

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: P179868

Luminaire Tested: **LDA6A65827D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179868
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: LDA6A65827D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, 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: 5652.2 lumens
Efficiency: N/A
Efficacy: 72.5 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

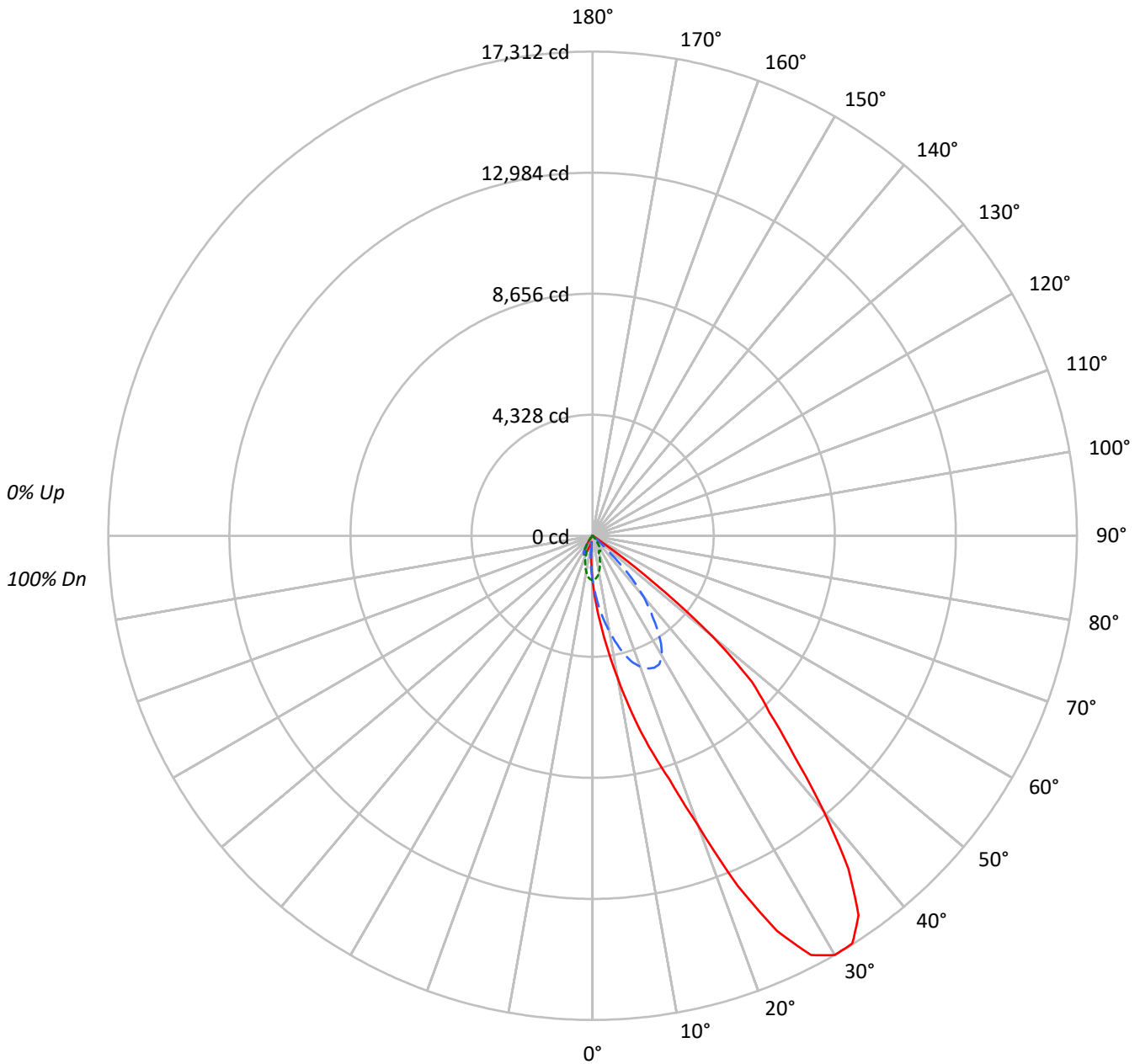
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	87471	87471	87471
5°	169497	83359	28115
10°	287971	72945	12625
15°	443748	58184	20074
20°	642376	37862	34916
25°	942478	36540	44894
30°	1095852	34619	34404
35°	1109190	18337	18183
40°	918335	6913	7636
45°	693576	2349	2783
50°	474526	861	861
55°	66005	755	105
60°	1721	735	0
65°	441	1025	0
70°	176	1266	0
75°	0	1673	0
80°	0	2841	347
85°	0	5661	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.4	3.0
10°-20°	707.6	12.5
20°-30°	1614.2	28.6
30°-40°	1868.0	33.0
40°-50°	1126.6	19.9
50°-60°	153.0	2.7
60°-70°	4.9	0.1
70°-80°	5.4	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°	2489.2	44.0
0°-40°	4357.3	77.1
0°-60°	5636.9	99.7
0°-90°	5652.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5652.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1596	1596	1596	1596	1596	
5°	3080	2522	1515	829	511	358
15°	7819	4395	1025	316	354	2315
25°	15581	5208	604	726	742	7051
35°	16574	3971	274	280	272	9988
45°	8946	1081	30	37	36	6995
55°	691	8	8	6	1	1354
65°	3	4	8	4	0	5
75°	0	6	8	6	0	0
85°	0	6	9	6	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°	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6
2.5°	2307.6	2286.2	2295.2	2271.6	2212.1	2199.8	2198.6	2182.9	2132.4	2093.1	2045.9
5°	3080.1	3079.0	3084.6	3034.1	2929.7	2897.1	2881.4	2843.2	2720.8	2626.5	2522.0
7.5°	4044.7	4038.0	4031.2	3939.2	3775.2	3712.3	3671.9	3533.8	3365.3	3198.0	3011.6
10°	5173.2	5169.9	5144.0	4982.3	4719.6	4603.9	4525.3	4306.3	4035.7	3797.7	3481.0
12.5°	6483.7	6453.3	6407.3	6170.4	5809.9	5684.1	5511.2	5164.2	4748.8	4383.8	3941.4
15°	7818.8	7775.0	7693.0	7388.7	6941.8	6727.3	6512.8	6055.8	5492.1	4962.1	4395.0
17.5°	9124.7	9076.4	8884.4	8367.9	7931.1	7669.4	7431.4	6803.7	6141.2	5459.6	4740.9
20°	11011.2	10836.0	10501.4	9687.3	8875.4	8403.8	8125.3	7461.7	6642.0	5848.1	4986.8
22.5°	13531.0	13142.5	12429.4	11106.7	9946.7	9266.2	8810.3	7927.7	7002.4	6101.9	5138.4
25°	15581.4	15405.1	14594.4	12712.4	10902.3	10100.5	9466.1	8298.3	7265.2	6271.4	5208.0
27.5°	16903.1	16859.3	15932.9	14041.9	11682.7	10630.5	9922.0	8543.1	7392.1	6307.4	5174.3
30°	17311.8	17380.3	16491.0	14493.3	11908.4	10737.2	9962.4	8546.4	7294.4	6144.5	4958.7
32.5°	17281.5	17284.9	16194.5	14103.7	11541.2	10427.3	9625.5	8262.3	6933.9	5736.9	4548.9
35°	16574.1	16400.0	15167.1	12906.7	10686.7	9704.1	8958.5	7712.1	6339.9	5123.8	3970.6
37.5°	15021.1	14793.1	13355.8	11373.9	9674.9	8766.5	8164.6	6990.1	5632.5	4469.2	3373.2
40°	12832.6	12509.2	11323.4	9948.9	8567.8	7885.0	7379.7	6182.7	4875.7	3826.9	2812.9
42.5°	10641.8	10483.4	9699.7	8582.4	7636.9	6994.6	6466.8	5337.2	4148.0	3193.5	2104.3
45°	8946.2	8810.3	8283.7	7547.0	6619.5	6033.4	5524.7	4455.7	3222.7	2142.5	1081.4
47.5°	7711.0	7600.9	7096.8	6323.1	5305.7	4664.5	4140.1	2921.8	1825.8	925.3	270.6
50°	5564.0	5451.7	4957.6	4061.5	3143.0	2606.3	2229.0	1304.8	517.7	187.5	28.1
52.5°	2727.5	2635.5	2299.7	1721.4	1155.5	830.9	607.5	244.8	59.5	20.2	13.5
55°	690.6	634.4	528.9	332.4	162.8	97.7	62.9	22.5	14.6	11.2	7.9
57.5°	39.3	38.2	34.8	25.8	19.1	16.8	14.6	11.2	7.9	6.7	5.6
60°	15.7	14.6	13.5	11.2	9.0	7.9	7.9	5.6	4.5	4.5	4.5
62.5°	6.7	6.7	6.7	5.6	4.5	4.5	4.5	3.4	4.5	4.5	4.5
65°	3.4	3.4	3.4	2.2	2.2	2.2	3.4	3.4	3.4	4.5	4.5
67.5°	2.2	1.1	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	4.5
70°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	5.6
72.5°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	5.6
75°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6
77.5°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6
80°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6
82.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6
85°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6
87.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6
2.5°	1985.3	1944.9	1885.4	1846.1	1807.9	1771.9	1712.4	1678.7	1618.1	1562.0	1513.7
5°	2396.3	2295.2	2172.8	2068.4	2001.0	1934.8	1814.6	1725.9	1614.7	1514.8	1422.7
7.5°	2811.8	2633.2	2432.2	2260.4	2156.0	2053.8	1874.1	1730.4	1573.2	1430.6	1294.7
10°	3189.0	2920.7	2636.6	2390.7	2249.2	2116.7	1879.7	1688.8	1486.7	1310.4	1139.7
12.5°	3539.4	3172.2	2801.6	2480.5	2305.3	2145.9	1856.2	1622.6	1382.3	1173.4	974.7
15°	3851.6	3379.9	2921.8	2532.2	2326.7	2138.0	1801.1	1529.4	1258.8	1025.2	773.7
17.5°	4088.5	3509.1	2974.6	2524.3	2288.5	2078.5	1706.8	1412.6	1127.4	844.4	560.3
20°	4232.2	3564.1	2963.3	2463.7	2206.5	1984.2	1594.5	1285.7	969.1	649.0	494.1
22.5°	4292.9	3559.6	2910.6	2372.7	2105.4	1880.9	1486.7	1162.2	802.9	587.3	515.4
25°	4303.0	3513.6	2836.5	2272.8	2005.5	1782.0	1377.8	1021.8	697.3	604.1	577.2
27.5°	4225.5	3405.8	2697.2	2129.0	1865.1	1633.8	1215.0	811.9	654.7	601.9	619.8
30°	3996.4	3159.9	2451.3	1876.4	1621.5	1390.2	868.0	636.7	543.5	546.9	551.3
32.5°	3593.3	2751.1	2056.0	1506.9	1228.5	916.3	540.1	425.6	413.2	413.2	411.0
35°	3055.4	2251.4	1613.6	953.3	610.9	440.2	279.6	280.7	275.1	274.0	272.9
37.5°	2499.6	1776.4	1021.8	394.1	265.0	184.2	165.1	167.3	165.1	168.4	166.2
40°	1970.7	1097.1	372.8	125.8	93.2	89.8	92.1	94.3	94.3	96.6	96.6
42.5°	1145.4	363.8	97.7	50.5	50.5	48.3	49.4	51.7	52.8	53.9	52.8
45°	340.2	75.2	31.4	28.1	28.1	26.9	26.9	28.1	29.2	30.3	30.3
47.5°	53.9	21.3	18.0	15.7	15.7	15.7	15.7	15.7	16.8	16.8	18.0
50°	16.8	13.5	11.2	10.1	10.1	9.0	9.0	10.1	10.1	10.1	11.2
52.5°	10.1	7.9	7.9	6.7	7.9	7.9	6.7	7.9	7.9	7.9	9.0
55°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	7.9	7.9	7.9
57.5°	5.6	5.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
60°	5.6	5.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	7.9
62.5°	5.6	5.6	6.7	6.7	6.7	6.7	6.7	6.7	7.9	7.9	7.9
65°	5.6	5.6	6.7	6.7	6.7	6.7	6.7	7.9	7.9	7.9	7.9
67.5°	5.6	6.7	6.7	6.7	6.7	7.9	7.9	7.9	7.9	7.9	7.9
70°	5.6	6.7	6.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
72.5°	5.6	6.7	6.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
75°	6.7	6.7	6.7	7.9	7.9	7.9	7.9	7.9	7.9	7.9	9.0
77.5°	6.7	6.7	7.9	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0
80°	6.7	6.7	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0	9.0
82.5°	6.7	6.7	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0	9.0
85°	6.7	6.7	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0	9.0
87.5°	6.7	6.7	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0	9.0
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6
2.5°	1472.1	1420.5	1395.8	1361.0	1336.3	1281.2	1258.8	1220.6	1189.2	1137.5	1140.9
5°	1344.1	1246.4	1180.2	1128.5	1092.6	1005.0	946.6	884.8	828.7	759.1	733.3
7.5°	1166.7	1046.5	945.5	883.7	837.7	720.9	591.8	490.7	414.4	359.3	338.0
10°	989.3	833.2	672.6	577.2	510.9	398.6	341.4	314.4	289.7	259.4	239.2
12.5°	782.7	560.3	414.4	376.2	349.2	312.2	275.1	245.9	251.5	252.7	260.5
15°	534.5	403.1	357.1	331.3	302.1	280.7	293.1	300.9	315.5	316.7	326.8
17.5°	434.6	378.4	341.4	340.2	342.5	354.8	373.9	384.0	403.1	407.6	422.2
20°	434.6	402.0	433.4	433.4	439.1	455.9	480.6	495.2	516.5	524.4	542.4
22.5°	495.2	517.7	557.0	561.5	563.7	581.7	613.1	627.7	652.4	656.9	676.0
25°	604.1	624.3	660.3	663.6	664.8	678.2	701.8	709.7	726.5	717.5	728.8
27.5°	638.9	647.9	670.4	672.6	667.0	672.6	681.6	681.6	687.2	669.3	672.6
30°	561.5	563.7	574.9	576.1	563.7	565.9	567.1	565.9	564.8	545.7	545.7
32.5°	416.6	416.6	431.2	427.8	414.4	417.7	417.7	417.7	416.6	400.9	398.6
35°	276.2	277.4	289.7	287.5	277.4	279.6	279.6	283.0	279.6	270.6	268.4
37.5°	168.4	169.6	175.2	176.3	172.9	174.1	175.2	174.1	176.3	171.8	169.6
40°	97.7	99.9	104.4	105.6	104.4	104.4	105.6	106.7	111.2	105.6	103.3
42.5°	57.3	58.4	60.6	60.6	60.6	60.6	61.8	62.9	64.0	62.9	61.8
45°	32.6	33.7	34.8	34.8	35.9	34.8	35.9	35.9	37.1	35.9	35.9
47.5°	19.1	19.1	20.2	20.2	21.3	20.2	21.3	21.3	21.3	20.2	20.2
50°	11.2	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	11.2	11.2
52.5°	9.0	9.0	9.0	9.0	9.0	7.9	7.9	7.9	7.9	6.7	6.7
55°	7.9	7.9	7.9	7.9	7.9	7.9	6.7	5.6	5.6	4.5	4.5
57.5°	6.7	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	3.4	3.4
60°	7.9	7.9	7.9	7.9	6.7	6.7	6.7	5.6	4.5	3.4	3.4
62.5°	7.9	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	3.4	3.4
65°	7.9	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	3.4	3.4
67.5°	7.9	7.9	7.9	7.9	7.9	6.7	6.7	5.6	4.5	4.5	3.4
70°	7.9	9.0	9.0	7.9	7.9	7.9	6.7	5.6	5.6	4.5	3.4
72.5°	7.9	9.0	9.0	7.9	7.9	7.9	6.7	5.6	5.6	4.5	3.4
75°	9.0	9.0	9.0	9.0	7.9	7.9	6.7	6.7	5.6	4.5	3.4
77.5°	9.0	9.0	9.0	9.0	7.9	7.9	6.7	6.7	5.6	4.5	3.4
80°	9.0	9.0	9.0	9.0	9.0	7.9	7.9	6.7	5.6	4.5	4.5
82.5°	9.0	9.0	9.0	9.0	9.0	7.9	7.9	6.7	5.6	4.5	4.5
85°	9.0	9.0	9.0	9.0	9.0	7.9	7.9	6.7	5.6	4.5	3.4
87.5°	9.0	9.0	9.0	9.0	7.9	7.9	6.7	6.7	5.6	4.5	3.4
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: P179868

CATALOG NUMBER: LDA6A65827D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6	1595.6
2.5°	1099.3	1073.5	1062.3	1080.2	1071.3	1044.3	1049.9	1033.1
5°	655.8	616.5	591.8	603.0	567.1	534.5	534.5	510.9
7.5°	316.7	304.3	297.6	299.8	292.0	281.8	276.2	276.2
10°	222.3	217.8	219.0	219.0	225.7	224.6	227.9	226.8
12.5°	263.9	266.1	267.3	271.7	277.4	277.4	280.7	278.5
15°	338.0	335.7	342.5	343.6	352.6	353.7	358.2	353.7
17.5°	430.1	434.6	441.3	440.2	458.1	459.3	459.3	458.1
20°	553.6	557.0	563.7	565.9	587.3	589.5	597.4	598.5
22.5°	688.3	688.3	691.7	696.2	716.4	717.5	720.9	720.9
25°	734.4	727.6	728.8	734.4	745.6	741.1	744.5	742.2
27.5°	674.9	664.8	662.5	670.4	678.2	665.9	670.4	670.4
30°	548.0	539.0	536.7	544.6	550.2	536.7	541.2	543.5
32.5°	400.9	395.3	394.1	399.8	404.2	393.0	397.5	400.9
35°	270.6	268.4	266.1	267.3	274.0	265.0	269.5	271.7
37.5°	171.8	167.3	168.4	170.7	175.2	169.6	174.1	174.1
40°	105.6	103.3	103.3	105.6	107.8	103.3	105.6	106.7
42.5°	61.8	61.8	61.8	62.9	64.0	61.8	61.8	62.9
45°	35.9	34.8	34.8	35.9	37.1	34.8	35.9	35.9
47.5°	20.2	19.1	19.1	20.2	20.2	19.1	20.2	20.2
50°	11.2	10.1	10.1	11.2	11.2	10.1	10.1	10.1
52.5°	5.6	5.6	5.6	5.6	5.6	5.6	4.5	4.5
55°	3.4	3.4	2.2	2.2	2.2	2.2	2.2	1.1
57.5°	2.2	2.2	1.1	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
67.5°	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
70°	3.4	2.2	2.2	1.1	1.1	1.1	0.0	0.0
72.5°	3.4	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.4	2.2	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	3.4	2.2	2.2	2.2	1.1	1.1	1.1	0.0
80°	3.4	2.2	2.2	2.2	1.1	1.1	1.1	1.1
82.5°	3.4	2.2	2.2	2.2	1.1	1.1	1.1	1.1
85°	3.4	2.2	2.2	2.2	1.1	1.1	1.1	0.0
87.5°	3.4	2.2	2.2	2.2	1.1	1.1	1.1	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)