

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: P170866

Luminaire Tested: **LDA4A28930D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170866
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: LDA4A28930D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1957.6 lumens
Efficiency: N/A
Efficacy: 44.0 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

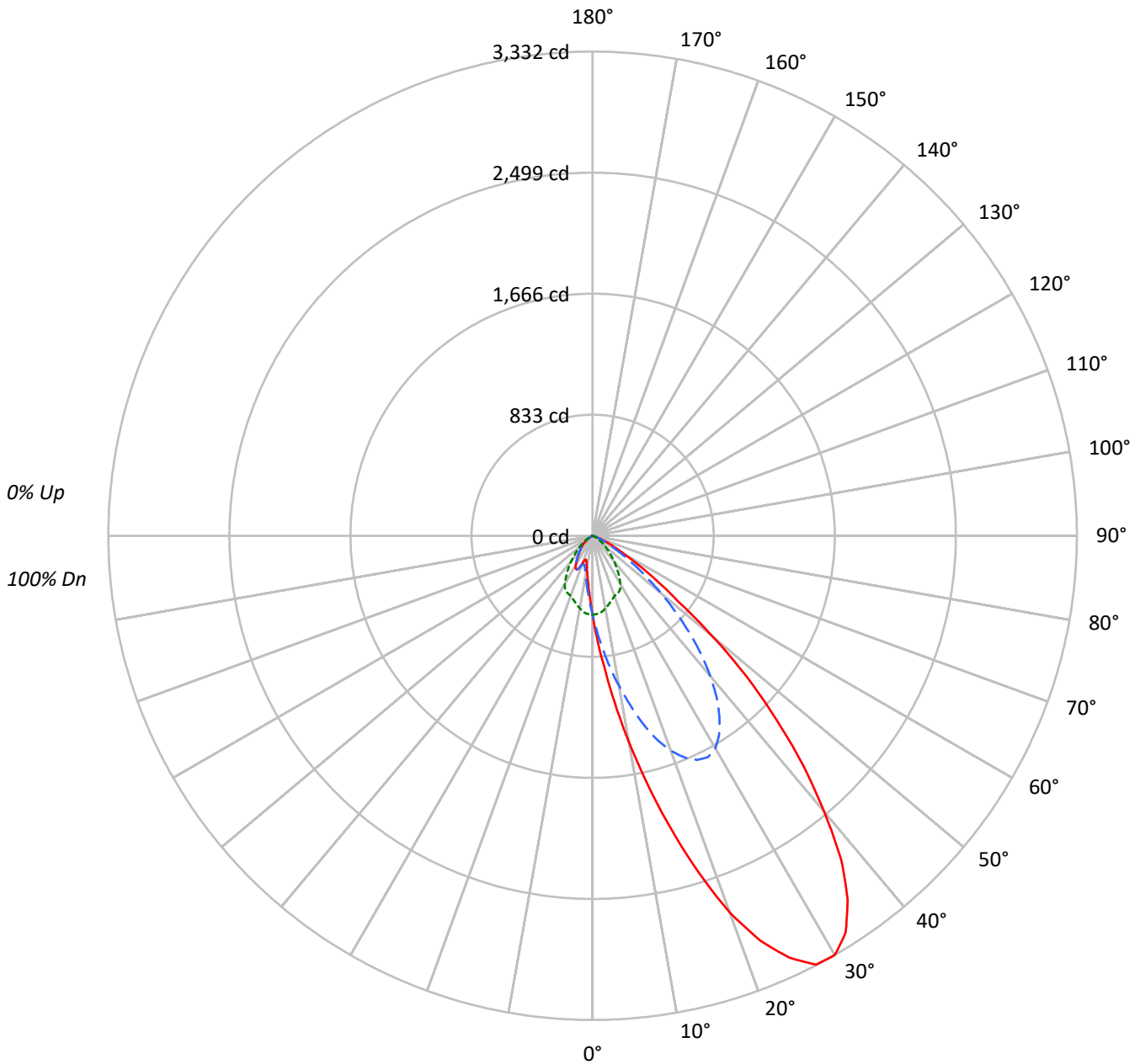
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	66952	66952	66952
5°	111373	66415	41801
10°	180320	63513	28244
15°	266656	60196	21964
20°	362243	57860	25924
25°	436095	58086	35195
30°	474525	54436	32844
35°	460631	45851	26276
40°	399014	36921	21544
45°	311143	28451	18438
50°	206341	21262	14181
55°	115071	15612	8494
60°	60661	10361	3454
65°	32718	5195	379
70°	15616	1839	469
75°	5481	1191	620
80°	1776	1776	0
85°	5378	3538	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.9	3.0
10°-20°	228.5	11.7
20°-30°	469.9	24.0
30°-40°	561.3	28.7
40°-50°	414.5	21.2
50°-60°	174.4	8.9
60°-70°	42.9	2.2
70°-80°	5.9	0.3
80°-90°	2.3	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°	756.3	38.6
0°-40°	1317.7	67.3
0°-60°	1906.6	97.4
0°-90°	1957.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1957.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	543	543	543	543	543	
5°	900	775	536	385	338	103
15°	2088	1340	471	214	172	613
25°	3204	1702	427	257	259	1465
35°	3059	1521	304	182	174	1876
45°	1784	938	163	107	106	1369
55°	535	348	73	46	40	511
65°	112	76	18	4	1	122
75°	12	6	2	1	1	16
85°	4	4	2	1	0	3
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	705.8	696.9	696.9	699.5	707.1	700.7	695.6	690.6	695.6	684.2	688.0
5°	899.5	898.2	898.2	888.0	897.0	898.2	888.0	879.1	881.7	865.1	865.1
7.5°	1154.3	1146.7	1144.1	1130.1	1140.3	1139.0	1122.5	1107.2	1107.2	1080.4	1074.0
10°	1439.7	1429.5	1424.4	1406.6	1415.5	1410.4	1386.2	1363.3	1356.9	1318.7	1304.7
12.5°	1754.4	1748.0	1740.4	1717.5	1725.1	1714.9	1680.5	1647.4	1633.4	1582.4	1558.2
15°	2088.2	2098.4	2085.7	2058.9	2064.0	2046.2	2001.6	1955.7	1934.1	1865.3	1829.6
17.5°	2432.2	2445.0	2430.9	2400.4	2399.1	2374.9	2313.7	2257.7	2225.8	2137.9	2090.8
20°	2759.7	2763.5	2745.6	2712.5	2704.9	2671.7	2597.8	2518.9	2488.3	2380.0	2320.1
22.5°	3017.0	3031.0	3009.4	2985.2	2961.0	2918.9	2832.3	2745.6	2702.3	2578.7	2506.1
25°	3204.3	3236.2	3210.7	3182.6	3155.9	3106.2	3009.4	2916.4	2862.9	2725.3	2642.4
27.5°	3327.9	3358.5	3330.4	3298.6	3270.6	3213.2	3107.5	3018.3	2953.3	2803.0	2713.8
30°	3331.7	3368.7	3339.4	3305.0	3278.2	3220.9	3112.6	3020.8	2948.2	2797.9	2704.9
32.5°	3240.0	3269.3	3240.0	3210.7	3180.1	3125.3	3017.0	2929.1	2852.7	2708.7	2615.7
35°	3059.1	3084.5	3055.2	3020.8	2999.2	2950.8	2847.6	2763.5	2687.0	2554.5	2473.0
37.5°	2809.3	2832.3	2805.5	2786.4	2754.6	2711.2	2617.0	2541.8	2469.2	2349.4	2276.8
40°	2478.1	2526.5	2501.0	2488.3	2459.0	2422.0	2339.2	2273.0	2206.7	2102.2	2042.3
42.5°	2146.8	2192.7	2169.8	2160.8	2135.4	2103.5	2034.7	1978.6	1917.5	1830.9	1779.9
45°	1783.7	1832.1	1810.5	1806.6	1785.0	1760.8	1686.9	1657.6	1604.1	1522.5	1498.3
47.5°	1442.3	1451.2	1430.8	1432.1	1416.8	1400.2	1340.3	1322.5	1295.7	1233.3	1205.3
50°	1075.3	1081.7	1065.1	1070.2	1060.0	1049.8	1009.1	1000.2	983.6	941.5	925.0
52.5°	740.2	769.5	758.1	763.2	758.1	754.3	737.7	722.4	714.8	688.0	680.4
55°	535.1	537.7	528.7	533.8	530.0	528.7	518.6	509.6	505.8	489.2	486.7
57.5°	370.8	373.3	373.3	370.8	369.5	366.9	360.6	355.5	352.9	349.1	341.5
60°	245.9	256.1	252.3	254.8	253.5	253.5	248.4	244.6	243.3	235.7	235.7
62.5°	168.2	174.5	172.0	173.3	172.0	172.0	168.2	165.6	165.6	164.4	160.5
65°	112.1	115.9	113.4	114.7	114.7	114.7	112.1	109.6	109.6	108.3	105.7
67.5°	71.3	73.9	72.6	73.9	72.6	73.9	71.3	70.1	68.8	68.8	67.5
70°	43.3	44.6	43.3	44.6	43.3	43.3	42.0	42.0	40.8	39.5	39.5
72.5°	22.9	24.2	24.2	24.2	24.2	24.2	22.9	21.7	21.7	21.7	20.4
75°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.2	10.2	10.2
77.5°	5.1	5.1	5.1	5.1	6.4	5.1	5.1	5.1	5.1	5.1	5.1
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	3.8	3.8	3.8	3.8	3.8	3.8	5.1	5.1	5.1	5.1	3.8
87.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.4	6.4	5.1	5.1
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	677.8	671.4	668.9	663.8	657.4	653.6	649.8	651.1	642.1	635.8	626.8
5°	848.5	834.5	826.9	815.4	801.4	789.9	779.7	774.6	758.1	746.6	722.4
7.5°	1049.8	1025.6	1010.3	990.0	965.8	945.4	925.0	911.0	885.5	863.8	826.9
10°	1270.3	1233.3	1206.6	1176.0	1139.0	1105.9	1075.3	1049.8	1011.6	978.5	930.1
12.5°	1511.1	1458.8	1420.6	1376.0	1323.8	1277.9	1223.1	1193.8	1141.6	1095.7	1033.3
15°	1767.1	1698.3	1644.8	1583.7	1514.9	1453.7	1383.6	1340.3	1271.5	1212.9	1135.2
17.5°	2013.0	1926.4	1856.3	1778.6	1693.3	1614.3	1531.4	1470.3	1386.2	1313.6	1220.6
20°	2227.1	2123.9	2038.5	1944.2	1843.6	1746.8	1656.3	1574.8	1476.7	1391.3	1285.5
22.5°	2401.6	2281.9	2183.8	2074.2	1958.3	1848.7	1745.5	1652.5	1540.4	1446.1	1330.1
25°	2527.8	2396.5	2287.0	2165.9	2038.5	1913.7	1804.1	1702.2	1579.9	1479.2	1355.6
27.5°	2594.0	2455.1	2339.2	2209.3	2074.2	1944.2	1825.8	1717.5	1588.8	1483.0	1355.6
30°	2582.6	2441.1	2321.4	2187.6	2051.3	1921.3	1797.7	1689.4	1556.9	1449.9	1322.5
32.5°	2494.6	2355.8	2238.6	2108.6	1974.8	1848.7	1725.1	1620.6	1488.1	1383.6	1260.1
35°	2349.4	2218.2	2107.3	1983.7	1857.6	1739.1	1627.0	1521.2	1393.8	1294.5	1178.5
37.5°	2160.8	2041.1	1940.4	1825.8	1709.8	1602.8	1491.9	1401.5	1288.1	1195.1	1081.7
40°	1935.3	1829.6	1740.4	1638.5	1534.0	1441.0	1348.0	1260.1	1149.2	1066.4	969.6
42.5°	1686.9	1596.4	1520.0	1430.8	1340.3	1261.3	1181.1	1104.6	1012.9	937.7	847.3
45°	1419.3	1342.9	1280.4	1209.1	1133.9	1060.0	1001.4	937.7	852.4	796.3	719.9
47.5°	1142.8	1084.2	1037.1	982.3	922.4	876.6	820.5	769.5	707.1	654.9	592.4
50°	880.4	839.6	806.5	768.3	725.0	682.9	649.8	610.3	563.1	521.1	471.4
52.5°	651.1	624.3	603.9	578.4	549.1	527.5	496.9	467.6	431.9	400.1	361.8
55°	466.3	451.0	438.3	423.0	402.6	383.5	368.2	347.8	322.3	298.1	270.1
57.5°	335.1	318.5	317.2	300.7	293.0	279.0	265.0	249.7	231.9	215.3	194.9
60°	231.9	220.4	215.3	208.9	200.0	191.1	184.7	174.5	161.8	150.3	135.1
62.5°	156.7	149.1	146.5	144.0	136.3	132.5	124.9	118.5	109.6	100.7	90.5
65°	103.2	98.1	95.6	91.7	87.9	85.4	81.5	76.4	68.8	63.7	57.3
67.5°	65.0	61.2	58.6	57.3	53.5	52.2	48.4	45.9	40.8	38.2	34.4
70°	36.9	35.7	33.1	33.1	30.6	28.0	26.8	24.2	22.9	20.4	19.1
72.5°	19.1	19.1	17.8	16.6	15.3	15.3	14.0	12.7	11.5	10.2	10.2
75°	8.9	8.9	8.9	7.6	7.6	7.6	6.4	6.4	6.4	5.1	5.1
77.5°	5.1	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	2.5	2.5
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	3.8	2.5	2.5	2.5	2.5	3.8	3.8	3.8	3.8	3.8	3.8
87.5°	3.8	3.8	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
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°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	620.5	617.9	611.6	610.3	596.3	593.7	586.1	574.6	565.7	563.1	565.7
5°	713.5	702.0	682.9	679.1	656.2	648.5	631.9	614.1	598.8	589.9	586.1
7.5°	809.0	789.9	761.9	747.9	714.8	698.2	674.0	648.5	624.3	607.7	597.5
10°	900.8	870.2	819.2	807.8	767.0	740.2	707.1	672.7	642.1	619.2	602.6
12.5°	987.4	950.5	898.2	866.4	812.9	778.5	736.4	694.4	656.2	625.6	602.6
15°	1076.6	1028.2	963.2	918.6	857.5	811.6	760.6	712.2	667.6	629.4	601.4
17.5°	1150.5	1090.6	1014.2	960.7	889.3	834.5	775.9	719.9	671.4	628.1	596.3
20°	1205.3	1135.2	1048.6	986.1	907.1	846.0	782.3	721.1	667.6	620.5	586.1
22.5°	1242.2	1162.0	1067.7	998.9	916.1	849.8	781.0	717.3	662.5	614.1	577.2
25°	1260.1	1173.4	1075.3	1001.4	914.8	846.0	774.6	709.7	653.6	603.9	568.2
27.5°	1257.5	1165.8	1065.1	987.4	899.5	828.2	755.5	690.6	635.8	586.1	549.1
30°	1220.6	1130.1	1028.2	949.2	862.6	791.2	718.6	654.9	601.4	550.4	516.0
32.5°	1163.2	1070.2	970.8	882.9	809.0	739.0	670.2	605.2	554.2	504.5	471.4
35°	1085.5	996.3	900.8	825.6	745.3	677.8	611.6	550.4	502.0	453.6	423.0
37.5°	995.1	909.7	821.8	744.1	674.0	611.6	549.1	494.3	445.9	402.6	373.3
40°	890.6	811.6	731.3	665.1	596.3	538.9	481.6	428.1	388.6	349.1	323.6
42.5°	777.2	707.1	634.5	577.2	514.7	463.8	409.0	370.8	332.5	296.9	276.5
45°	658.7	597.5	536.4	484.1	433.2	388.6	341.5	305.8	276.5	247.2	229.3
47.5°	541.5	489.2	439.6	397.5	352.9	316.0	282.8	251.0	223.0	198.8	184.7
50°	423.0	388.6	349.1	314.7	279.0	248.4	217.9	194.9	173.3	155.4	146.5
52.5°	330.0	298.1	266.3	238.3	212.8	187.3	166.9	147.8	132.5	121.0	114.7
55°	245.9	220.4	196.2	174.5	154.2	137.6	123.6	112.1	101.9	93.0	90.5
57.5°	175.8	156.7	140.1	123.6	110.8	100.7	91.7	84.1	77.7	71.3	70.1
60°	122.3	108.3	98.1	87.9	80.3	72.6	67.5	62.4	57.3	53.5	52.2
62.5°	81.5	73.9	66.3	61.2	57.3	51.0	48.4	44.6	42.0	38.2	36.9
65°	52.2	47.1	43.3	39.5	36.9	34.4	31.9	29.3	26.8	24.2	24.2
67.5°	31.9	28.0	26.8	24.2	21.7	20.4	19.1	16.6	15.3	15.3	14.0
70°	17.8	15.3	14.0	12.7	11.5	11.5	10.2	8.9	8.9	7.6	7.6
72.5°	8.9	8.9	7.6	7.6	6.4	6.4	5.1	5.1	5.1	3.8	3.8
75°	5.1	5.1	3.8	3.8	3.8	3.8	3.8	3.8	2.5	2.5	2.5
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	3.8	3.8	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	3.8	3.8	3.8	3.8	3.8	2.5	2.5	2.5	2.5	2.5	2.5
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: P170866

CATALOG NUMBER: LDA4A28930D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
2.5°	555.5	542.8	540.2	540.2	486.7	454.8	430.6	424.3
5°	568.2	550.4	541.5	536.4	440.8	384.8	347.8	337.6
7.5°	574.6	549.1	535.1	523.6	396.2	323.6	284.1	272.7
10°	572.1	541.5	522.4	507.1	355.5	276.5	235.7	225.5
12.5°	567.0	532.6	508.4	489.2	321.1	239.5	202.6	192.4
15°	561.9	522.4	494.3	471.4	293.0	214.0	180.9	172.0
17.5°	551.7	510.9	479.1	454.8	275.2	203.9	175.8	170.7
20°	540.2	498.2	465.0	440.8	270.1	214.0	197.5	197.5
22.5°	532.6	489.2	457.4	433.2	279.0	238.3	231.9	235.7
25°	522.4	481.6	449.7	426.8	287.9	257.4	253.5	258.6
27.5°	505.8	465.0	434.5	411.5	282.8	254.8	251.0	253.5
30°	472.7	433.2	406.4	382.2	262.5	235.7	229.3	230.6
32.5°	430.6	392.4	366.9	344.0	233.2	207.7	201.3	201.3
35°	384.8	349.1	324.9	304.5	205.1	182.2	175.8	174.5
37.5°	338.9	305.8	285.4	266.3	179.6	159.3	152.9	151.6
40°	293.0	263.7	244.6	229.3	158.0	141.4	135.1	133.8
42.5°	249.7	224.2	207.7	194.9	137.6	124.9	119.8	118.5
45°	206.4	186.0	173.3	163.1	119.8	107.0	105.7	105.7
47.5°	166.9	150.3	141.4	135.1	101.9	91.7	90.5	91.7
50°	133.8	122.3	115.9	110.8	86.6	77.7	73.9	73.9
52.5°	105.7	98.1	94.3	90.5	71.3	62.4	57.3	56.1
55°	84.1	77.7	75.2	72.6	56.1	45.9	40.8	39.5
57.5°	66.3	61.2	58.6	56.1	42.0	31.9	26.8	25.5
60°	49.7	45.9	43.3	42.0	29.3	19.1	15.3	14.0
62.5°	35.7	33.1	30.6	29.3	17.8	10.2	6.4	5.1
65°	21.7	21.7	19.1	17.8	8.9	3.8	2.5	1.3
67.5°	12.7	11.5	10.2	10.2	3.8	2.5	1.3	1.3
70°	6.4	6.4	5.1	5.1	2.5	1.3	1.3	1.3
72.5°	3.8	3.8	3.8	2.5	2.5	1.3	1.3	1.3
75°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3
77.5°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	0.0
80°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	0.0
82.5°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3
85°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	0.0
87.5°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3
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)