

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: P179908

Luminaire Tested: **LDA6A55827D010TE LARH20SP 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179908
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: LDA6A55827D010TE LARH20SP 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4363.7 lumens
Efficiency: N/A
Efficacy: 71.5 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

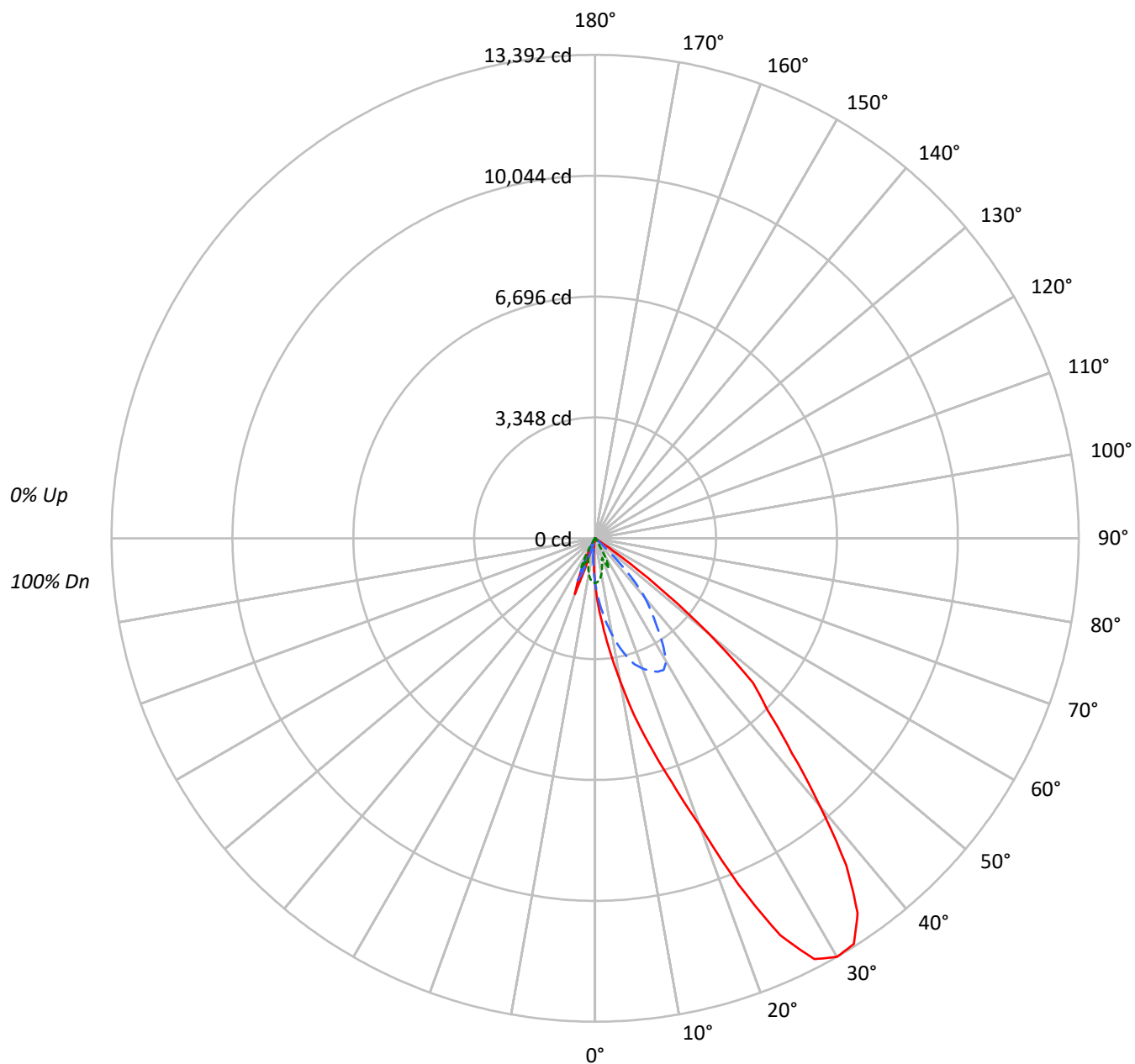
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	68098	68098	68098
5°	133139	64731	23613
10°	224100	55582	5238
15°	341279	42083	8598
20°	493164	34093	95908
25°	733948	55158	27721
30°	847732	18883	5482
35°	848002	4223	2958
40°	693106	2354	1818
45°	524853	1535	1171
50°	348560	1040	802
55°	56036	898	631
60°	3508	932	515
65°	1103	1219	610
70°	609	1362	753
75°	402	1589	996
80°	284	2368	1484
85°	566	4717	1761



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.7	3.0
10°-20°	554.4	12.7
20°-30°	1305.2	29.9
30°-40°	1375.2	31.5
40°-50°	857.5	19.6
50°-60°	123.2	2.8
60°-70°	7.9	0.2
70°-80°	6.2	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°	1989.3	45.6
0°-40°	3364.4	77.1
0°-60°	4345.1	99.6
0°-90°	4363.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4363.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1242	1242	1242	1242	1242	
5°	2419	1958	1176	611	429	281
15°	6013	3404	742	129	152	1791
25°	12134	4080	912	660	458	5460
35°	12671	2989	63	58	44	7643
45°	6770	827	20	22	15	5299
55°	586	15	9	10	7	1053
65°	8	7	9	8	5	12
75°	2	5	8	8	5	2
85°	1	5	8	6	3	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°	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2
2.5°	1813.4	1801.2	1804.9	1776.7	1739.1	1756.0	1713.7	1714.6	1688.2	1621.4	1592.3
5°	2419.4	2417.6	2414.7	2363.0	2296.2	2303.7	2241.6	2218.1	2150.3	2032.7	1958.3
7.5°	3172.3	3173.2	3159.1	3033.0	2958.7	2954.0	2856.1	2785.5	2659.4	2474.0	2338.5
10°	4025.8	4052.2	4026.8	3832.9	3694.6	3696.5	3520.5	3385.0	3182.6	2912.6	2719.6
12.5°	5028.0	5031.8	4992.3	4737.3	4526.5	4510.5	4274.3	4015.5	3707.7	3354.9	3074.4
15°	6013.3	6039.7	5988.9	5674.5	5380.9	5336.7	5035.6	4694.0	4311.9	3789.6	3403.8
17.5°	7105.9	7064.5	6929.9	6480.1	6127.2	6062.3	5738.5	5291.5	4804.1	4172.6	3666.3
20°	8453.5	8467.6	8182.5	7510.5	6913.9	6660.8	6285.3	5795.9	5188.0	4454.0	3841.4
22.5°	10378.9	10302.6	9691.0	8604.0	7707.2	7369.4	6833.9	6159.2	5475.0	4667.6	3972.2
25°	12133.9	11933.5	11369.8	9874.5	8470.4	8052.6	7498.3	6468.8	5713.1	4825.7	4080.4
27.5°	13141.8	13052.4	12413.4	10904.9	9086.8	8498.6	7718.5	6696.5	5854.3	4903.8	4111.5
30°	13392.1	13408.1	12839.7	11246.5	9232.7	8560.8	7754.3	6689.9	5759.2	4764.6	3932.7
32.5°	13328.1	13241.6	12531.1	10869.2	8844.0	8232.3	7404.2	6390.7	5380.9	4349.5	3487.5
35°	12671.3	12544.2	11670.0	9887.6	8184.3	7589.6	6838.6	5900.4	4853.0	3820.7	2988.8
37.5°	11421.6	11274.8	10265.9	8709.4	7392.9	6889.4	6240.1	5354.6	4319.4	3327.6	2550.3
40°	9685.3	9502.8	8659.6	7580.2	6542.2	6190.2	5641.6	4731.6	3766.1	2860.8	2145.6
42.5°	8062.0	7974.5	7468.2	6542.2	5843.0	5503.3	4949.9	4103.0	3214.6	2383.7	1588.5
45°	6769.9	6711.6	6375.6	5787.5	5077.9	4759.8	4238.5	3412.3	2445.8	1605.4	827.2
47.5°	5925.8	5777.1	5448.7	4831.4	4042.8	3646.6	3149.7	2248.2	1379.6	711.4	254.1
50°	4087.0	4101.1	3730.3	3050.0	2379.0	2044.0	1688.2	1034.2	456.4	155.3	44.2
52.5°	2152.2	1993.1	1732.5	1293.9	900.6	687.0	501.6	207.0	82.8	31.1	23.5
55°	586.3	514.8	411.2	290.8	157.2	110.1	72.5	38.6	27.3	21.6	15.1
57.5°	57.4	54.6	49.9	40.5	34.8	32.0	29.2	23.5	18.8	13.2	9.4
60°	32.0	31.1	29.2	25.4	22.6	20.7	18.8	16.0	11.3	8.5	7.5
62.5°	17.9	16.9	16.0	14.1	12.2	11.3	11.3	9.4	7.5	6.6	6.6
65°	8.5	8.5	8.5	8.5	8.5	7.5	6.6	6.6	6.6	6.6	6.6
67.5°	6.6	6.6	6.6	5.6	5.6	5.6	5.6	5.6	5.6	4.7	5.6
70°	3.8	3.8	4.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.7
72.5°	1.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.8	3.8	4.7
75°	1.9	1.9	1.9	1.9	2.8	2.8	2.8	2.8	3.8	3.8	4.7
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	3.8	3.8	4.7
80°	0.9	0.9	0.9	1.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
82.5°	0.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
85°	0.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	4.7
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	4.7
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°	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2
2.5°	1562.1	1516.0	1469.9	1423.8	1421.9	1394.6	1354.2	1300.5	1256.3	1218.7	1182.0
5°	1884.0	1788.9	1693.9	1598.8	1570.6	1521.7	1434.2	1335.4	1250.7	1176.3	1104.8
7.5°	2206.8	2046.8	1896.2	1747.5	1688.2	1613.9	1477.5	1334.4	1212.1	1102.9	996.6
10°	2494.7	2262.3	2050.6	1841.6	1756.0	1659.1	1475.6	1293.9	1138.7	998.5	862.9
12.5°	2760.1	2436.4	2168.2	1904.7	1788.0	1670.4	1446.4	1230.0	1044.6	877.1	720.8
15°	2993.5	2596.4	2251.0	1932.9	1789.9	1648.7	1385.2	1141.5	933.5	741.5	572.2
17.5°	3160.1	2676.4	2278.3	1907.5	1740.9	1582.9	1294.9	1034.2	810.2	609.8	446.1
20°	3261.7	2709.3	2264.2	1860.5	1683.5	1519.8	1228.1	974.9	757.5	584.4	473.3
22.5°	3328.5	2741.3	2269.8	1859.5	1682.6	1528.3	1256.3	1019.2	842.2	749.1	735.9
25°	3400.0	2786.5	2311.2	1901.9	1737.2	1594.1	1330.6	1099.1	951.4	911.9	917.5
27.5°	3396.3	2766.7	2271.7	1865.2	1692.0	1547.1	1238.4	945.8	807.4	696.4	655.9
30°	3193.9	2538.0	2002.6	1547.1	1342.9	1165.0	758.5	493.1	340.7	298.3	256.0
32.5°	2720.6	2056.2	1497.2	1070.0	840.4	627.7	298.3	158.1	134.6	112.9	102.6
35°	2262.3	1639.3	1119.9	646.5	408.4	253.1	107.3	70.6	66.8	63.1	63.1
37.5°	1869.9	1287.4	723.7	272.9	149.6	91.3	51.8	47.1	45.2	44.2	44.2
40°	1462.4	839.4	313.4	90.3	48.0	41.4	36.7	34.8	33.9	32.9	33.9
42.5°	862.9	337.8	91.3	33.9	32.0	30.1	27.3	26.3	26.3	25.4	26.3
45°	293.6	87.5	30.1	24.5	22.6	22.6	20.7	20.7	20.7	19.8	21.6
47.5°	76.2	27.3	19.8	17.9	16.9	16.9	16.0	16.0	16.0	16.0	16.9
50°	26.3	17.9	14.1	13.2	12.2	13.2	12.2	12.2	12.2	12.2	13.2
52.5°	16.0	12.2	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
55°	10.4	9.4	8.5	8.5	8.5	8.5	8.5	9.4	9.4	9.4	9.4
57.5°	8.5	7.5	7.5	7.5	7.5	7.5	8.5	7.5	7.5	8.5	9.4
60°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	8.5	8.5	9.4
62.5°	6.6	7.5	7.5	7.5	7.5	7.5	7.5	8.5	8.5	8.5	9.4
65°	6.6	6.6	6.6	7.5	7.5	7.5	8.5	8.5	8.5	9.4	9.4
67.5°	5.6	5.6	6.6	6.6	7.5	7.5	7.5	8.5	8.5	8.5	9.4
70°	5.6	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	8.5	8.5
72.5°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	8.5
75°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	6.6	7.5	7.5	8.5
77.5°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	8.5
80°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	7.5
82.5°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	7.5
85°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5
87.5°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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°	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2
2.5°	1131.1	1115.1	1058.7	1051.2	1041.7	995.6	976.8	944.8	899.6	886.5	870.5
5°	1021.0	968.3	885.5	862.9	838.5	766.0	721.8	669.1	610.7	578.7	548.6
7.5°	880.8	807.4	697.3	653.1	625.8	546.8	476.2	405.6	320.0	271.0	240.0
10°	724.6	623.9	509.1	458.3	421.6	306.8	240.0	208.9	179.7	156.2	135.5
12.5°	567.5	453.6	323.7	265.4	236.2	195.7	159.0	120.5	107.3	106.3	102.6
15°	415.9	288.9	218.3	196.7	176.0	126.1	125.2	125.2	128.9	131.7	132.7
17.5°	306.8	254.1	199.5	186.3	195.7	203.3	216.4	236.2	252.2	297.4	288.0
20°	449.8	446.1	486.5	538.3	575.0	653.1	751.9	863.9	980.6	1110.4	1209.3
22.5°	771.7	865.8	939.2	1001.3	1034.2	1122.7	1200.8	1239.4	1262.0	1250.7	1234.7
25°	942.9	976.8	954.2	932.6	935.4	855.4	797.1	722.7	659.7	602.3	568.4
27.5°	563.7	515.7	447.9	400.9	391.5	337.8	298.3	256.9	244.7	207.0	191.0
30°	203.3	189.2	167.5	150.6	148.7	134.6	126.1	116.7	115.7	107.3	102.6
32.5°	92.2	92.2	84.7	86.6	84.7	81.9	80.9	78.1	78.1	75.3	73.4
35°	60.2	61.2	60.2	60.2	59.3	59.3	59.3	57.4	58.3	56.5	53.6
37.5°	44.2	45.2	43.3	44.2	44.2	44.2	44.2	43.3	42.3	40.5	39.5
40°	33.9	33.9	33.9	33.9	33.9	33.9	33.9	32.9	32.9	32.0	30.1
42.5°	26.3	27.3	27.3	27.3	27.3	27.3	27.3	27.3	27.3	26.3	26.3
45°	21.6	22.6	21.6	22.6	22.6	22.6	21.6	21.6	21.6	20.7	19.8
47.5°	16.9	16.9	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.1
50°	13.2	13.2	13.2	13.2	13.2	13.2	14.1	13.2	13.2	13.2	13.2
52.5°	10.4	11.3	11.3	12.2	12.2	12.2	12.2	12.2	11.3	11.3	10.4
55°	9.4	10.4	10.4	11.3	11.3	11.3	11.3	10.4	10.4	10.4	9.4
57.5°	9.4	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4	8.5	8.5
60°	9.4	9.4	9.4	10.4	10.4	9.4	9.4	8.5	8.5	7.5	7.5
62.5°	9.4	9.4	9.4	10.4	10.4	9.4	9.4	8.5	7.5	7.5	6.6
65°	9.4	10.4	9.4	10.4	10.4	9.4	9.4	8.5	7.5	7.5	6.6
67.5°	9.4	10.4	10.4	10.4	9.4	9.4	9.4	8.5	7.5	7.5	6.6
70°	8.5	9.4	9.4	9.4	9.4	9.4	8.5	8.5	7.5	7.5	6.6
72.5°	8.5	9.4	8.5	9.4	9.4	8.5	8.5	8.5	7.5	7.5	6.6
75°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.5	7.5	6.6	6.6
77.5°	8.5	8.5	8.5	8.5	8.5	8.5	7.5	7.5	7.5	6.6	6.6
80°	8.5	8.5	8.5	8.5	8.5	8.5	7.5	7.5	6.6	6.6	5.6
82.5°	7.5	8.5	8.5	8.5	8.5	8.5	7.5	7.5	6.6	6.6	5.6
85°	7.5	7.5	7.5	7.5	7.5	7.5	6.6	6.6	5.6	4.7	4.7
87.5°	6.6	7.5	6.6	6.6	6.6	6.6	5.6	4.7	3.8	3.8	2.8
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: P179908

CATALOG NUMBER: LDA6A55827D010TE LARH20SP 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2	1242.2
2.5°	845.1	821.5	822.5	826.2	802.7	790.5	787.7	775.4
5°	508.2	480.9	476.2	472.4	439.5	426.3	415.9	429.1
7.5°	218.3	208.0	206.1	203.3	188.2	180.7	176.9	180.7
10°	108.2	101.6	102.6	103.5	98.8	96.0	95.0	94.1
12.5°	107.3	106.3	107.3	107.3	108.2	106.3	107.3	107.3
15°	139.3	139.3	142.1	144.0	148.7	147.7	149.6	151.5
17.5°	347.2	329.4	338.8	338.8	381.1	343.5	375.5	346.3
20°	1364.5	1428.5	1493.5	1548.0	1603.6	1620.5	1653.4	1644.0
22.5°	1210.2	1217.7	1208.3	1198.0	1195.1	1198.0	1147.1	1154.7
25°	519.5	515.7	500.6	484.6	489.3	493.1	475.2	458.3
27.5°	177.9	173.2	168.4	164.7	162.8	160.0	154.3	150.6
30°	100.7	97.9	96.0	95.0	93.2	91.3	88.5	86.6
32.5°	72.5	70.6	69.6	68.7	66.8	64.9	62.1	61.2
35°	53.6	51.8	50.8	49.9	48.0	46.1	45.2	44.2
37.5°	39.5	37.6	37.6	37.6	34.8	32.9	32.0	31.1
40°	30.1	29.2	29.2	29.2	27.3	26.3	25.4	25.4
42.5°	26.3	25.4	25.4	25.4	23.5	22.6	22.6	21.6
45°	19.8	18.8	18.8	17.9	16.9	16.9	16.0	15.1
47.5°	15.1	14.1	14.1	14.1	13.2	12.2	12.2	11.3
50°	12.2	12.2	11.3	12.2	10.4	10.4	10.4	9.4
52.5°	10.4	10.4	9.4	9.4	8.5	8.5	8.5	7.5
55°	9.4	8.5	8.5	8.5	7.5	7.5	7.5	6.6
57.5°	7.5	7.5	6.6	6.6	5.6	5.6	5.6	5.6
60°	6.6	6.6	5.6	5.6	4.7	4.7	4.7	4.7
62.5°	6.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
65°	6.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
67.5°	6.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
70°	6.6	6.6	5.6	5.6	5.6	4.7	4.7	4.7
72.5°	6.6	6.6	5.6	5.6	5.6	5.6	4.7	4.7
75°	5.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
77.5°	5.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
80°	5.6	5.6	4.7	4.7	4.7	4.7	4.7	4.7
82.5°	5.6	4.7	4.7	4.7	4.7	3.8	3.8	3.8
85°	3.8	3.8	3.8	3.8	2.8	2.8	2.8	2.8
87.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)