

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: P179871

Luminaire Tested: **LDA6A65840D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179871
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: LDA6A65840D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, 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: 6164.0 lumens
Efficiency: N/A
Efficacy: 79.0 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

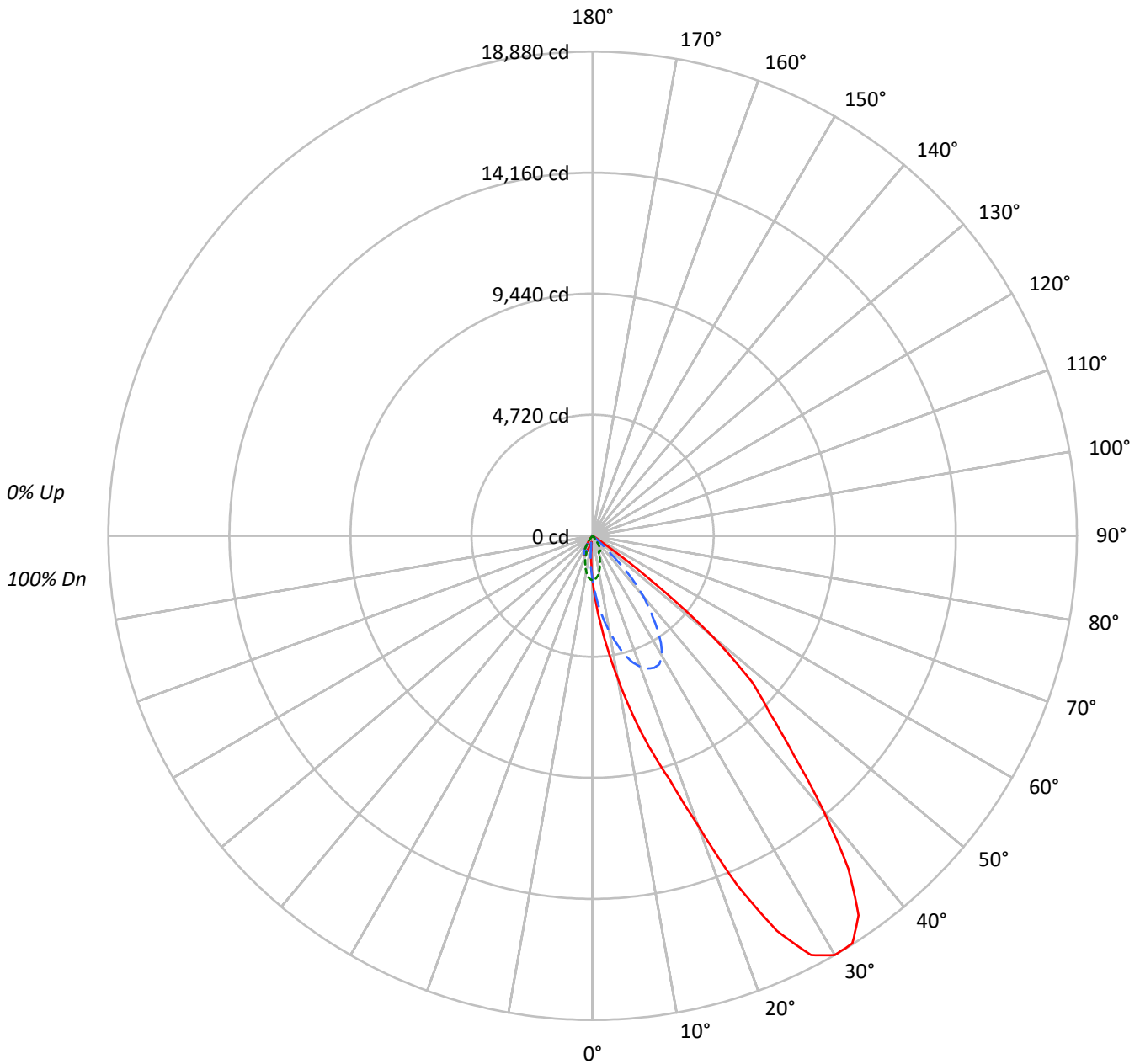
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				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°	95393	95393	95393
5°	184850	90909	30662
10°	314050	79552	13772
15°	483930	63457	21890
20°	700551	41292	38077
25°	1027832	39849	48965
30°	1195095	37753	37518
35°	1209634	19997	19836
40°	1001498	7536	8323
45°	756381	2566	3039
50°	517501	938	938
55°	71978	822	115
60°	1875	800	0
65°	480	1116	0
70°	192	1378	0
75°	0	1822	0
80°	0	3094	379
85°	0	6164	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.6	3.0
10°-20°	771.7	12.5
20°-30°	1760.4	28.6
30°-40°	2037.2	33.0
40°-50°	1228.6	19.9
50°-60°	166.9	2.7
60°-70°	5.4	0.1
70°-80°	5.8	0.1
80°-90°	5.4	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°	2714.6	44.0
0°-40°	4751.8	77.1
0°-60°	6147.3	99.7
0°-90°	6164.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6164.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1740	1740	1740	1740	1740	
5°	3359	2750	1652	904	557	391
15°	8527	4793	1118	344	386	2524
25°	16992	5680	659	792	810	7690
35°	18075	4330	299	305	296	10893
45°	9756	1179	33	40	39	7629
55°	753	9	9	6	1	1476
65°	4	5	9	5	0	6
75°	0	6	9	6	0	0
85°	0	6	10	6	0	0
90°	0	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°	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1
2.5°	2516.5	2493.3	2503.1	2477.4	2412.4	2399.0	2397.8	2380.6	2325.5	2282.6	2231.2
5°	3359.1	3357.8	3364.0	3308.9	3195.0	3159.5	3142.3	3100.7	2967.2	2864.3	2750.4
7.5°	4411.0	4403.6	4396.3	4295.9	4117.1	4048.5	4004.4	3853.8	3670.1	3487.6	3284.4
10°	5641.7	5638.0	5609.9	5433.5	5147.0	5020.8	4935.1	4696.3	4401.2	4141.6	3796.2
12.5°	7070.8	7037.7	6987.5	6729.1	6336.0	6198.9	6010.3	5631.9	5178.8	4780.8	4298.3
15°	8526.8	8479.1	8389.7	8057.8	7570.4	7336.5	7102.6	6604.2	5989.5	5411.5	4793.1
17.5°	9951.0	9898.4	9689.0	9125.7	8649.3	8364.0	8104.4	7419.8	6697.3	5954.0	5170.2
20°	12008.4	11817.3	11452.4	10564.6	9679.2	9164.9	8861.2	8137.4	7243.5	6377.7	5438.4
22.5°	14756.4	14332.6	13555.0	12112.5	10847.5	10105.3	9608.2	8645.6	7636.6	6654.4	5603.7
25°	16992.5	16800.2	15916.0	13863.6	11889.6	11015.2	10323.3	9049.7	7923.1	6839.4	5679.7
27.5°	18433.8	18386.0	17375.8	15313.5	12740.7	11593.2	10820.5	9316.7	8061.5	6878.5	5642.9
30°	18879.6	18954.3	17984.4	15805.8	12986.8	11709.6	10864.6	9320.4	7955.0	6701.0	5407.8
32.5°	18846.5	18850.2	17661.1	15380.9	12586.4	11371.6	10497.2	9010.6	7561.9	6256.4	4960.8
35°	18075.0	17885.2	16540.6	14075.5	11654.5	10582.9	9769.8	8410.5	6914.1	5587.8	4330.2
37.5°	16381.4	16132.8	14565.3	12403.9	10551.1	9560.4	8904.0	7623.1	6142.6	4873.9	3678.7
40°	13994.7	13642.0	12348.8	10849.9	9343.6	8599.1	8048.0	6742.6	5317.2	4173.4	3067.6
42.5°	11605.5	11432.8	10578.0	9359.6	8328.5	7628.0	7052.4	5820.5	4523.6	3482.7	2294.9
45°	9756.3	9608.2	9033.8	8230.5	7219.0	6579.7	6025.0	4859.2	3514.6	2336.5	1179.3
47.5°	8409.3	8289.3	7739.4	6895.7	5786.2	5087.0	4515.1	3186.4	1991.2	1009.1	295.1
50°	6067.9	5945.4	5406.6	4429.4	3427.6	2842.3	2430.8	1423.0	564.5	204.5	30.6
52.5°	2974.5	2874.1	2508.0	1877.3	1260.1	906.2	662.5	267.0	64.9	22.0	14.7
55°	753.1	691.9	576.8	362.5	177.6	106.5	68.6	24.5	15.9	12.2	8.6
57.5°	42.9	41.6	38.0	28.2	20.8	18.4	15.9	12.2	8.6	7.3	6.1
60°	17.1	15.9	14.7	12.2	9.8	8.6	8.6	6.1	4.9	4.9	4.9
62.5°	7.3	7.3	7.3	6.1	4.9	4.9	4.9	3.7	4.9	4.9	4.9
65°	3.7	3.7	3.7	2.4	2.4	2.4	3.7	3.7	3.7	4.9	4.9
67.5°	2.4	1.2	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	4.9
70°	1.2	1.2	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1
72.5°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1
75°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1
77.5°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1
80°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1
85°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1
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°	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1
2.5°	2165.1	2121.0	2056.1	2013.2	1971.6	1932.4	1867.5	1830.8	1764.6	1703.4	1650.8
5°	2613.3	2503.1	2369.6	2255.7	2182.2	2110.0	1978.9	1882.2	1761.0	1652.0	1551.6
7.5°	3066.4	2871.7	2652.5	2465.1	2351.2	2239.8	2043.8	1887.1	1715.7	1560.1	1412.0
10°	3477.8	3185.2	2875.3	2607.2	2452.9	2308.4	2050.0	1841.8	1621.4	1429.1	1243.0
12.5°	3859.9	3459.5	3055.4	2705.1	2514.1	2340.2	2024.3	1769.5	1507.5	1279.7	1062.9
15°	4200.4	3686.0	3186.4	2761.5	2537.4	2331.6	1964.2	1667.9	1372.8	1118.1	843.7
17.5°	4458.7	3826.9	3243.9	2752.9	2495.7	2266.7	1861.4	1540.5	1229.5	920.9	611.1
20°	4615.5	3886.9	3231.7	2686.8	2406.3	2163.9	1738.9	1402.2	1056.8	707.8	538.8
22.5°	4681.6	3882.0	3174.1	2587.6	2296.1	2051.2	1621.4	1267.5	875.6	640.5	562.1
25°	4692.6	3831.8	3093.3	2478.6	2187.1	1943.4	1502.6	1114.4	760.5	658.8	629.4
27.5°	4608.1	3714.2	2941.5	2321.8	2034.1	1781.8	1325.0	885.4	713.9	656.4	676.0
30°	4358.3	3446.0	2673.3	2046.3	1768.3	1516.0	946.6	694.3	592.7	596.4	601.3
32.5°	3918.7	3000.3	2242.2	1643.4	1339.7	999.3	589.0	464.1	450.7	450.7	448.2
35°	3332.1	2455.3	1759.7	1039.7	666.2	480.0	304.9	306.1	300.0	298.8	297.6
37.5°	2725.9	1937.3	1114.4	429.8	289.0	200.8	180.0	182.5	180.0	183.7	181.2
40°	2149.2	1196.4	406.6	137.2	101.6	98.0	100.4	102.9	102.9	105.3	105.3
42.5°	1249.1	396.8	106.5	55.1	55.1	52.7	53.9	56.3	57.6	58.8	57.6
45°	371.1	82.0	34.3	30.6	30.6	29.4	29.4	30.6	31.8	33.1	33.1
47.5°	58.8	23.3	19.6	17.1	17.1	17.1	17.1	17.1	18.4	18.4	19.6
50°	18.4	14.7	12.2	11.0	11.0	9.8	9.8	11.0	11.0	11.0	12.2
52.5°	11.0	8.6	8.6	7.3	8.6	8.6	7.3	8.6	8.6	8.6	9.8
55°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.6	8.6	8.6
57.5°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
60°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	8.6
62.5°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	7.3	8.6	8.6	8.6
65°	6.1	6.1	7.3	7.3	7.3	7.3	7.3	8.6	8.6	8.6	8.6
67.5°	6.1	7.3	7.3	7.3	7.3	8.6	8.6	8.6	8.6	8.6	8.6
70°	6.1	7.3	7.3	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
72.5°	6.1	7.3	7.3	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
75°	7.3	7.3	7.3	8.6	8.6	8.6	8.6	8.6	8.6	8.6	9.8
77.5°	7.3	7.3	8.6	8.6	8.6	8.6	8.6	8.6	9.8	9.8	9.8
80°	7.3	7.3	8.6	8.6	8.6	8.6	8.6	9.8	9.8	9.8	9.8
82.5°	7.3	7.3	8.6	8.6	8.6	8.6	8.6	9.8	9.8	9.8	9.8
85°	7.3	7.3	8.6	8.6	8.6	8.6	8.6	9.8	9.8	9.8	9.8
87.5°	7.3	7.3	8.6	8.6	8.6	8.6	8.6	9.8	9.8	9.8	9.8
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1
2.5°	1605.4	1549.1	1522.2	1484.2	1457.3	1397.3	1372.8	1331.1	1296.8	1240.5	1244.2
5°	1465.8	1359.3	1287.0	1230.7	1191.5	1096.0	1032.3	965.0	903.8	827.8	799.7
7.5°	1272.4	1141.3	1031.1	963.8	913.5	786.2	645.4	535.1	451.9	391.9	368.6
10°	1078.9	908.6	733.5	629.4	557.2	434.7	372.3	342.9	315.9	282.9	260.8
12.5°	853.5	611.1	451.9	410.2	380.8	340.4	300.0	268.2	274.3	275.5	284.1
15°	582.9	439.6	389.4	361.3	329.4	306.1	319.6	328.2	344.1	345.3	356.4
17.5°	473.9	412.7	372.3	371.1	373.5	387.0	407.8	418.8	439.6	444.5	460.4
20°	473.9	438.4	472.7	472.7	478.8	497.2	524.1	540.0	563.3	571.9	591.5
22.5°	540.0	564.5	607.4	612.3	614.7	634.3	668.6	684.5	711.5	716.4	737.2
25°	658.8	680.9	720.1	723.7	725.0	739.7	765.4	773.9	792.3	782.5	794.8
27.5°	696.8	706.6	731.1	733.5	727.4	733.5	743.3	743.3	749.5	729.9	733.5
30°	612.3	614.7	627.0	628.2	614.7	617.2	618.4	617.2	616.0	595.2	595.2
32.5°	454.3	454.3	470.2	466.6	451.9	455.5	455.5	455.5	454.3	437.2	434.7
35°	301.3	302.5	315.9	313.5	302.5	304.9	304.9	308.6	304.9	295.1	292.7
37.5°	183.7	184.9	191.0	192.3	188.6	189.8	191.0	189.8	192.3	187.4	184.9
40°	106.5	109.0	113.9	115.1	113.9	113.9	115.1	116.3	121.2	115.1	112.7
42.5°	62.5	63.7	66.1	66.1	66.1	66.1	67.4	68.6	69.8	68.6	67.4
45°	35.5	36.7	38.0	38.0	39.2	38.0	39.2	39.2	40.4	39.2	39.2
47.5°	20.8	20.8	22.0	22.0	23.3	22.0	23.3	23.3	23.3	22.0	22.0
50°	12.2	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	12.2	12.2
52.5°	9.8	9.8	9.8	9.8	9.8	8.6	8.6	8.6	8.6	7.3	7.3
55°	8.6	8.6	8.6	8.6	8.6	8.6	7.3	6.1	6.1	4.9	4.9
57.5°	7.3	8.6	8.6	8.6	8.6	7.3	7.3	6.1	4.9	3.7	3.7
60°	8.6	8.6	8.6	8.6	7.3	7.3	7.3	6.1	4.9	3.7	3.7
62.5°	8.6	8.6	8.6	8.6	8.6	7.3	7.3	6.1	4.9	3.7	3.7
65°	8.6	8.6	8.6	8.6	8.6	7.3	7.3	6.1	4.9	3.7	3.7
67.5°	8.6	8.6	8.6	8.6	8.6	7.3	7.3	6.1	4.9	4.9	3.7
70°	8.6	9.8	9.8	8.6	8.6	8.6	7.3	6.1	6.1	4.9	3.7
72.5°	8.6	9.8	9.8	8.6	8.6	8.6	7.3	6.1	6.1	4.9	3.7
75°	9.8	9.8	9.8	9.8	8.6	8.6	7.3	7.3	6.1	4.9	3.7
77.5°	9.8	9.8	9.8	9.8	8.6	8.6	7.3	7.3	6.1	4.9	3.7
80°	9.8	9.8	9.8	9.8	9.8	8.6	8.6	7.3	6.1	4.9	4.9
82.5°	9.8	9.8	9.8	9.8	9.8	8.6	8.6	7.3	6.1	4.9	4.9
85°	9.8	9.8	9.8	9.8	9.8	8.6	8.6	7.3	6.1	4.9	3.7
87.5°	9.8	9.8	9.8	9.8	8.6	8.6	7.3	7.3	6.1	4.9	3.7
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: P179871

CATALOG NUMBER: LDA6A65840D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1	1740.1
2.5°	1198.9	1170.7	1158.5	1178.1	1168.3	1138.9	1145.0	1126.6
5°	715.2	672.3	645.4	657.6	618.4	582.9	582.9	557.2
7.5°	345.3	331.9	324.5	327.0	318.4	307.4	301.3	301.3
10°	242.5	237.6	238.8	238.8	246.1	244.9	248.6	247.4
12.5°	287.8	290.2	291.5	296.4	302.5	302.5	306.1	303.7
15°	368.6	366.2	373.5	374.7	384.5	385.7	390.6	385.7
17.5°	469.0	473.9	481.3	480.0	499.6	500.9	500.9	499.6
20°	603.7	607.4	614.7	617.2	640.5	642.9	651.5	652.7
22.5°	750.7	750.7	754.3	759.2	781.3	782.5	786.2	786.2
25°	800.9	793.5	794.8	800.9	813.1	808.2	811.9	809.5
27.5°	736.0	725.0	722.5	731.1	739.7	726.2	731.1	731.1
30°	597.6	587.8	585.4	593.9	600.1	585.4	590.3	592.7
32.5°	437.2	431.1	429.8	436.0	440.9	428.6	433.5	437.2
35°	295.1	292.7	290.2	291.5	298.8	289.0	293.9	296.4
37.5°	187.4	182.5	183.7	186.1	191.0	184.9	189.8	189.8
40°	115.1	112.7	112.7	115.1	117.6	112.7	115.1	116.3
42.5°	67.4	67.4	67.4	68.6	69.8	67.4	67.4	68.6
45°	39.2	38.0	38.0	39.2	40.4	38.0	39.2	39.2
47.5°	22.0	20.8	20.8	22.0	22.0	20.8	22.0	22.0
50°	12.2	11.0	11.0	12.2	12.2	11.0	11.0	11.0
52.5°	6.1	6.1	6.1	6.1	6.1	6.1	4.9	4.9
55°	3.7	3.7	2.4	2.4	2.4	2.4	2.4	1.2
57.5°	2.4	2.4	1.2	1.2	1.2	1.2	0.0	0.0
60°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
62.5°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
65°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
67.5°	2.4	2.4	1.2	1.2	1.2	0.0	0.0	0.0
70°	3.7	2.4	2.4	1.2	1.2	1.2	0.0	0.0
72.5°	3.7	2.4	2.4	2.4	1.2	1.2	0.0	0.0
75°	3.7	2.4	2.4	2.4	1.2	1.2	0.0	0.0
77.5°	3.7	2.4	2.4	2.4	1.2	1.2	1.2	0.0
80°	3.7	2.4	2.4	2.4	1.2	1.2	1.2	1.2
82.5°	3.7	2.4	2.4	2.4	1.2	1.2	1.2	1.2
85°	3.7	2.4	2.4	2.4	1.2	1.2	1.2	0.0
87.5°	3.7	2.4	2.4	2.4	1.2	1.2	1.2	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)