

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: P179913

Luminaire Tested: **LDA6A55930D010TE LARH20SP 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179913
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26689)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A55930D010TE LARH20SP 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3713.8 lumens
Efficiency: N/A
Efficacy: 60.9 lumens/watt
Spacing Criteria (0/90/45): 2.34 / 0.96 / 1.3
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

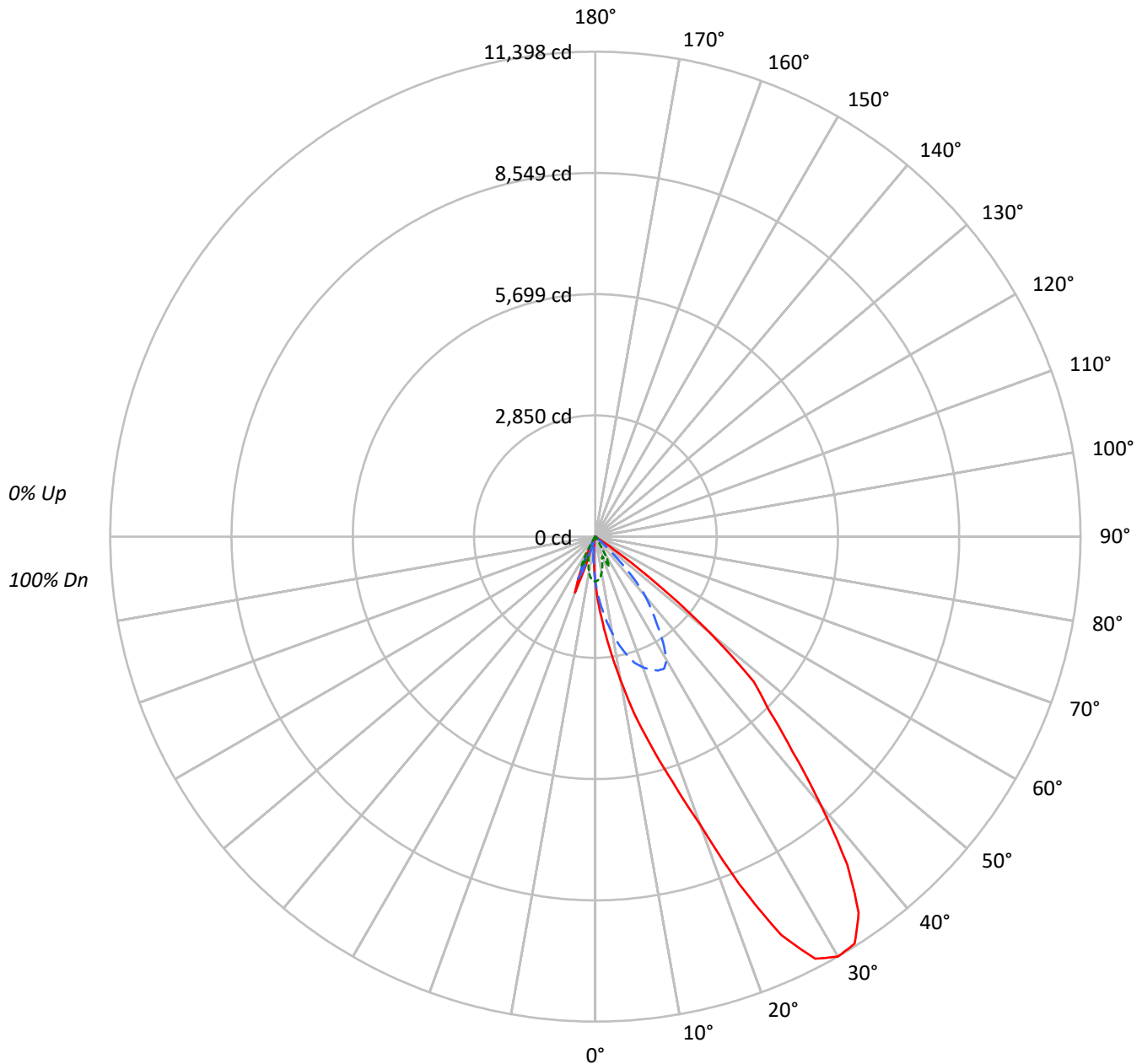
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	109	106	104	110	107	104	102	103	101	99		99	97	96		96
2	105	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	91	85	80	97	90	84	80	87	82	78		84	80	77		82
4	92	83	76	71	90	82	76	71	80	74	70		77	73	69		76
5	86	76	69	64	84	75	68	63	73	67	63		71	66	62		70
6	80	70	62	57	79	69	62	57	67	61	57		66	60	56		64
7	75	64	57	51	74	63	56	51	62	56	51		60	55	51		59
8	70	59	52	47	69	58	51	46	57	51	46		56	50	46		55
9	66	54	47	42	64	54	47	42	53	46	42		52	46	42		51
10	62	50	43	38	61	50	43	38	49	43	38		48	42	38		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	57956	57956	57956
5°	113311	55090	20097
10°	190722	47299	4459
15°	290450	35817	7316
20°	419710	29018	81627
25°	624635	46944	23590
30°	721472	16072	4665
35°	721698	3594	2516
40°	589877	2004	1546
45°	446682	1302	992
50°	296647	887	682
55°	47692	765	535
60°	2982	789	439
65°	934	1038	519
70°	513	1154	641
75°	339	1356	847
80°	253	2020	1263
85°	503	4026	1510



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.4	3.0
10°-20°	471.8	12.7
20°-30°	1110.8	29.9
30°-40°	1170.3	31.5
40°-50°	729.7	19.6
50°-60°	104.9	2.8
60°-70°	6.7	0.2
70°-80°	5.2	0.1
80°-90°	3.9	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°	1693.0	45.6
0°-40°	2863.3	77.1
0°-60°	3697.9	99.6
0°-90°	3713.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3713.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1057	1057	1057	1057	1057	
5°	2059	1667	1001	520	365	239
15°	5118	2897	631	110	129	1524
25°	10327	3473	776	561	390	4647
35°	10784	2544	54	50	38	6505
45°	5762	704	17	18	13	4509
55°	499	13	8	9	6	897
65°	7	6	8	6	4	11
75°	2	4	6	6	4	2
85°	1	4	6	5	2	1
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°	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2
2.5°	1543.3	1532.9	1536.1	1512.1	1480.0	1494.5	1458.4	1459.2	1436.8	1379.9	1355.1
5°	2059.1	2057.5	2055.1	2011.0	1954.2	1960.6	1907.7	1887.7	1830.0	1729.9	1666.7
7.5°	2699.8	2700.6	2688.6	2581.3	2518.0	2514.0	2430.7	2370.6	2263.3	2105.5	1990.2
10°	3426.2	3448.6	3427.0	3262.0	3144.3	3145.9	2996.1	2880.8	2708.6	2478.8	2314.6
12.5°	4279.2	4282.4	4248.7	4031.7	3852.3	3838.7	3637.7	3417.4	3155.5	2855.2	2616.5
15°	5117.7	5140.1	5096.9	4829.4	4579.5	4541.9	4285.6	3994.8	3669.7	3225.2	2896.8
17.5°	6047.5	6012.3	5897.8	5514.9	5214.6	5159.3	4883.8	4503.4	4088.6	3551.2	3120.3
20°	7194.4	7206.4	6963.8	6391.9	5884.2	5668.7	5349.2	4932.7	4415.3	3790.6	3269.2
22.5°	8833.0	8768.2	8247.6	7322.6	6559.3	6271.8	5816.1	5241.8	4659.6	3972.4	3380.6
25°	10326.7	10156.1	9676.4	8403.8	7208.8	6853.2	6381.5	5505.3	4862.2	4107.0	3472.7
27.5°	11184.5	11108.4	10564.6	9280.7	7733.4	7232.9	6568.9	5699.1	4982.3	4173.4	3499.1
30°	11397.5	11411.1	10927.4	9571.5	7857.6	7285.7	6599.4	5693.5	4901.5	4054.9	3346.9
32.5°	11343.0	11269.4	10664.7	9250.3	7526.8	7006.2	6301.4	5438.9	4579.5	3701.7	2968.1
35°	10784.0	10675.9	9931.9	8415.0	6965.4	6459.2	5820.1	5021.6	4130.2	3251.6	2543.6
37.5°	9720.4	9595.5	8736.9	7412.3	6291.8	5863.3	5310.7	4557.1	3676.1	2832.0	2170.4
40°	8242.8	8087.4	7369.8	6451.2	5567.8	5268.3	4801.3	4026.9	3205.2	2434.7	1826.0
42.5°	6861.2	6786.8	6355.9	5567.8	4972.7	4683.6	4212.7	3491.9	2735.8	2028.7	1351.9
45°	5761.6	5712.0	5426.0	4925.5	4321.6	4050.9	3607.2	2904.0	2081.5	1366.3	704.0
47.5°	5043.2	4916.7	4637.2	4111.8	3440.6	3103.5	2680.6	1913.3	1174.1	605.5	216.2
50°	3478.3	3490.3	3174.7	2595.7	2024.7	1739.5	1436.8	880.2	388.4	132.1	37.6
52.5°	1831.6	1696.3	1474.4	1101.2	766.5	584.7	426.9	176.2	70.5	26.4	20.0
55°	499.0	438.1	350.0	247.5	133.7	93.7	61.7	32.8	23.2	18.4	12.8
57.5°	48.9	46.5	42.4	34.4	29.6	27.2	24.8	20.0	16.0	11.2	8.0
60°	27.2	26.4	24.8	21.6	19.2	17.6	16.0	13.6	9.6	7.2	6.4
62.5°	15.2	14.4	13.6	12.0	10.4	9.6	9.6	8.0	6.4	5.6	5.6
65°	7.2	7.2	7.2	7.2	7.2	6.4	5.6	5.6	5.6	5.6	5.6
67.5°	5.6	5.6	5.6	4.8	4.8	4.8	4.8	4.8	4.8	4.0	4.8
70°	3.2	3.2	4.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.0
72.5°	1.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.0
75°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4	3.2	3.2	4.0
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	2.4	2.4	3.2	3.2	4.0
80°	0.8	0.8	0.8	1.6	1.6	1.6	1.6	2.4	3.2	3.2	4.0
82.5°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.2	3.2	4.0
85°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.2	4.0
87.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.2	4.0
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°	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2
2.5°	1329.5	1290.2	1251.0	1211.7	1210.1	1186.9	1152.5	1106.8	1069.2	1037.2	1005.9
5°	1603.4	1522.5	1441.6	1360.7	1336.7	1295.0	1220.6	1136.5	1064.4	1001.1	940.2
7.5°	1878.1	1741.9	1613.8	1487.3	1436.8	1373.5	1257.4	1135.7	1031.5	938.6	848.1
10°	2123.2	1925.3	1745.1	1567.3	1494.5	1412.0	1255.8	1101.2	969.1	849.7	734.4
12.5°	2349.0	2073.5	1845.3	1621.0	1521.7	1421.6	1231.0	1046.8	889.0	746.4	613.5
15°	2547.6	2209.7	1915.7	1645.0	1523.3	1403.2	1178.9	971.5	794.5	631.1	486.9
17.5°	2689.4	2277.7	1939.0	1623.4	1481.7	1347.1	1102.0	880.2	689.6	519.0	379.6
20°	2775.9	2305.8	1926.9	1583.4	1432.8	1293.4	1045.2	829.7	644.7	497.4	402.8
22.5°	2832.8	2333.0	1931.8	1582.6	1432.0	1300.6	1069.2	867.4	716.8	637.5	626.3
25°	2893.6	2371.4	1967.0	1618.6	1478.4	1356.7	1132.5	935.4	809.7	776.1	780.9
27.5°	2890.4	2354.6	1933.4	1587.4	1440.0	1316.7	1054.0	804.9	687.2	592.7	558.2
30°	2718.2	2160.0	1704.3	1316.7	1142.9	991.5	645.5	419.7	289.9	253.9	217.8
32.5°	2315.4	1749.9	1274.2	910.6	715.2	534.2	253.9	134.5	114.5	96.1	87.3
35°	1925.3	1395.2	953.1	550.2	347.6	215.4	91.3	60.1	56.9	53.7	53.7
37.5°	1591.4	1095.6	615.9	232.3	127.3	77.7	44.0	40.0	38.4	37.6	37.6
40°	1244.6	714.4	266.7	76.9	40.8	35.2	31.2	29.6	28.8	28.0	28.8
42.5°	734.4	287.5	77.7	28.8	27.2	25.6	23.2	22.4	22.4	21.6	22.4
45°	249.9	74.5	25.6	20.8	19.2	19.2	17.6	17.6	17.6	16.8	18.4
47.5°	64.9	23.2	16.8	15.2	14.4	14.4	13.6	13.6	13.6	13.6	14.4
50°	22.4	15.2	12.0	11.2	10.4	11.2	10.4	10.4	10.4	10.4	11.2
52.5°	13.6	10.4	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
55°	8.8	8.0	7.2	7.2	7.2	7.2	7.2	8.0	8.0	8.0	8.0
57.5°	7.2	6.4	6.4	6.4	6.4	6.4	7.2	6.4	6.4	7.2	8.0
60°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	7.2	7.2	8.0
62.5°	5.6	6.4	6.4	6.4	6.4	6.4	6.4	7.2	7.2	7.2	8.0
65°	5.6	5.6	5.6	6.4	6.4	6.4	7.2	7.2	7.2	8.0	8.0
67.5°	4.8	4.8	5.6	5.6	6.4	6.4	6.4	7.2	7.2	7.2	8.0
70°	4.8	4.8	4.8	5.6	5.6	5.6	5.6	6.4	6.4	7.2	7.2
72.5°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	6.4	6.4	6.4	7.2
75°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	5.6	6.4	6.4	7.2
77.5°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	6.4	6.4	6.4	7.2
80°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	6.4	6.4	6.4	6.4
82.5°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	6.4	6.4	6.4	6.4
85°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	5.6	6.4	6.4	6.4
87.5°	4.0	4.8	4.8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2
2.5°	962.7	949.1	901.0	894.6	886.6	847.3	831.3	804.1	765.7	754.4	740.8
5°	869.0	824.1	753.6	734.4	713.6	651.9	614.3	569.4	519.8	492.5	466.9
7.5°	749.6	687.2	593.5	555.8	532.6	465.3	405.3	345.2	272.3	230.7	204.2
10°	616.7	531.0	433.3	390.0	358.8	261.1	204.2	177.8	153.0	132.9	115.3
12.5°	482.9	386.0	275.5	225.9	201.0	166.6	135.4	102.5	91.3	90.5	87.3
15°	354.0	245.9	185.8	167.4	149.8	107.3	106.5	106.5	109.7	112.1	112.9
17.5°	261.1	216.2	169.8	158.6	166.6	173.0	184.2	201.0	214.6	253.1	245.1
20°	382.8	379.6	414.1	458.1	489.3	555.8	639.9	735.2	834.5	945.1	1029.1
22.5°	656.7	736.8	799.3	852.1	880.2	955.5	1021.9	1054.8	1074.0	1064.4	1050.8
25°	802.5	831.3	812.1	793.7	796.1	728.0	678.4	615.1	561.4	512.6	483.7
27.5°	479.7	438.9	381.2	341.2	333.2	287.5	253.9	218.6	208.2	176.2	162.6
30°	173.0	161.0	142.6	128.1	126.5	114.5	107.3	99.3	98.5	91.3	87.3
32.5°	78.5	78.5	72.1	73.7	72.1	69.7	68.9	66.5	66.5	64.1	62.5
35°	51.3	52.1	51.3	51.3	50.5	50.5	50.5	48.9	49.7	48.1	45.7
37.5°	37.6	38.4	36.8	37.6	37.6	37.6	37.6	36.8	36.0	34.4	33.6
40°	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.0	28.0	27.2	25.6
42.5°	22.4	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	22.4	22.4
45°	18.4	19.2	18.4	19.2	19.2	19.2	18.4	18.4	18.4	17.6	16.8
47.5°	14.4	14.4	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	12.8
50°	11.2	11.2	11.2	11.2	11.2	11.2	12.0	11.2	11.2	11.2	11.2
52.5°	8.8	9.6	9.6	10.4	10.4	10.4	10.4	10.4	9.6	9.6	8.8
55°	8.0	8.8	8.8	9.6	9.6	9.6	9.6	8.8	8.8	8.8	8.0
57.5°	8.0	8.8	8.8	8.8	8.8	8.8	8.8	8.0	8.0	7.2	7.2
60°	8.0	8.0	8.0	8.8	8.8	8.0	8.0	7.2	7.2	6.4	6.4
62.5°	8.0	8.0	8.0	8.8	8.8	8.0	8.0	7.2	6.4	6.4	5.6
65°	8.0	8.8	8.0	8.8	8.8	8.0	8.0	7.2	6.4	6.4	5.6
67.5°	8.0	8.8	8.8	8.8	8.0	8.0	8.0	7.2	6.4	6.4	5.6
70°	7.2	8.0	8.0	8.0	8.0	8.0	7.2	7.2	6.4	6.4	5.6
72.5°	7.2	8.0	7.2	8.0	8.0	7.2	7.2	7.2	6.4	6.4	5.6
75°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	6.4	6.4	5.6	5.6
77.5°	7.2	7.2	7.2	7.2	7.2	7.2	6.4	6.4	6.4	5.6	5.6
80°	7.2	7.2	7.2	7.2	7.2	7.2	6.4	6.4	5.6	5.6	4.8
82.5°	6.4	7.2	7.2	7.2	7.2	7.2	6.4	6.4	5.6	5.6	4.8
85°	6.4	6.4	6.4	6.4	6.4	6.4	5.6	5.6	4.8	4.0	4.0
87.5°	5.6	6.4	5.6	5.6	5.6	5.6	4.8	4.0	3.2	3.2	2.4
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: P179913

CATALOG NUMBER: LDA6A55930D010TE LARH20SP 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2	1057.2
2.5°	719.2	699.2	700.0	703.2	683.2	672.7	670.3	659.9
5°	432.5	409.3	405.3	402.0	374.0	362.8	354.0	365.2
7.5°	185.8	177.0	175.4	173.0	160.2	153.8	150.6	153.8
10°	92.1	86.5	87.3	88.1	84.1	81.7	80.9	80.1
12.5°	91.3	90.5	91.3	91.3	92.1	90.5	91.3	91.3
15°	118.5	118.5	120.9	122.5	126.5	125.7	127.3	128.9
17.5°	295.5	280.3	288.3	288.3	324.4	292.3	319.6	294.7
20°	1161.3	1215.8	1271.0	1317.5	1364.7	1379.1	1407.2	1399.2
22.5°	1029.9	1036.4	1028.3	1019.5	1017.1	1019.5	976.3	982.7
25°	442.1	438.9	426.1	412.5	416.5	419.7	404.5	390.0
27.5°	151.4	147.4	143.4	140.2	138.6	136.2	131.3	128.1
30°	85.7	83.3	81.7	80.9	79.3	77.7	75.3	73.7
32.5°	61.7	60.1	59.3	58.5	56.9	55.3	52.9	52.1
35°	45.7	44.0	43.2	42.4	40.8	39.2	38.4	37.6
37.5°	33.6	32.0	32.0	32.0	29.6	28.0	27.2	26.4
40°	25.6	24.8	24.8	24.8	23.2	22.4	21.6	21.6
42.5°	22.4	21.6	21.6	21.6	20.0	19.2	19.2	18.4
45°	16.8	16.0	16.0	15.2	14.4	14.4	13.6	12.8
47.5°	12.8	12.0	12.0	12.0	11.2	10.4	10.4	9.6
50°	10.4	10.4	9.6	10.4	8.8	8.8	8.8	8.0
52.5°	8.8	8.8	8.0	8.0	7.2	7.2	7.2	6.4
55°	8.0	7.2	7.2	7.2	6.4	6.4	6.4	5.6
57.5°	6.4	6.4	5.6	5.6	4.8	4.8	4.8	4.8
60°	5.6	5.6	4.8	4.8	4.0	4.0	4.0	4.0
62.5°	5.6	4.8	4.8	4.8	4.0	4.0	4.0	4.0
65°	5.6	4.8	4.8	4.8	4.0	4.0	4.0	4.0
67.5°	5.6	4.8	4.8	4.8	4.0	4.0	4.0	4.0
70°	5.6	5.6	4.8	4.8	4.8	4.0	4.0	4.0
72.5°	5.6	5.6	4.8	4.8	4.8	4.8	4.0	4.0
75°	4.8	4.8	4.8	4.8	4.0	4.0	4.0	4.0
77.5°	4.8	4.8	4.8	4.8	4.0	4.0	4.0	4.0
80°	4.8	4.8	4.0	4.0	4.0	4.0	4.0	4.0
82.5°	4.8	4.0	4.0	4.0	4.0	3.2	3.2	3.2
85°	3.2	3.2	3.2	3.2	2.4	2.4	2.4	2.4
87.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.8	0.8
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)