

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: P179890

Luminaire Tested: **LDA6A65935D010TE LARH30NF 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179890  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65935D010TE LARH30NF 6LA1LI 30°  
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 30°  
Narrow Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5610.2 lumens  
Efficiency: N/A  
Efficacy: 71.9 lumens/watt  
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

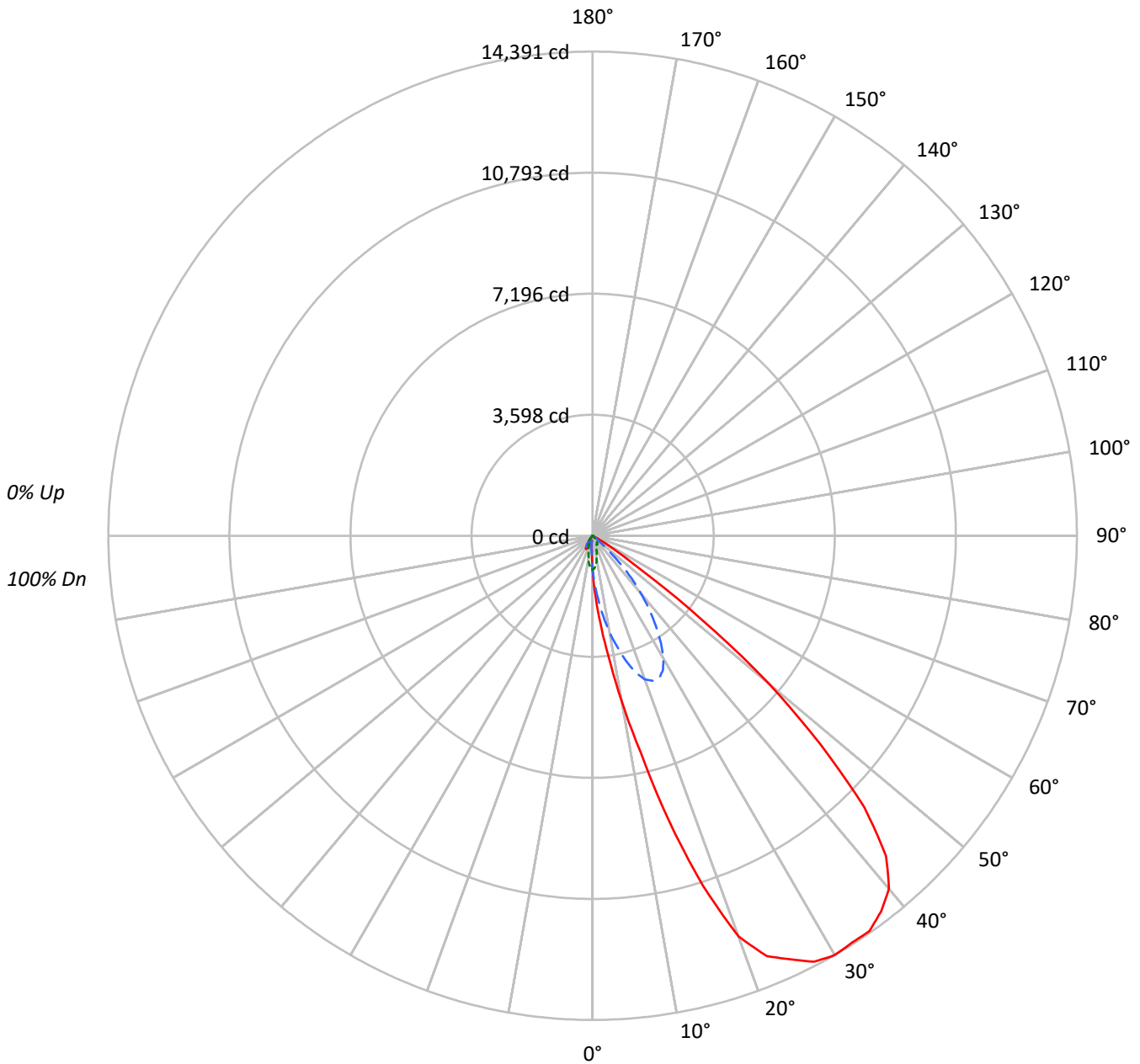
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81																			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	74	73																			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65																			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58																			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52																			
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46																			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38																			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	55478	55478	55478
5°	142306	50468	15716
10°	277400	38782	7554
15°	497965	26345	10131
20°	739323	19998	16726
25°	840351	16477	26227
30°	910950	18015	24668
35°	959530	11671	15292
40°	980279	5181	7450
45°	885379	1977	2768
50°	582821	785	785
55°	159602	679	0
60°	31872	778	0
65°	2244	1064	0
70°	321	1314	0
75°	0	1949	0
80°	0	2904	316
85°	0	5787	629



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.0	2.2
10°-20°	658.6	11.7
20°-30°	1492.6	26.6
30°-40°	1791.7	31.9
40°-50°	1262.7	22.5
50°-60°	260.5	4.6
60°-70°	9.2	0.2
70°-80°	5.5	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°	2275.2	40.6
0°-40°	4066.8	72.5
0°-60°	5590.1	99.6
0°-90°	5610.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5610.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1012	1012	1012	1012	1012	
5°	2586	1884	917	382	286	318
15°	8774	3860	464	165	178	2604
25°	13893	4669	272	382	434	6412
35°	14338	3270	174	228	228	8913
45°	11420	1121	26	35	36	8399
55°	1670	22	7	5	0	2201
65°	17	5	8	5	0	51
75°	0	5	9	6	0	0
85°	0	6	9	6	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°	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0
2.5°	1725.0	1673.0	1693.4	1633.2	1620.0	1608.7	1620.0	1554.7	1517.9	1471.0	1433.3
5°	2586.0	2523.8	2538.1	2433.0	2385.0	2352.4	2346.3	2211.6	2110.6	1999.4	1884.2
7.5°	3600.0	3540.8	3532.7	3369.5	3270.5	3214.4	3190.9	2998.1	2823.7	2625.8	2409.5
10°	4983.3	4848.6	4806.8	4570.1	4381.4	4262.1	4115.2	3807.1	3501.1	3202.2	2926.7
12.5°	6593.0	6519.6	6415.5	5998.3	5667.8	5498.4	5279.1	4797.6	4334.5	3840.8	3379.7
15°	8774.1	8512.9	8335.4	7732.5	7200.0	6938.9	6618.5	5882.0	5182.2	4556.9	3860.1
17.5°	10905.1	10768.4	10490.9	9708.5	8888.3	8476.2	7998.8	6998.0	6009.5	5120.0	4269.2
20°	12673.0	12544.4	12228.2	11490.6	10580.7	9972.7	9371.8	7998.8	6707.3	5568.8	4542.6
22.5°	13519.7	13438.0	13180.0	12548.5	11773.2	11194.8	10549.1	8850.6	7223.5	5862.6	4667.1
25°	13893.0	13855.3	13689.0	13191.2	12460.8	11970.1	11360.1	9453.5	7544.8	5999.3	4669.1
27.5°	14271.5	14278.6	13911.4	13517.6	12825.0	12353.7	11766.1	9720.7	7603.0	5922.8	4516.1
30°	14390.8	14315.3	14153.1	13588.0	12930.0	12429.1	11798.7	9597.3	7364.2	5608.6	4211.1
32.5°	14341.9	14312.3	14133.8	13536.0	12751.5	12199.6	11483.5	9107.6	6893.0	5159.8	3778.5
35°	14337.8	14282.7	13873.6	13360.5	12394.5	11713.0	10769.4	8316.0	6225.8	4568.1	3269.5
37.5°	14078.7	13942.0	13634.9	12943.3	11670.2	10806.1	9748.3	7348.9	5409.7	3904.0	2764.5
40°	13698.2	13514.6	13110.6	12063.9	10415.4	9419.8	8387.4	6250.3	4545.7	3249.1	2227.9
42.5°	12903.5	12626.0	12054.8	10615.4	8743.5	7845.7	6986.8	5137.3	3707.1	2647.2	1700.5
45°	11420.2	11040.8	10268.5	8688.4	7063.3	6330.9	5640.2	4133.5	2967.5	1963.7	1121.1
47.5°	9179.0	8827.1	8124.2	6916.4	5539.3	4920.0	4369.2	3074.6	2011.7	1137.4	535.6
50°	6833.8	6531.8	5983.0	4806.8	3718.3	3231.7	2760.4	1746.4	942.6	540.7	222.4
52.5°	4077.4	3927.5	3440.9	2665.6	1836.2	1582.2	1270.0	739.6	475.4	195.9	60.2
55°	1669.9	1541.4	1358.8	1090.5	798.8	677.4	579.4	365.2	147.9	40.8	22.4
57.5°	754.9	726.3	643.7	506.0	367.2	308.1	208.1	69.4	32.6	20.4	13.3
60°	290.7	262.2	224.4	121.4	52.0	43.9	35.7	23.5	16.3	11.2	8.2
62.5°	41.8	39.8	35.7	28.6	22.4	20.4	17.3	12.2	9.2	7.1	6.1
65°	17.3	17.3	15.3	12.2	10.2	9.2	8.2	6.1	5.1	5.1	5.1
67.5°	7.1	7.1	6.1	5.1	4.1	4.1	4.1	3.1	4.1	4.1	5.1
70°	2.0	2.0	2.0	2.0	2.0	2.0	3.1	3.1	4.1	4.1	5.1
72.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.1	4.1	5.1	5.1
75°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.1	4.1	5.1	5.1
77.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.1	3.1	4.1	5.1	5.1
80°	0.0	0.0	1.0	1.0	2.0	2.0	3.1	3.1	4.1	5.1	6.1
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.1	3.1	4.1	5.1	6.1
85°	0.0	0.0	1.0	1.0	2.0	2.0	3.1	3.1	4.1	5.1	6.1
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.1	3.1	4.1	5.1	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°	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0
2.5°	1400.6	1335.3	1317.0	1259.8	1211.9	1188.4	1158.9	1092.5	1042.6	976.3	936.5
5°	1803.6	1680.1	1582.2	1462.9	1384.3	1333.3	1253.7	1132.3	1034.4	917.1	833.4
7.5°	2239.2	2013.7	1837.2	1640.4	1527.1	1438.4	1302.7	1128.3	984.4	828.3	698.8
10°	2659.5	2322.8	2045.3	1762.8	1613.8	1490.4	1303.7	1084.4	893.6	696.7	560.0
12.5°	3029.8	2595.2	2204.5	1841.3	1656.7	1502.6	1269.0	1005.8	775.3	573.3	452.9
15°	3338.9	2806.4	2316.7	1870.9	1659.7	1476.1	1196.6	893.6	643.7	464.2	379.5
17.5°	3573.5	2917.5	2351.4	1835.2	1600.6	1400.6	1085.4	751.8	522.3	393.8	319.3
20°	3694.9	2939.0	2301.4	1738.3	1491.4	1286.4	939.5	610.0	442.7	342.8	267.3
22.5°	3710.2	2878.8	2182.0	1599.5	1353.7	1147.6	778.4	509.0	394.8	303.0	235.6
25°	3619.4	2748.2	2011.7	1442.5	1202.7	988.5	633.5	456.0	359.1	272.4	271.4
27.5°	3425.6	2523.8	1807.7	1259.8	1020.1	803.9	537.6	412.1	320.3	288.7	307.1
30°	3152.2	2236.1	1556.7	1029.3	796.7	618.2	452.9	339.7	281.6	284.6	299.9
32.5°	2781.9	1879.1	1261.9	753.9	570.2	465.2	339.7	231.6	233.6	234.6	247.9
35°	2316.7	1506.7	942.6	507.0	400.9	327.5	191.8	170.4	173.4	174.4	183.6
37.5°	1856.6	1157.8	626.4	337.7	252.0	172.4	119.4	114.3	116.3	115.3	125.5
40°	1422.0	806.9	375.4	167.3	96.9	80.6	73.4	70.4	71.4	72.4	78.5
42.5°	1006.9	437.6	185.7	63.2	51.0	46.9	43.9	41.8	42.8	42.8	46.9
45°	511.1	207.1	63.2	34.7	31.6	28.6	26.5	25.5	25.5	25.5	27.5
47.5°	221.4	68.3	29.6	21.4	19.4	18.4	16.3	15.3	15.3	15.3	16.3
50°	69.4	27.5	18.4	14.3	12.2	11.2	10.2	10.2	10.2	9.2	10.2
52.5°	25.5	17.3	12.2	9.2	8.2	8.2	8.2	7.1	8.2	7.1	8.2
55°	15.3	11.2	8.2	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
57.5°	10.2	8.2	7.1	7.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1
60°	7.1	7.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1	8.2
65°	5.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	8.2	8.2	8.2
67.5°	5.1	6.1	6.1	7.1	7.1	7.1	7.1	8.2	8.2	8.2	8.2
70°	6.1	6.1	7.1	7.1	7.1	7.1	8.2	8.2	8.2	8.2	9.2
72.5°	6.1	6.1	7.1	7.1	7.1	7.1	8.2	8.2	9.2	9.2	9.2
75°	6.1	7.1	7.1	7.1	7.1	8.2	8.2	8.2	9.2	9.2	9.2
77.5°	6.1	7.1	7.1	8.2	8.2	8.2	8.2	9.2	9.2	9.2	9.2
80°	6.1	7.1	7.1	8.2	8.2	8.2	9.2	9.2	9.2	9.2	10.2
82.5°	6.1	7.1	7.1	8.2	8.2	8.2	9.2	9.2	9.2	9.2	10.2
85°	7.1	7.1	8.2	8.2	8.2	8.2	9.2	9.2	9.2	9.2	10.2
87.5°	7.1	7.1	8.2	8.2	8.2	8.2	9.2	9.2	10.2	9.2	10.2
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°	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0
2.5°	883.4	824.3	783.5	768.2	738.6	691.6	664.1	638.6	590.6	580.4	553.9
5°	737.5	642.7	575.3	549.8	516.2	476.4	437.6	412.1	381.5	369.3	350.9
7.5°	581.5	486.6	428.5	408.0	384.6	351.9	317.3	291.8	260.1	243.8	228.5
10°	457.0	386.6	337.7	317.3	292.8	258.1	222.4	188.7	161.2	143.8	140.8
12.5°	371.3	313.2	261.2	239.7	211.2	176.5	151.0	150.0	147.9	146.9	148.9
15°	304.0	247.9	192.8	169.3	161.2	160.2	163.2	166.3	165.3	168.3	170.4
17.5°	249.9	189.7	177.5	178.5	179.5	182.6	187.7	195.9	196.9	202.0	206.1
20°	204.0	201.0	206.1	210.1	213.2	219.3	230.5	240.7	243.8	250.9	259.1
22.5°	231.6	240.7	252.0	257.1	261.2	272.4	284.6	300.9	307.1	316.2	327.5
25°	279.5	294.8	312.2	318.3	324.4	342.8	357.0	376.4	381.5	392.7	404.0
27.5°	319.3	335.6	354.0	362.1	367.2	385.6	397.8	410.1	410.1	416.2	424.4
30°	313.2	326.4	341.7	347.9	349.9	363.2	375.4	379.5	377.4	380.5	386.6
32.5°	260.1	270.3	282.6	287.7	289.7	298.9	309.1	309.1	308.1	308.1	312.2
35°	192.8	199.9	206.1	211.2	214.2	220.3	229.5	228.5	228.5	226.5	229.5
37.5°	129.6	133.6	140.8	142.8	143.8	147.9	155.1	155.1	153.0	154.0	156.1
40°	78.5	83.6	87.7	88.8	90.8	93.9	99.0	99.0	99.0	99.0	100.0
42.5°	46.9	50.0	53.0	53.0	54.1	58.1	60.2	60.2	60.2	60.2	61.2
45°	27.5	28.6	30.6	31.6	31.6	33.7	34.7	34.7	34.7	34.7	35.7
47.5°	16.3	17.3	17.3	18.4	18.4	19.4	20.4	20.4	19.4	19.4	19.4
50°	10.2	10.2	10.2	10.2	11.2	11.2	11.2	11.2	11.2	11.2	10.2
52.5°	8.2	8.2	8.2	8.2	7.1	7.1	7.1	7.1	6.1	6.1	5.1
55°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	6.1	5.1	4.1	3.1
57.5°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.1	4.1	3.1
60°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.1	4.1	3.1
62.5°	8.2	8.2	7.1	7.1	7.1	6.1	6.1	5.1	5.1	4.1	3.1
65°	8.2	8.2	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.1	3.1
67.5°	8.2	8.2	8.2	8.2	7.1	7.1	7.1	6.1	5.1	4.1	3.1
70°	9.2	9.2	8.2	8.2	8.2	7.1	7.1	6.1	5.1	5.1	4.1
72.5°	9.2	9.2	8.2	8.2	8.2	8.2	7.1	6.1	6.1	5.1	4.1
75°	9.2	9.2	9.2	9.2	8.2	8.2	7.1	7.1	6.1	5.1	4.1
77.5°	9.2	9.2	9.2	9.2	8.2	8.2	8.2	7.1	6.1	5.1	4.1
80°	9.2	9.2	9.2	9.2	9.2	8.2	8.2	7.1	6.1	5.1	4.1
82.5°	10.2	10.2	9.2	9.2	9.2	8.2	8.2	7.1	6.1	5.1	5.1
85°	10.2	10.2	9.2	9.2	9.2	8.2	8.2	7.1	6.1	6.1	5.1
87.5°	10.2	10.2	9.2	9.2	9.2	8.2	8.2	7.1	6.1	6.1	5.1
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: P179890

CATALOG NUMBER: LDA6A65935D010TE LARH30NF 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0	1012.0
2.5°	537.6	507.0	496.8	503.9	495.8	489.7	481.5	477.4
5°	336.6	314.2	307.1	309.1	302.0	295.8	287.7	285.6
7.5°	207.1	185.7	177.5	177.5	169.3	162.2	157.1	154.0
10°	138.7	134.7	135.7	136.7	135.7	136.7	133.6	135.7
12.5°	148.9	146.9	148.9	150.0	150.0	152.0	147.9	151.0
15°	173.4	171.4	174.4	176.5	176.5	179.5	175.5	178.5
17.5°	212.2	211.2	216.3	218.3	219.3	224.4	219.3	223.4
20°	268.3	267.3	274.4	277.5	276.5	286.7	279.5	286.7
22.5°	340.7	338.7	348.9	351.9	353.0	366.2	360.1	365.2
25°	413.1	415.2	420.3	425.4	426.4	437.6	428.5	433.6
27.5°	428.5	425.4	428.5	434.6	435.6	440.7	432.5	436.6
30°	387.6	382.5	383.6	390.7	392.7	394.8	387.6	389.7
32.5°	315.2	307.1	307.1	314.2	316.2	319.3	307.1	312.2
35°	232.6	225.4	225.4	230.5	231.6	233.6	224.4	228.5
37.5°	159.1	153.0	155.1	157.1	158.1	160.2	159.1	158.1
40°	102.0	97.9	101.0	101.0	102.0	103.0	103.0	104.1
42.5°	62.2	59.2	61.2	61.2	62.2	62.2	62.2	63.2
45°	35.7	34.7	34.7	35.7	35.7	35.7	34.7	35.7
47.5°	19.4	18.4	19.4	19.4	19.4	19.4	19.4	19.4
50°	10.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
52.5°	5.1	4.1	4.1	4.1	3.1	4.1	3.1	3.1
55°	3.1	2.0	2.0	2.0	1.0	1.0	0.0	0.0
57.5°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
60°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
65°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	3.1	2.0	1.0	1.0	1.0	0.0	0.0	0.0
70°	3.1	2.0	2.0	1.0	1.0	0.0	0.0	0.0
72.5°	3.1	2.0	2.0	2.0	1.0	1.0	0.0	0.0
75°	3.1	2.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	3.1	3.1	2.0	2.0	1.0	1.0	1.0	0.0
80°	4.1	3.1	2.0	2.0	2.0	1.0	1.0	1.0
82.5°	4.1	3.1	2.0	2.0	2.0	1.0	1.0	1.0
85°	4.1	3.1	3.1	2.0	2.0	1.0	1.0	1.0
87.5°	4.1	3.1	3.1	2.0	2.0	1.0	1.0	1.0
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)