

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: P170848

Luminaire Tested: **LDA4A09840D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170848
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: LDA4A09840D010TE 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: 857.4 lumens
Efficiency: N/A
Efficacy: 61.9 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

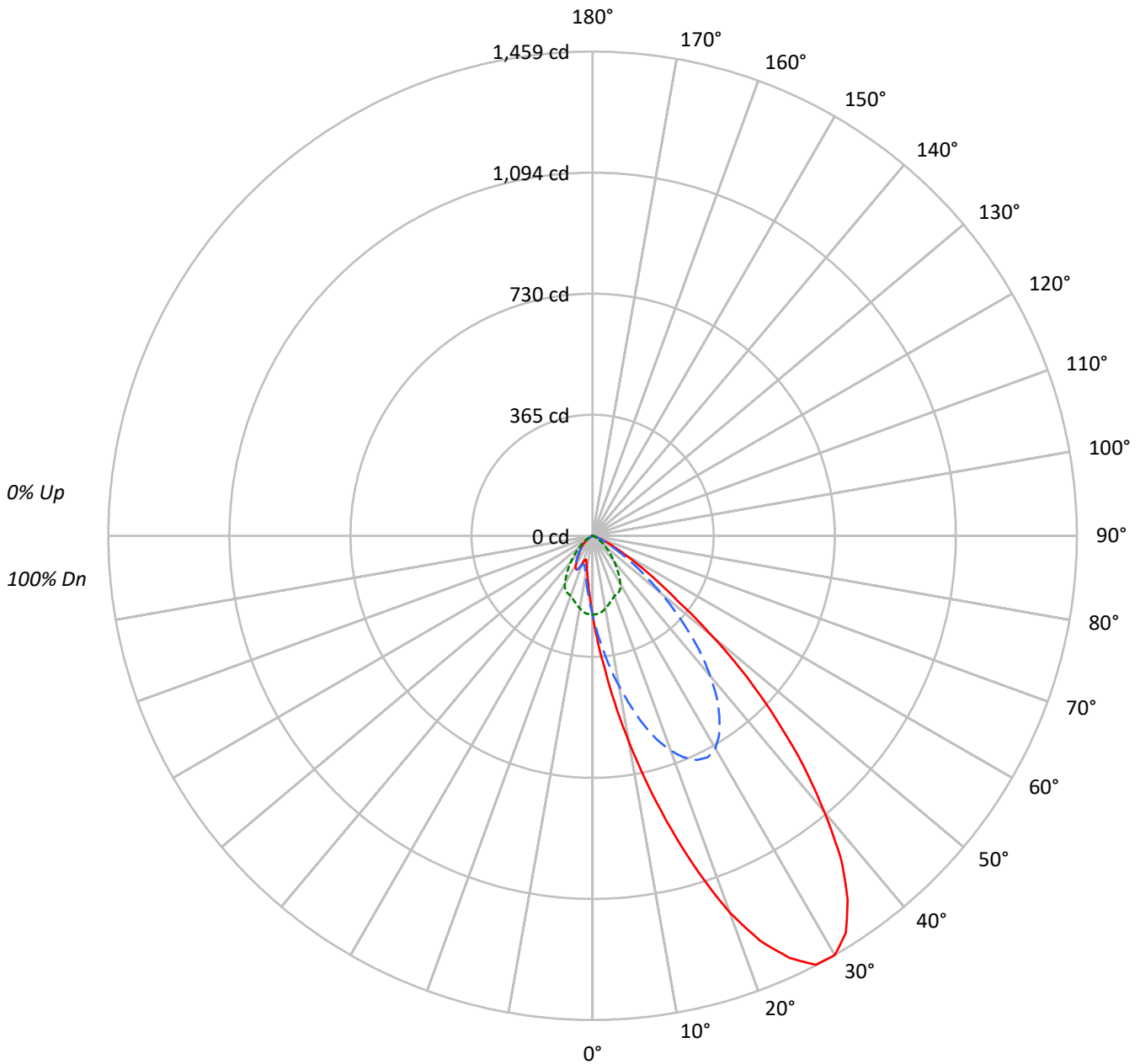
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170848

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LLWW1

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°	29319	29319	29319
5°	48771	29085	18313
10°	78969	27818	12375
15°	116779	26369	9616
20°	158643	25347	11354
25°	190985	25436	15420
30°	207816	23842	14385
35°	201728	20087	11504
40°	174751	16166	9436
45°	136270	12455	8076
50°	90362	9307	6217
55°	50407	6838	3720
60°	26569	4539	1505
65°	14330	2277	175
70°	6852	793	216
75°	2383	524	286
80°	781	781	0
85°	2406	1557	0



TEST NUMBER: P170848

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LLWW1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.4	3.0
10°-20°	100.1	11.7
20°-30°	205.8	24.0
30°-40°	245.8	28.7
40°-50°	181.5	21.2
50°-60°	76.4	8.9
60°-70°	18.8	2.2
70°-80°	2.6	0.3
80°-90°	1.0	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°	331.2	38.6
0°-40°	577.1	67.3
0°-60°	835.0	97.4
0°-90°	857.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	857.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	238	238	238	238	238	
5°	394	339	235	168	148	45
15°	914	587	206	94	75	268
25°	1403	746	187	113	113	642
35°	1340	666	133	80	76	822
45°	781	411	71	47	46	600
55°	234	152	32	20	17	224
65°	49	34	8	2	1	53
75°	5	3	1	1	1	7
85°	2	2	1	1	0	2
90°	0	0	0	0	0	



TEST NUMBER: P170848

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7
2.5°	309.1	305.2	305.2	306.3	309.7	306.9	304.7	302.4	304.7	299.6	301.3
5°	393.9	393.4	393.4	388.9	392.8	393.4	388.9	385.0	386.1	378.9	378.9
7.5°	505.5	502.2	501.1	494.9	499.4	498.8	491.6	484.9	484.9	473.2	470.4
10°	630.5	626.1	623.8	616.0	619.9	617.7	607.1	597.0	594.2	577.5	571.4
12.5°	768.3	765.5	762.2	752.2	755.5	751.0	736.0	721.5	715.3	693.0	682.4
15°	914.5	919.0	913.4	901.7	903.9	896.1	876.6	856.5	847.0	816.9	801.3
17.5°	1065.2	1070.8	1064.6	1051.2	1050.7	1040.1	1013.3	988.7	974.8	936.3	915.6
20°	1208.6	1210.3	1202.4	1187.9	1184.6	1170.1	1137.7	1103.1	1089.7	1042.3	1016.1
22.5°	1321.3	1327.4	1317.9	1307.3	1296.7	1278.3	1240.4	1202.4	1183.5	1129.4	1097.5
25°	1403.3	1417.3	1406.1	1393.8	1382.1	1360.4	1317.9	1277.2	1253.8	1193.5	1157.3
27.5°	1457.4	1470.8	1458.6	1444.6	1432.3	1407.2	1360.9	1321.9	1293.4	1227.6	1188.5
30°	1459.1	1475.3	1462.5	1447.4	1435.7	1410.6	1363.1	1323.0	1291.2	1225.3	1184.6
32.5°	1418.9	1431.8	1418.9	1406.1	1392.7	1368.7	1321.3	1282.8	1249.3	1186.3	1145.5
35°	1339.7	1350.9	1338.0	1323.0	1313.5	1292.3	1247.1	1210.3	1176.8	1118.8	1083.0
37.5°	1230.3	1240.4	1228.7	1220.3	1206.4	1187.4	1146.1	1113.2	1081.4	1028.9	997.1
40°	1085.3	1106.5	1095.3	1089.7	1076.9	1060.7	1024.5	995.4	966.4	920.7	894.4
42.5°	940.2	960.3	950.2	946.3	935.2	921.2	891.1	866.5	839.8	801.8	779.5
45°	781.2	802.4	792.9	791.2	781.7	771.1	738.8	725.9	702.5	666.8	656.2
47.5°	631.6	635.5	626.6	627.2	620.5	613.2	587.0	579.2	567.5	540.1	527.8
50°	470.9	473.7	466.5	468.7	464.2	459.8	441.9	438.0	430.8	412.3	405.1
52.5°	324.2	337.0	332.0	334.2	332.0	330.3	323.1	316.4	313.0	301.3	298.0
55°	234.4	235.5	231.6	233.8	232.1	231.6	227.1	223.2	221.5	214.3	213.1
57.5°	162.4	163.5	163.5	162.4	161.8	160.7	157.9	155.7	154.6	152.9	149.5
60°	107.7	112.2	110.5	111.6	111.0	111.0	108.8	107.1	106.6	103.2	103.2
62.5°	73.7	76.4	75.3	75.9	75.3	75.3	73.7	72.5	72.5	72.0	70.3
65°	49.1	50.8	49.7	50.2	50.2	50.2	49.1	48.0	48.0	47.4	46.3
67.5°	31.2	32.4	31.8	32.4	31.8	32.4	31.2	30.7	30.1	30.1	29.6
70°	19.0	19.5	19.0	19.5	19.0	19.0	18.4	18.4	17.9	17.3	17.3
72.5°	10.0	10.6	10.6	10.6	10.6	10.6	10.0	9.5	9.5	9.5	8.9
75°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5
77.5°	2.2	2.2	2.2	2.2	2.8	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.7	1.7	1.7	1.7	1.7	1.7	2.2	2.2	2.2	2.2	1.7
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.8	2.8	2.2	2.2
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: P170848

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7
2.5°	296.8	294.1	292.9	290.7	287.9	286.2	284.6	285.1	281.2	278.4	274.5
5°	371.6	365.5	362.1	357.1	351.0	345.9	341.5	339.3	332.0	327.0	316.4
7.5°	459.8	449.2	442.5	433.6	422.9	414.0	405.1	399.0	387.8	378.3	362.1
10°	556.3	540.1	528.4	515.0	498.8	484.3	470.9	459.8	443.0	428.5	407.3
12.5°	661.8	638.9	622.1	602.6	579.7	559.7	535.7	522.8	500.0	479.9	452.5
15°	773.9	743.8	720.4	693.6	663.4	636.7	606.0	587.0	556.9	531.2	497.2
17.5°	881.6	843.7	813.0	778.9	741.6	707.0	670.7	643.9	607.1	575.3	534.5
20°	975.3	930.2	892.8	851.5	807.4	765.0	725.4	689.7	646.7	609.3	563.0
22.5°	1051.8	999.3	956.4	908.4	857.6	809.6	764.4	723.7	674.6	633.3	582.5
25°	1107.0	1049.6	1001.6	948.6	892.8	838.1	790.1	745.5	691.9	647.8	593.7
27.5°	1136.0	1075.2	1024.5	967.5	908.4	851.5	799.6	752.2	695.8	649.5	593.7
30°	1131.0	1069.1	1016.6	958.1	898.3	841.4	787.3	739.9	681.9	635.0	579.2
32.5°	1092.5	1031.7	980.4	923.5	864.9	809.6	755.5	709.8	651.7	606.0	551.8
35°	1028.9	971.4	922.9	868.8	813.5	761.6	712.5	666.2	610.4	566.9	516.1
37.5°	946.3	893.9	849.8	799.6	748.8	701.9	653.4	613.8	564.1	523.4	473.7
40°	847.6	801.3	762.2	717.6	671.8	631.1	590.3	551.8	503.3	467.0	424.6
42.5°	738.8	699.1	665.7	626.6	587.0	552.4	517.2	483.8	443.6	410.7	371.1
45°	621.6	588.1	560.8	529.5	496.6	464.2	438.6	410.7	373.3	348.7	315.3
47.5°	500.5	474.8	454.2	430.2	404.0	383.9	359.3	337.0	309.7	286.8	259.5
50°	385.6	367.7	353.2	336.5	317.5	299.1	284.6	267.3	246.6	228.2	206.5
52.5°	285.1	273.4	264.5	253.3	240.5	231.0	217.6	204.8	189.2	175.2	158.5
55°	204.2	197.5	191.9	185.2	176.3	168.0	161.3	152.3	141.2	130.6	118.3
57.5°	146.7	139.5	138.9	131.7	128.3	122.2	116.1	109.4	101.6	94.3	85.4
60°	101.6	96.5	94.3	91.5	87.6	83.7	80.9	76.4	70.9	65.8	59.1
62.5°	68.6	65.3	64.2	63.1	59.7	58.0	54.7	51.9	48.0	44.1	39.6
65°	45.2	43.0	41.8	40.2	38.5	37.4	35.7	33.5	30.1	27.9	25.1
67.5°	28.5	26.8	25.7	25.1	23.4	22.9	21.2	20.1	17.9	16.7	15.1
70°	16.2	15.6	14.5	14.5	13.4	12.3	11.7	10.6	10.0	8.9	8.4
72.5°	8.4	8.4	7.8	7.3	6.7	6.7	6.1	5.6	5.0	4.5	4.5
75°	3.9	3.9	3.9	3.3	3.3	3.3	2.8	2.8	2.8	2.2	2.2
77.5°	2.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	1.7	1.1	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	1.7	1.7	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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: P170848

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7
2.5°	271.7	270.6	267.8	267.3	261.1	260.0	256.7	251.6	247.7	246.6	247.7
5°	312.5	307.4	299.1	297.4	287.4	284.0	276.8	268.9	262.3	258.3	256.7
7.5°	354.3	345.9	333.7	327.5	313.0	305.8	295.2	284.0	273.4	266.2	261.7
10°	394.5	381.1	358.8	353.8	335.9	324.2	309.7	294.6	281.2	271.2	263.9
12.5°	432.4	416.3	393.4	379.4	356.0	340.9	322.5	304.1	287.4	274.0	263.9
15°	471.5	450.3	421.8	402.3	375.5	355.4	333.1	311.9	292.4	275.6	263.4
17.5°	503.9	477.6	444.2	420.7	389.5	365.5	339.8	315.3	294.1	275.1	261.1
20°	527.8	497.2	459.2	431.9	397.3	370.5	342.6	315.8	292.4	271.7	256.7
22.5°	544.0	508.9	467.6	437.5	401.2	372.2	342.0	314.1	290.1	268.9	252.8
25°	551.8	513.9	470.9	438.6	400.6	370.5	339.3	310.8	286.2	264.5	248.9
27.5°	550.7	510.6	466.5	432.4	393.9	362.7	330.9	302.4	278.4	256.7	240.5
30°	534.5	494.9	450.3	415.7	377.8	346.5	314.7	286.8	263.4	241.0	226.0
32.5°	509.4	468.7	425.2	386.7	354.3	323.6	293.5	265.0	242.7	221.0	206.5
35°	475.4	436.3	394.5	361.6	326.4	296.8	267.8	241.0	219.8	198.6	185.2
37.5°	435.8	398.4	359.9	325.9	295.2	267.8	240.5	216.5	195.3	176.3	163.5
40°	390.0	355.4	320.3	291.3	261.1	236.0	210.9	187.5	170.2	152.9	141.7
42.5°	340.4	309.7	277.9	252.8	225.4	203.1	179.1	162.4	145.6	130.0	121.1
45°	288.5	261.7	234.9	212.0	189.7	170.2	149.5	133.9	121.1	108.2	100.4
47.5°	237.1	214.3	192.5	174.1	154.6	138.4	123.9	109.9	97.6	87.0	80.9
50°	185.2	170.2	152.9	137.8	122.2	108.8	95.4	85.4	75.9	68.1	64.2
52.5°	144.5	130.6	116.6	104.3	93.2	82.0	73.1	64.7	58.0	53.0	50.2
55°	107.7	96.5	85.9	76.4	67.5	60.3	54.1	49.1	44.6	40.7	39.6
57.5°	77.0	68.6	61.4	54.1	48.5	44.1	40.2	36.8	34.0	31.2	30.7
60°	53.6	47.4	43.0	38.5	35.2	31.8	29.6	27.3	25.1	23.4	22.9
62.5°	35.7	32.4	29.0	26.8	25.1	22.3	21.2	19.5	18.4	16.7	16.2
65°	22.9	20.6	19.0	17.3	16.2	15.1	13.9	12.8	11.7	10.6	10.6
67.5°	13.9	12.3	11.7	10.6	9.5	8.9	8.4	7.3	6.7	6.7	6.1
70°	7.8	6.7	6.1	5.6	5.0	5.0	4.5	3.9	3.9	3.3	3.3
72.5°	3.9	3.9	3.3	3.3	2.8	2.8	2.2	2.2	2.2	1.7	1.7
75°	2.2	2.2	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1
87.5°	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1
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: P170848

CATALOG NUMBER: LDA4A09840D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	237.7	237.7	237.7	237.7	237.7	237.7	237.7	237.7
2.5°	243.3	237.7	236.6	236.6	213.1	199.2	188.6	185.8
5°	248.9	241.0	237.1	234.9	193.1	168.5	152.3	147.9
7.5°	251.6	240.5	234.4	229.3	173.5	141.7	124.4	119.4
10°	250.5	237.1	228.8	222.1	155.7	121.1	103.2	98.8
12.5°	248.3	233.2	222.6	214.3	140.6	104.9	88.7	84.3
15°	246.1	228.8	216.5	206.5	128.3	93.7	79.2	75.3
17.5°	241.6	223.8	209.8	199.2	120.5	89.3	77.0	74.8
20°	236.6	218.2	203.7	193.1	118.3	93.7	86.5	86.5
22.5°	233.2	214.3	200.3	189.7	122.2	104.3	101.6	103.2
25°	228.8	210.9	197.0	186.9	126.1	112.7	111.0	113.3
27.5°	221.5	203.7	190.3	180.2	123.9	111.6	109.9	111.0
30°	207.0	189.7	178.0	167.4	114.9	103.2	100.4	101.0
32.5°	188.6	171.9	160.7	150.7	102.1	91.0	88.2	88.2
35°	168.5	152.9	142.3	133.4	89.8	79.8	77.0	76.4
37.5°	148.4	133.9	125.0	116.6	78.7	69.7	67.0	66.4
40°	128.3	115.5	107.1	100.4	69.2	61.9	59.1	58.6
42.5°	109.4	98.2	91.0	85.4	60.3	54.7	52.5	51.9
45°	90.4	81.5	75.9	71.4	52.5	46.9	46.3	46.3
47.5°	73.1	65.8	61.9	59.1	44.6	40.2	39.6	40.2
50°	58.6	53.6	50.8	48.5	37.9	34.0	32.4	32.4
52.5°	46.3	43.0	41.3	39.6	31.2	27.3	25.1	24.6
55°	36.8	34.0	32.9	31.8	24.6	20.1	17.9	17.3
57.5°	29.0	26.8	25.7	24.6	18.4	13.9	11.7	11.2
60°	21.8	20.1	19.0	18.4	12.8	8.4	6.7	6.1
62.5°	15.6	14.5	13.4	12.8	7.8	4.5	2.8	2.2
65°	9.5	9.5	8.4	7.8	3.9	1.7	1.1	0.6
67.5°	5.6	5.0	4.5	4.5	1.7	1.1	0.6	0.6
70°	2.8	2.8	2.2	2.2	1.1	0.6	0.6	0.6
72.5°	1.7	1.7	1.7	1.1	1.1	0.6	0.6	0.6
75°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
77.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
80°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
82.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
85°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
87.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)