

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: P179872

Luminaire Tested: **LDA6A65927D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179872
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: LDA6A65927D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4494.6 lumens
Efficiency: N/A
Efficacy: 57.6 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

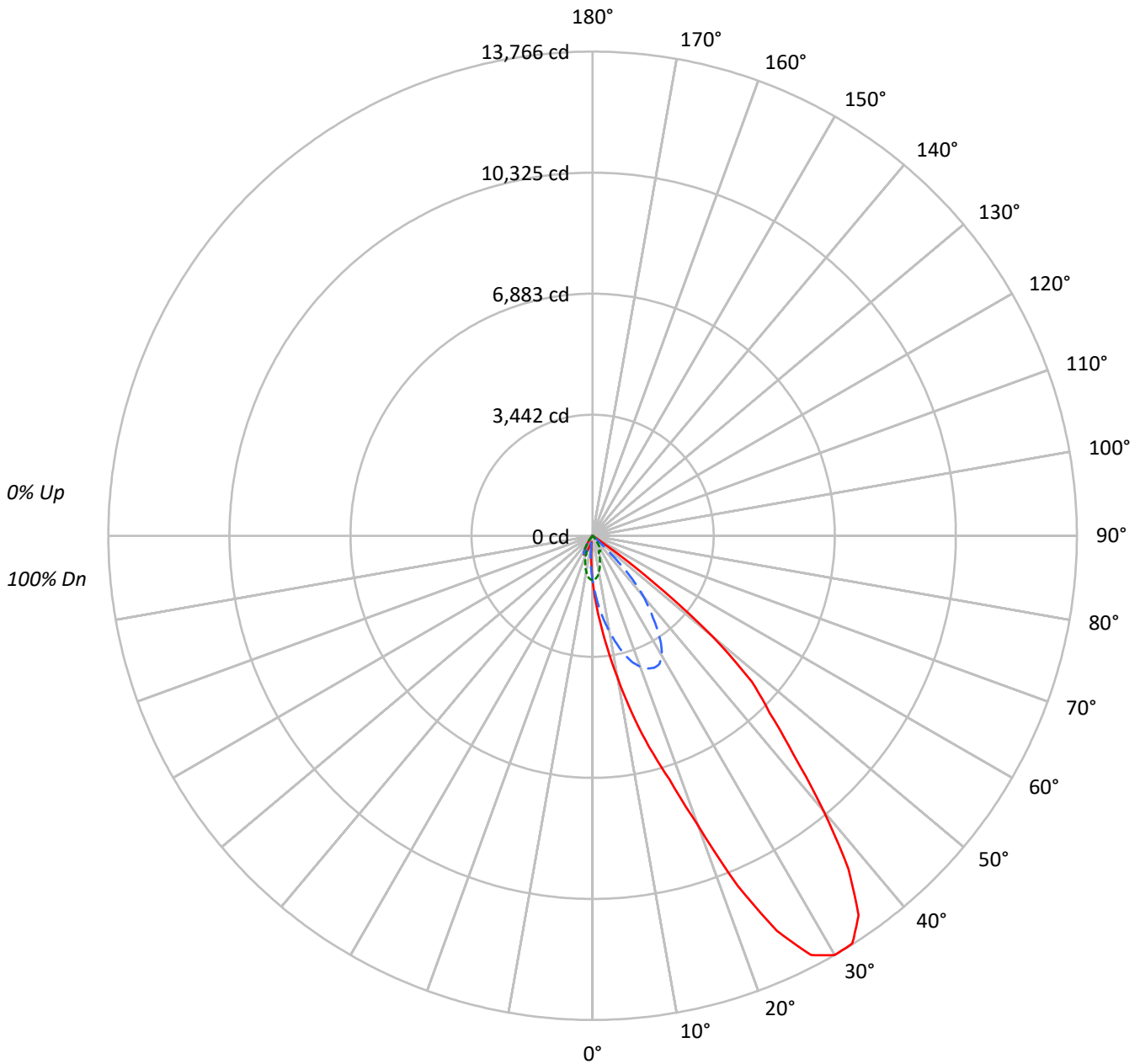
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	45	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°	69556	69556	69556
5°	134784	66283	22359
10°	228993	58004	10042
15°	352862	46266	15965
20°	510805	30108	27763
25°	749444	29058	35700
30°	871406	27523	27359
35°	882006	14583	14462
40°	730240	5496	6069
45°	551522	1868	2217
50°	377335	682	682
55°	52481	602	86
60°	1371	592	0
65°	350	817	0
70°	144	1010	0
75°	0	1334	0
80°	0	2241	284
85°	0	4466	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.1	3.0
10°-20°	562.7	12.5
20°-30°	1283.6	28.6
30°-40°	1485.4	33.0
40°-50°	895.8	19.9
50°-60°	121.7	2.7
60°-70°	4.0	0.1
70°-80°	4.3	0.1
80°-90°	4.0	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°	1979.4	44.0
0°-40°	3464.8	77.1
0°-60°	4482.4	99.7
0°-90°	4494.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4494.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1269	1269	1269	1269	1269	
5°	2449	2006	1204	659	406	285
15°	6217	3495	815	251	281	1841
25°	12390	4141	480	578	590	5607
35°	13179	3157	218	222	216	7943
45°	7114	860	24	30	29	5563
55°	549	6	6	4	1	1077
65°	3	4	6	4	0	4
75°	0	4	6	4	0	0
85°	0	4	7	4	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°	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8
2.5°	1834.9	1818.0	1825.1	1806.4	1759.0	1749.2	1748.3	1735.8	1695.6	1664.4	1626.9
5°	2449.3	2448.4	2452.8	2412.7	2329.6	2303.7	2291.2	2260.9	2163.5	2088.5	2005.5
7.5°	3216.3	3210.9	3205.6	3132.3	3002.0	2952.0	2919.8	2810.0	2676.1	2543.0	2394.8
10°	4113.7	4111.0	4090.4	3961.9	3752.9	3661.0	3598.4	3424.3	3209.1	3019.8	2768.0
12.5°	5155.7	5131.6	5095.0	4906.6	4619.9	4519.9	4382.4	4106.5	3776.1	3485.9	3134.1
15°	6217.4	6182.5	6117.4	5875.4	5520.0	5349.5	5178.9	4815.5	4367.2	3945.8	3494.9
17.5°	7255.8	7217.4	7064.7	6654.0	6306.7	6098.6	5909.3	5410.2	4883.4	4341.4	3769.9
20°	8755.9	8616.6	8350.5	7703.2	7057.6	6682.6	6461.1	5933.4	5281.6	4650.3	3965.4
22.5°	10759.6	10450.7	9883.7	8831.8	7909.4	7368.3	7005.8	6304.0	5568.2	4852.1	4086.0
25°	12390.1	12249.9	11605.2	10108.7	8669.3	8031.8	7527.3	6598.6	5777.2	4986.9	4141.3
27.5°	13441.0	13406.2	12669.6	11165.9	9289.9	8453.2	7889.8	6793.3	5878.1	5015.5	4114.6
30°	13766.1	13820.5	13113.3	11524.9	9469.4	8538.1	7921.9	6796.0	5800.4	4886.0	3943.1
32.5°	13742.0	13744.6	12877.6	11215.0	9177.4	8291.6	7654.1	6570.1	5513.7	4561.9	3617.2
35°	13179.4	13041.0	12060.6	10263.2	8497.9	7716.6	7123.7	6132.5	5041.4	4074.4	3157.3
37.5°	11944.5	11763.3	10620.3	9044.3	7693.4	6971.0	6492.4	5558.4	4478.9	3553.8	2682.3
40°	10204.2	9947.1	9004.2	7911.2	6812.9	6270.0	5868.2	4916.4	3877.0	3043.1	2236.8
42.5°	8462.2	8336.3	7713.0	6824.5	6072.7	5562.0	5142.3	4244.0	3298.4	2539.4	1673.3
45°	7113.9	7005.8	6587.0	6001.3	5263.7	4797.6	4393.1	3543.1	2562.7	1703.7	859.9
47.5°	6131.6	6044.1	5643.2	5028.0	4219.0	3709.2	3292.2	2323.4	1451.9	735.8	215.2
50°	4424.4	4335.1	3942.2	3229.7	2499.3	2072.5	1772.4	1037.6	411.6	149.1	22.3
52.5°	2168.9	2095.7	1828.7	1368.8	918.8	660.8	483.1	194.7	47.3	16.1	10.7
55°	549.1	504.5	420.6	264.3	129.5	77.7	50.0	17.9	11.6	8.9	6.3
57.5°	31.3	30.4	27.7	20.5	15.2	13.4	11.6	8.9	6.3	5.4	4.5
60°	12.5	11.6	10.7	8.9	7.1	6.3	6.3	4.5	3.6	3.6	3.6
62.5°	5.4	5.4	5.4	4.5	3.6	3.6	3.6	2.7	3.6	3.6	3.6
65°	2.7	2.7	2.7	1.8	1.8	1.8	2.7	2.7	2.7	3.6	3.6
67.5°	1.8	0.9	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	3.6
70°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.5
72.5°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.5
75°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.5
77.5°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.5
80°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.5
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.5
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.5
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.5
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°	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8
2.5°	1578.7	1546.5	1499.2	1468.0	1437.6	1409.0	1361.7	1334.9	1286.7	1242.0	1203.6
5°	1905.5	1825.1	1727.8	1644.7	1591.2	1538.5	1443.0	1372.4	1284.0	1204.5	1131.3
7.5°	2235.9	2093.9	1934.1	1797.4	1714.4	1633.1	1490.3	1376.0	1251.0	1137.6	1029.5
10°	2535.9	2322.5	2096.6	1901.0	1788.5	1683.1	1494.7	1342.9	1182.2	1042.0	906.3
12.5°	2814.5	2522.5	2227.8	1972.4	1833.2	1706.4	1476.0	1290.3	1099.2	933.1	775.1
15°	3062.7	2687.7	2323.4	2013.5	1850.1	1700.1	1432.2	1216.2	1001.0	815.2	615.2
17.5°	3251.1	2790.4	2365.3	2007.3	1819.8	1652.8	1357.2	1123.3	896.5	671.5	445.6
20°	3365.4	2834.1	2356.4	1959.1	1754.6	1577.8	1267.9	1022.4	770.6	516.1	392.9
22.5°	3413.6	2830.5	2314.4	1886.7	1674.2	1495.6	1182.2	924.2	638.4	467.0	409.8
25°	3421.6	2793.9	2255.5	1807.3	1594.7	1417.1	1095.6	812.6	554.5	480.4	459.0
27.5°	3360.0	2708.2	2144.8	1693.0	1483.1	1299.2	966.1	645.6	520.6	478.6	492.9
30°	3177.9	2512.7	1949.2	1492.1	1289.4	1105.4	690.2	506.3	432.2	434.8	438.4
32.5°	2857.3	2187.6	1634.9	1198.3	976.8	728.6	429.5	338.4	328.6	328.6	326.8
35°	2429.6	1790.3	1283.1	758.1	485.7	350.0	222.3	223.2	218.8	217.9	217.0
37.5°	1987.6	1412.6	812.6	313.4	210.7	146.4	131.3	133.0	131.3	133.9	132.2
40°	1567.1	872.4	296.4	100.0	74.1	71.4	73.2	75.0	75.0	76.8	76.8
42.5°	910.8	289.3	77.7	40.2	40.2	38.4	39.3	41.1	42.0	42.9	42.0
45°	270.6	59.8	25.0	22.3	22.3	21.4	21.4	22.3	23.2	24.1	24.1
47.5°	42.9	17.0	14.3	12.5	12.5	12.5	12.5	12.5	13.4	13.4	14.3
50°	13.4	10.7	8.9	8.0	8.0	7.1	7.1	8.0	8.0	8.0	8.9
52.5°	8.0	6.3	6.3	5.4	6.3	6.3	5.4	6.3	6.3	6.3	7.1
55°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.3	6.3	6.3
57.5°	4.5	4.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
60°	4.5	4.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.3
62.5°	4.5	4.5	5.4	5.4	5.4	5.4	5.4	5.4	6.3	6.3	6.3
65°	4.5	4.5	5.4	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3
67.5°	4.5	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3	6.3	6.3
70°	4.5	5.4	5.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
72.5°	4.5	5.4	5.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
75°	5.4	5.4	5.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.1
77.5°	5.4	5.4	6.3	6.3	6.3	6.3	6.3	6.3	7.1	7.1	7.1
80°	5.4	5.4	6.3	6.3	6.3	6.3	6.3	7.1	7.1	7.1	7.1
82.5°	5.4	5.4	6.3	6.3	6.3	6.3	6.3	7.1	7.1	7.1	7.1
85°	5.4	5.4	6.3	6.3	6.3	6.3	6.3	7.1	7.1	7.1	7.1
87.5°	5.4	5.4	6.3	6.3	6.3	6.3	6.3	7.1	7.1	7.1	7.1
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8
2.5°	1170.6	1129.5	1109.9	1082.2	1062.6	1018.8	1001.0	970.6	945.6	904.5	907.2
5°	1068.8	991.1	938.5	897.4	868.8	799.2	752.7	703.6	659.0	603.6	583.1
7.5°	927.7	832.2	751.8	702.7	666.1	573.3	470.6	390.2	329.5	285.7	268.8
10°	786.7	662.5	534.9	459.0	406.3	317.0	271.4	250.0	230.4	206.3	190.2
12.5°	622.4	445.6	329.5	299.1	277.7	248.2	218.8	195.5	200.0	200.9	207.2
15°	425.0	320.6	283.9	263.4	240.2	223.2	233.1	239.3	250.9	251.8	259.8
17.5°	345.6	300.9	271.4	270.6	272.3	282.2	297.3	305.4	320.6	324.1	335.7
20°	345.6	319.7	344.7	344.7	349.1	362.5	382.2	393.8	410.7	417.0	431.3
22.5°	393.8	411.6	442.9	446.5	448.2	462.5	487.5	499.1	518.8	522.4	537.5
25°	480.4	496.5	525.0	527.7	528.6	539.3	558.1	564.3	577.7	570.6	579.5
27.5°	508.1	515.2	533.1	534.9	530.4	534.9	542.0	542.0	546.5	532.2	534.9
30°	446.5	448.2	457.2	458.1	448.2	450.0	450.9	450.0	449.1	434.0	434.0
32.5°	331.3	331.3	342.9	340.2	329.5	332.2	332.2	332.2	331.3	318.8	317.0
35°	219.7	220.5	230.4	228.6	220.5	222.3	222.3	225.0	222.3	215.2	213.4
37.5°	133.9	134.8	139.3	140.2	137.5	138.4	139.3	138.4	140.2	136.6	134.8
40°	77.7	79.5	83.0	83.9	83.0	83.0	83.9	84.8	88.4	83.9	82.1
42.5°	45.5	46.4	48.2	48.2	48.2	48.2	49.1	50.0	50.9	50.0	49.1
45°	25.9	26.8	27.7	27.7	28.6	27.7	28.6	28.6	29.5	28.6	28.6
47.5°	15.2	15.2	16.1	16.1	17.0	16.1	17.0	17.0	17.0	16.1	16.1
50°	8.9	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	8.9	8.9
52.5°	7.1	7.1	7.1	7.1	7.1	6.3	6.3	6.3	6.3	5.4	5.4
55°	6.3	6.3	6.3	6.3	6.3	6.3	5.4	4.5	4.5	3.6	3.6
57.5°	5.4	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	2.7	2.7
60°	6.3	6.3	6.3	6.3	5.4	5.4	5.4	4.5	3.6	2.7	2.7
62.5°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	2.7	2.7
65°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	2.7	2.7
67.5°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	3.6	2.7
70°	6.3	7.1	7.1	6.3	6.3	6.3	5.4	4.5	4.5	3.6	2.7
72.5°	6.3	7.1	7.1	6.3	6.3	6.3	5.4	4.5	4.5	3.6	2.7
75°	7.1	7.1	7.1	7.1	6.3	6.3	5.4	5.4	4.5	3.6	2.7
77.5°	7.1	7.1	7.1	7.1	6.3	6.3	5.4	5.4	4.5	3.6	2.7
80°	7.1	7.1	7.1	7.1	7.1	6.3	6.3	5.4	4.5	3.6	3.6
82.5°	7.1	7.1	7.1	7.1	7.1	6.3	6.3	5.4	4.5	3.6	3.6
85°	7.1	7.1	7.1	7.1	7.1	6.3	6.3	5.4	4.5	3.6	2.7
87.5°	7.1	7.1	7.1	7.1	6.3	6.3	5.4	5.4	4.5	3.6	2.7
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: P179872

CATALOG NUMBER: LDA6A65927D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8	1268.8
2.5°	874.2	853.6	844.7	859.0	851.8	830.4	834.9	821.5
5°	521.5	490.2	470.6	479.5	450.9	425.0	425.0	406.3
7.5°	251.8	242.0	236.6	238.4	232.2	224.1	219.7	219.7
10°	176.8	173.2	174.1	174.1	179.5	178.6	181.3	180.4
12.5°	209.8	211.6	212.5	216.1	220.5	220.5	223.2	221.4
15°	268.8	267.0	272.3	273.2	280.4	281.3	284.8	281.3
17.5°	342.0	345.6	350.9	350.0	364.3	365.2	365.2	364.3
20°	440.2	442.9	448.2	450.0	467.0	468.8	475.0	475.9
22.5°	547.4	547.4	550.0	553.6	569.7	570.6	573.3	573.3
25°	584.0	578.6	579.5	584.0	592.9	589.3	592.0	590.2
27.5°	536.6	528.6	526.8	533.1	539.3	529.5	533.1	533.1
30°	435.7	428.6	426.8	433.1	437.5	426.8	430.4	432.2
32.5°	318.8	314.3	313.4	317.9	321.4	312.5	316.1	318.8
35°	215.2	213.4	211.6	212.5	217.9	210.7	214.3	216.1
37.5°	136.6	133.0	133.9	135.7	139.3	134.8	138.4	138.4
40°	83.9	82.1	82.1	83.9	85.7	82.1	83.9	84.8
42.5°	49.1	49.1	49.1	50.0	50.9	49.1	49.1	50.0
45°	28.6	27.7	27.7	28.6	29.5	27.7	28.6	28.6
47.5°	16.1	15.2	15.2	16.1	16.1	15.2	16.1	16.1
50°	8.9	8.0	8.0	8.9	8.9	8.0	8.0	8.0
52.5°	4.5	4.5	4.5	4.5	4.5	4.5	3.6	3.6
55°	2.7	2.7	1.8	1.8	1.8	1.8	1.8	0.9
57.5°	1.8	1.8	0.9	0.9	0.9	0.9	0.0	0.0
60°	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
62.5°	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
65°	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
67.5°	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.7	1.8	1.8	0.9	0.9	0.9	0.0	0.0
72.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
75°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
77.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.9	0.0
80°	2.7	1.8	1.8	1.8	0.9	0.9	0.9	0.9
82.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.9	0.9
85°	2.7	1.8	1.8	1.8	0.9	0.9	0.9	0.0
87.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.9	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)