

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: P170856

Luminaire Tested: **LDA4A13840D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170856  
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: LDA4A13840D010TE 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: 1272.4 lumens  
Efficiency: N/A  
Efficacy: 57.1 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

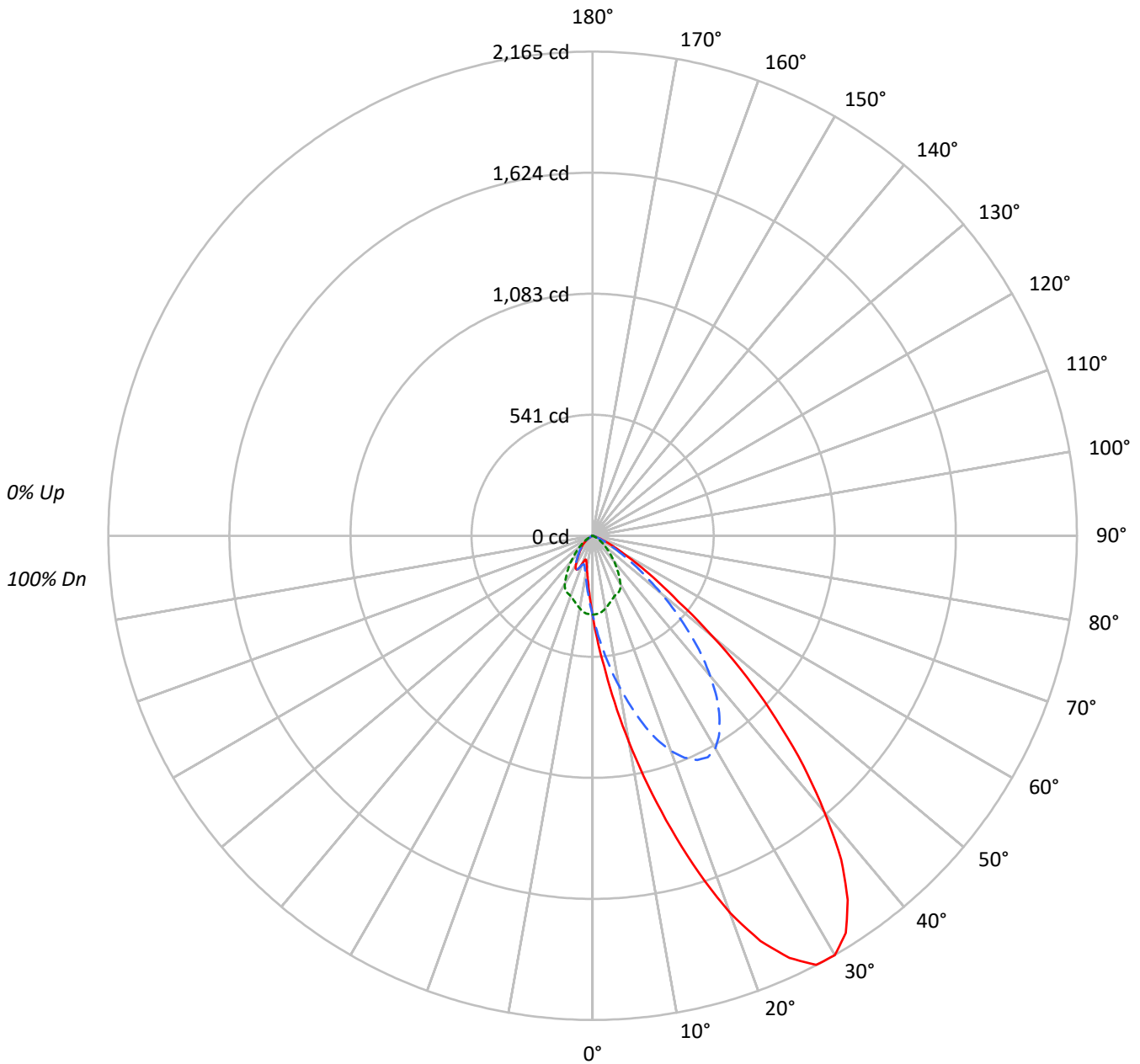
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	43516	43516	43516
5°	72383	43163	27165
10°	117195	41282	18361
15°	173310	39126	14277
20°	235431	37606	16854
25°	283435	37753	22878
30°	308412	35379	21350
35°	299378	29799	17075
40°	259333	24008	13992
45°	202225	18490	11984
50°	134113	13816	9211
55°	74793	10150	5527
60°	39421	6735	2245
65°	21277	3386	233
70°	10170	1190	289
75°	3574	810	381
80°	1208	1208	0
85°	3538	2406	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.6	3.0
10°-20°	148.5	11.7
20°-30°	305.4	24.0
30°-40°	364.8	28.7
40°-50°	269.4	21.2
50°-60°	113.4	8.9
60°-70°	27.9	2.2
70°-80°	3.8	0.3
80°-90°	1.5	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°	491.6	38.6
0°-40°	856.4	67.3
0°-60°	1239.2	97.4
0°-90°	1272.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1272.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	353	353	353	353	353	
5°	585	504	349	250	219	67
15°	1357	871	306	139	112	398
25°	2083	1106	277	167	168	952
35°	1988	989	198	118	113	1219
45°	1159	610	106	70	69	890
55°	348	226	47	30	26	332
65°	73	50	12	2	1	79
75°	8	4	2	1	1	11
85°	2	2	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°	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8
2.5°	458.8	453.0	453.0	454.6	459.6	455.4	452.1	448.8	452.1	444.7	447.2
5°	584.6	583.8	583.8	577.2	583.0	583.8	577.2	571.4	573.0	562.3	562.3
7.5°	750.2	745.3	743.6	734.5	741.1	740.3	729.5	719.6	719.6	702.2	698.1
10°	935.7	929.1	925.8	914.2	920.0	916.7	901.0	886.1	881.9	857.1	848.0
12.5°	1140.3	1136.1	1131.2	1116.3	1121.2	1114.6	1092.2	1070.7	1061.6	1028.5	1012.7
15°	1357.2	1363.9	1355.6	1338.2	1341.5	1329.9	1300.9	1271.1	1257.0	1212.3	1189.1
17.5°	1580.8	1589.1	1580.0	1560.1	1559.3	1543.6	1503.8	1467.4	1446.7	1389.5	1358.9
20°	1793.6	1796.1	1784.5	1763.0	1758.0	1736.5	1688.5	1637.1	1617.3	1546.9	1507.9
22.5°	1960.9	1970.0	1955.9	1940.2	1924.5	1897.1	1840.8	1784.5	1756.4	1676.0	1628.8
25°	2082.6	2103.3	2086.8	2068.6	2051.2	2018.9	1955.9	1895.5	1860.7	1771.3	1717.4
27.5°	2163.0	2182.8	2164.6	2143.9	2125.7	2088.4	2019.7	1961.7	1919.5	1821.8	1763.8
30°	2165.4	2189.5	2170.4	2148.1	2130.7	2093.4	2023.0	1963.4	1916.2	1818.5	1758.0
32.5°	2105.8	2124.9	2105.8	2086.8	2066.9	2031.3	1960.9	1903.8	1854.1	1760.5	1700.1
35°	1988.2	2004.8	1985.7	1963.4	1949.3	1917.8	1850.8	1796.1	1746.4	1660.3	1607.3
37.5°	1825.9	1840.8	1823.4	1811.0	1790.3	1762.2	1700.9	1652.0	1604.8	1527.0	1479.8
40°	1610.6	1642.1	1625.5	1617.3	1598.2	1574.2	1520.4	1477.3	1434.2	1366.3	1327.4
42.5°	1395.3	1425.1	1410.2	1404.4	1387.9	1367.2	1322.5	1286.0	1246.3	1190.0	1156.8
45°	1159.3	1190.8	1176.7	1174.2	1160.1	1144.4	1096.4	1077.3	1042.6	989.6	973.8
47.5°	937.4	943.2	929.9	930.8	920.8	910.1	871.1	859.6	842.2	801.6	783.4
50°	698.9	703.0	692.3	695.6	689.0	682.3	655.8	650.0	639.3	612.0	601.2
52.5°	481.1	500.2	492.7	496.0	492.7	490.2	479.5	469.5	464.6	447.2	442.2
55°	347.8	349.5	343.7	347.0	344.5	343.7	337.0	331.2	328.7	318.0	316.3
57.5°	241.0	242.6	242.6	241.0	240.1	238.5	234.3	231.0	229.4	226.9	221.9
60°	159.8	166.4	164.0	165.6	164.8	164.8	161.5	159.0	158.2	153.2	153.2
62.5°	109.3	113.4	111.8	112.6	111.8	111.8	109.3	107.7	107.7	106.8	104.3
65°	72.9	75.4	73.7	74.5	74.5	74.5	72.9	71.2	71.2	70.4	68.7
67.5°	46.4	48.0	47.2	48.0	47.2	48.0	46.4	45.5	44.7	44.7	43.9
70°	28.2	29.0	28.2	29.0	28.2	28.2	27.3	27.3	26.5	25.7	25.7
72.5°	14.9	15.7	15.7	15.7	15.7	15.7	14.9	14.1	14.1	14.1	13.2
75°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	6.6	6.6	6.6
77.5°	3.3	3.3	3.3	3.3	4.1	3.3	3.3	3.3	3.3	3.3	3.3
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	2.5	2.5	2.5	2.5	2.5	2.5	3.3	3.3	3.3	3.3	2.5
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.1	4.1	3.3	3.3
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°	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8
2.5°	440.5	436.4	434.7	431.4	427.3	424.8	422.3	423.2	417.4	413.2	407.4
5°	551.5	542.4	537.4	530.0	520.9	513.4	506.8	503.5	492.7	485.3	469.5
7.5°	682.3	666.6	656.7	643.4	627.7	614.4	601.2	592.1	575.5	561.4	537.4
10°	825.6	801.6	784.2	764.3	740.3	718.8	698.9	682.3	657.5	636.0	604.5
12.5°	982.1	948.2	923.3	894.3	860.4	830.6	795.0	775.9	742.0	712.2	671.6
15°	1148.6	1103.8	1069.1	1029.3	984.6	944.8	899.3	871.1	826.4	788.3	737.8
17.5°	1308.4	1252.1	1206.5	1156.0	1100.5	1049.2	995.4	955.6	901.0	853.8	793.3
20°	1447.5	1380.4	1324.9	1263.7	1198.2	1135.3	1076.5	1023.5	959.8	904.3	835.5
22.5°	1560.9	1483.1	1419.3	1348.1	1272.8	1201.6	1134.5	1074.0	1001.2	939.9	864.5
25°	1642.9	1557.6	1486.4	1407.7	1324.9	1243.8	1172.6	1106.3	1026.8	961.4	881.1
27.5°	1686.0	1595.7	1520.4	1435.9	1348.1	1263.7	1186.6	1116.3	1032.6	963.9	881.1
30°	1678.5	1586.6	1508.8	1421.8	1333.2	1248.8	1168.4	1098.0	1011.9	942.4	859.6
32.5°	1621.4	1531.1	1454.9	1370.5	1283.5	1201.6	1121.2	1053.3	967.2	899.3	819.0
35°	1527.0	1441.7	1369.7	1289.3	1207.3	1130.3	1057.5	988.7	905.9	841.3	766.0
37.5°	1404.4	1326.6	1261.2	1186.6	1111.3	1041.7	969.7	910.9	837.2	776.7	703.0
40°	1257.9	1189.1	1131.2	1064.9	997.0	936.6	876.1	819.0	746.9	693.1	630.2
42.5°	1096.4	1037.6	987.9	929.9	871.1	819.8	767.6	717.9	658.3	609.5	550.7
45°	922.5	872.8	832.2	785.9	737.0	689.0	650.9	609.5	554.0	517.6	467.9
47.5°	742.8	704.7	674.1	638.5	599.5	569.7	533.3	500.2	459.6	425.6	385.1
50°	572.2	545.7	524.2	499.3	471.2	443.9	422.3	396.7	366.0	338.7	306.4
52.5°	423.2	405.8	392.5	376.0	356.9	342.8	323.0	303.9	280.7	260.0	235.2
55°	303.1	293.1	284.9	274.9	261.7	249.3	239.3	226.1	209.5	193.8	175.6
57.5°	217.8	207.0	206.2	195.4	190.5	181.4	172.2	162.3	150.7	139.9	126.7
60°	150.7	143.3	139.9	135.8	130.0	124.2	120.1	113.4	105.2	97.7	87.8
62.5°	101.9	96.9	95.2	93.6	88.6	86.1	81.2	77.0	71.2	65.4	58.8
65°	67.1	63.8	62.1	59.6	57.1	55.5	53.0	49.7	44.7	41.4	37.3
67.5°	42.2	39.7	38.1	37.3	34.8	34.0	31.5	29.8	26.5	24.8	22.4
70°	24.0	23.2	21.5	21.5	19.9	18.2	17.4	15.7	14.9	13.2	12.4
72.5°	12.4	12.4	11.6	10.8	9.9	9.9	9.1	8.3	7.5	6.6	6.6
75°	5.8	5.8	5.8	5.0	5.0	5.0	4.1	4.1	4.1	3.3	3.3
77.5°	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	2.5	1.7	1.7	1.7	1.7	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	2.5	2.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
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°	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8
2.5°	403.3	401.6	397.5	396.7	387.5	385.9	380.9	373.5	367.7	366.0	367.7
5°	463.7	456.3	443.9	441.4	426.5	421.5	410.7	399.1	389.2	383.4	380.9
7.5°	525.8	513.4	495.2	486.1	464.6	453.8	438.1	421.5	405.8	395.0	388.4
10°	585.5	565.6	532.5	525.0	498.5	481.1	459.6	437.2	417.4	402.4	391.7
12.5°	641.8	617.8	583.8	563.1	528.3	506.0	478.6	451.3	426.5	406.6	391.7
15°	699.7	668.3	626.0	597.0	557.3	527.5	494.4	462.9	433.9	409.1	390.9
17.5°	747.8	708.8	659.2	624.4	578.0	542.4	504.3	467.9	436.4	408.2	387.5
20°	783.4	737.8	681.5	640.9	589.6	549.8	508.4	468.7	433.9	403.3	380.9
22.5°	807.4	755.2	693.9	649.2	595.4	552.3	507.6	466.2	430.6	399.1	375.1
25°	819.0	762.7	698.9	650.9	594.6	549.8	503.5	461.2	424.8	392.5	369.3
27.5°	817.3	757.7	692.3	641.8	584.6	538.3	491.1	448.8	413.2	380.9	356.9
30°	793.3	734.5	668.3	616.9	560.6	514.2	467.0	425.6	390.9	357.7	335.4
32.5°	756.0	695.6	631.0	573.9	525.8	480.3	435.6	393.3	360.2	327.9	306.4
35°	705.5	647.6	585.5	536.6	484.4	440.5	397.5	357.7	326.3	294.8	274.9
37.5°	646.7	591.3	534.1	483.6	438.1	397.5	356.9	321.3	289.8	261.7	242.6
40°	578.8	527.5	475.3	432.3	387.5	350.3	313.0	278.2	252.6	226.9	210.3
42.5°	505.1	459.6	412.4	375.1	334.5	301.4	265.8	241.0	216.1	192.9	179.7
45°	428.1	388.4	348.6	314.7	281.5	252.6	221.9	198.7	179.7	160.6	149.1
47.5°	351.9	318.0	285.7	258.4	229.4	205.4	183.8	163.1	144.9	129.2	120.1
50°	274.9	252.6	226.9	204.5	181.4	161.5	141.6	126.7	112.6	101.0	95.2
52.5°	214.5	193.8	173.1	154.9	138.3	121.7	108.5	96.1	86.1	78.7	74.5
55°	159.8	143.3	127.5	113.4	100.2	89.4	80.3	72.9	66.2	60.5	58.8
57.5°	114.3	101.9	91.1	80.3	72.0	65.4	59.6	54.7	50.5	46.4	45.5
60°	79.5	70.4	63.8	57.1	52.2	47.2	43.9	40.6	37.3	34.8	34.0
62.5°	53.0	48.0	43.1	39.7	37.3	33.1	31.5	29.0	27.3	24.8	24.0
65°	34.0	30.6	28.2	25.7	24.0	22.4	20.7	19.0	17.4	15.7	15.7
67.5°	20.7	18.2	17.4	15.7	14.1	13.2	12.4	10.8	9.9	9.9	9.1
70°	11.6	9.9	9.1	8.3	7.5	7.5	6.6	5.8	5.8	5.0	5.0
72.5°	5.8	5.8	5.0	5.0	4.1	4.1	3.3	3.3	3.3	2.5	2.5
75°	3.3	3.3	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7
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: P170856

CATALOG NUMBER: LDA4A13840D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8
2.5°	361.0	352.8	351.1	351.1	316.3	295.6	279.9	275.8
5°	369.3	357.7	351.9	348.6	286.5	250.1	226.1	219.4
7.5°	373.5	356.9	347.8	340.3	257.5	210.3	184.7	177.2
10°	371.8	351.9	339.5	329.6	231.0	179.7	153.2	146.6
12.5°	368.5	346.1	330.4	318.0	208.7	155.7	131.7	125.0
15°	365.2	339.5	321.3	306.4	190.5	139.1	117.6	111.8
17.5°	358.6	332.1	311.4	295.6	178.9	132.5	114.3	111.0
20°	351.1	323.8	302.3	286.5	175.6	139.1	128.4	128.4
22.5°	346.1	318.0	297.3	281.5	181.4	154.9	150.7	153.2
25°	339.5	313.0	292.3	277.4	187.1	167.3	164.8	168.1
27.5°	328.7	302.3	282.4	267.5	183.8	165.6	163.1	164.8
30°	307.2	281.5	264.2	248.4	170.6	153.2	149.1	149.9
32.5°	279.9	255.1	238.5	223.6	151.5	135.0	130.8	130.8
35°	250.1	226.9	211.2	197.9	133.3	118.4	114.3	113.4
37.5°	220.3	198.7	185.5	173.1	116.8	103.5	99.4	98.5
40°	190.5	171.4	159.0	149.1	102.7	91.9	87.8	86.9
42.5°	162.3	145.7	135.0	126.7	89.4	81.2	77.8	77.0
45°	134.1	120.9	112.6	106.0	77.8	69.6	68.7	68.7
47.5°	108.5	97.7	91.9	87.8	66.2	59.6	58.8	59.6
50°	86.9	79.5	75.4	72.0	56.3	50.5	48.0	48.0
52.5°	68.7	63.8	61.3	58.8	46.4	40.6	37.3	36.4
55°	54.7	50.5	48.9	47.2	36.4	29.8	26.5	25.7
57.5°	43.1	39.7	38.1	36.4	27.3	20.7	17.4	16.6
60°	32.3	29.8	28.2	27.3	19.0	12.4	9.9	9.1
62.5°	23.2	21.5	19.9	19.0	11.6	6.6	4.1	3.3
65°	14.1	14.1	12.4	11.6	5.8	2.5	1.7	0.8
67.5°	8.3	7.5	6.6	6.6	2.5	1.7	0.8	0.8
70°	4.1	4.1	3.3	3.3	1.7	0.8	0.8	0.8
72.5°	2.5	2.5	2.5	1.7	1.7	0.8	0.8	0.8
75°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.8
77.5°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.0
80°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.0
82.5°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.8
85°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.0
87.5°	1.7	1.7	1.7	1.7	1.7	0.8	0.8	0.8
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)