

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: P179866

Luminaire Tested: **LDA6A55935D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179866
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: LDA6A55935D010TE LARH20SP 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4303.8 lumens
Efficiency: N/A
Efficacy: 70.6 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

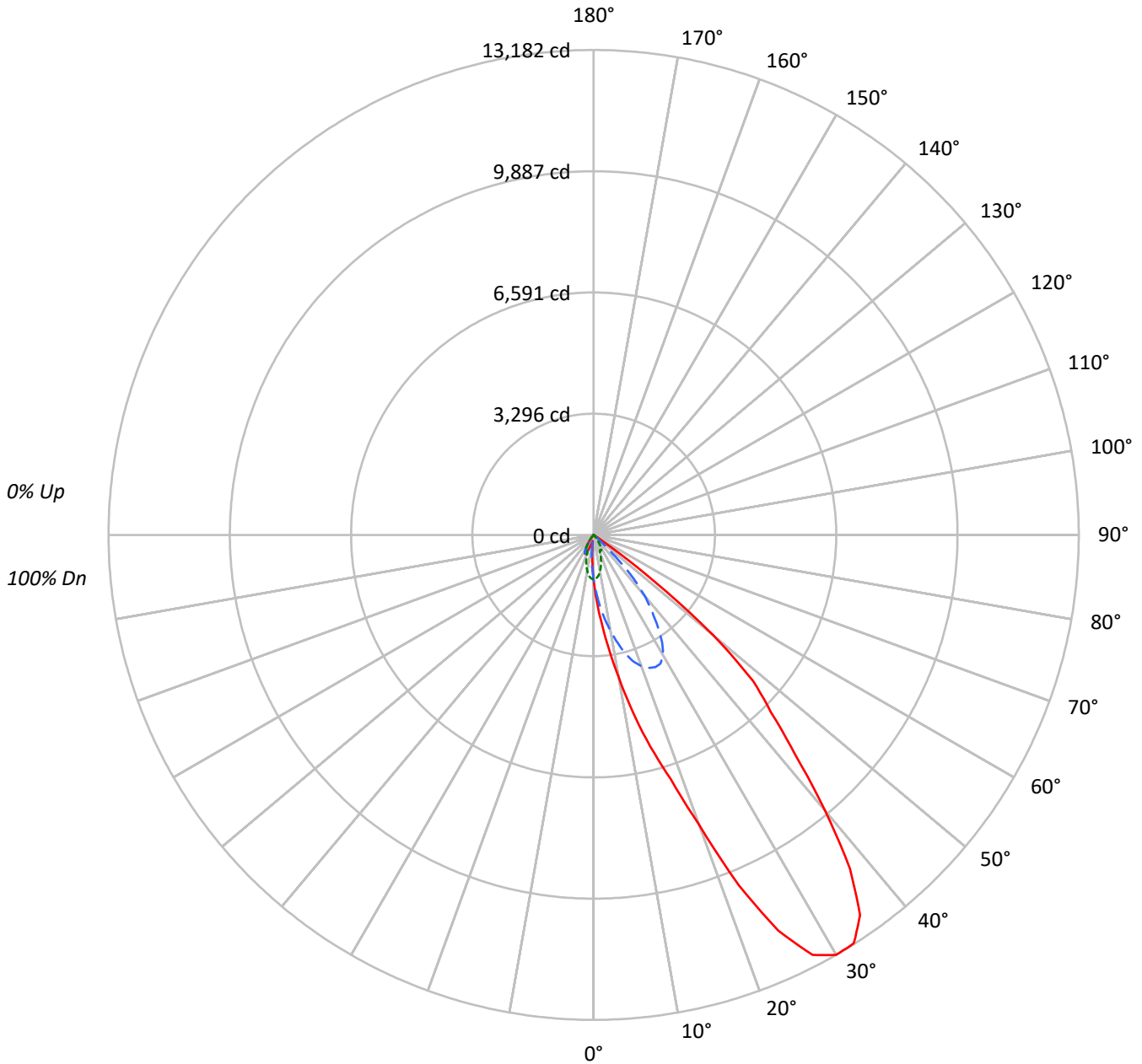
Input Watts (W): 61
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	66607	66607	66607
5°	129061	63471	21407
10°	219273	55543	9613
15°	337885	44302	15284
20°	489127	28831	26585
25°	717640	27824	34187
30°	834426	26358	26194
35°	844576	13960	13846
40°	699253	5260	5811
45°	528117	1791	2124
50°	361319	657	657
55°	50254	573	86
60°	1316	559	0
65°	337	778	0
70°	144	962	0
75°	0	1271	0
80°	0	2147	284
85°	0	4277	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.5	3.0
10°-20°	538.8	12.5
20°-30°	1229.1	28.6
30°-40°	1422.4	33.0
40°-50°	857.8	19.9
50°-60°	116.5	2.7
60°-70°	3.8	0.1
70°-80°	4.1	0.1
80°-90°	3.8	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°	1895.4	44.0
0°-40°	3317.8	77.1
0°-60°	4292.1	99.7
0°-90°	4303.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4303.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1215	1215	1215	1215	1215	
5°	2345	1920	1153	631	389	273
15°	5954	3347	781	240	269	1762
25°	11864	3966	460	553	565	5369
35°	12620	3023	209	213	207	7605
45°	6812	823	23	28	27	5327
55°	526	6	6	4	1	1031
65°	3	3	6	3	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°	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0
2.5°	1757.1	1740.8	1747.7	1729.7	1684.4	1675.0	1674.1	1662.2	1623.7	1593.8	1557.8
5°	2345.3	2344.5	2348.7	2310.3	2230.8	2206.0	2194.0	2164.9	2071.7	1999.9	1920.4
7.5°	3079.8	3074.7	3069.5	2999.4	2874.6	2826.7	2795.9	2690.8	2562.5	2435.1	2293.2
10°	3939.1	3936.5	3916.9	3793.7	3593.7	3505.6	3445.7	3279.0	3072.9	2891.7	2650.6
12.5°	4936.9	4913.8	4878.8	4698.3	4423.9	4328.1	4196.4	3932.2	3615.9	3338.0	3001.1
15°	5953.5	5920.2	5857.8	5626.0	5285.7	5122.4	4959.1	4611.1	4181.9	3778.3	3346.6
17.5°	6947.9	6911.1	6764.9	6371.6	6039.0	5839.8	5658.5	5180.6	4676.1	4157.1	3609.9
20°	8384.3	8251.0	7996.2	7376.3	6758.1	6399.0	6186.9	5681.6	5057.5	4453.0	3797.1
22.5°	10303.0	10007.2	9464.2	8457.0	7573.8	7055.6	6708.5	6036.4	5331.9	4646.2	3912.6
25°	11864.3	11730.0	11112.7	9679.7	8301.4	7690.9	7207.8	6318.6	5532.0	4775.3	3965.6
27.5°	12870.6	12837.3	12131.9	10692.0	8895.6	8094.5	7555.0	6505.0	5628.6	4802.7	3939.9
30°	13181.9	13234.0	12556.8	11035.8	9067.5	8175.7	7585.7	6507.6	5554.2	4678.7	3775.8
32.5°	13158.8	13161.3	12331.1	10739.1	8787.9	7939.7	7329.2	6291.2	5279.8	4368.3	3463.7
35°	12620.1	12487.6	11548.8	9827.6	8137.2	7389.1	6821.4	5872.3	4827.4	3901.5	3023.4
37.5°	11437.6	11264.0	10169.6	8660.5	7366.9	6675.2	6216.9	5322.5	4288.8	3403.0	2568.5
40°	9771.2	9524.9	8622.0	7575.5	6523.8	6004.0	5619.2	4707.7	3712.5	2913.9	2141.8
42.5°	8103.0	7982.5	7385.7	6534.9	5815.0	5325.9	4924.1	4063.9	3158.4	2431.7	1602.3
45°	6812.0	6708.5	6307.5	5746.6	5040.4	4594.0	4206.7	3392.7	2453.9	1631.4	823.4
47.5°	5871.4	5787.6	5403.7	4814.6	4040.0	3551.8	3152.5	2224.8	1390.3	704.5	206.1
50°	4236.6	4151.1	3774.9	3092.6	2393.2	1984.5	1697.2	993.5	394.2	142.8	21.4
52.5°	2076.8	2006.7	1751.1	1310.7	879.8	632.7	462.6	186.4	45.3	15.4	10.3
55°	525.8	483.1	402.7	253.1	124.0	74.4	47.9	17.1	11.1	8.6	6.0
57.5°	29.9	29.1	26.5	19.7	14.5	12.8	11.1	8.6	6.0	5.1	4.3
60°	12.0	11.1	10.3	8.6	6.8	6.0	6.0	4.3	3.4	3.4	3.4
62.5°	5.1	5.1	5.1	4.3	3.4	3.4	3.4	2.6	3.4	3.4	3.4
65°	2.6	2.6	2.6	1.7	1.7	1.7	2.6	2.6	2.6	3.4	3.4
67.5°	1.7	0.9	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.4	3.4
70°	0.9	0.9	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.4	4.3
72.5°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.4	4.3
75°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3
77.5°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3
80°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3
82.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3
85°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3
87.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.4	4.3
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°	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0
2.5°	1511.7	1480.9	1435.6	1405.7	1376.6	1349.2	1303.9	1278.3	1232.1	1189.3	1152.6
5°	1824.6	1747.7	1654.5	1574.9	1523.6	1473.2	1381.7	1314.2	1229.5	1153.4	1083.3
7.5°	2141.0	2005.0	1852.0	1721.2	1641.6	1563.8	1427.0	1317.6	1197.9	1089.3	985.8
10°	2428.3	2223.9	2007.6	1820.3	1712.6	1611.7	1431.3	1286.0	1132.0	997.8	867.8
12.5°	2695.0	2415.4	2133.3	1888.7	1755.4	1633.9	1413.4	1235.5	1052.5	893.5	742.2
15°	2932.7	2573.6	2224.8	1928.1	1771.6	1628.0	1371.5	1164.5	958.5	780.6	589.1
17.5°	3113.1	2671.9	2265.0	1922.1	1742.5	1582.6	1299.6	1075.6	858.4	643.0	426.7
20°	3222.6	2713.8	2256.4	1875.9	1680.1	1510.8	1214.1	979.0	737.9	494.2	376.2
22.5°	3268.7	2710.4	2216.2	1806.7	1603.2	1432.2	1132.0	884.9	611.3	447.2	392.5
25°	3276.4	2675.4	2159.8	1730.6	1527.1	1356.9	1049.1	778.1	531.0	460.0	439.5
27.5°	3217.4	2593.3	2053.8	1621.1	1420.2	1244.1	925.1	618.2	498.5	458.3	472.0
30°	3043.0	2406.0	1866.5	1428.7	1234.7	1058.5	660.9	484.8	413.8	416.4	419.8
32.5°	2736.1	2094.8	1565.5	1147.4	935.4	697.7	411.3	324.1	314.6	314.6	312.9
35°	2326.5	1714.3	1228.7	725.9	465.1	335.2	212.9	213.8	209.5	208.6	207.8
37.5°	1903.3	1352.6	778.1	300.1	201.8	140.2	125.7	127.4	125.7	128.3	126.5
40°	1500.6	835.4	283.9	95.8	71.0	68.4	70.1	71.8	71.8	73.5	73.5
42.5°	872.1	277.0	74.4	38.5	38.5	36.8	37.6	39.3	40.2	41.0	40.2
45°	259.1	57.3	23.9	21.4	21.4	20.5	20.5	21.4	22.2	23.1	23.1
47.5°	41.0	16.2	13.7	12.0	12.0	12.0	12.0	12.0	12.8	12.8	13.7
50°	12.8	10.3	8.6	7.7	7.7	6.8	6.8	7.7	7.7	7.7	8.6
52.5°	7.7	6.0	6.0	5.1	6.0	6.0	5.1	6.0	6.0	6.0	6.8
55°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.0	6.0	6.0
57.5°	4.3	4.3	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
60°	4.3	4.3	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.0
62.5°	4.3	4.3	5.1	5.1	5.1	5.1	5.1	5.1	6.0	6.0	6.0
65°	4.3	4.3	5.1	5.1	5.1	5.1	5.1	6.0	6.0	6.0	6.0
67.5°	4.3	5.1	5.1	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.0
70°	4.3	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
72.5°	4.3	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
75°	5.1	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.8
77.5°	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8
80°	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8	6.8
82.5°	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8	6.8
85°	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8	6.8
87.5°	5.1	5.1	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8	6.8
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°	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0
2.5°	1120.9	1081.6	1062.8	1036.3	1017.5	975.6	958.5	929.4	905.5	866.1	868.7
5°	1023.5	949.1	898.6	859.3	831.9	765.2	720.8	673.8	631.0	578.0	558.3
7.5°	888.4	796.9	719.9	672.9	637.8	548.9	450.6	373.6	315.5	273.6	257.4
10°	753.3	634.4	512.2	439.5	389.0	303.5	259.9	239.4	220.6	197.5	182.1
12.5°	595.9	426.7	315.5	286.4	265.9	237.7	209.5	187.2	191.5	192.4	198.4
15°	407.0	307.0	271.9	252.2	230.0	213.8	223.2	229.1	240.3	241.1	248.8
17.5°	330.9	288.1	259.9	259.1	260.8	270.2	284.7	292.4	307.0	310.4	321.5
20°	330.9	306.1	330.0	330.0	334.3	347.1	365.9	377.1	393.3	399.3	413.0
22.5°	377.1	394.2	424.1	427.5	429.2	442.9	466.8	478.0	496.8	500.2	514.7
25°	460.0	475.4	502.8	505.3	506.2	516.4	534.4	540.4	553.2	546.4	554.9
27.5°	486.5	493.3	510.4	512.2	507.9	512.2	519.0	519.0	523.3	509.6	512.2
30°	427.5	429.2	437.8	438.6	429.2	430.9	431.8	430.9	430.1	415.5	415.5
32.5°	317.2	317.2	328.3	325.8	315.5	318.1	318.1	318.1	317.2	305.2	303.5
35°	210.3	211.2	220.6	218.9	211.2	212.9	212.9	215.5	212.9	206.1	204.4
37.5°	128.3	129.1	133.4	134.2	131.7	132.5	133.4	132.5	134.2	130.8	129.1
40°	74.4	76.1	79.5	80.4	79.5	79.5	80.4	81.2	84.6	80.4	78.7
42.5°	43.6	44.5	46.2	46.2	46.2	46.2	47.0	47.9	48.7	47.9	47.0
45°	24.8	25.7	26.5	26.5	27.4	26.5	27.4	27.4	28.2	27.4	27.4
47.5°	14.5	14.5	15.4	15.4	16.2	15.4	16.2	16.2	16.2	15.4	15.4
50°	8.6	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	8.6	8.6
52.5°	6.8	6.8	6.8	6.8	6.8	6.0	6.0	6.0	6.0	5.1	5.1
55°	6.0	6.0	6.0	6.0	6.0	6.0	5.1	4.3	4.3	3.4	3.4
57.5°	5.1	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	2.6	2.6
60°	6.0	6.0	6.0	6.0	5.1	5.1	5.1	4.3	3.4	2.6	2.6
62.5°	6.0	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	2.6	2.6
65°	6.0	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	2.6	2.6
67.5°	6.0	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	3.4	2.6
70°	6.0	6.8	6.8	6.0	6.0	6.0	5.1	4.3	4.3	3.4	2.6
72.5°	6.0	6.8	6.8	6.0	6.0	6.0	5.1	4.3	4.3	3.4	2.6
75°	6.8	6.8	6.8	6.8	6.0	6.0	5.1	5.1	4.3	3.4	2.6
77.5°	6.8	6.8	6.8	6.8	6.0	6.0	5.1	5.1	4.3	3.4	2.6
80°	6.8	6.8	6.8	6.8	6.8	6.0	6.0	5.1	4.3	3.4	3.4
82.5°	6.8	6.8	6.8	6.8	6.8	6.0	6.0	5.1	4.3	3.4	3.4
85°	6.8	6.8	6.8	6.8	6.8	6.0	6.0	5.1	4.3	3.4	2.6
87.5°	6.8	6.8	6.8	6.8	6.0	6.0	5.1	5.1	4.3	3.4	2.6
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: P179866

CATALOG NUMBER: LDA6A55935D010TE LARH20SP 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0	1215.0
2.5°	837.1	817.4	808.9	822.5	815.7	795.2	799.4	786.6
5°	499.3	469.4	450.6	459.1	431.8	407.0	407.0	389.0
7.5°	241.1	231.7	226.6	228.3	222.3	214.6	210.3	210.3
10°	169.3	165.9	166.7	166.7	171.9	171.0	173.6	172.7
12.5°	200.9	202.6	203.5	206.9	211.2	211.2	213.8	212.0
15°	257.4	255.7	260.8	261.6	268.5	269.3	272.8	269.3
17.5°	327.5	330.9	336.0	335.2	348.8	349.7	349.7	348.8
20°	421.5	424.1	429.2	430.9	447.2	448.9	454.9	455.7
22.5°	524.1	524.1	526.7	530.1	545.5	546.4	548.9	548.9
25°	559.2	554.1	554.9	559.2	567.7	564.3	566.9	565.2
27.5°	513.9	506.2	504.5	510.4	516.4	507.0	510.4	510.4
30°	417.3	410.4	408.7	414.7	419.0	408.7	412.1	413.8
32.5°	305.2	301.0	300.1	304.4	307.8	299.3	302.7	305.2
35°	206.1	204.4	202.6	203.5	208.6	201.8	205.2	206.9
37.5°	130.8	127.4	128.3	130.0	133.4	129.1	132.5	132.5
40°	80.4	78.7	78.7	80.4	82.1	78.7	80.4	81.2
42.5°	47.0	47.0	47.0	47.9	48.7	47.0	47.0	47.9
45°	27.4	26.5	26.5	27.4	28.2	26.5	27.4	27.4
47.5°	15.4	14.5	14.5	15.4	15.4	14.5	15.4	15.4
50°	8.6	7.7	7.7	8.6	8.6	7.7	7.7	7.7
52.5°	4.3	4.3	4.3	4.3	4.3	4.3	3.4	3.4
55°	2.6	2.6	1.7	1.7	1.7	1.7	1.7	0.9
57.5°	1.7	1.7	0.9	0.9	0.9	0.9	0.0	0.0
60°	1.7	1.7	0.9	0.9	0.9	0.0	0.0	0.0
62.5°	1.7	1.7	0.9	0.9	0.9	0.0	0.0	0.0
65°	1.7	1.7	0.9	0.9	0.9	0.0	0.0	0.0
67.5°	1.7	1.7	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.6	1.7	1.7	0.9	0.9	0.9	0.0	0.0
72.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
75°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
77.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.9	0.0
80°	2.6	1.7	1.7	1.7	0.9	0.9	0.9	0.9
82.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.9	0.9
85°	2.6	1.7	1.7	1.7	0.9	0.9	0.9	0.0
87.5°	2.6	1.7	1.7	1.7	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)