

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: P179875

Luminaire Tested: **LDA6A65940D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179875
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26686)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A65940D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5251.4 lumens
Efficiency: N/A
Efficacy: 67.3 lumens/watt
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

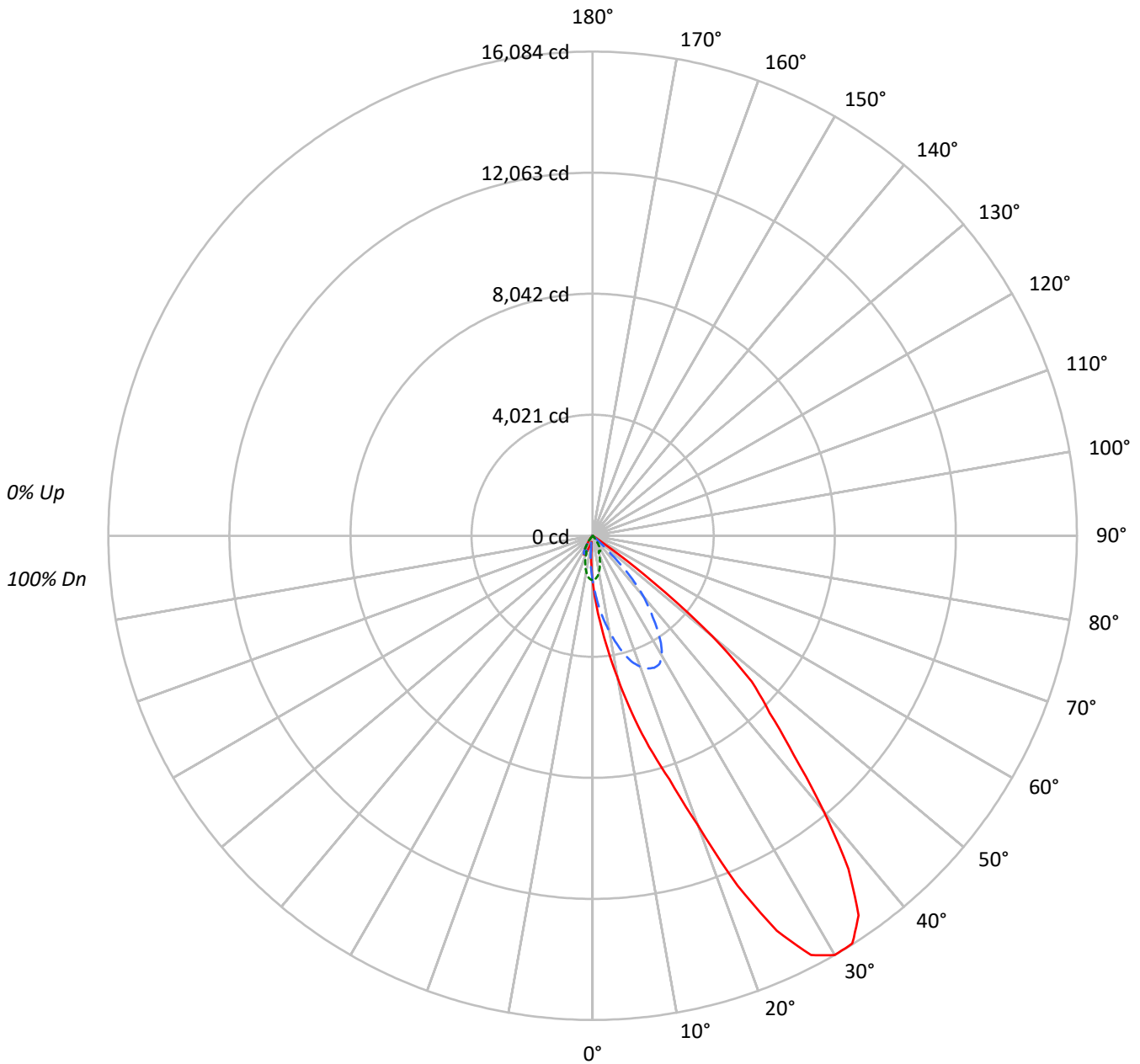
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82
3	99	91	85	80	96	89	84	80	87	82	78	84	80	77	82	79	76	74
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	46	44
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	81271	81271	81271
5°	157478	77449	26123
10°	267552	67773	11729
15°	412284	54058	18649
20°	596825	35178	32442
25°	875651	33952	41712
30°	1018150	32163	31961
35°	1030542	17039	16898
40°	853220	6419	7092
45°	644392	2186	2589
50°	440881	802	802
55°	61322	698	96
60°	1601	691	0
65°	402	947	0
70°	160	1170	0
75°	0	1546	0
80°	0	2620	316
85°	0	5221	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.5	3.0
10°-20°	657.4	12.5
20°-30°	1499.7	28.6
30°-40°	1735.6	33.0
40°-50°	1046.7	19.9
50°-60°	142.2	2.7
60°-70°	4.6	0.1
70°-80°	5.0	0.1
80°-90°	4.6	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°	2312.7	44.0
0°-40°	4048.3	77.1
0°-60°	5237.2	99.7
0°-90°	5251.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5251.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1482	1482	1482	1482	1482	
5°	2862	2343	1407	770	475	333
15°	7264	4083	952	293	329	2151
25°	14477	4839	561	675	690	6551
35°	15399	3689	255	260	252	9280
45°	8312	1005	28	34	33	6499
55°	642	7	7	5	1	1258
65°	3	4	7	4	0	5
75°	0	5	7	5	0	0
85°	0	5	8	5	0	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°	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5
2.5°	2143.9	2124.1	2132.5	2110.6	2055.3	2043.8	2042.8	2028.1	1981.2	1944.7	1900.9
5°	2861.7	2860.7	2865.9	2819.0	2721.9	2691.7	2677.1	2641.6	2527.9	2440.2	2343.2
7.5°	3757.9	3751.7	3745.4	3659.8	3507.5	3449.1	3411.5	3283.2	3126.7	2971.3	2798.1
10°	4806.4	4803.3	4779.3	4629.1	4384.9	4277.5	4204.4	4001.0	3749.6	3528.4	3234.2
12.5°	6023.9	5995.8	5953.0	5732.8	5398.0	5281.1	5120.4	4798.1	4412.1	4073.0	3661.9
15°	7264.4	7223.7	7147.5	6864.8	6449.6	6250.3	6051.1	5626.4	5102.7	4610.3	4083.4
17.5°	8477.7	8432.9	8254.5	7774.6	7368.7	7125.6	6904.5	6321.3	5705.7	5072.4	4404.7
20°	10230.4	10067.7	9756.8	9000.4	8246.1	7807.9	7549.2	6932.6	6171.0	5433.4	4633.2
22.5°	12571.6	12210.6	11548.1	10319.1	9241.4	8609.2	8185.6	7365.6	6505.9	5669.2	4774.1
25°	14476.6	14312.8	13559.6	11811.0	10129.2	9384.3	8794.9	7709.9	6750.1	5826.7	4838.8
27.5°	15704.6	15663.9	14803.2	13046.3	10854.3	9876.8	9218.5	7937.3	6867.9	5860.1	4807.5
30°	16084.3	16148.0	15321.7	13465.7	11064.0	9975.9	9256.0	7940.4	6777.2	5708.9	4607.1
32.5°	16056.1	16059.3	15046.3	13103.7	10722.9	9687.9	8943.0	7676.5	6442.3	5330.1	4226.3
35°	15398.9	15237.2	14091.6	11991.5	9928.9	9016.1	8323.3	7165.3	5890.4	4760.5	3689.1
37.5°	13956.0	13744.2	12408.8	10567.4	8988.9	8144.9	7585.7	6494.4	5233.1	4152.3	3134.0
40°	11922.7	11622.2	10520.5	9243.5	7960.3	7325.9	6856.5	5744.3	4529.9	3555.5	2613.4
42.5°	9887.2	9740.1	9011.9	7973.8	7095.4	6498.6	6008.3	4958.7	3853.9	2967.1	1955.1
45°	8311.8	8185.6	7696.3	7011.9	6150.2	5605.6	5133.0	4139.8	2994.2	1990.6	1004.7
47.5°	7164.2	7062.0	6593.6	5874.7	4929.5	4333.8	3846.6	2714.6	1696.4	859.7	251.4
50°	5169.5	5065.1	4606.1	3773.6	2920.2	2421.5	2070.9	1212.3	481.0	174.2	26.1
52.5°	2534.1	2448.6	2136.6	1599.4	1073.5	772.0	564.4	227.4	55.3	18.8	12.5
55°	641.6	589.5	491.4	308.8	151.3	90.8	58.4	20.9	13.6	10.4	7.3
57.5°	36.5	35.5	32.3	24.0	17.7	15.6	13.6	10.4	7.3	6.3	5.2
60°	14.6	13.6	12.5	10.4	8.3	7.3	7.3	5.2	4.2	4.2	4.2
62.5°	6.3	6.3	6.3	5.2	4.2	4.2	4.2	3.1	4.2	4.2	4.2
65°	3.1	3.1	3.1	2.1	2.1	2.1	3.1	3.1	3.1	4.2	4.2
67.5°	2.1	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.2	4.2
70°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.2	5.2
72.5°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.2	5.2
75°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	4.2	5.2
77.5°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	4.2	5.2
80°	0.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	4.2	5.2
82.5°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	4.2	5.2
85°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	4.2	4.2	5.2
87.5°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.2	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°	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5
2.5°	1844.5	1807.0	1751.7	1715.2	1679.7	1646.3	1591.0	1559.7	1503.4	1451.2	1406.3
5°	2226.4	2132.5	2018.8	1921.7	1859.1	1797.6	1685.9	1603.5	1500.2	1407.4	1321.8
7.5°	2612.4	2446.5	2259.8	2100.1	2003.1	1908.2	1741.2	1607.7	1461.6	1329.1	1202.9
10°	2962.9	2713.6	2449.6	2221.2	2089.7	1966.6	1746.5	1569.1	1381.3	1217.5	1058.9
12.5°	3288.4	2947.3	2603.0	2304.6	2141.9	1993.7	1724.5	1507.5	1284.3	1090.2	905.6
15°	3578.5	3140.3	2714.6	2352.6	2161.7	1986.4	1673.4	1421.0	1169.5	952.5	718.8
17.5°	3798.6	3260.3	2763.7	2345.3	2126.2	1931.1	1585.8	1312.5	1047.5	784.5	520.6
20°	3932.1	3311.4	2753.2	2289.0	2050.1	1843.5	1481.5	1194.6	900.4	603.0	459.0
22.5°	3988.5	3307.2	2704.2	2204.5	1956.2	1747.5	1381.3	1079.8	745.9	545.6	478.9
25°	3997.9	3264.4	2635.3	2111.6	1863.3	1655.7	1280.1	949.4	647.9	561.3	536.2
27.5°	3925.9	3164.3	2506.0	1978.1	1732.9	1518.0	1128.8	754.3	608.2	559.2	575.9
30°	3713.0	2935.8	2277.5	1743.3	1506.5	1291.6	806.5	591.5	504.9	508.1	512.3
32.5°	3338.5	2556.0	1910.3	1400.1	1141.4	851.3	501.8	395.4	383.9	383.9	381.8
35°	2838.8	2091.8	1499.2	885.7	567.5	409.0	259.8	260.8	255.6	254.6	253.5
37.5°	2322.4	1650.5	949.4	366.2	246.2	171.1	153.4	155.4	153.4	156.5	154.4
40°	1831.0	1019.3	346.4	116.8	86.6	83.5	85.5	87.6	87.6	89.7	89.7
42.5°	1064.2	338.0	90.8	46.9	46.9	44.9	45.9	48.0	49.0	50.1	49.0
45°	316.1	69.9	29.2	26.1	26.1	25.0	25.0	26.1	27.1	28.2	28.2
47.5°	50.1	19.8	16.7	14.6	14.6	14.6	14.6	14.6	15.6	15.6	16.7
50°	15.6	12.5	10.4	9.4	9.4	8.3	8.3	9.4	9.4	9.4	10.4
52.5°	9.4	7.3	7.3	6.3	7.3	7.3	6.3	7.3	7.3	7.3	8.3
55°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.3	7.3
57.5°	5.2	5.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
60°	5.2	5.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.3
62.5°	5.2	5.2	6.3	6.3	6.3	6.3	6.3	6.3	7.3	7.3	7.3
65°	5.2	5.2	6.3	6.3	6.3	6.3	6.3	7.3	7.3	7.3	7.3
67.5°	5.2	6.3	6.3	6.3	6.3	7.3	7.3	7.3	7.3	7.3	7.3
70°	5.2	6.3	6.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
72.5°	5.2	6.3	6.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
75°	6.3	6.3	6.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.3
77.5°	6.3	6.3	7.3	7.3	7.3	7.3	7.3	7.3	8.3	8.3	8.3
80°	6.3	6.3	7.3	7.3	7.3	7.3	7.3	8.3	8.3	8.3	8.3
82.5°	6.3	6.3	7.3	7.3	7.3	7.3	7.3	8.3	8.3	8.3	8.3
85°	6.3	6.3	7.3	7.3	7.3	7.3	7.3	8.3	8.3	8.3	8.3
87.5°	6.3	6.3	7.3	7.3	7.3	7.3	7.3	8.3	8.3	8.3	8.3
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5
2.5°	1367.7	1319.8	1296.8	1264.5	1241.5	1190.4	1169.5	1134.1	1104.8	1056.8	1060.0
5°	1248.8	1158.0	1096.5	1048.5	1015.1	933.7	879.5	822.1	769.9	705.3	681.3
7.5°	1084.0	972.3	878.4	821.1	778.3	669.8	549.8	455.9	385.0	333.9	314.0
10°	919.1	774.1	624.9	536.2	474.7	370.4	317.2	292.1	269.2	241.0	222.2
12.5°	727.2	520.6	385.0	349.5	324.5	290.0	255.6	228.5	233.7	234.7	242.0
15°	496.6	374.5	331.8	307.8	280.6	260.8	272.3	279.6	293.2	294.2	303.6
17.5°	403.8	351.6	317.2	316.1	318.2	329.7	347.4	356.8	374.5	378.7	392.3
20°	403.8	373.5	402.7	402.7	407.9	423.6	446.5	460.1	479.9	487.2	503.9
22.5°	460.1	481.0	517.5	521.6	523.7	540.4	569.6	583.2	606.1	610.3	628.1
25°	561.3	580.1	613.5	616.6	617.6	630.1	652.1	659.4	675.0	666.7	677.1
27.5°	593.6	602.0	622.8	624.9	619.7	624.9	633.3	633.3	638.5	621.8	624.9
30°	521.6	523.7	534.2	535.2	523.7	525.8	526.9	525.8	524.8	507.0	507.0
32.5°	387.1	387.1	400.6	397.5	385.0	388.1	388.1	388.1	387.1	372.5	370.4
35°	256.6	257.7	269.2	267.1	257.7	259.8	259.8	262.9	259.8	251.4	249.3
37.5°	156.5	157.5	162.8	163.8	160.7	161.7	162.8	161.7	163.8	159.6	157.5
40°	90.8	92.9	97.0	98.1	97.0	97.0	98.1	99.1	103.3	98.1	96.0
42.5°	53.2	54.3	56.3	56.3	56.3	56.3	57.4	58.4	59.5	58.4	57.4
45°	30.3	31.3	32.3	32.3	33.4	32.3	33.4	33.4	34.4	33.4	33.4
47.5°	17.7	17.7	18.8	18.8	19.8	18.8	19.8	19.8	19.8	18.8	18.8
50°	10.4	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	10.4	10.4
52.5°	8.3	8.3	8.3	8.3	8.3	7.3	7.3	7.3	7.3	6.3	6.3
55°	7.3	7.3	7.3	7.3	7.3	7.3	6.3	5.2	5.2	4.2	4.2
57.5°	6.3	7.3	7.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1	3.1
60°	7.3	7.3	7.3	7.3	6.3	6.3	6.3	5.2	4.2	3.1	3.1
62.5°	7.3	7.3	7.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1	3.1
65°	7.3	7.3	7.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1	3.1
67.5°	7.3	7.3	7.3	7.3	7.3	6.3	6.3	5.2	4.2	4.2	3.1
70°	7.3	8.3	8.3	7.3	7.3	7.3	6.3	5.2	5.2	4.2	3.1
72.5°	7.3	8.3	8.3	7.3	7.3	7.3	6.3	5.2	5.2	4.2	3.1
75°	8.3	8.3	8.3	8.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1
77.5°	8.3	8.3	8.3	8.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1
80°	8.3	8.3	8.3	8.3	8.3	7.3	7.3	6.3	5.2	4.2	4.2
82.5°	8.3	8.3	8.3	8.3	8.3	7.3	7.3	6.3	5.2	4.2	4.2
85°	8.3	8.3	8.3	8.3	8.3	7.3	7.3	6.3	5.2	4.2	3.1
87.5°	8.3	8.3	8.3	8.3	7.3	7.3	6.3	6.3	5.2	4.2	3.1
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: P179875

CATALOG NUMBER: LDA6A65940D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5	1482.5
2.5°	1021.4	997.4	986.9	1003.6	995.3	970.3	975.5	959.8
5°	609.3	572.8	549.8	560.2	526.9	496.6	496.6	474.7
7.5°	294.2	282.7	276.5	278.6	271.3	261.9	256.6	256.6
10°	206.6	202.4	203.4	203.4	209.7	208.7	211.8	210.7
12.5°	245.2	247.3	248.3	252.5	257.7	257.7	260.8	258.7
15°	314.0	311.9	318.2	319.2	327.6	328.6	332.8	328.6
17.5°	399.6	403.8	410.0	409.0	425.7	426.7	426.7	425.7
20°	514.3	517.5	523.7	525.8	545.6	547.7	555.0	556.1
22.5°	639.5	639.5	642.7	646.8	665.6	666.7	669.8	669.8
25°	682.3	676.0	677.1	682.3	692.7	688.6	691.7	689.6
27.5°	627.0	617.6	615.5	622.8	630.1	618.7	622.8	622.8
30°	509.1	500.8	498.7	506.0	511.2	498.7	502.9	504.9
32.5°	372.5	367.2	366.2	371.4	375.6	365.1	369.3	372.5
35°	251.4	249.3	247.3	248.3	254.6	246.2	250.4	252.5
37.5°	159.6	155.4	156.5	158.6	162.8	157.5	161.7	161.7
40°	98.1	96.0	96.0	98.1	100.2	96.0	98.1	99.1
42.5°	57.4	57.4	57.4	58.4	59.5	57.4	57.4	58.4
45°	33.4	32.3	32.3	33.4	34.4	32.3	33.4	33.4
47.5°	18.8	17.7	17.7	18.8	18.8	17.7	18.8	18.8
50°	10.4	9.4	9.4	10.4	10.4	9.4	9.4	9.4
52.5°	5.2	5.2	5.2	5.2	5.2	5.2	4.2	4.2
55°	3.1	3.1	2.1	2.1	2.1	2.1	2.1	1.0
57.5°	2.1	2.1	1.0	1.0	1.0	1.0	0.0	0.0
60°	2.1	2.1	1.0	1.0	1.0	0.0	0.0	0.0
62.5°	2.1	2.1	1.0	1.0	1.0	0.0	0.0	0.0
65°	2.1	2.1	1.0	1.0	1.0	0.0	0.0	0.0
67.5°	2.1	2.1	1.0	1.0	1.0	0.0	0.0	0.0
70°	3.1	2.1	2.1	1.0	1.0	1.0	0.0	0.0
72.5°	3.1	2.1	2.1	2.1	1.0	1.0	0.0	0.0
75°	3.1	2.1	2.1	2.1	1.0	1.0	0.0	0.0
77.5°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	0.0
80°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	1.0
82.5°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	1.0
85°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	0.0
87.5°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	0.0
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)