

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: P170844

Luminaire Tested: **LDA4A18940D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170844
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: LDA4A18940D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1352.8 lumens
Efficiency: N/A
Efficacy: 46.5 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

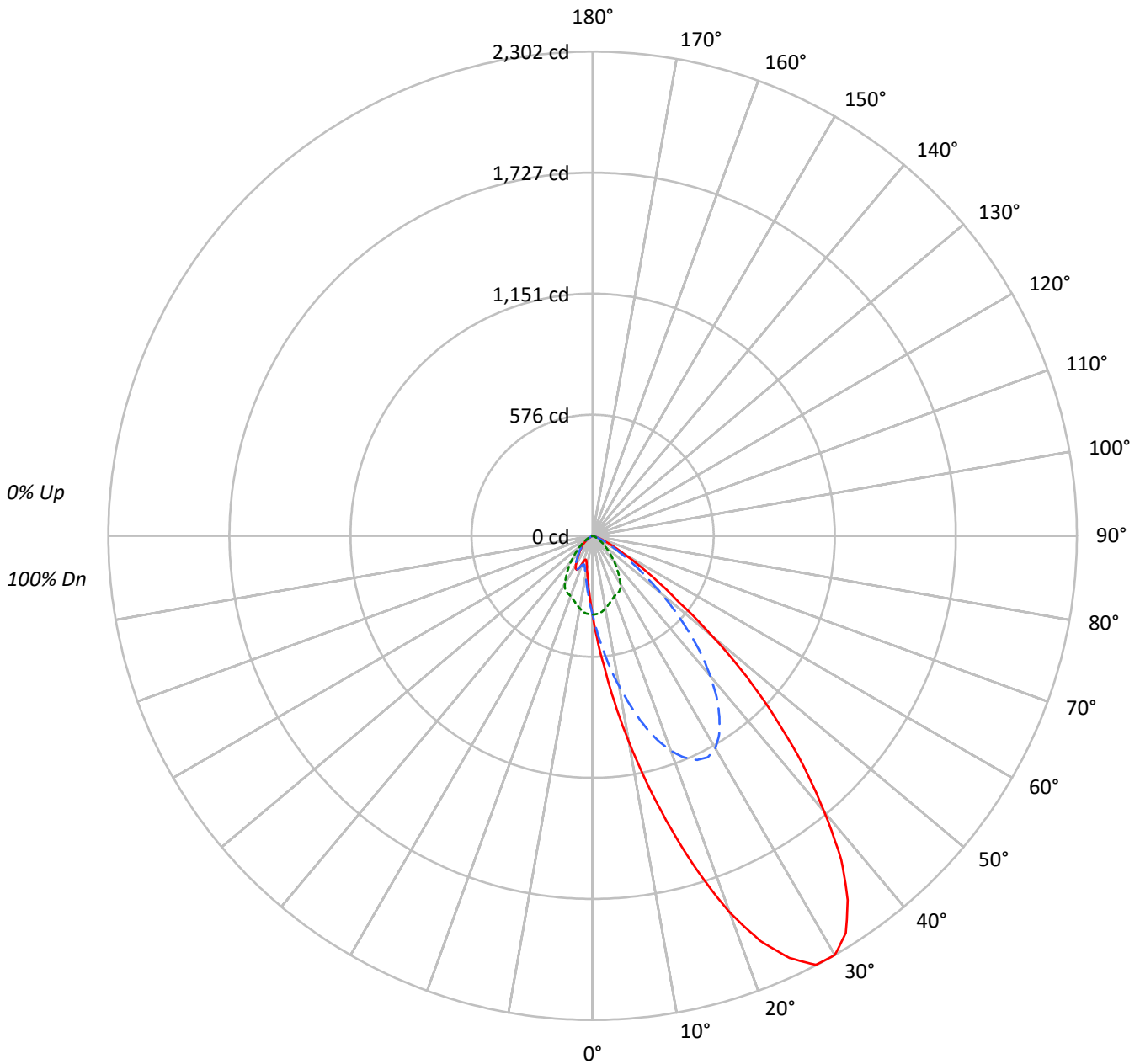
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	46267	46267	46267
5°	76965	45887	28886
10°	124610	43887	19514
15°	184266	41591	15183
20°	250303	39982	17917
25°	301346	40135	24321
30°	327896	37615	22703
35°	318290	31681	18160
40°	275724	25521	14878
45°	215011	19659	12751
50°	142595	14699	9806
55°	79524	10795	5871
60°	41913	7179	2393
65°	22619	3590	263
70°	10783	1262	325
75°	3765	858	429
80°	1279	1279	0
85°	3680	2547	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.0	3.0
10°-20°	157.9	11.7
20°-30°	324.7	24.0
30°-40°	387.9	28.7
40°-50°	286.4	21.2
50°-60°	120.5	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°	522.6	38.6
0°-40°	910.5	67.3
0°-60°	1317.5	97.4
0°-90°	1352.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1352.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	375	375	375	375	375	
5°	622	535	371	266	233	71
15°	1443	926	326	148	119	423
25°	2214	1176	295	178	179	1013
35°	2114	1051	210	126	121	1296
45°	1233	648	113	74	73	946
55°	370	240	50	32	27	353
65°	78	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	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1
2.5°	487.7	481.6	481.6	483.3	488.6	484.2	480.7	477.2	480.7	472.8	475.4
5°	621.6	620.7	620.7	613.6	619.8	620.7	613.6	607.5	609.2	597.8	597.8
7.5°	797.6	792.4	790.6	780.9	788.0	787.1	775.6	765.1	765.1	746.6	742.2
10°	994.9	987.8	984.3	972.0	978.1	974.6	957.9	942.0	937.6	911.2	901.5
12.5°	1212.3	1207.9	1202.6	1186.8	1192.1	1185.0	1161.2	1138.4	1128.7	1093.5	1076.7
15°	1443.0	1450.0	1441.2	1422.7	1426.2	1413.9	1383.1	1351.4	1336.4	1288.9	1264.3
17.5°	1680.7	1689.5	1679.8	1658.7	1657.8	1641.1	1598.8	1560.1	1538.1	1477.3	1444.7
20°	1906.9	1909.6	1897.3	1874.4	1869.1	1846.2	1795.1	1740.6	1719.4	1644.6	1603.2
22.5°	2084.8	2094.5	2079.5	2062.8	2046.1	2017.0	1957.1	1897.3	1867.3	1781.9	1731.7
25°	2214.2	2236.2	2218.6	2199.2	2180.8	2146.4	2079.5	2015.2	1978.3	1883.2	1826.0
27.5°	2299.6	2320.7	2301.4	2279.4	2260.0	2220.4	2147.3	2085.7	2040.8	1936.9	1875.3
30°	2302.2	2327.8	2307.5	2283.8	2265.3	2225.7	2150.8	2087.4	2037.2	1933.4	1869.1
32.5°	2238.9	2259.1	2238.9	2218.6	2197.5	2159.6	2084.8	2024.0	1971.2	1871.7	1807.5
35°	2113.8	2131.4	2111.2	2087.4	2072.5	2039.0	1967.7	1909.6	1856.8	1765.2	1708.9
37.5°	1941.3	1957.1	1938.6	1925.4	1903.4	1873.5	1808.3	1756.4	1706.2	1623.5	1573.3
40°	1712.4	1745.8	1728.2	1719.4	1699.2	1673.6	1616.4	1570.6	1524.9	1452.7	1411.3
42.5°	1483.5	1515.2	1499.3	1493.2	1475.6	1453.5	1406.0	1367.3	1325.0	1265.1	1229.9
45°	1232.6	1266.0	1251.0	1248.4	1233.4	1216.7	1165.7	1145.4	1108.4	1052.1	1035.4
47.5°	996.6	1002.8	988.7	989.6	979.0	967.6	926.2	913.9	895.4	852.2	832.9
50°	743.1	747.5	736.0	739.5	732.5	725.5	697.3	691.1	679.7	650.6	639.2
52.5°	511.5	531.8	523.8	527.4	523.8	521.2	509.8	499.2	493.9	475.4	470.1
55°	369.8	371.5	365.4	368.9	366.2	365.4	358.3	352.2	349.5	338.1	336.3
57.5°	256.2	258.0	258.0	256.2	255.3	253.6	249.2	245.6	243.9	241.2	235.9
60°	169.9	177.0	174.3	176.1	175.2	175.2	171.7	169.0	168.2	162.9	162.9
62.5°	116.2	120.6	118.9	119.7	118.9	118.9	116.2	114.5	114.5	113.6	110.9
65°	77.5	80.1	78.4	79.2	79.2	79.2	77.5	75.7	75.7	74.8	73.1
67.5°	49.3	51.1	50.2	51.1	50.2	51.1	49.3	48.4	47.5	47.5	46.7
70°	29.9	30.8	29.9	30.8	29.9	29.9	29.1	29.1	28.2	27.3	27.3
72.5°	15.8	16.7	16.7	16.7	16.7	16.7	15.8	15.0	15.0	15.0	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



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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°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1
2.5°	468.4	464.0	462.2	458.7	454.3	451.6	449.0	449.9	443.7	439.3	433.2
5°	586.3	576.7	571.4	563.5	553.8	545.8	538.8	535.3	523.8	515.9	499.2
7.5°	725.5	708.7	698.2	684.1	667.3	653.3	639.2	629.5	611.9	596.9	571.4
10°	877.8	852.2	833.7	812.6	787.1	764.2	743.1	725.5	699.0	676.1	642.7
12.5°	1044.2	1008.1	981.6	950.8	914.7	883.0	845.2	824.9	788.8	757.1	714.0
15°	1221.1	1173.6	1136.6	1094.3	1046.8	1004.5	956.1	926.2	878.6	838.1	784.4
17.5°	1391.0	1331.2	1282.7	1229.0	1170.1	1115.5	1058.2	1016.0	957.9	907.7	843.4
20°	1538.9	1467.6	1408.6	1343.5	1273.9	1207.0	1144.5	1088.2	1020.4	961.4	888.3
22.5°	1659.6	1576.8	1509.0	1433.3	1353.2	1277.5	1206.1	1141.9	1064.4	999.3	919.1
25°	1746.7	1656.0	1580.3	1496.7	1408.6	1322.4	1246.6	1176.2	1091.7	1022.1	936.7
27.5°	1792.5	1696.5	1616.4	1526.6	1433.3	1343.5	1261.6	1186.8	1097.9	1024.8	936.7
30°	1784.6	1686.8	1604.1	1511.6	1417.4	1327.6	1242.2	1167.4	1075.8	1001.9	913.9
32.5°	1723.8	1627.9	1546.9	1457.1	1364.6	1277.5	1192.1	1119.9	1028.3	956.1	870.7
35°	1623.5	1532.8	1456.2	1370.8	1283.6	1201.7	1124.3	1051.2	963.2	894.5	814.4
37.5°	1493.2	1410.4	1340.8	1261.6	1181.5	1107.5	1030.9	968.4	890.1	825.8	747.5
40°	1337.3	1264.3	1202.6	1132.2	1060.0	995.7	931.5	870.7	794.1	736.9	670.0
42.5°	1165.7	1103.1	1050.3	988.7	926.2	871.6	816.1	763.3	699.9	648.0	585.5
45°	980.8	927.9	884.8	835.5	783.6	732.5	692.0	648.0	589.0	550.3	497.4
47.5°	789.7	749.2	716.6	678.8	637.4	605.7	567.0	531.8	488.6	452.5	409.4
50°	608.4	580.2	557.3	530.9	500.9	471.9	449.0	421.7	389.1	360.1	325.7
52.5°	449.9	431.4	417.3	399.7	379.5	364.5	343.4	323.1	298.5	276.4	250.0
55°	322.2	311.7	302.9	292.3	278.2	265.0	254.4	240.3	222.7	206.0	186.6
57.5°	231.5	220.1	219.2	207.8	202.5	192.8	183.1	172.6	160.2	148.8	134.7
60°	160.2	152.3	148.8	144.4	138.2	132.1	127.7	120.6	111.8	103.9	93.3
62.5°	108.3	103.0	101.2	99.5	94.2	91.6	86.3	81.9	75.7	69.6	62.5
65°	71.3	67.8	66.0	63.4	60.7	59.0	56.3	52.8	47.5	44.0	39.6
67.5°	44.9	42.3	40.5	39.6	37.0	36.1	33.5	31.7	28.2	26.4	23.8
70°	25.5	24.7	22.9	22.9	21.1	19.4	18.5	16.7	15.8	14.1	13.2
72.5°	13.2	13.2	12.3	11.4	10.6	10.6	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



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CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1
2.5°	428.8	427.0	422.6	421.7	412.0	410.3	405.0	397.1	390.9	389.1	390.9
5°	493.0	485.1	471.9	469.3	453.4	448.1	436.7	424.4	413.8	407.6	405.0
7.5°	559.1	545.8	526.5	516.8	493.9	482.5	465.7	448.1	431.4	420.0	412.9
10°	622.4	601.3	566.1	558.2	530.0	511.5	488.6	464.9	443.7	427.9	416.4
12.5°	682.3	656.8	620.7	598.7	561.7	537.9	508.9	479.8	453.4	432.3	416.4
15°	743.9	710.5	665.6	634.8	592.5	560.8	525.6	492.1	461.3	434.9	415.5
17.5°	795.0	753.6	700.8	663.8	614.5	576.7	536.2	497.4	464.0	434.0	412.0
20°	832.9	784.4	724.6	681.4	626.8	584.6	540.6	498.3	461.3	428.8	405.0
22.5°	858.4	802.9	737.8	690.2	633.0	587.2	539.7	495.7	457.8	424.4	398.8
25°	870.7	810.8	743.1	692.0	632.1	584.6	535.3	490.4	451.6	417.3	392.7
27.5°	869.0	805.6	736.0	682.3	621.6	572.3	522.1	477.2	439.3	405.0	379.5
30°	843.4	780.9	710.5	655.9	596.0	546.7	496.5	452.5	415.5	380.3	356.6
32.5°	803.8	739.5	670.9	610.1	559.1	510.6	463.1	418.2	383.0	348.6	325.7
35°	750.1	688.5	622.4	570.5	515.0	468.4	422.6	380.3	346.9	313.4	292.3
37.5°	687.6	628.6	567.9	514.2	465.7	422.6	379.5	341.6	308.1	278.2	258.0
40°	615.4	560.8	505.3	459.6	412.0	372.4	332.8	295.8	268.5	241.2	223.6
42.5°	537.0	488.6	438.4	398.8	355.7	320.5	282.6	256.2	229.8	205.1	191.0
45°	455.2	412.9	370.6	334.6	299.3	268.5	235.9	211.3	191.0	170.8	158.5
47.5°	374.2	338.1	303.7	274.7	243.9	218.3	195.4	173.4	154.1	137.3	127.7
50°	292.3	268.5	241.2	217.5	192.8	171.7	150.5	134.7	119.7	107.4	101.2
52.5°	228.0	206.0	184.0	164.6	147.0	129.4	115.3	102.1	91.6	83.6	79.2
55°	169.9	152.3	135.6	120.6	106.5	95.1	85.4	77.5	70.4	64.3	62.5
57.5°	121.5	108.3	96.8	85.4	76.6	69.6	63.4	58.1	53.7	49.3	48.4
60°	84.5	74.8	67.8	60.7	55.5	50.2	46.7	43.1	39.6	37.0	36.1
62.5°	56.3	51.1	45.8	42.3	39.6	35.2	33.5	30.8	29.1	26.4	25.5
65°	36.1	32.6	29.9	27.3	25.5	23.8	22.0	20.2	18.5	16.7	16.7
67.5°	22.0	19.4	18.5	16.7	15.0	14.1	13.2	11.4	10.6	10.6	9.7
70°	12.3	10.6	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: P170844

CATALOG NUMBER: LDA4A18940D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1
2.5°	383.9	375.1	373.3	373.3	336.3	314.3	297.6	293.2
5°	392.7	380.3	374.2	370.6	304.6	265.9	240.3	233.3
7.5°	397.1	379.5	369.8	361.8	273.8	223.6	196.3	188.4
10°	395.3	374.2	361.0	350.4	245.6	191.0	162.9	155.8
12.5°	391.8	368.0	351.3	338.1	221.9	165.5	140.0	132.9
15°	388.3	361.0	341.6	325.7	202.5	147.9	125.0	118.9
17.5°	381.2	353.0	331.0	314.3	190.2	140.9	121.5	118.0
20°	373.3	344.2	321.3	304.6	186.6	147.9	136.5	136.5
22.5°	368.0	338.1	316.1	299.3	192.8	164.6	160.2	162.9
25°	361.0	332.8	310.8	294.9	199.0	177.8	175.2	178.7
27.5°	349.5	321.3	300.2	284.4	195.4	176.1	173.4	175.2
30°	326.6	299.3	280.8	264.1	181.4	162.9	158.5	159.4
32.5°	297.6	271.2	253.6	237.7	161.1	143.5	139.1	139.1
35°	265.9	241.2	224.5	210.4	141.7	125.9	121.5	120.6
37.5°	234.2	211.3	197.2	184.0	124.1	110.1	105.6	104.8
40°	202.5	182.2	169.0	158.5	109.2	97.7	93.3	92.4
42.5°	172.6	155.0	143.5	134.7	95.1	86.3	82.8	81.9
45°	142.6	128.5	119.7	112.7	82.8	74.0	73.1	73.1
47.5°	115.3	103.9	97.7	93.3	70.4	63.4	62.5	63.4
50°	92.4	84.5	80.1	76.6	59.9	53.7	51.1	51.1
52.5°	73.1	67.8	65.1	62.5	49.3	43.1	39.6	38.7
55°	58.1	53.7	51.9	50.2	38.7	31.7	28.2	27.3
57.5°	45.8	42.3	40.5	38.7	29.1	22.0	18.5	17.6
60°	34.3	31.7	29.9	29.1	20.2	13.2	10.6	9.7
62.5°	24.7	22.9	21.1	20.2	12.3	7.0	4.4	3.5
65°	15.0	15.0	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)