

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: P179911

Luminaire Tested: **LDA6A55840D010TE LARH20SP 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179911
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: LDA6A55840D010TE LARH20SP 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4758.9 lumens
Efficiency: N/A
Efficacy: 78.0 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

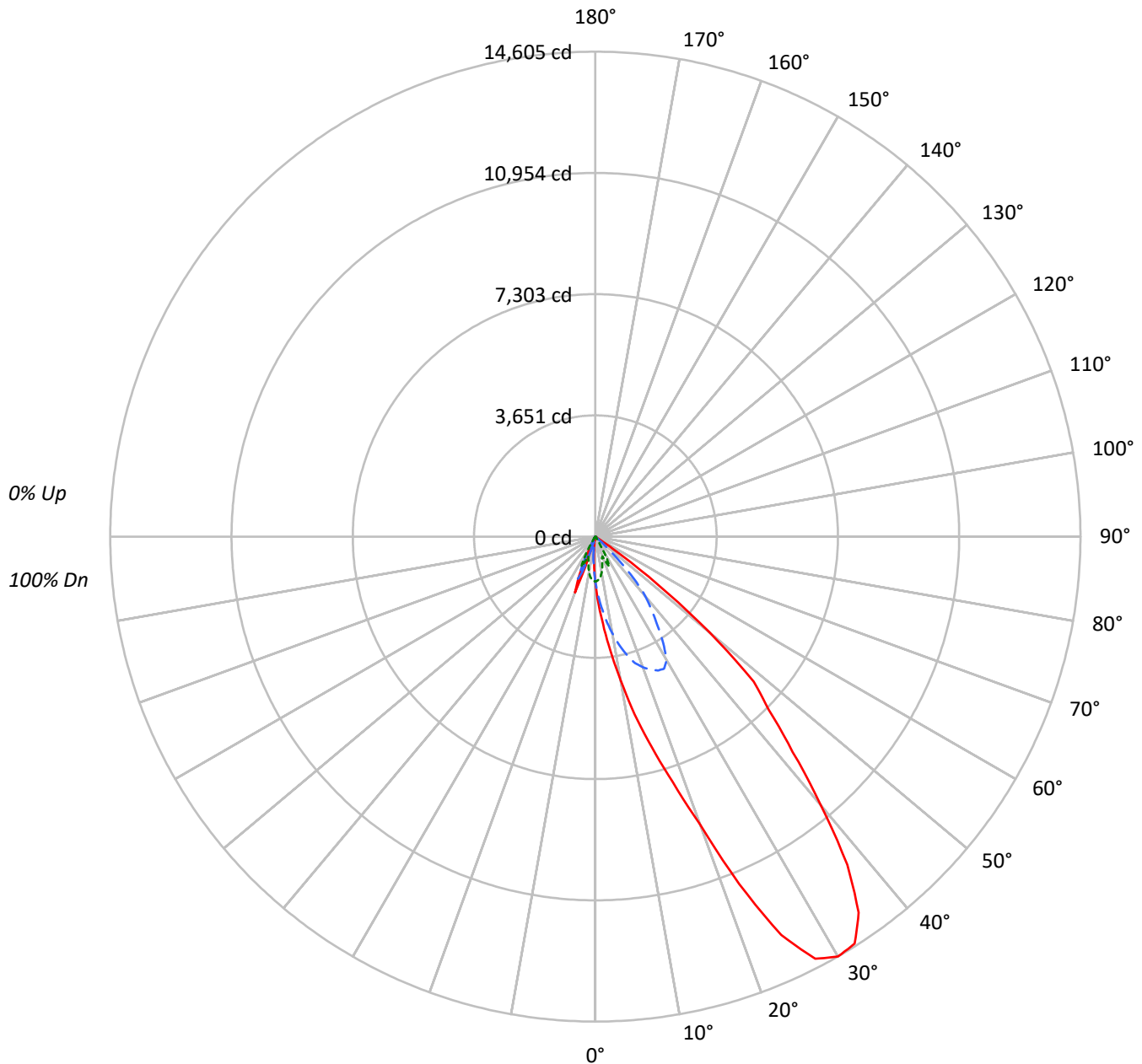
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	74265	74265	74265
5°	145196	70592	25754
10°	244395	60615	5711
15°	372187	45897	9376
20°	537822	37179	104595
25°	800417	60155	30232
30°	924503	20592	5976
35°	924797	4604	3226
40°	755873	2569	1982
45°	572385	1675	1271
50°	380124	1134	878
55°	61111	984	688
60°	3826	1009	559
65°	1193	1336	662
70°	657	1475	817
75°	445	1737	1080
80°	316	2589	1610
85°	629	5158	1950



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.4	3.0
10°-20°	604.6	12.7
20°-30°	1423.4	29.9
30°-40°	1499.7	31.5
40°-50°	935.1	19.6
50°-60°	134.4	2.8
60°-70°	8.6	0.2
70°-80°	6.7	0.1
80°-90°	5.0	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°	2169.4	45.6
0°-40°	3669.1	77.1
0°-60°	4738.6	99.6
0°-90°	4758.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4758.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1355	1355	1355	1355	1355	
5°	2638	2136	1283	666	468	306
15°	6558	3712	809	141	165	1953
25°	13233	4450	994	719	500	5954
35°	13819	3259	69	64	48	8336
45°	7383	902	22	24	16	5778
55°	639	16	10	11	7	1149
65°	9	7	10	8	5	14
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°	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7
2.5°	1977.6	1964.3	1968.4	1937.6	1896.6	1915.0	1868.8	1869.9	1841.1	1768.3	1736.5
5°	2638.5	2636.5	2633.4	2577.0	2504.1	2512.3	2444.6	2418.9	2345.0	2216.8	2135.7
7.5°	3459.6	3460.6	3445.2	3307.7	3226.6	3221.5	3114.7	3037.8	2900.2	2698.1	2550.3
10°	4390.4	4419.1	4391.4	4180.0	4029.1	4031.2	3839.3	3691.5	3470.9	3176.3	2965.9
12.5°	5483.4	5487.5	5444.4	5166.3	4936.4	4918.9	4661.3	4379.1	4043.5	3658.7	3352.8
15°	6557.9	6586.6	6531.2	6188.4	5868.2	5820.0	5491.6	5119.1	4702.4	4132.8	3712.0
17.5°	7749.4	7704.2	7557.5	7066.9	6682.1	6611.3	6258.2	5770.7	5239.1	4550.5	3998.4
20°	9219.0	9234.4	8923.4	8190.7	7540.0	7264.0	6854.5	6320.8	5657.8	4857.4	4189.2
22.5°	11318.8	11235.6	10568.6	9383.2	8405.2	8036.7	7452.8	6717.0	5970.9	5090.3	4331.9
25°	13232.8	13014.2	12399.4	10768.7	9237.5	8781.8	8177.3	7054.6	6230.5	5262.7	4449.9
27.5°	14331.9	14234.4	13537.6	11892.5	9909.7	9268.3	8417.5	7303.0	6384.4	5347.9	4483.8
30°	14604.9	14622.3	14002.5	12265.0	10068.8	9336.0	8456.5	7295.8	6280.8	5196.0	4288.8
32.5°	14535.1	14440.7	13665.9	11853.5	9644.9	8977.8	8074.7	6969.4	5868.2	4743.4	3803.4
35°	13818.8	13680.2	12726.8	10783.1	8925.5	8276.9	7457.9	6434.7	5292.5	4166.7	3259.4
37.5°	12455.9	12295.8	11195.6	9498.2	8062.4	7513.3	6805.2	5839.5	4710.6	3628.9	2781.2
40°	10562.4	10363.3	9443.8	8266.6	7134.7	6750.8	6152.5	5160.1	4107.1	3119.9	2339.9
42.5°	8792.1	8696.6	8144.5	7134.7	6372.1	6001.6	5398.2	4474.6	3505.7	2599.6	1732.3
45°	7383.0	7319.4	6953.0	6311.6	5537.8	5190.9	4622.3	3721.3	2667.3	1750.8	902.1
47.5°	6462.4	6300.3	5942.1	5268.9	4408.9	3976.8	3434.9	2451.8	1504.5	775.9	277.1
50°	4457.1	4472.5	4068.1	3326.2	2594.4	2229.1	1841.1	1127.9	497.7	169.3	48.2
52.5°	2347.1	2173.6	1889.4	1411.1	982.1	749.2	547.0	225.8	90.3	33.9	25.7
55°	639.4	561.4	448.5	317.1	171.4	120.1	79.0	42.1	29.8	23.6	16.4
57.5°	62.6	59.5	54.4	44.1	38.0	34.9	31.8	25.7	20.5	14.4	10.3
60°	34.9	33.9	31.8	27.7	24.6	22.6	20.5	17.4	12.3	9.2	8.2
62.5°	19.5	18.5	17.4	15.4	13.3	12.3	12.3	10.3	8.2	7.2	7.2
65°	9.2	9.2	9.2	9.2	9.2	8.2	7.2	7.2	7.2	7.2	7.2
67.5°	7.2	7.2	7.2	6.2	6.2	6.2	6.2	6.2	6.2	5.1	6.2
70°	4.1	4.1	5.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	5.1
72.5°	2.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.1	4.1	5.1
75°	2.1	2.1	2.1	2.1	3.1	3.1	3.1	3.1	4.1	4.1	5.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	3.1	3.1	4.1	4.1	5.1
80°	1.0	1.0	1.0	2.1	2.1	2.1	2.1	3.1	4.1	4.1	5.1
82.5°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.1	4.1	5.1
85°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.1	5.1
87.5°	0.0	0.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.1	5.1
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°	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7
2.5°	1703.6	1653.3	1603.0	1552.8	1550.7	1520.9	1476.8	1418.3	1370.1	1329.0	1289.0
5°	2054.6	1950.9	1847.3	1743.6	1712.9	1659.5	1564.0	1456.3	1363.9	1282.8	1204.8
7.5°	2406.6	2232.1	2067.9	1905.8	1841.1	1760.1	1611.2	1455.3	1321.8	1202.8	1086.8
10°	2720.7	2467.2	2236.2	2008.4	1915.0	1809.3	1609.2	1411.1	1241.8	1088.9	941.1
12.5°	3010.1	2657.0	2364.5	2077.2	1949.9	1821.6	1577.4	1341.3	1139.2	956.5	786.1
15°	3264.6	2831.5	2454.8	2108.0	1952.0	1798.0	1510.7	1244.9	1018.1	808.7	624.0
17.5°	3446.2	2918.7	2484.6	2080.3	1898.6	1726.2	1412.2	1127.9	883.6	665.0	486.5
20°	3557.1	2954.6	2469.2	2028.9	1836.0	1657.4	1339.3	1063.2	826.2	637.3	516.2
22.5°	3629.9	2989.5	2475.4	2027.9	1835.0	1666.7	1370.1	1111.5	918.5	816.9	802.5
25°	3707.9	3038.8	2520.5	2074.1	1894.5	1738.5	1451.2	1198.7	1037.6	994.5	1000.6
27.5°	3703.8	3017.2	2477.4	2034.1	1845.2	1687.2	1350.6	1031.4	880.5	759.4	715.3
30°	3483.2	2767.9	2183.9	1687.2	1464.5	1270.5	827.2	537.8	371.5	325.3	279.1
32.5°	2967.0	2242.4	1632.8	1166.9	916.5	684.5	325.3	172.4	146.8	123.2	111.9
35°	2467.2	1787.8	1221.3	705.0	445.4	276.1	117.0	77.0	72.9	68.8	68.8
37.5°	2039.2	1403.9	789.2	297.6	163.2	99.5	56.4	51.3	49.3	48.2	48.2
40°	1594.8	915.4	341.7	98.5	52.3	45.2	40.0	38.0	36.9	35.9	36.9
42.5°	941.1	368.4	99.5	36.9	34.9	32.8	29.8	28.7	28.7	27.7	28.7
45°	320.2	95.4	32.8	26.7	24.6	24.6	22.6	22.6	22.6	21.6	23.6
47.5°	83.1	29.8	21.6	19.5	18.5	18.5	17.4	17.4	17.4	17.4	18.5
50°	28.7	19.5	15.4	14.4	13.3	14.4	13.3	13.3	13.3	13.3	14.4
52.5°	17.4	13.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
55°	11.3	10.3	9.2	9.2	9.2	9.2	9.2	10.3	10.3	10.3	10.3
57.5°	9.2	8.2	8.2	8.2	8.2	8.2	9.2	8.2	8.2	9.2	10.3
60°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	9.2	9.2	10.3
62.5°	7.2	8.2	8.2	8.2	8.2	8.2	8.2	9.2	9.2	9.2	10.3
65°	7.2	7.2	7.2	8.2	8.2	8.2	9.2	9.2	9.2	10.3	10.3
67.5°	6.2	6.2	7.2	7.2	8.2	8.2	8.2	9.2	9.2	9.2	10.3
70°	6.2	6.2	6.2	7.2	7.2	7.2	7.2	8.2	8.2	9.2	9.2
72.5°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	8.2	8.2	8.2	9.2
75°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	7.2	8.2	8.2	9.2
77.5°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	8.2	8.2	8.2	9.2
80°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	8.2	8.2	8.2	8.2
82.5°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	8.2	8.2	8.2	8.2
85°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	7.2	8.2	8.2	8.2
87.5°	5.1	6.2	6.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7
2.5°	1233.6	1216.1	1154.6	1146.3	1136.1	1085.8	1065.3	1030.4	981.1	966.7	949.3
5°	1113.5	1056.0	965.7	941.1	914.4	835.4	787.2	729.7	666.1	631.2	598.3
7.5°	960.6	880.5	760.5	712.2	682.5	596.3	519.3	442.3	348.9	295.6	261.7
10°	790.2	680.4	555.2	499.8	459.8	334.6	261.7	227.8	196.0	170.4	147.8
12.5°	618.8	494.7	353.0	289.4	257.6	213.5	173.4	131.4	117.0	116.0	111.9
15°	453.6	315.1	238.1	214.5	191.9	137.5	136.5	136.5	140.6	143.7	144.7
17.5°	334.6	277.1	217.6	203.2	213.5	221.7	236.0	257.6	275.0	324.3	314.0
20°	490.6	486.5	530.6	587.0	627.1	712.2	820.0	942.1	1069.4	1211.0	1318.8
22.5°	841.5	944.2	1024.2	1092.0	1127.9	1224.3	1309.5	1351.6	1376.2	1363.9	1346.5
25°	1028.3	1065.3	1040.6	1017.0	1020.1	932.9	869.3	788.2	719.4	656.8	619.9
27.5°	614.7	562.4	488.5	437.2	426.9	368.4	325.3	280.2	266.8	225.8	208.3
30°	221.7	206.3	182.7	164.2	162.2	146.8	137.5	127.3	126.2	117.0	111.9
32.5°	100.6	100.6	92.4	94.4	92.4	89.3	88.3	85.2	85.2	82.1	80.0
35°	65.7	66.7	65.7	65.7	64.7	64.7	64.7	62.6	63.6	61.6	58.5
37.5°	48.2	49.3	47.2	48.2	48.2	48.2	48.2	47.2	46.2	44.1	43.1
40°	36.9	36.9	36.9	36.9	36.9	36.9	36.9	35.9	35.9	34.9	32.8
42.5°	28.7	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	28.7	28.7
45°	23.6	24.6	23.6	24.6	24.6	24.6	23.6	23.6	23.6	22.6	21.6
47.5°	18.5	18.5	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	16.4
50°	14.4	14.4	14.4	14.4	14.4	14.4	15.4	14.4	14.4	14.4	14.4
52.5°	11.3	12.3	12.3	13.3	13.3	13.3	13.3	13.3	12.3	12.3	11.3
55°	10.3	11.3	11.3	12.3	12.3	12.3	12.3	11.3	11.3	11.3	10.3
57.5°	10.3	11.3	11.3	11.3	11.3	11.3	11.3	10.3	10.3	9.2	9.2
60°	10.3	10.3	10.3	11.3	11.3	10.3	10.3	9.2	9.2	8.2	8.2
62.5°	10.3	10.3	10.3	11.3	11.3	10.3	10.3	9.2	8.2	8.2	7.2
65°	10.3	11.3	10.3	11.3	11.3	10.3	10.3	9.2	8.2	8.2	7.2
67.5°	10.3	11.3	11.3	11.3	10.3	10.3	10.3	9.2	8.2	8.2	7.2
70°	9.2	10.3	10.3	10.3	10.3	10.3	9.2	9.2	8.2	8.2	7.2
72.5°	9.2	10.3	9.2	10.3	10.3	9.2	9.2	9.2	8.2	8.2	7.2
75°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	8.2	8.2	7.2	7.2
77.5°	9.2	9.2	9.2	9.2	9.2	9.2	8.2	8.2	8.2	7.2	7.2
80°	9.2	9.2	9.2	9.2	9.2	9.2	8.2	8.2	7.2	7.2	6.2
82.5°	8.2	9.2	9.2	9.2	9.2	9.2	8.2	8.2	7.2	7.2	6.2
85°	8.2	8.2	8.2	8.2	8.2	8.2	7.2	7.2	6.2	5.1	5.1
87.5°	7.2	8.2	7.2	7.2	7.2	7.2	6.2	5.1	4.1	4.1	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: P179911

CATALOG NUMBER: LDA6A55840D010TE LARH20SP 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7	1354.7
2.5°	921.6	895.9	897.0	901.1	875.4	862.1	859.0	845.6
5°	554.2	524.4	519.3	515.2	479.3	464.9	453.6	468.0
7.5°	238.1	226.8	224.8	221.7	205.3	197.0	192.9	197.0
10°	118.0	110.8	111.9	112.9	107.8	104.7	103.7	102.6
12.5°	117.0	116.0	117.0	117.0	118.0	116.0	117.0	117.0
15°	151.9	151.9	155.0	157.0	162.2	161.1	163.2	165.2
17.5°	378.7	359.2	369.5	369.5	415.6	374.6	409.5	377.7
20°	1488.1	1557.9	1628.7	1688.2	1748.8	1767.2	1803.2	1792.9
22.5°	1319.8	1328.0	1317.7	1306.4	1303.4	1306.4	1251.0	1259.2
25°	566.5	562.4	546.0	528.5	533.7	537.8	518.3	499.8
27.5°	194.0	188.8	183.7	179.6	177.5	174.5	168.3	164.2
30°	109.8	106.7	104.7	103.7	101.6	99.5	96.5	94.4
32.5°	79.0	77.0	75.9	74.9	72.9	70.8	67.7	66.7
35°	58.5	56.4	55.4	54.4	52.3	50.3	49.3	48.2
37.5°	43.1	41.1	41.1	41.1	38.0	35.9	34.9	33.9
40°	32.8	31.8	31.8	31.8	29.8	28.7	27.7	27.7
42.5°	28.7	27.7	27.7	27.7	25.7	24.6	24.6	23.6
45°	21.6	20.5	20.5	19.5	18.5	18.5	17.4	16.4
47.5°	16.4	15.4	15.4	15.4	14.4	13.3	13.3	12.3
50°	13.3	13.3	12.3	13.3	11.3	11.3	11.3	10.3
52.5°	11.3	11.3	10.3	10.3	9.2	9.2	9.2	8.2
55°	10.3	9.2	9.2	9.2	8.2	8.2	8.2	7.2
57.5°	8.2	8.2	7.2	7.2	6.2	6.2	6.2	6.2
60°	7.2	7.2	6.2	6.2	5.1	5.1	5.1	5.1
62.5°	7.2	6.2	6.2	6.2	5.1	5.1	5.1	5.1
65°	7.2	6.2	6.2	6.2	5.1	5.1	5.1	5.1
67.5°	7.2	6.2	6.2	6.2	5.1	5.1	5.1	5.1
70°	7.2	7.2	6.2	6.2	6.2	5.1	5.1	5.1
72.5°	7.2	7.2	6.2	6.2	6.2	6.2	5.1	5.1
75°	6.2	6.2	6.2	6.2	5.1	5.1	5.1	5.1
77.5°	6.2	6.2	6.2	6.2	5.1	5.1	5.1	5.1
80°	6.2	6.2	5.1	5.1	5.1	5.1	5.1	5.1
82.5°	6.2	5.1	5.1	5.1	5.1	4.1	4.1	4.1
85°	4.1	4.1	4.1	4.1	3.1	3.1	3.1	3.1
87.5°	3.1	2.1	2.1	2.1	1.0	1.0	1.0	1.0
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)