

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: P170839

Luminaire Tested: **LDA4A18835D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170839
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: LDA4A18835D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1537.0 lumens
Efficiency: N/A
Efficacy: 52.8 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

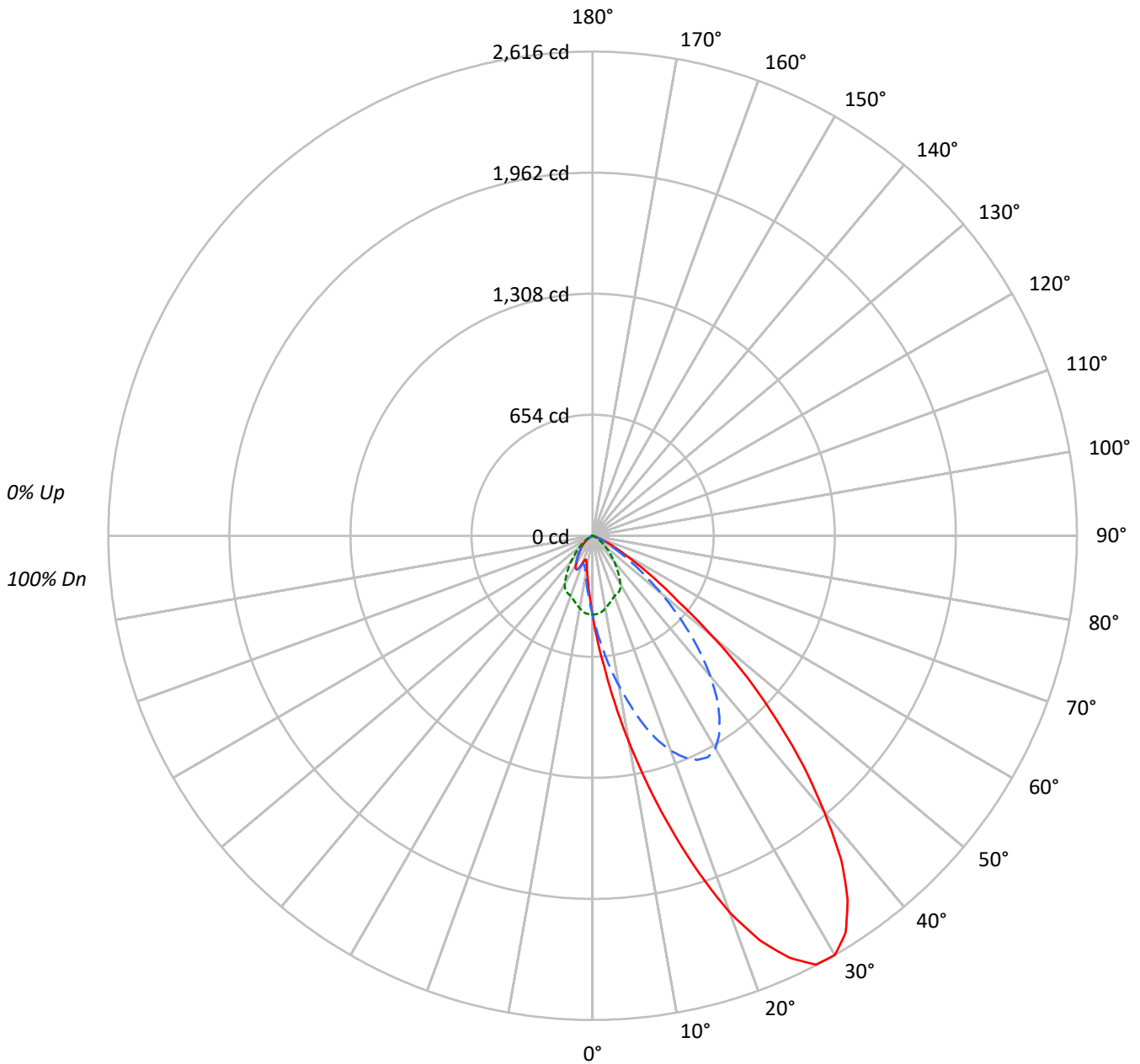
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	52558	52558	52558
5°	87439	52139	32824
10°	141568	49861	22181
15°	209359	47261	17239
20°	284405	45430	20346
25°	342392	45606	27641
30°	372561	42742	25794
35°	361641	36003	20629
40°	313273	28999	16907
45°	244282	22328	14478
50°	162014	16695	11130
55°	90341	12258	6666
60°	47636	8141	2714
65°	25684	4086	292
70°	12262	1443	361
75°	4289	953	477
80°	1421	1421	0
85°	4246	2830	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.4	3.0
10°-20°	179.4	11.7
20°-30°	369.0	24.0
30°-40°	440.7	28.7
40°-50°	325.4	21.2
50°-60°	137.0	8.9
60°-70°	33.6	2.2
70°-80°	4.6	0.3
80°-90°	1.8	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°	593.8	38.6
0°-40°	1034.5	67.3
0°-60°	1496.9	97.4
0°-90°	1537.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1537.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	426	426	426	426	426	
5°	706	608	421	302	265	81
15°	1640	1052	370	168	135	481
25°	2516	1336	335	202	203	1151
35°	2402	1194	239	143	137	1473
45°	1400	736	128	84	83	1075
55°	420	273	57	36	31	401
65°	88	60	14	3	1	96
75°	9	5	2	1	1	13
85°	3	3	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°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	554.2	547.2	547.2	549.2	555.2	550.2	546.2	542.2	546.2	537.2	540.2
5°	706.2	705.2	705.2	697.2	704.2	705.2	697.2	690.2	692.2	679.2	679.2
7.5°	906.3	900.3	898.3	887.3	895.3	894.3	881.3	869.3	869.3	848.3	843.3
10°	1130.3	1122.3	1118.3	1104.3	1111.3	1107.3	1088.3	1070.3	1065.3	1035.3	1024.3
12.5°	1377.4	1372.4	1366.4	1348.4	1354.4	1346.4	1319.4	1293.4	1282.4	1242.4	1223.4
15°	1639.5	1647.5	1637.5	1616.5	1620.5	1606.5	1571.5	1535.5	1518.5	1464.4	1436.4
17.5°	1909.6	1919.6	1908.6	1884.6	1883.6	1864.6	1816.5	1772.5	1747.5	1678.5	1641.5
20°	2166.7	2169.7	2155.6	2129.6	2123.6	2097.6	2039.6	1977.6	1953.6	1868.6	1821.5
22.5°	2368.7	2379.7	2362.7	2343.7	2324.7	2291.7	2223.7	2155.6	2121.6	2024.6	1967.6
25°	2515.8	2540.8	2520.8	2498.8	2477.7	2438.7	2362.7	2289.7	2247.7	2139.6	2074.6
27.5°	2612.8	2636.8	2614.8	2589.8	2567.8	2522.8	2439.7	2369.7	2318.7	2200.7	2130.6
30°	2615.8	2644.8	2621.8	2594.8	2573.8	2528.8	2443.7	2371.7	2314.7	2196.7	2123.6
32.5°	2543.8	2566.8	2543.8	2520.8	2496.8	2453.7	2368.7	2299.7	2239.7	2126.6	2053.6
35°	2401.7	2421.7	2398.7	2371.7	2354.7	2316.7	2235.7	2169.7	2109.6	2005.6	1941.6
37.5°	2205.7	2223.7	2202.7	2187.7	2162.7	2128.6	2054.6	1995.6	1938.6	1844.6	1787.5
40°	1945.6	1983.6	1963.6	1953.6	1930.6	1901.6	1836.6	1784.5	1732.5	1650.5	1603.5
42.5°	1685.5	1721.5	1703.5	1696.5	1676.5	1651.5	1597.5	1553.5	1505.5	1437.4	1397.4
45°	1400.4	1438.4	1421.4	1418.4	1401.4	1382.4	1324.4	1301.4	1259.4	1195.4	1176.4
47.5°	1132.3	1139.3	1123.3	1124.3	1112.3	1099.3	1052.3	1038.3	1017.3	968.3	946.3
50°	844.3	849.3	836.3	840.3	832.3	824.2	792.2	785.2	772.2	739.2	726.2
52.5°	581.2	604.2	595.2	599.2	595.2	592.2	579.2	567.2	561.2	540.2	534.2
55°	420.1	422.1	415.1	419.1	416.1	415.1	407.1	400.1	397.1	384.1	382.1
57.5°	291.1	293.1	293.1	291.1	290.1	288.1	283.1	279.1	277.1	274.1	268.1
60°	193.1	201.1	198.1	200.1	199.1	199.1	195.1	192.1	191.1	185.1	185.1
62.5°	132.0	137.0	135.0	136.0	135.0	135.0	132.0	130.0	130.0	129.0	126.0
65°	88.0	91.0	89.0	90.0	90.0	90.0	88.0	86.0	86.0	85.0	83.0
67.5°	56.0	58.0	57.0	58.0	57.0	58.0	56.0	55.0	54.0	54.0	53.0
70°	34.0	35.0	34.0	35.0	34.0	34.0	33.0	33.0	32.0	31.0	31.0
72.5°	18.0	19.0	19.0	19.0	19.0	19.0	18.0	17.0	17.0	17.0	16.0
75°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0
77.5°	4.0	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	3.0
87.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	4.0	4.0
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°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	532.2	527.2	525.2	521.2	516.2	513.2	510.2	511.2	504.2	499.2	492.1
5°	666.2	655.2	649.2	640.2	629.2	620.2	612.2	608.2	595.2	586.2	567.2
7.5°	824.2	805.2	793.2	777.2	758.2	742.2	726.2	715.2	695.2	678.2	649.2
10°	997.3	968.3	947.3	923.3	894.3	868.3	844.3	824.2	794.2	768.2	730.2
12.5°	1186.4	1145.3	1115.3	1080.3	1039.3	1003.3	960.3	937.3	896.3	860.3	811.2
15°	1387.4	1333.4	1291.4	1243.4	1189.4	1141.3	1086.3	1052.3	998.3	952.3	891.3
17.5°	1580.5	1512.5	1457.4	1396.4	1329.4	1267.4	1202.4	1154.3	1088.3	1031.3	958.3
20°	1748.5	1667.5	1600.5	1526.5	1447.4	1371.4	1300.4	1236.4	1159.3	1092.3	1009.3
22.5°	1885.6	1791.5	1714.5	1628.5	1537.5	1451.4	1370.4	1297.4	1209.4	1135.3	1044.3
25°	1984.6	1881.6	1795.5	1700.5	1600.5	1502.5	1416.4	1336.4	1240.4	1161.3	1064.3
27.5°	2036.6	1927.6	1836.6	1734.5	1628.5	1526.5	1433.4	1348.4	1247.4	1164.4	1064.3
30°	2027.6	1916.6	1822.5	1717.5	1610.5	1508.5	1411.4	1326.4	1222.4	1138.3	1038.3
32.5°	1958.6	1849.6	1757.5	1655.5	1550.5	1451.4	1354.4	1272.4	1168.4	1086.3	989.3
35°	1844.6	1741.5	1654.5	1557.5	1458.4	1365.4	1277.4	1194.4	1094.3	1016.3	925.3
37.5°	1696.5	1602.5	1523.5	1433.4	1342.4	1258.4	1171.4	1100.3	1011.3	938.3	849.3
40°	1519.5	1436.4	1366.4	1286.4	1204.4	1131.3	1058.3	989.3	902.3	837.3	761.2
42.5°	1324.4	1253.4	1193.4	1123.3	1052.3	990.3	927.3	867.3	795.2	736.2	665.2
45°	1114.3	1054.3	1005.3	949.3	890.3	832.3	786.2	736.2	669.2	625.2	565.2
47.5°	897.3	851.3	814.2	771.2	724.2	688.2	644.2	604.2	555.2	514.2	465.1
50°	691.2	659.2	633.2	603.2	569.2	536.2	510.2	479.1	442.1	409.1	370.1
52.5°	511.2	490.1	474.1	454.1	431.1	414.1	390.1	367.1	339.1	314.1	284.1
55°	366.1	354.1	344.1	332.1	316.1	301.1	289.1	273.1	253.1	234.1	212.1
57.5°	263.1	250.1	249.1	236.1	230.1	219.1	208.1	196.1	182.1	169.1	153.0
60°	182.1	173.1	169.1	164.0	157.0	150.0	145.0	137.0	127.0	118.0	106.0
62.5°	123.0	117.0	115.0	113.0	107.0	104.0	98.0	93.0	86.0	79.0	71.0
65°	81.0	77.0	75.0	72.0	69.0	67.0	64.0	60.0	54.0	50.0	45.0
67.5°	51.0	48.0	46.0	45.0	42.0	41.0	38.0	36.0	32.0	30.0	27.0
70°	29.0	28.0	26.0	26.0	24.0	22.0	21.0	19.0	18.0	16.0	15.0
72.5°	15.0	15.0	14.0	13.0	12.0	12.0	11.0	10.0	9.0	8.0	8.0
75°	7.0	7.0	7.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0
77.5°	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	3.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	487.1	485.1	480.1	479.1	468.1	466.1	460.1	451.1	444.1	442.1	444.1
5°	560.2	551.2	536.2	533.2	515.2	509.2	496.1	482.1	470.1	463.1	460.1
7.5°	635.2	620.2	598.2	587.2	561.2	548.2	529.2	509.2	490.1	477.1	469.1
10°	707.2	683.2	643.2	634.2	602.2	581.2	555.2	528.2	504.2	486.1	473.1
12.5°	775.2	746.2	705.2	680.2	638.2	611.2	578.2	545.2	515.2	491.1	473.1
15°	845.3	807.2	756.2	721.2	673.2	637.2	597.2	559.2	524.2	494.1	472.1
17.5°	903.3	856.3	796.2	754.2	698.2	655.2	609.2	565.2	527.2	493.1	468.1
20°	946.3	891.3	823.2	774.2	712.2	664.2	614.2	566.2	524.2	487.1	460.1
22.5°	975.3	912.3	838.3	784.2	719.2	667.2	613.2	563.2	520.2	482.1	453.1
25°	989.3	921.3	844.3	786.2	718.2	664.2	608.2	557.2	513.2	474.1	446.1
27.5°	987.3	915.3	836.3	775.2	706.2	650.2	593.2	542.2	499.2	460.1	431.1
30°	958.3	887.3	807.2	745.2	677.2	621.2	564.2	514.2	472.1	432.1	405.1
32.5°	913.3	840.3	762.2	693.2	635.2	580.2	526.2	475.1	435.1	396.1	370.1
35°	852.3	782.2	707.2	648.2	585.2	532.2	480.1	432.1	394.1	356.1	332.1
37.5°	781.2	714.2	645.2	584.2	529.2	480.1	431.1	388.1	350.1	316.1	293.1
40°	699.2	637.2	574.2	522.2	468.1	423.1	378.1	336.1	305.1	274.1	254.1
42.5°	610.2	555.2	498.2	453.1	404.1	364.1	321.1	291.1	261.1	233.1	217.1
45°	517.2	469.1	421.1	380.1	340.1	305.1	268.1	240.1	217.1	194.1	180.1
47.5°	425.1	384.1	345.1	312.1	277.1	248.1	222.1	197.1	175.1	156.0	145.0
50°	332.1	305.1	274.1	247.1	219.1	195.1	171.1	153.0	136.0	122.0	115.0
52.5°	259.1	234.1	209.1	187.1	167.1	147.0	131.0	116.0	104.0	95.0	90.0
55°	193.1	173.1	154.0	137.0	121.0	108.0	97.0	88.0	80.0	73.0	71.0
57.5°	138.0	123.0	110.0	97.0	87.0	79.0	72.0	66.0	61.0	56.0	55.0
60°	96.0	85.0	77.0	69.0	63.0	57.0	53.0	49.0	45.0	42.0	41.0
62.5°	64.0	58.0	52.0	48.0	45.0	40.0	38.0	35.0	33.0	30.0	29.0
65°	41.0	37.0	34.0	31.0	29.0	27.0	25.0	23.0	21.0	19.0	19.0
67.5°	25.0	22.0	21.0	19.0	17.0	16.0	15.0	13.0	12.0	12.0	11.0
70°	14.0	12.0	11.0	10.0	9.0	9.0	8.0	7.0	7.0	6.0	6.0
72.5°	7.0	7.0	6.0	6.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0
75°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
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: P170839

CATALOG NUMBER: LDA4A18835D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	436.1	426.1	424.1	424.1	382.1	357.1	338.1	333.1
5°	446.1	432.1	425.1	421.1	346.1	302.1	273.1	265.1
7.5°	451.1	431.1	420.1	411.1	311.1	254.1	223.1	214.1
10°	449.1	425.1	410.1	398.1	279.1	217.1	185.1	177.1
12.5°	445.1	418.1	399.1	384.1	252.1	188.1	159.0	151.0
15°	441.1	410.1	388.1	370.1	230.1	168.1	142.0	135.0
17.5°	433.1	401.1	376.1	357.1	216.1	160.0	138.0	134.0
20°	424.1	391.1	365.1	346.1	212.1	168.1	155.0	155.0
22.5°	418.1	384.1	359.1	340.1	219.1	187.1	182.1	185.1
25°	410.1	378.1	353.1	335.1	226.1	202.1	199.1	203.1
27.5°	397.1	365.1	341.1	323.1	222.1	200.1	197.1	199.1
30°	371.1	340.1	319.1	300.1	206.1	185.1	180.1	181.1
32.5°	338.1	308.1	288.1	270.1	183.1	163.0	158.0	158.0
35°	302.1	274.1	255.1	239.1	161.0	143.0	138.0	137.0
37.5°	266.1	240.1	224.1	209.1	141.0	125.0	120.0	119.0
40°	230.1	207.1	192.1	180.1	124.0	111.0	106.0	105.0
42.5°	196.1	176.1	163.0	153.0	108.0	98.0	94.0	93.0
45°	162.0	146.0	136.0	128.0	94.0	84.0	83.0	83.0
47.5°	131.0	118.0	111.0	106.0	80.0	72.0	71.0	72.0
50°	105.0	96.0	91.0	87.0	68.0	61.0	58.0	58.0
52.5°	83.0	77.0	74.0	71.0	56.0	49.0	45.0	44.0
55°	66.0	61.0	59.0	57.0	44.0	36.0	32.0	31.0
57.5°	52.0	48.0	46.0	44.0	33.0	25.0	21.0	20.0
60°	39.0	36.0	34.0	33.0	23.0	15.0	12.0	11.0
62.5°	28.0	26.0	24.0	23.0	14.0	8.0	5.0	4.0
65°	17.0	17.0	15.0	14.0	7.0	3.0	2.0	1.0
67.5°	10.0	9.0	8.0	8.0	3.0	2.0	1.0	1.0
70°	5.0	5.0	4.0	4.0	2.0	1.0	1.0	1.0
72.5°	3.0	3.0	3.0	2.0	2.0	1.0	1.0	1.0
75°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
77.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	0.0
80°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	0.0
82.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
85°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	0.0
87.5°	2.0	2.0	2.0	2.0	2.0	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)