	0	



TEST NUMBER: P170862

CATALOG NUMBER: LDA4A28830D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7
2.5°	825.4	814.9	814.9	817.9	826.9	819.4	813.4	807.5	813.4	800.0	804.5
5°	1051.8	1050.3	1050.3	1038.4	1048.8	1050.3	1038.4	1028.0	1031.0	1011.6	1011.6
7.5°	1349.8	1340.8	1337.9	1321.5	1333.4	1331.9	1312.5	1294.7	1294.7	1263.4	1255.9
10°	1683.5	1671.6	1665.6	1644.8	1655.2	1649.2	1620.9	1594.1	1586.7	1542.0	1525.6
12.5°	2051.5	2044.0	2035.1	2008.3	2017.2	2005.3	1965.1	1926.4	1910.0	1850.4	1822.1
15°	2441.8	2453.8	2438.9	2407.6	2413.5	2392.7	2340.5	2286.9	2261.6	2181.1	2139.4
17.5°	2844.1	2859.0	2842.6	2806.8	2805.4	2777.0	2705.5	2640.0	2602.7	2499.9	2444.8
20°	3227.0	3231.4	3210.6	3171.9	3162.9	3124.2	3037.8	2945.4	2909.6	2783.0	2713.0
22.5°	3527.9	3544.3	3519.0	3490.7	3462.4	3413.2	3311.9	3210.6	3159.9	3015.4	2930.5
25°	3746.9	3784.2	3754.4	3721.6	3690.3	3632.2	3519.0	3410.2	3347.7	3186.8	3089.9
27.5°	3891.4	3927.2	3894.4	3857.2	3824.4	3757.4	3633.7	3529.4	3453.4	3277.6	3173.3
30°	3895.9	3939.1	3904.8	3864.6	3833.3	3766.3	3639.7	3532.4	3447.5	3271.7	3162.9
32.5°	3788.6	3822.9	3788.6	3754.4	3718.6	3654.6	3527.9	3425.1	3335.7	3167.4	3058.6
35°	3577.1	3606.9	3572.6	3532.4	3507.1	3450.5	3329.8	3231.4	3142.1	2987.1	2891.8
37.5°	3285.1	3311.9	3280.6	3258.3	3221.0	3170.4	3060.1	2972.2	2887.3	2747.2	2662.3
40°	2897.7	2954.3	2924.5	2909.6	2875.4	2832.2	2735.3	2657.9	2580.4	2458.2	2388.2
42.5°	2510.4	2564.0	2537.2	2526.8	2497.0	2459.7	2379.3	2313.7	2242.2	2140.9	2081.3
45°	2085.8	2142.4	2117.1	2112.6	2087.3	2058.9	1972.5	1938.3	1875.7	1780.3	1752.0
47.5°	1686.5	1696.9	1673.1	1674.6	1656.7	1637.3	1567.3	1546.4	1515.2	1442.2	1409.4
50°	1257.4	1264.9	1245.5	1251.5	1239.5	1227.6	1179.9	1169.5	1150.2	1101.0	1081.6
52.5°	865.6	899.9	886.4	892.4	886.4	882.0	862.6	844.7	835.8	804.5	795.6
55°	625.7	628.7	618.3	624.2	619.8	618.3	606.4	595.9	591.5	572.1	569.1
57.5°	433.5	436.5	436.5	433.5	432.1	429.1	421.6	415.7	412.7	408.2	399.3
60°	287.5	299.5	295.0	298.0	296.5	296.5	290.5	286.0	284.6	275.6	275.6
62.5°	196.7	204.1	201.1	202.6	201.1	201.1	196.7	193.7	193.7	192.2	187.7
65°	131.1	135.6	132.6	134.1	134.1	134.1	131.1	128.1	128.1	126.6	123.7
67.5°	83.4	86.4	84.9	86.4	84.9	86.4	83.4	81.9	80.5	80.5	79.0
70°	50.7	52.1	50.7	52.1	50.7	50.7	49.2	49.2	47.7	46.2	46.2
72.5°	26.8	28.3	28.3	28.3	28.3	28.3	26.8	25.3	25.3	25.3	23.8
75°	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	11.9	11.9	11.9
77.5°	6.0	6.0	6.0	6.0	7.4	6.0	6.0	6.0	6.0	6.0	6.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	4.5	4.5	4.5	4.5	4.5	4.5	6.0	6.0	6.0	6.0	4.5
87.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.4	7.4	6.0	6.0
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: P170862

CATALOG NUMBER: LDA4A28830D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7
2.5°	792.6	785.1	782.2	776.2	768.8	764.3	759.8	761.3	750.9	743.4	733.0
5°	992.2	975.8	966.9	953.5	937.1	923.7	911.8	905.8	886.4	873.0	844.7
7.5°	1227.6	1199.3	1181.4	1157.6	1129.3	1105.5	1081.6	1065.2	1035.4	1010.1	966.9
10°	1485.4	1442.2	1410.9	1375.1	1331.9	1293.2	1257.4	1227.6	1182.9	1144.2	1087.6
12.5°	1766.9	1705.9	1661.2	1609.0	1547.9	1494.3	1430.2	1396.0	1334.9	1281.3	1208.3
15°	2066.4	1985.9	1923.4	1851.9	1771.4	1699.9	1618.0	1567.3	1486.9	1418.3	1327.4
17.5°	2353.9	2252.6	2170.7	2079.8	1980.0	1887.6	1790.8	1719.3	1620.9	1536.0	1427.3
20°	2604.2	2483.5	2383.7	2273.5	2155.8	2042.6	1936.8	1841.4	1726.7	1626.9	1503.2
22.5°	2808.3	2668.3	2553.6	2425.4	2289.9	2161.7	2041.1	1932.3	1801.2	1691.0	1555.4
25°	2955.8	2802.4	2674.2	2532.7	2383.7	2237.7	2109.6	1990.4	1847.4	1729.7	1585.2
27.5°	3033.3	2870.9	2735.3	2583.4	2425.4	2273.5	2134.9	2008.3	1857.8	1734.2	1585.2
30°	3019.9	2854.5	2714.5	2558.0	2398.6	2246.7	2102.2	1975.5	1820.6	1695.4	1546.4
32.5°	2917.1	2754.7	2617.6	2465.7	2309.2	2161.7	2017.2	1895.1	1740.1	1618.0	1473.4
35°	2747.2	2593.8	2464.2	2319.7	2172.2	2033.6	1902.5	1778.9	1629.9	1513.7	1378.1
37.5°	2526.8	2386.7	2269.0	2134.9	1999.4	1874.2	1744.6	1638.8	1506.2	1397.5	1264.9
40°	2263.1	2139.4	2035.1	1915.9	1793.8	1685.0	1576.2	1473.4	1343.8	1247.0	1133.8
42.5°	1972.5	1866.8	1777.4	1673.1	1567.3	1474.9	1381.1	1291.7	1184.4	1096.5	990.7
45°	1659.7	1570.3	1497.3	1413.9	1326.0	1239.5	1171.0	1096.5	996.7	931.1	841.8
47.5°	1336.4	1267.8	1212.7	1148.7	1078.6	1025.0	959.5	899.9	826.9	765.8	692.8
50°	1029.5	981.8	943.1	898.4	847.7	798.5	759.8	713.6	658.5	609.3	551.2
52.5°	761.3	730.0	706.2	676.4	642.1	616.8	581.0	546.8	505.1	467.8	423.1
55°	545.3	527.4	512.5	494.6	470.8	448.4	430.6	406.7	376.9	348.6	315.8
57.5°	391.8	372.5	371.0	351.6	342.7	326.3	309.9	292.0	271.1	251.8	227.9
60°	271.1	257.7	251.8	244.3	233.9	223.5	216.0	204.1	189.2	175.8	157.9
62.5°	183.2	174.3	171.3	168.4	159.4	154.9	146.0	138.6	128.1	117.7	105.8
65°	120.7	114.7	111.7	107.3	102.8	99.8	95.3	89.4	80.5	74.5	67.0
67.5°	76.0	71.5	68.5	67.0	62.6	61.1	56.6	53.6	47.7	44.7	40.2
70°	43.2	41.7	38.7	38.7	35.8	32.8	31.3	28.3	26.8	23.8	22.3
72.5°	22.3	22.3	20.9	19.4	17.9	17.9	16.4	14.9	13.4	11.9	11.9
75°	10.4	10.4	10.4	8.9	8.9	8.9	7.4	7.4	7.4	6.0	6.0
77.5°	6.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
85°	4.5	3.0	3.0	3.0	3.0	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	4.5	4.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
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: P170862

CATALOG NUMBER: LDA4A28830D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7
2.5°	725.5	722.6	715.1	713.6	697.2	694.3	685.3	671.9	661.5	658.5	661.5
5°	834.3	820.9	798.5	794.1	767.3	758.3	739.0	718.1	700.2	689.8	685.3
7.5°	946.0	923.7	890.9	874.5	835.8	816.4	788.1	758.3	730.0	710.6	698.7
10°	1053.3	1017.6	958.0	944.6	896.9	865.6	826.9	786.6	750.9	724.1	704.7
12.5°	1154.6	1111.4	1050.3	1013.1	950.5	910.3	861.1	812.0	767.3	731.5	704.7
15°	1258.9	1202.3	1126.3	1074.2	1002.7	949.0	889.4	832.8	780.7	736.0	703.2
17.5°	1345.3	1275.3	1185.9	1123.3	1039.9	975.8	907.3	841.8	785.1	734.5	697.2
20°	1409.4	1327.4	1226.1	1153.1	1060.8	989.2	914.8	843.2	780.7	725.5	685.3
22.5°	1452.6	1358.7	1248.5	1168.0	1071.2	993.7	913.3	838.8	774.7	718.1	674.9
25°	1473.4	1372.1	1257.4	1171.0	1069.7	989.2	905.8	829.8	764.3	706.2	664.5
27.5°	1470.5	1363.2	1245.5	1154.6	1051.8	968.4	883.5	807.5	743.4	685.3	642.1
30°	1427.3	1321.5	1202.3	1109.9	1008.6	925.2	840.3	765.8	703.2	643.6	603.4
32.5°	1360.2	1251.5	1135.3	1032.5	946.0	864.1	783.7	707.7	648.1	590.0	551.2
35°	1269.3	1165.0	1053.3	965.4	871.6	792.6	715.1	643.6	587.0	530.4	494.6
37.5°	1163.6	1063.7	960.9	870.1	788.1	715.1	642.1	578.1	521.4	470.8	436.5
40°	1041.4	949.0	855.2	777.7	697.2	630.2	563.2	500.6	454.4	408.2	378.4
42.5°	908.8	826.9	741.9	674.9	601.9	542.3	478.2	433.5	388.8	347.1	323.3
45°	770.2	698.7	627.2	566.1	506.5	454.4	399.3	357.6	323.3	289.0	268.2
47.5°	633.2	572.1	514.0	464.8	412.7	369.5	330.7	293.5	260.7	232.4	216.0
50°	494.6	454.4	408.2	368.0	326.3	290.5	254.8	227.9	202.6	181.8	171.3
52.5°	385.9	348.6	311.4	278.6	248.8	219.0	195.2	172.8	154.9	141.5	134.1
55°	287.5	257.7	229.4	204.1	180.3	160.9	144.5	131.1	119.2	108.8	105.8
57.5°	205.6	183.2	163.9	144.5	129.6	117.7	107.3	98.3	90.9	83.4	81.9
60°	143.0	126.6	114.7	102.8	93.9	84.9	79.0	73.0	67.0	62.6	61.1
62.5°	95.3	86.4	77.5	71.5	67.0	59.6	56.6	52.1	49.2	44.7	43.2
65°	61.1	55.1	50.7	46.2	43.2	40.2	37.2	34.3	31.3	28.3	28.3
67.5°	37.2	32.8	31.3	28.3	25.3	23.8	22.3	19.4	17.9	17.9	16.4
70°	20.9	17.9	16.4	14.9	13.4	13.4	11.9	10.4	10.4	8.9	8.9
72.5°	10.4	10.4	8.9	8.9	7.4	7.4	6.0	6.0	6.0	4.5	4.5
75°	6.0	6.0	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0	3.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	4.5	4.5	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	4.5	4.5	4.5	4.5	4.5	3.0	3.0	3.0	3.0	3.0	3.0
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: P170862

CATALOG NUMBER: LDA4A28830D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	634.7	634.7	634.7	634.7	634.7	634.7	634.7	634.7
2.5°	649.6	634.7	631.7	631.7	569.1	531.9	503.6	496.1
5°	664.5	643.6	633.2	627.2	515.5	449.9	406.7	394.8
7.5°	671.9	642.1	625.7	612.3	463.3	378.4	332.2	318.8
10°	668.9	633.2	610.8	593.0	415.7	323.3	275.6	263.7
12.5°	663.0	622.7	594.4	572.1	375.4	280.1	236.9	225.0
15°	657.0	610.8	578.1	551.2	342.7	250.3	211.6	201.1
17.5°	645.1	597.4	560.2	531.9	321.8	238.4	205.6	199.6
20°	631.7	582.5	543.8	515.5	315.8	250.3	230.9	230.9
22.5°	622.7	572.1	534.8	506.5	326.3	278.6	271.1	275.6
25°	610.8	563.2	525.9	499.1	336.7	300.9	296.5	302.4
27.5°	591.5	543.8	508.0	481.2	330.7	298.0	293.5	296.5
30°	552.7	506.5	475.3	446.9	306.9	275.6	268.2	269.7
32.5°	503.6	458.9	429.1	402.3	272.6	242.8	235.4	235.4
35°	449.9	408.2	379.9	356.1	239.9	213.0	205.6	204.1
37.5°	396.3	357.6	333.7	311.4	210.1	186.2	178.8	177.3
40°	342.7	308.4	286.0	268.2	184.7	165.4	157.9	156.4
42.5°	292.0	262.2	242.8	227.9	160.9	146.0	140.0	138.6
45°	241.4	217.5	202.6	190.7	140.0	125.1	123.7	123.7
47.5°	195.2	175.8	165.4	157.9	119.2	107.3	105.8	107.3
50°	156.4	143.0	135.6	129.6	101.3	90.9	86.4	86.4
52.5°	123.7	114.7	110.2	105.8	83.4	73.0	67.0	65.6
55°	98.3	90.9	87.9	84.9	65.6	53.6	47.7	46.2
57.5°	77.5	71.5	68.5	65.6	49.2	37.2	31.3	29.8
60°	58.1	53.6	50.7	49.2	34.3	22.3	17.9	16.4
62.5°	41.7	38.7	35.8	34.3	20.9	11.9	7.4	6.0
65°	25.3	25.3	22.3	20.9	10.4	4.5	3.0	1.5
67.5°	14.9	13.4	11.9	11.9	4.5	3.0	1.5	1.5
70°	7.4	7.4	6.0	6.0	3.0	1.5	1.5	1.5
72.5°	4.5	4.5	4.5	3.0	3.0	1.5	1.5	1.5
75°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.5
77.5°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	0.0
80°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	0.0
82.5°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.5
85°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	0.0
87.5°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.5
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)