

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: P179641

Luminaire Tested: **LDA6A45930D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179641
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26670)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45930D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3620.8 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 2.28 / 0.6 / 1.28
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

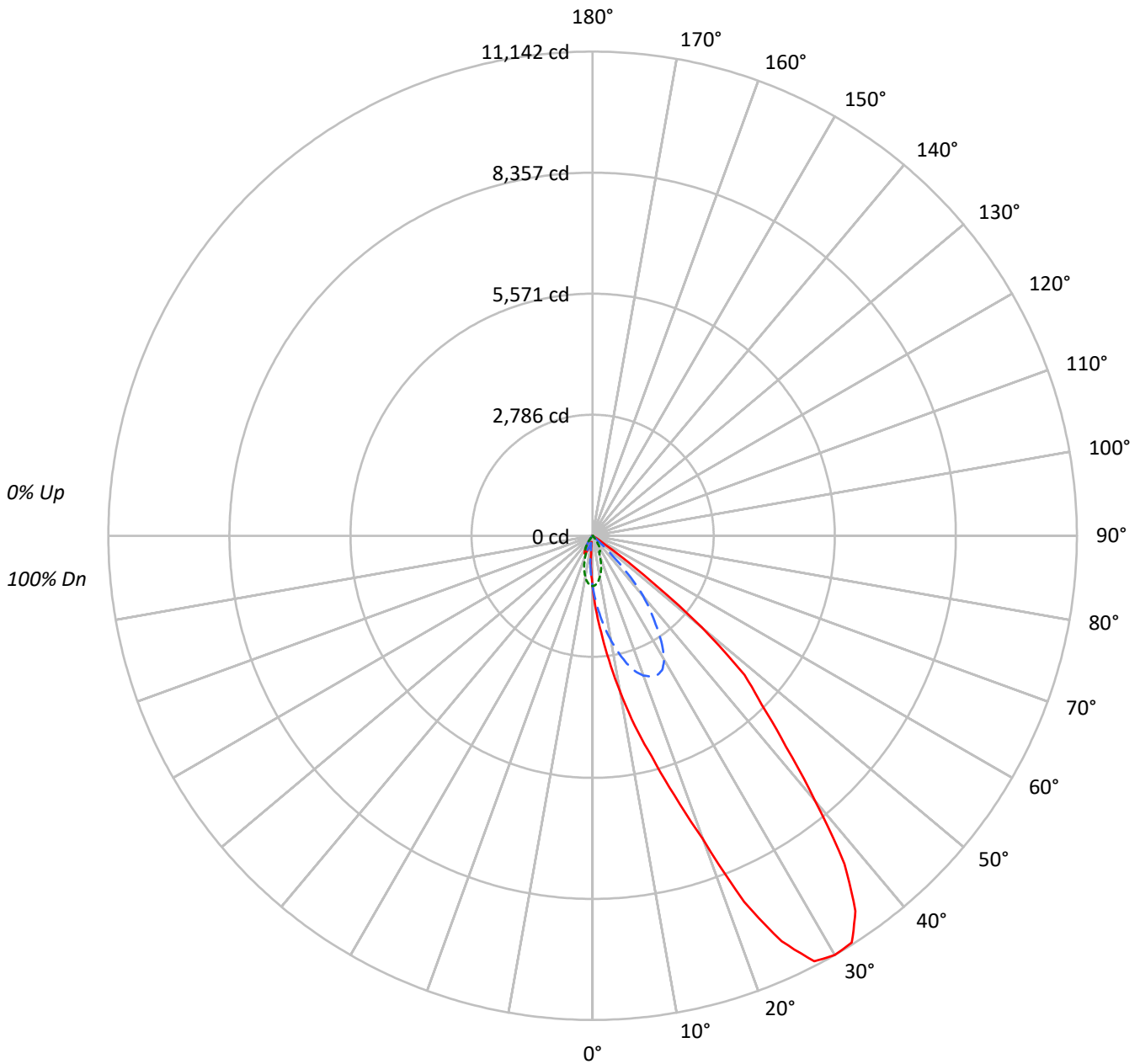
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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				100
1	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91				91
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83				83
3	99	91	85	81	97	90	84	80	87	83	79	85	81	77	82	79	76	75				75
4	92	83	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67				67
5	86	76	69	64	85	75	69	64	74	68	63	72	67	63	70	66	62	61				61
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55				55
7	76	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49				49
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45				45
9	66	55	48	43	65	54	47	43	53	47	43	52	47	43	51	46	42	41				41
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37				37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	63526	63526	63526
5°	122254	60857	22793
10°	202217	53411	8200
15°	298543	43093	13070
20°	433495	27442	22122
25°	622730	23971	26826
30°	705317	20763	19522
35°	705376	10781	10018
40°	569725	4022	4194
45°	426618	1388	1512
50°	279283	554	486
55°	32821	468	76
60°	987	537	0
65°	208	636	0
70°	128	785	0
75°	0	1207	0
80°	0	1799	253
85°	0	3585	503



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.6	3.3
10°-20°	484.4	13.4
20°-30°	1062.9	29.4
30°-40°	1179.9	32.6
40°-50°	683.1	18.9
50°-60°	81.2	2.2
60°-70°	3.1	0.1
70°-80°	3.4	0.1
80°-90°	3.2	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°	1666.9	46.0
0°-40°	2846.8	78.6
0°-60°	3611.1	99.7
0°-90°	3620.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3620.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1159	1159	1159	1159	1159	
5°	2222	1796	1106	633	414	255
15°	5260	3043	759	206	230	1579
25°	10295	3533	396	441	444	4650
35°	10540	2577	161	159	150	6354
45°	5503	607	18	21	20	4300
55°	343	5	5	3	1	756
65°	2	3	5	3	0	3
75°	0	3	6	3	0	0
85°	0	3	6	3	1	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°	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8
2.5°	1685.3	1652.0	1618.6	1616.2	1588.5	1551.9	1577.1	1523.4	1539.7	1499.0	1473.8
5°	2221.6	2185.0	2136.2	2122.3	2075.1	2020.6	2041.0	1946.6	1936.8	1858.7	1796.0
7.5°	2879.2	2836.8	2760.4	2723.7	2645.6	2564.2	2574.0	2422.6	2377.1	2248.5	2133.7
10°	3632.7	3602.6	3492.8	3417.1	3294.2	3175.4	3155.0	2931.2	2832.0	2630.1	2449.5
12.5°	4478.3	4433.5	4281.3	4166.6	3998.9	3848.4	3803.6	3483.0	3304.8	3012.6	2756.3
15°	5260.3	5230.2	5099.2	4926.6	4714.2	4519.8	4443.3	4068.9	3787.3	3399.2	3042.7
17.5°	6262.9	6179.9	5943.9	5605.3	5301.8	5108.1	5015.3	4546.6	4201.6	3727.9	3273.0
20°	7430.7	7318.4	6957.0	6488.3	5984.6	5644.4	5440.1	4935.6	4508.4	3958.2	3422.8
22.5°	9120.9	8892.2	8206.2	7366.4	6665.7	6211.6	5919.5	5186.2	4732.2	4102.3	3505.8
25°	10295.2	10094.2	9467.6	8363.3	7240.2	6717.8	6306.8	5393.8	4878.6	4187.7	3533.4
27.5°	11039.0	10932.4	10211.4	9107.9	7684.6	7005.0	6540.4	5524.8	4934.0	4185.3	3477.3
30°	11142.3	11148.8	10479.9	9307.2	7719.6	7012.4	6489.9	5468.6	4819.2	4027.4	3292.6
32.5°	11097.6	11008.9	10183.7	8929.6	7332.2	6711.3	6214.9	5231.8	4542.5	3710.0	2971.9
35°	10540.1	10342.4	9470.0	8086.6	6768.2	6177.4	5714.4	4852.6	4102.3	3289.3	2577.3
37.5°	9518.0	9204.7	8230.6	7052.2	6076.5	5555.7	5205.8	4367.6	3646.6	2851.5	2185.0
40°	7961.2	7624.3	6937.5	6114.8	5345.7	4988.5	4652.4	3835.4	3133.1	2403.9	1805.8
42.5°	6586.8	6402.0	5889.4	5259.5	4747.6	4379.8	4059.2	3281.2	2641.5	1968.5	1279.3
45°	5502.8	5377.5	5054.4	4592.2	4084.4	3749.1	3457.0	2663.5	1930.3	1250.0	607.1
47.5°	4738.7	4599.5	4233.3	3746.7	3150.2	2785.6	2456.8	1660.9	1053.8	483.4	141.6
50°	3274.7	3110.3	2720.5	2251.7	1741.5	1467.3	1237.8	671.4	276.7	83.8	16.3
52.5°	1481.9	1368.0	1123.8	861.8	569.6	423.2	275.9	116.4	29.3	12.2	9.0
55°	343.4	301.1	228.7	140.8	70.0	46.4	30.9	12.2	9.0	6.5	4.9
57.5°	22.0	19.5	17.1	13.8	11.4	9.8	9.0	6.5	4.9	4.1	3.3
60°	9.0	9.0	8.1	6.5	5.7	4.9	4.9	3.3	3.3	3.3	3.3
62.5°	4.1	4.1	4.1	3.3	2.4	2.4	2.4	2.4	2.4	2.4	3.3
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4	2.4	3.3
67.5°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	2.4	2.4	3.3
70°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	2.4	3.3	3.3
72.5°	0.0	0.8	0.8	0.8	1.6	1.6	1.6	1.6	2.4	3.3	3.3
75°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3
77.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	1.6	2.4	3.3	3.3
80°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3
82.5°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3
85°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3
87.5°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3
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°	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8
2.5°	1436.3	1401.3	1364.7	1327.3	1310.2	1282.5	1238.6	1207.7	1180.0	1143.4	1097.0
5°	1720.3	1642.2	1560.0	1483.5	1446.1	1397.3	1311.8	1242.6	1178.4	1105.9	1034.3
7.5°	2003.5	1868.4	1738.2	1613.7	1553.5	1483.5	1351.7	1245.1	1144.2	1044.1	946.4
10°	2255.0	2059.7	1873.3	1700.0	1618.6	1525.0	1352.5	1210.1	1083.1	959.5	841.5
12.5°	2489.4	2224.9	1981.6	1757.0	1650.4	1538.1	1328.9	1159.6	1007.5	863.4	725.9
15°	2696.1	2362.4	2058.1	1783.8	1659.3	1525.0	1285.8	1092.1	922.0	759.3	582.7
17.5°	2843.4	2441.4	2085.7	1768.4	1628.4	1479.5	1215.8	1008.3	824.4	624.2	413.4
20°	2921.5	2465.8	2067.8	1719.5	1569.0	1407.8	1133.6	919.6	708.8	470.4	337.7
22.5°	2949.2	2451.1	2018.2	1650.4	1491.7	1328.1	1049.8	826.8	576.2	398.8	345.9
25°	2936.1	2407.2	1953.9	1569.0	1410.3	1245.9	968.4	708.0	466.3	396.3	368.6
27.5°	2849.1	2308.7	1833.5	1446.9	1287.4	1124.6	826.8	522.4	412.6	371.9	379.2
30°	2657.0	2108.5	1627.6	1247.5	1097.0	925.3	562.3	384.1	323.9	328.0	328.0
32.5°	2347.8	1809.0	1340.3	991.2	796.7	577.0	320.6	240.9	244.9	244.1	240.9
35°	1968.5	1477.8	1028.6	608.7	390.6	265.3	161.9	157.1	161.9	161.1	158.7
37.5°	1620.2	1132.8	637.2	244.1	157.1	114.7	96.0	96.0	97.7	97.7	96.8
40°	1222.3	665.7	223.0	80.6	56.2	53.7	54.5	54.5	55.3	56.2	57.0
42.5°	684.4	219.7	58.6	31.7	31.7	30.1	30.1	30.1	31.7	31.7	32.6
45°	184.7	47.2	19.5	18.7	17.9	17.1	17.1	17.1	17.9	17.9	18.7
47.5°	27.7	13.8	11.4	10.6	10.6	9.8	9.8	9.8	10.6	10.6	10.6
50°	10.6	8.1	7.3	6.5	6.5	6.5	5.7	5.7	6.5	6.5	6.5
52.5°	6.5	5.7	4.9	4.1	4.9	4.1	4.1	4.1	4.9	4.9	4.9
55°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.9	4.9
57.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.9	4.9
60°	3.3	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.9	4.9	4.9
62.5°	3.3	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.9	4.9	4.9
65°	3.3	4.1	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9
67.5°	3.3	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
70°	4.1	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	4.1	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.7
75°	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7
77.5°	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7
80°	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7
82.5°	4.1	4.1	4.9	4.9	4.9	5.7	4.9	5.7	5.7	5.7	5.7
85°	4.1	4.1	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7
87.5°	4.1	4.1	4.9	4.9	4.9	5.7	4.9	4.9	5.7	5.7	5.7
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8
2.5°	1064.4	1045.7	1011.5	987.9	978.2	958.6	922.0	917.9	874.0	851.2	827.6
5°	973.3	926.9	869.1	832.5	811.3	769.8	712.9	686.8	633.1	598.1	546.9
7.5°	861.8	790.2	711.2	664.9	630.7	560.7	459.8	399.6	319.8	273.4	240.1
10°	734.0	638.8	519.2	442.7	386.5	304.4	241.7	222.2	201.0	183.9	167.6
12.5°	584.3	424.0	308.4	263.7	242.5	218.1	192.1	169.3	165.2	166.8	172.5
15°	397.9	283.2	244.1	226.2	211.6	188.0	193.7	200.2	205.9	210.0	217.3
17.5°	299.5	262.0	223.8	224.6	230.3	236.0	244.9	254.7	262.9	268.5	278.3
20°	295.4	271.8	276.7	286.5	293.0	301.1	316.6	325.5	336.1	343.4	354.0
22.5°	321.4	342.6	349.1	356.4	366.2	375.2	391.4	403.6	411.8	419.1	426.4
25°	381.7	397.9	403.6	409.3	415.8	422.4	432.9	443.5	441.1	443.5	444.3
27.5°	385.7	397.9	400.4	403.6	403.6	409.3	409.3	415.8	405.3	403.6	400.4
30°	332.0	336.1	338.5	338.5	335.3	339.3	335.3	340.2	328.0	323.9	319.8
32.5°	244.9	250.6	248.2	247.4	244.9	249.0	244.1	249.0	238.4	236.0	231.9
35°	157.1	166.0	161.9	164.4	162.8	166.8	163.6	166.8	158.7	157.9	155.4
37.5°	98.5	101.7	100.1	100.9	100.9	103.4	101.7	103.4	100.1	100.1	97.7
40°	57.8	59.4	59.4	60.2	61.0	61.8	61.0	62.7	61.0	61.8	59.4
42.5°	33.4	34.2	34.2	35.0	35.8	35.8	35.8	37.4	35.8	36.6	35.0
45°	18.7	20.3	19.5	20.3	20.3	21.2	21.2	21.2	21.2	21.2	20.3
47.5°	11.4	12.2	12.2	12.2	12.2	12.2	13.0	13.0	12.2	12.2	12.2
50°	7.3	7.3	7.3	7.3	8.1	8.1	8.1	7.3	7.3	7.3	6.5
52.5°	4.9	4.9	4.9	4.9	5.7	4.9	4.9	4.9	4.1	4.1	4.1
55°	4.9	4.9	4.9	4.9	4.9	4.1	4.1	4.1	3.3	2.4	2.4
57.5°	4.9	4.9	4.9	4.9	4.9	4.1	4.1	3.3	3.3	2.4	2.4
60°	4.9	4.9	4.9	4.9	4.9	4.1	4.1	3.3	3.3	2.4	2.4
62.5°	4.9	4.9	4.9	4.9	4.9	4.1	4.1	3.3	3.3	2.4	2.4
65°	4.9	4.9	4.9	4.9	4.9	4.1	4.1	4.1	3.3	2.4	2.4
67.5°	4.9	5.7	4.9	4.9	4.9	4.9	4.1	4.1	3.3	2.4	2.4
70°	4.9	5.7	4.9	4.9	4.9	4.9	4.1	4.1	3.3	2.4	2.4
72.5°	5.7	5.7	5.7	4.9	4.9	4.9	4.9	4.1	3.3	2.4	2.4
75°	5.7	5.7	5.7	4.9	4.9	4.9	4.9	4.1	3.3	2.4	2.4
77.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.4
80°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.4
82.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.4
85°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.4
87.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.4
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: P179641

CATALOG NUMBER: LDA6A45930D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8	1158.8
2.5°	833.3	825.2	819.5	806.5	799.1	791.0	778.8	773.1
5°	529.0	504.5	489.1	466.3	431.3	439.4	420.7	414.2
7.5°	227.9	217.3	214.0	209.1	201.0	196.9	196.1	194.5
10°	156.2	147.3	146.5	147.3	148.1	147.3	147.3	147.3
12.5°	175.8	176.6	178.2	180.7	181.5	181.5	180.7	180.7
15°	221.3	223.0	225.4	228.7	230.3	230.3	230.3	230.3
17.5°	284.0	286.5	290.5	293.8	297.0	297.0	297.0	297.8
20°	365.4	365.4	370.3	374.3	376.8	377.6	378.4	379.2
22.5°	437.8	438.6	441.9	445.1	447.6	446.8	445.1	445.1
25°	451.6	449.2	450.0	450.0	449.2	445.1	445.1	443.5
27.5°	402.8	399.6	399.6	397.1	396.3	394.7	391.4	389.8
30°	319.8	318.2	317.4	314.9	319.0	313.3	310.1	308.4
32.5°	230.3	231.1	230.3	227.9	231.9	226.2	224.6	222.2
35°	154.6	155.4	154.6	153.0	153.0	153.0	151.4	149.7
37.5°	97.7	96.8	97.7	97.7	99.3	96.8	96.8	95.2
40°	59.4	59.4	60.2	60.2	61.0	59.4	58.6	58.6
42.5°	35.0	35.0	35.8	35.8	36.6	35.0	35.0	35.0
45°	20.3	20.3	20.3	20.3	21.2	20.3	19.5	19.5
47.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	10.6
50°	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7
52.5°	4.1	3.3	3.3	3.3	3.3	2.4	2.4	2.4
55°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8
57.5°	1.6	1.6	1.6	0.8	0.8	0.8	0.0	0.0
60°	1.6	1.6	0.8	0.8	0.8	0.0	0.0	0.0
62.5°	1.6	1.6	0.8	0.8	0.8	0.0	0.0	0.0
65°	1.6	1.6	0.8	0.8	0.8	0.0	0.0	0.0
67.5°	1.6	1.6	1.6	0.8	0.8	0.0	0.0	0.0
70°	1.6	1.6	1.6	0.8	0.8	0.8	0.0	0.0
72.5°	1.6	1.6	1.6	0.8	0.8	0.8	0.0	0.0
75°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	0.0
77.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.8	0.0
80°	2.4	1.6	1.6	1.6	0.8	0.8	0.8	0.8
82.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.8	0.8
85°	2.4	1.6	1.6	1.6	0.8	0.8	0.8	0.8
87.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	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)