

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: P179873

Luminaire Tested: **LDA6A65930D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179873
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: LDA6A65930D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, 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: 4810.3 lumens
Efficiency: N/A
Efficacy: 61.7 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

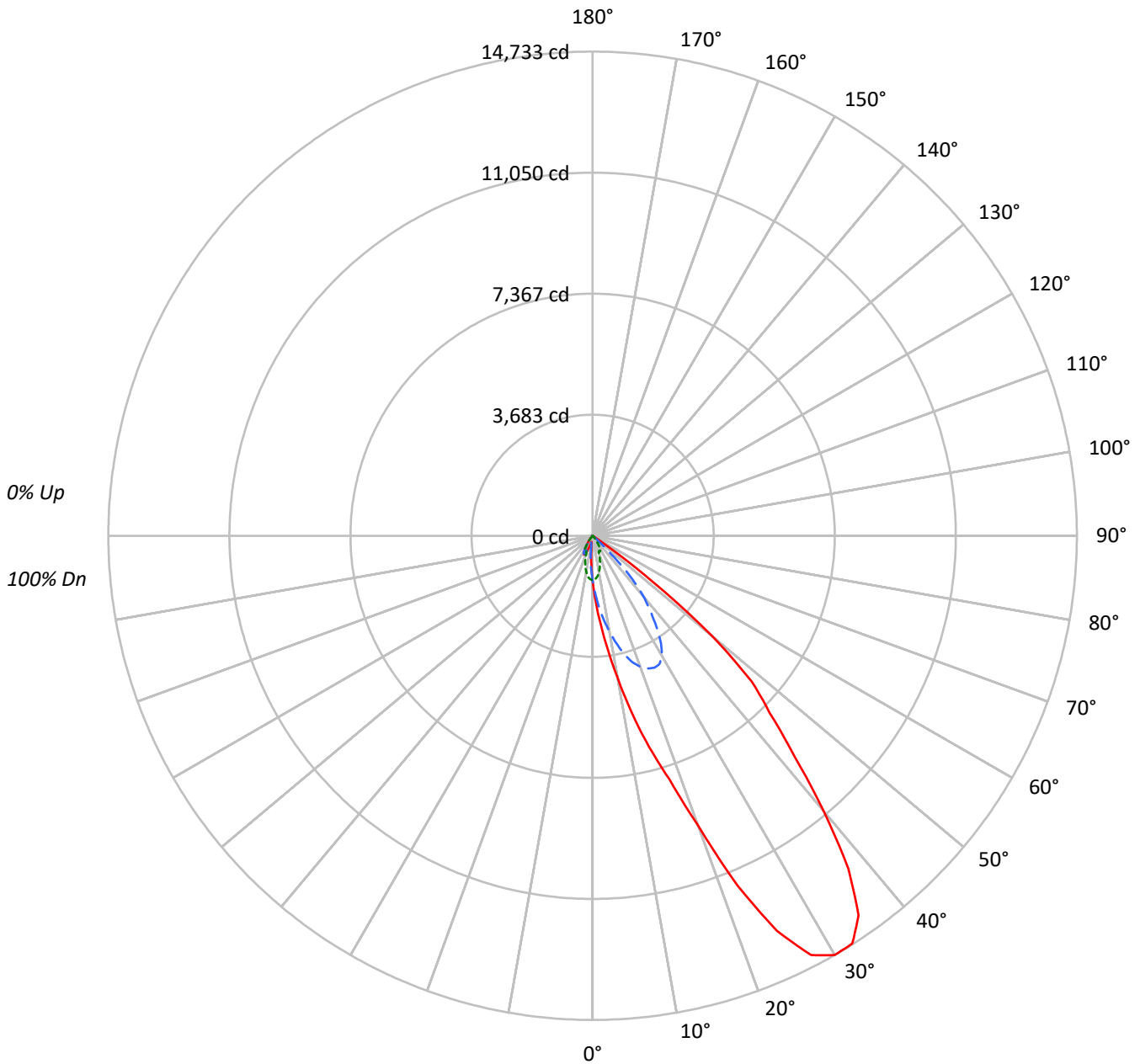
Input Watts (W): 78
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	74446	74446	74446
5°	144255	70944	23927
10°	245080	62084	10744
15°	377658	49518	17083
20°	546701	32226	29718
25°	802105	31097	38210
30°	932637	29460	29277
35°	943983	15606	15479
40°	781557	5882	6498
45°	590271	2000	2372
50°	403850	733	733
55°	56170	640	96
60°	1469	625	0
65°	376	869	0
70°	160	1074	0
75°	0	1419	0
80°	0	2399	316
85°	0	4780	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.5	3.0
10°-20°	602.2	12.5
20°-30°	1373.8	28.6
30°-40°	1589.8	33.0
40°-50°	958.8	19.9
50°-60°	130.3	2.7
60°-70°	4.2	0.1
70°-80°	4.6	0.1
80°-90°	4.3	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°	2118.5	44.0
0°-40°	3708.3	77.1
0°-60°	4797.3	99.7
0°-90°	4810.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4810.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1358	1358	1358	1358	1358	
5°	2621	2146	1289	705	435	305
15°	6654	3740	872	268	301	1970
25°	13261	4432	514	618	632	6001
35°	14106	3379	233	238	231	8501
45°	7614	920	26	32	31	5953
55°	588	7	7	5	1	1152
65°	3	4	7	4	0	4
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°	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0
2.5°	1963.9	1945.7	1953.4	1933.3	1882.6	1872.1	1871.2	1857.8	1814.8	1781.3	1741.2
5°	2621.4	2620.4	2625.2	2582.2	2493.3	2465.6	2452.2	2419.7	2315.6	2235.3	2146.4
7.5°	3442.3	3436.5	3430.8	3352.5	3212.9	3159.4	3125.0	3007.5	2864.1	2721.7	2563.1
10°	4402.7	4399.9	4377.9	4240.3	4016.6	3918.2	3851.3	3665.0	3434.6	3232.0	2962.5
12.5°	5518.0	5492.2	5453.0	5251.3	4944.6	4837.5	4690.4	4395.1	4041.5	3730.9	3354.4
15°	6654.3	6617.0	6547.2	6288.2	5907.9	5725.4	5542.8	5153.9	4674.1	4223.1	3740.4
17.5°	7765.7	7724.6	7561.2	7121.6	6749.8	6527.2	6324.6	5790.3	5226.5	4646.4	4034.8
20°	9371.2	9222.1	8937.3	8244.5	7553.5	7152.2	6915.1	6350.4	5652.7	4977.1	4244.1
22.5°	11515.7	11185.0	10578.2	9452.4	8465.2	7886.1	7498.1	6747.0	5959.5	5193.1	4373.1
25°	13260.7	13110.7	12420.7	10819.0	9278.5	8596.2	8056.2	7062.3	6183.1	5337.4	4432.3
27.5°	14385.5	14348.3	13559.8	11950.5	9942.7	9047.2	8444.2	7270.7	6291.1	5367.9	4403.7
30°	14733.4	14791.7	14034.8	12334.7	10134.8	9138.0	8478.6	7273.5	6208.0	5229.4	4220.2
32.5°	14707.6	14710.5	13782.5	12003.1	9822.3	8874.2	8191.9	7031.7	5901.2	4882.5	3871.4
35°	14105.5	13957.4	12908.1	10984.3	9095.0	8258.8	7624.2	6563.5	5395.7	4360.7	3379.2
37.5°	12783.9	12589.9	11366.6	9679.9	8234.0	7460.8	6948.6	5949.0	4793.6	3803.5	2870.8
40°	10921.3	10646.0	9636.9	8467.1	7291.7	6710.6	6280.6	5261.9	4149.5	3256.9	2393.9
42.5°	9056.8	8922.0	8255.0	7304.1	6499.4	5952.8	5503.6	4542.2	3530.2	2717.9	1790.9
45°	7613.7	7498.1	7049.9	6423.0	5633.6	5134.8	4701.8	3792.1	2742.7	1823.4	920.3
47.5°	6562.5	6468.9	6039.8	5381.3	4515.5	3969.8	3523.5	2486.6	1553.9	787.5	230.3
50°	4735.3	4639.7	4219.2	3456.6	2674.9	2218.1	1897.0	1110.5	440.6	159.6	23.9
52.5°	2321.3	2242.9	1957.2	1465.0	983.4	707.2	517.0	208.3	50.6	17.2	11.5
55°	587.7	539.9	450.1	282.9	138.6	83.1	53.5	19.1	12.4	9.6	6.7
57.5°	33.4	32.5	29.6	22.0	16.2	14.3	12.4	9.6	6.7	5.7	4.8
60°	13.4	12.4	11.5	9.6	7.6	6.7	6.7	4.8	3.8	3.8	3.8
62.5°	5.7	5.7	5.7	4.8	3.8	3.8	3.8	2.9	3.8	3.8	3.8
65°	2.9	2.9	2.9	1.9	1.9	1.9	2.9	2.9	2.9	3.8	3.8
67.5°	1.9	1.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.8	3.8
70°	1.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.8	4.8
72.5°	0.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.8	4.8
75°	0.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8
77.5°	0.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8
80°	0.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8
82.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8
85°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	3.8	4.8
87.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.8	4.8
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°	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0
2.5°	1689.6	1655.2	1604.6	1571.1	1538.6	1508.0	1457.4	1428.7	1377.1	1329.3	1288.2
5°	2039.4	1953.4	1849.2	1760.3	1703.0	1646.6	1544.3	1468.8	1374.2	1289.2	1210.8
7.5°	2393.0	2241.0	2070.0	1923.7	1834.9	1747.9	1595.0	1472.7	1338.9	1217.5	1101.9
10°	2714.1	2485.7	2243.9	2034.6	1914.2	1801.4	1599.8	1437.3	1265.3	1115.3	970.0
12.5°	3012.2	2699.7	2384.4	2111.1	1962.0	1826.3	1579.7	1380.9	1176.4	998.7	829.5
15°	3277.9	2876.5	2486.6	2155.0	1980.1	1819.6	1532.9	1301.6	1071.3	872.5	658.4
17.5°	3479.6	2986.4	2531.5	2148.3	1947.6	1768.9	1452.6	1202.2	959.5	718.7	476.9
20°	3601.9	3033.3	2522.0	2096.7	1877.9	1688.6	1357.0	1094.2	824.7	552.4	420.5
22.5°	3653.5	3029.4	2477.1	2019.3	1791.9	1600.7	1265.3	989.1	683.3	499.8	438.6
25°	3662.1	2990.3	2414.0	1934.3	1706.8	1516.6	1172.6	869.6	593.5	514.1	491.2
27.5°	3596.1	2898.5	2295.5	1811.9	1587.3	1390.5	1034.0	690.9	557.1	512.2	527.5
30°	3401.2	2689.2	2086.2	1596.9	1380.0	1183.1	738.7	541.9	462.5	465.4	469.2
32.5°	3058.1	2341.4	1749.8	1282.5	1045.5	779.8	459.7	362.2	351.7	351.7	349.8
35°	2600.3	1916.1	1373.3	811.4	519.9	374.6	238.0	238.9	234.1	233.2	232.2
37.5°	2127.3	1511.9	869.6	335.4	225.5	156.7	140.5	142.4	140.5	143.3	141.4
40°	1677.2	933.7	317.3	107.0	79.3	76.5	78.4	80.3	80.3	82.2	82.2
42.5°	974.8	309.6	83.1	43.0	43.0	41.1	42.0	44.0	44.9	45.9	44.9
45°	289.6	64.0	26.8	23.9	23.9	22.9	22.9	23.9	24.8	25.8	25.8
47.5°	45.9	18.2	15.3	13.4	13.4	13.4	13.4	13.4	14.3	14.3	15.3
50°	14.3	11.5	9.6	8.6	8.6	7.6	7.6	8.6	8.6	8.6	9.6
52.5°	8.6	6.7	6.7	5.7	6.7	6.7	5.7	6.7	6.7	6.7	7.6
55°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7
57.5°	4.8	4.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
60°	4.8	4.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.7
62.5°	4.8	4.8	5.7	5.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7
65°	4.8	4.8	5.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7	6.7
67.5°	4.8	5.7	5.7	5.7	5.7	6.7	6.7	6.7	6.7	6.7	6.7
70°	4.8	5.7	5.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
72.5°	4.8	5.7	5.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
75°	5.7	5.7	5.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	7.6
77.5°	5.7	5.7	6.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6
80°	5.7	5.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6
82.5°	5.7	5.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6
85°	5.7	5.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6
87.5°	5.7	5.7	6.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6
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°	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0
2.5°	1252.9	1208.9	1187.9	1158.3	1137.2	1090.4	1071.3	1038.8	1012.0	968.1	970.9
5°	1143.9	1060.8	1004.4	960.4	929.9	855.3	805.6	753.1	705.3	646.0	624.0
7.5°	992.9	890.7	804.7	752.1	712.9	613.5	503.6	417.6	352.6	305.8	287.7
10°	841.9	709.1	572.4	491.2	434.8	339.3	290.5	267.6	246.6	220.8	203.6
12.5°	666.1	476.9	352.6	320.1	297.2	265.7	234.1	209.3	214.1	215.0	221.7
15°	454.9	343.1	303.9	281.9	257.1	238.9	249.4	256.1	268.5	269.5	278.1
17.5°	369.8	322.1	290.5	289.6	291.5	302.0	318.2	326.8	343.1	346.9	359.3
20°	369.8	342.1	368.9	368.9	373.7	388.0	409.0	421.4	439.6	446.3	461.6
22.5°	421.4	440.6	474.0	477.8	479.7	495.0	521.8	534.2	555.2	559.1	575.3
25°	514.1	531.3	561.9	564.8	565.8	577.2	597.3	604.0	618.3	610.7	620.2
27.5°	543.8	551.4	570.5	572.4	567.7	572.4	580.1	580.1	584.9	569.6	572.4
30°	477.8	479.7	489.3	490.3	479.7	481.7	482.6	481.7	480.7	464.5	464.5
32.5°	354.5	354.5	367.0	364.1	352.6	355.5	355.5	355.5	354.5	341.2	339.3
35°	235.1	236.0	246.6	244.6	236.0	238.0	238.0	240.8	238.0	230.3	228.4
37.5°	143.3	144.3	149.1	150.0	147.2	148.1	149.1	148.1	150.0	146.2	144.3
40°	83.1	85.1	88.9	89.8	88.9	88.9	89.8	90.8	94.6	89.8	87.9
42.5°	48.7	49.7	51.6	51.6	51.6	51.6	52.6	53.5	54.5	53.5	52.6
45°	27.7	28.7	29.6	29.6	30.6	29.6	30.6	30.6	31.5	30.6	30.6
47.5°	16.2	16.2	17.2	17.2	18.2	17.2	18.2	18.2	18.2	17.2	17.2
50°	9.6	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	9.6	9.6
52.5°	7.6	7.6	7.6	7.6	7.6	6.7	6.7	6.7	6.7	5.7	5.7
55°	6.7	6.7	6.7	6.7	6.7	6.7	5.7	4.8	4.8	3.8	3.8
57.5°	5.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	2.9	2.9
60°	6.7	6.7	6.7	6.7	5.7	5.7	5.7	4.8	3.8	2.9	2.9
62.5°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	2.9	2.9
65°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	2.9	2.9
67.5°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
70°	6.7	7.6	7.6	6.7	6.7	6.7	5.7	4.8	4.8	3.8	2.9
72.5°	6.7	7.6	7.6	6.7	6.7	6.7	5.7	4.8	4.8	3.8	2.9
75°	7.6	7.6	7.6	7.6	6.7	6.7	5.7	5.7	4.8	3.8	2.9
77.5°	7.6	7.6	7.6	7.6	6.7	6.7	5.7	5.7	4.8	3.8	2.9
80°	7.6	7.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8	3.8
82.5°	7.6	7.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8	3.8
85°	7.6	7.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8	2.9
87.5°	7.6	7.6	7.6	7.6	6.7	6.7	5.7	5.7	4.8	3.8	2.9
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: P179873

CATALOG NUMBER: LDA6A65930D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0	1358.0
2.5°	935.6	913.6	904.1	919.3	911.7	888.8	893.5	879.2
5°	558.1	524.7	503.6	513.2	482.6	454.9	454.9	434.8
7.5°	269.5	259.0	253.2	255.2	248.5	239.9	235.1	235.1
10°	189.2	185.4	186.4	186.4	192.1	191.1	194.0	193.0
12.5°	224.6	226.5	227.4	231.3	236.0	236.0	238.9	237.0
15°	287.7	285.7	291.5	292.4	300.1	301.0	304.9	301.0
17.5°	366.0	369.8	375.6	374.6	389.9	390.9	390.9	389.9
20°	471.1	474.0	479.7	481.7	499.8	501.7	508.4	509.4
22.5°	585.8	585.8	588.7	592.5	609.7	610.7	613.5	613.5
25°	625.0	619.3	620.2	625.0	634.6	630.7	633.6	631.7
27.5°	574.4	565.8	563.8	570.5	577.2	566.7	570.5	570.5
30°	466.4	458.7	456.8	463.5	468.3	456.8	460.6	462.5
32.5°	341.2	336.4	335.4	340.2	344.0	334.5	338.3	341.2
35°	230.3	228.4	226.5	227.4	233.2	225.5	229.4	231.3
37.5°	146.2	142.4	143.3	145.3	149.1	144.3	148.1	148.1
40°	89.8	87.9	87.9	89.8	91.7	87.9	89.8	90.8
42.5°	52.6	52.6	52.6	53.5	54.5	52.6	52.6	53.5
45°	30.6	29.6	29.6	30.6	31.5	29.6	30.6	30.6
47.5°	17.2	16.2	16.2	17.2	17.2	16.2	17.2	17.2
50°	9.6	8.6	8.6	9.6	9.6	8.6	8.6	8.6
52.5°	4.8	4.8	4.8	4.8	4.8	4.8	3.8	3.8
55°	2.9	2.9	1.9	1.9	1.9	1.9	1.9	1.0
57.5°	1.9	1.9	1.0	1.0	1.0	1.0	0.0	0.0
60°	1.9	1.9	1.0	1.0	1.0	0.0	0.0	0.0
62.5°	1.9	1.9	1.0	1.0	1.0	0.0	0.0	0.0
65°	1.9	1.9	1.0	1.0	1.0	0.0	0.0	0.0
67.5°	1.9	1.9	1.0	1.0	1.0	0.0	0.0	0.0
70°	2.9	1.9	1.9	1.0	1.0	1.0	0.0	0.0
72.5°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
75°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
77.5°	2.9	1.9	1.9	1.9	1.0	1.0	1.0	0.0
80°	2.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0
82.5°	2.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0
85°	2.9	1.9	1.9	1.9	1.0	1.0	1.0	0.0
87.5°	2.9	1.9	1.9	1.9	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)