

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: P179939

Luminaire Tested: **LDA6A65940D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179939  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26690)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65940D010TE LARH30NF 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5329.6 lumens  
Efficiency: N/A  
Efficacy: 68.3 lumens/watt  
Spacing Criteria (0/90/45): 2.55 / 0.46 / 1.37  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

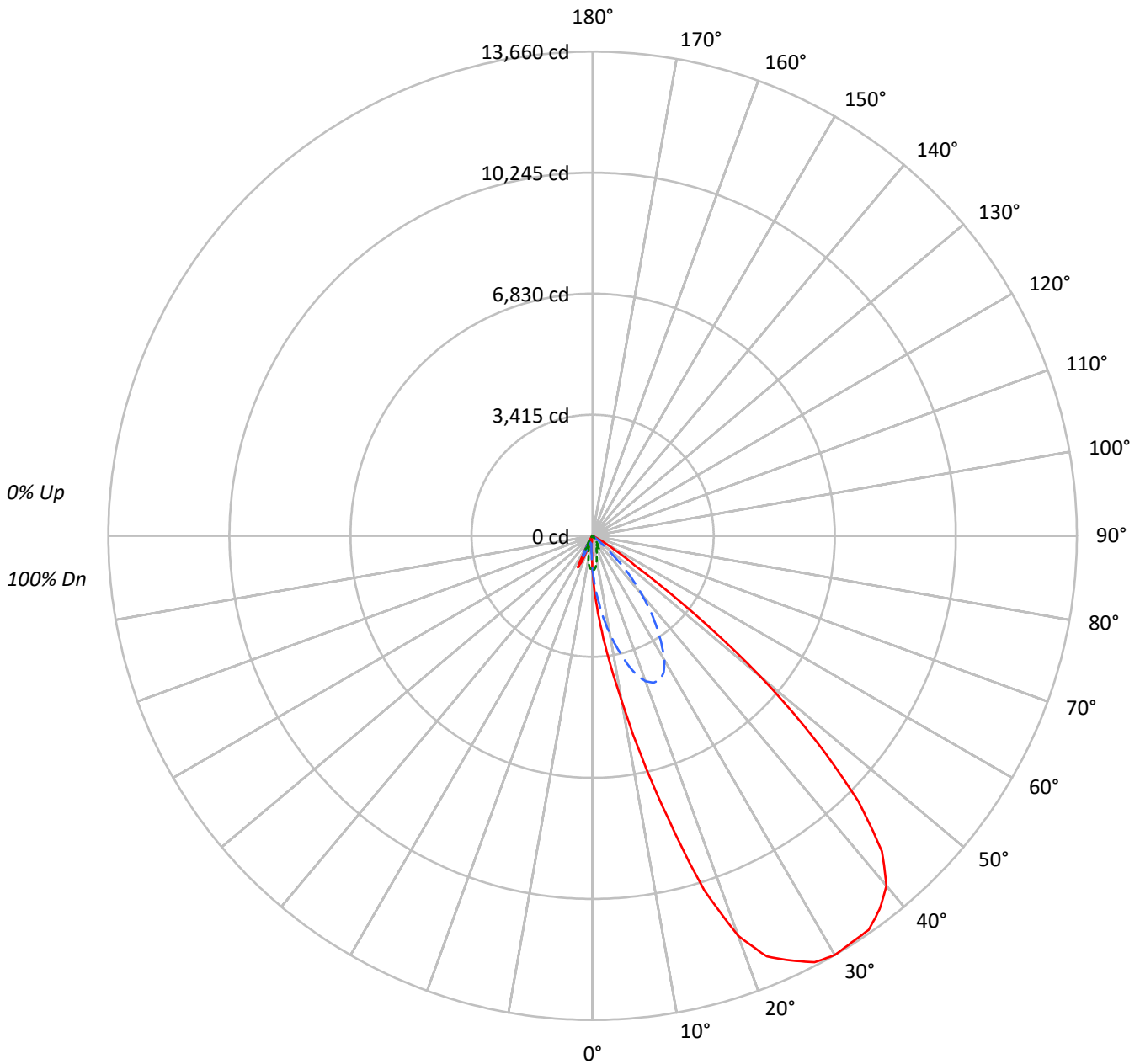
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81																			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	75	73																			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65																			
5	85	74	67	62	83	73	67	62	72	66	61	70	64	60	68	63	60	58																			
6	79	68	60	55	77	67	60	55	65	59	55	64	58	54	62	58	54	52																			
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47																			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	48	44	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38																			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	53702	53702	53702
5°	138642	49774	15557
10°	263004	37981	5227
15°	470281	24688	5210
20°	700738	16796	9492
25°	799558	20947	59628
30°	864684	17503	17832
35°	908300	8519	5588
40°	922664	3063	2834
45°	822047	2023	1698
50°	527957	1424	1160
55°	138987	994	602
60°	30995	1031	460
65°	2983	1219	545
70°	1010	1507	673
75°	212	1991	1101
80°	0	3283	1642
85°	0	5913	2642



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.9	2.2
10°-20°	620.9	11.6
20°-30°	1456.7	27.3
30°-40°	1675.6	31.4
40°-50°	1190.2	22.3
50°-60°	242.0	4.5
60°-70°	12.1	0.2
70°-80°	7.2	0.1
80°-90°	6.0	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°	2196.5	41.2
0°-40°	3872.1	72.7
0°-60°	5304.3	99.5
0°-90°	5329.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5329.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	980	980	980	980	980	
5°	2519	1822	904	362	283	307
15°	8286	3725	435	98	92	2486
25°	13219	4487	346	756	986	6092
35°	13572	3150	127	94	84	8432
45°	10603	1120	26	28	22	7814
55°	1454	29	10	10	6	1961
65°	23	8	9	8	4	55
75°	1	5	9	8	5	2
85°	0	5	9	7	4	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6
2.5°	1687.9	1636.8	1611.8	1610.7	1537.7	1561.7	1537.7	1518.9	1451.1	1423.0	1376.0
5°	2519.4	2456.8	2406.7	2384.8	2259.6	2232.5	2220.0	2156.3	2014.5	1932.0	1822.5
7.5°	3500.0	3434.3	3351.9	3286.1	3104.6	3053.5	3020.1	2910.6	2700.9	2535.0	2330.6
10°	4724.7	4686.1	4552.6	4431.6	4156.2	4049.8	3949.6	3694.0	3419.7	3086.9	2823.0
12.5°	6374.1	6283.3	6045.5	5803.4	5371.5	5213.0	5047.1	4638.2	4218.8	3697.2	3261.1
15°	8286.3	8209.1	7842.9	7448.6	6834.1	6573.3	6313.6	5669.9	5025.2	4353.4	3725.3
17.5°	10487.5	10341.4	9977.3	9310.7	8451.1	8041.1	7557.1	6737.1	5806.6	4893.7	4113.4
20°	12011.6	11925.0	11617.3	10977.8	9999.3	9457.8	8856.9	7731.3	6458.6	5326.7	4368.0
22.5°	12845.2	12758.6	12528.0	11963.6	11161.4	10617.9	9920.0	8535.6	6951.0	5617.7	4487.9
25°	13218.6	13162.3	13036.1	12576.0	11833.2	11344.0	10683.6	9091.7	7258.7	5750.2	4486.9
27.5°	13563.9	13578.5	13266.6	12887.9	12203.6	11712.2	11086.3	9342.0	7319.2	5683.5	4342.9
30°	13659.9	13623.4	13486.7	12953.7	12316.2	11781.1	11110.3	9209.5	7083.5	5388.2	4057.1
32.5°	13600.4	13601.5	13473.2	12906.7	12157.7	11558.9	10804.6	8734.9	6624.4	4925.0	3612.7
35°	13572.3	13562.9	13230.1	12732.5	11781.1	11076.9	10126.5	7973.3	5988.1	4333.5	3150.5
37.5°	13292.7	13236.4	12996.4	12321.5	11076.9	10176.6	9153.2	7041.7	5204.6	3718.0	2676.9
40°	12893.1	12822.2	12432.0	11463.9	9873.0	8868.4	7851.3	5987.0	4384.6	3105.7	2149.0
42.5°	12074.2	11957.4	11365.9	10081.7	8322.8	7388.1	6545.2	4931.3	3584.5	2521.5	1650.4
45°	10603.3	10412.4	9593.4	8251.9	6718.3	5984.9	5272.4	3952.8	2869.9	1877.8	1120.4
47.5°	8513.7	8305.1	7562.3	6484.6	5259.9	4665.3	4060.2	2910.6	1941.4	1094.3	562.3
50°	6190.5	6046.5	5390.3	4481.7	3478.1	2979.4	2515.2	1623.2	931.6	528.9	230.6
52.5°	3566.8	3463.5	3006.6	2358.7	1710.9	1432.3	1151.7	708.3	474.7	209.7	74.1
55°	1454.2	1394.8	1194.5	1011.9	759.5	656.2	547.7	353.7	159.6	50.1	29.2
57.5°	711.5	704.2	587.3	470.5	346.3	279.6	210.7	70.9	38.6	25.0	18.8
60°	282.7	272.3	186.7	108.5	60.5	49.0	41.7	29.2	21.9	16.7	13.6
62.5°	49.0	48.0	40.7	34.4	28.2	25.0	23.0	17.7	14.6	11.5	10.4
65°	23.0	23.0	20.9	18.8	15.6	14.6	13.6	11.5	9.4	8.3	8.3
67.5°	11.5	11.5	10.4	9.4	8.3	8.3	7.3	7.3	6.3	6.3	6.3
70°	6.3	6.3	6.3	5.2	5.2	5.2	5.2	5.2	4.2	5.2	5.2
72.5°	4.2	4.2	4.2	3.1	2.1	3.1	3.1	3.1	4.2	5.2	5.2
75°	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.2	5.2	5.2
77.5°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	5.2	5.2
80°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	5.2	5.2
82.5°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	5.2	5.2
85°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	5.2	5.2
87.5°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	5.2	5.2
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6
2.5°	1355.1	1300.9	1265.4	1202.8	1176.8	1165.3	1107.9	1052.6	999.4	960.8	901.3
5°	1739.0	1652.5	1520.0	1395.8	1341.6	1307.2	1194.5	1090.2	991.1	904.5	801.2
7.5°	2152.2	1973.8	1766.2	1566.9	1473.0	1410.4	1236.2	1083.9	942.0	810.6	669.7
10°	2548.6	2268.0	1965.4	1680.6	1553.4	1459.5	1232.0	1037.0	852.3	682.3	531.0
12.5°	2886.6	2523.5	2121.9	1752.6	1586.7	1466.8	1193.4	955.6	731.3	548.7	417.3
15°	3171.4	2719.7	2225.2	1776.6	1577.3	1435.5	1118.3	844.0	598.8	435.0	337.0
17.5°	3371.7	2814.6	2249.2	1735.9	1511.6	1347.8	1004.6	701.0	470.5	351.6	266.0
20°	3488.5	2827.1	2190.8	1636.8	1396.9	1223.7	861.7	550.8	381.8	287.9	206.6
22.5°	3506.3	2765.6	2076.0	1503.3	1264.4	1097.5	717.7	461.1	347.4	269.2	202.4
25°	3420.7	2643.5	1926.8	1372.9	1144.4	973.3	620.7	466.3	390.2	346.3	359.9
27.5°	3254.8	2442.2	1755.7	1239.3	1019.2	846.1	586.3	488.2	425.6	432.9	458.0
30°	3000.3	2158.4	1509.5	1013.0	780.3	644.7	466.3	351.6	292.1	276.5	277.5
32.5°	2625.8	1802.7	1185.1	703.1	524.7	435.0	295.2	196.1	197.2	182.6	181.5
35°	2198.1	1451.1	886.7	471.5	363.0	302.5	174.2	137.7	132.5	127.3	120.0
37.5°	1774.5	1121.5	590.5	322.4	231.6	168.0	87.6	72.0	66.8	62.6	62.6
40°	1351.0	784.5	365.1	169.0	93.9	68.9	52.2	43.8	42.8	42.8	41.7
42.5°	980.6	463.2	198.2	66.8	52.2	45.9	36.5	32.3	32.3	32.3	32.3
45°	521.6	235.8	76.2	41.7	34.4	32.3	27.1	25.0	25.0	26.1	26.1
47.5°	241.0	88.7	38.6	28.2	24.0	24.0	20.9	19.8	19.8	20.9	20.9
50°	86.6	36.5	25.0	19.8	17.7	18.8	16.7	15.6	16.7	16.7	16.7
52.5°	33.4	23.0	17.7	15.6	13.6	14.6	12.5	12.5	13.6	13.6	13.6
55°	20.9	16.7	13.6	11.5	10.4	11.5	10.4	10.4	10.4	10.4	10.4
57.5°	14.6	12.5	10.4	9.4	8.3	9.4	9.4	9.4	9.4	9.4	9.4
60°	11.5	9.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3	9.4	9.4
62.5°	9.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3	9.4	9.4	9.4
65°	8.3	7.3	8.3	8.3	7.3	8.3	8.3	8.3	9.4	9.4	10.4
67.5°	6.3	6.3	6.3	7.3	7.3	7.3	8.3	8.3	9.4	9.4	9.4
70°	6.3	6.3	7.3	7.3	7.3	7.3	8.3	8.3	9.4	9.4	9.4
72.5°	6.3	6.3	7.3	7.3	7.3	8.3	8.3	8.3	9.4	9.4	9.4
75°	6.3	6.3	7.3	7.3	7.3	8.3	8.3	8.3	9.4	9.4	9.4
77.5°	6.3	6.3	7.3	7.3	7.3	8.3	8.3	9.4	9.4	9.4	9.4
80°	6.3	7.3	7.3	8.3	8.3	8.3	8.3	9.4	9.4	10.4	10.4
82.5°	6.3	7.3	7.3	8.3	8.3	8.3	8.3	9.4	9.4	10.4	10.4
85°	6.3	7.3	7.3	8.3	8.3	8.3	8.3	9.4	9.4	9.4	9.4
87.5°	6.3	7.3	7.3	8.3	8.3	8.3	8.3	8.3	9.4	9.4	9.4
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6
2.5°	861.7	810.6	759.5	734.4	712.5	681.2	641.6	609.2	574.8	557.1	516.4
5°	719.8	632.2	558.1	522.7	495.5	458.0	417.3	388.1	362.0	347.4	321.3
7.5°	557.1	473.6	408.9	381.8	362.0	324.4	294.2	263.9	236.8	217.0	190.9
10°	430.8	366.2	313.0	286.9	265.0	225.3	188.8	160.7	131.4	111.6	103.3
12.5°	342.2	281.7	227.4	201.3	178.4	137.7	110.6	105.4	100.1	98.1	94.9
15°	262.9	207.6	150.2	124.1	114.8	109.5	103.3	102.2	98.1	98.1	94.9
17.5°	197.2	135.6	114.8	112.7	111.6	109.5	106.4	105.4	104.3	104.3	103.3
20°	141.9	131.4	128.3	130.4	131.4	133.5	132.5	132.5	136.7	146.1	144.0
22.5°	199.3	215.9	233.7	239.9	262.9	285.8	306.7	332.8	394.3	465.3	482.0
25°	394.3	444.4	490.3	515.4	552.9	604.0	653.1	713.6	756.3	791.8	832.5
27.5°	490.3	509.1	501.8	504.9	500.7	493.4	495.5	508.0	501.8	483.0	490.3
30°	290.0	304.6	296.3	300.4	289.0	289.0	285.8	292.1	287.9	280.6	278.5
32.5°	188.8	197.2	196.1	196.1	192.0	189.9	182.6	180.5	173.2	159.6	156.5
35°	113.7	108.5	103.3	100.1	98.1	98.1	97.0	97.0	93.9	90.8	89.7
37.5°	61.5	62.6	62.6	62.6	62.6	64.7	63.6	63.6	63.6	61.5	61.5
40°	42.8	44.9	44.9	44.9	45.9	45.9	45.9	46.9	45.9	45.9	45.9
42.5°	33.4	34.4	33.4	33.4	34.4	34.4	34.4	35.5	35.5	35.5	34.4
45°	27.1	27.1	26.1	27.1	27.1	28.2	28.2	28.2	28.2	27.1	27.1
47.5°	21.9	21.9	21.9	21.9	23.0	23.0	23.0	23.0	23.0	23.0	23.0
50°	17.7	17.7	17.7	18.8	18.8	18.8	17.7	18.8	18.8	18.8	17.7
52.5°	13.6	13.6	13.6	13.6	13.6	12.5	12.5	12.5	12.5	12.5	11.5
55°	10.4	10.4	10.4	10.4	10.4	11.5	10.4	11.5	10.4	10.4	9.4
57.5°	9.4	9.4	9.4	9.4	10.4	10.4	9.4	9.4	9.4	8.3	8.3
60°	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	8.3	7.3	7.3
62.5°	10.4	10.4	9.4	9.4	9.4	9.4	8.3	8.3	8.3	7.3	7.3
65°	10.4	10.4	9.4	10.4	10.4	9.4	9.4	8.3	8.3	7.3	7.3
67.5°	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4	8.3	8.3	7.3
70°	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4	8.3	8.3	7.3
72.5°	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4	9.4	8.3	7.3
75°	10.4	10.4	10.4	10.4	10.4	9.4	9.4	9.4	8.3	8.3	7.3
77.5°	10.4	10.4	10.4	10.4	10.4	9.4	9.4	9.4	8.3	8.3	7.3
80°	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4	8.3	8.3	7.3
82.5°	10.4	10.4	10.4	10.4	10.4	9.4	9.4	9.4	8.3	8.3	7.3
85°	10.4	9.4	9.4	9.4	9.4	9.4	8.3	8.3	7.3	7.3	6.3
87.5°	9.4	9.4	9.4	9.4	9.4	8.3	8.3	7.3	6.3	5.2	5.2
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: P179939

CATALOG NUMBER: LDA6A65940D010TE LARH30NF 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	979.6	979.6	979.6	979.6	979.6	979.6	979.6	979.6
2.5°	516.4	507.0	502.8	495.5	489.3	486.1	474.7	488.2
5°	316.1	304.6	301.5	295.2	287.9	283.8	275.4	282.7
7.5°	180.5	166.9	160.7	155.4	148.1	141.9	134.6	138.7
10°	101.2	97.0	98.1	94.9	93.9	92.8	91.8	93.9
12.5°	93.9	90.8	91.8	89.7	88.7	88.7	87.6	88.7
15°	94.9	91.8	93.9	91.8	90.8	90.8	89.7	91.8
17.5°	103.3	101.2	103.3	101.2	102.2	101.2	102.2	103.3
20°	145.0	148.1	154.4	150.2	153.4	157.5	162.7	162.7
22.5°	510.1	576.9	585.2	618.6	704.2	701.0	758.4	760.5
25°	890.9	895.1	932.6	920.1	921.2	965.0	960.8	985.8
27.5°	512.2	511.2	518.5	504.9	509.1	512.2	500.7	514.3
30°	285.8	280.6	283.8	276.5	276.5	278.5	275.4	281.7
32.5°	158.6	154.4	154.4	149.2	148.1	147.1	144.0	147.1
35°	90.8	87.6	88.7	86.6	84.5	83.5	82.4	83.5
37.5°	62.6	60.5	61.5	59.5	57.4	56.3	55.3	56.3
40°	45.9	44.9	44.9	42.8	41.7	40.7	39.6	39.6
42.5°	34.4	33.4	33.4	31.3	30.3	29.2	28.2	29.2
45°	26.1	25.0	25.0	24.0	23.0	21.9	21.9	21.9
47.5°	23.0	21.9	23.0	21.9	20.9	20.9	20.9	20.9
50°	17.7	17.7	17.7	16.7	15.6	15.6	14.6	13.6
52.5°	11.5	10.4	10.4	9.4	9.4	8.3	8.3	8.3
55°	9.4	8.3	8.3	7.3	7.3	6.3	6.3	6.3
57.5°	7.3	7.3	6.3	6.3	5.2	5.2	5.2	5.2
60°	6.3	6.3	6.3	5.2	5.2	4.2	4.2	4.2
62.5°	6.3	5.2	5.2	5.2	4.2	4.2	4.2	4.2
65°	6.3	5.2	5.2	5.2	4.2	4.2	4.2	4.2
67.5°	6.3	5.2	5.2	5.2	4.2	4.2	4.2	4.2
70°	7.3	6.3	6.3	5.2	5.2	5.2	4.2	4.2
72.5°	7.3	6.3	6.3	6.3	5.2	5.2	5.2	5.2
75°	7.3	6.3	6.3	6.3	5.2	5.2	5.2	5.2
77.5°	7.3	6.3	6.3	6.3	5.2	5.2	5.2	5.2
80°	7.3	6.3	6.3	6.3	5.2	5.2	5.2	5.2
82.5°	6.3	6.3	6.3	5.2	5.2	5.2	5.2	5.2
85°	6.3	5.2	5.2	5.2	4.2	4.2	4.2	4.2
87.5°	4.2	4.2	3.1	3.1	3.1	2.1	2.1	2.1
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)