

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: P179910

Luminaire Tested: **LDA6A55835D010TE LARH20SP 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179910  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26689)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A55835D010TE LARH20SP 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 20° Spot, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4637.0 lumens  
Efficiency: N/A  
Efficacy: 76.0 lumens/watt  
Spacing Criteria (0/90/45): 2.34 / 0.96 / 1.3  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

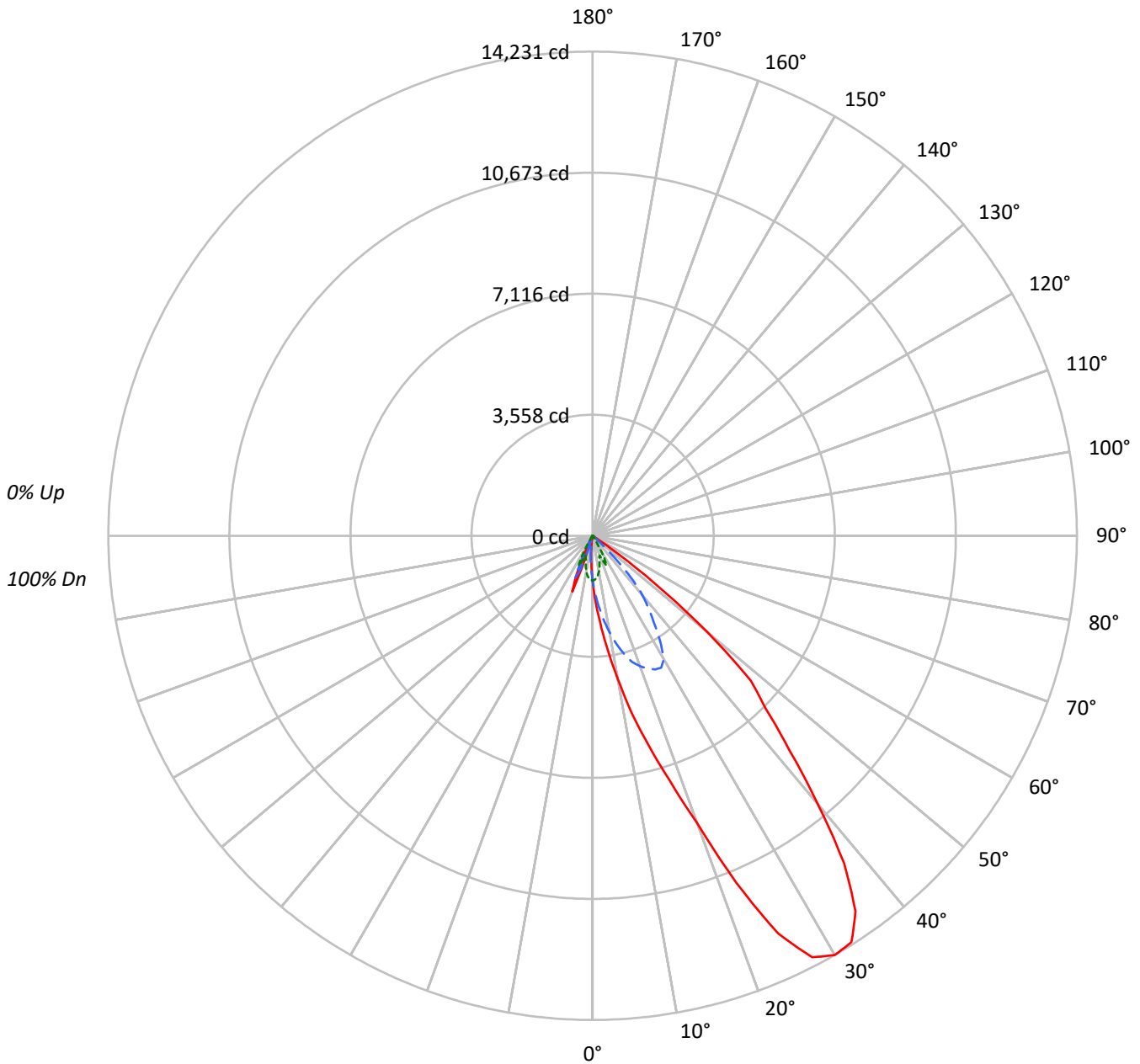
Input Watts (W): 61  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

### Luminous Intensity Polar Plot





TEST NUMBER: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**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	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	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	76	71	90	82	76	71	80	74	70	77	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60																			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54																			
7	75	64	57	51	74	63	56	51	62	56	51	60	55	51	59	54	50	49																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40																			
10	62	50	43	38	61	50	43	38	49	43	38	48	42	38	47	42	38	36																			

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

	0°	90°	180°
0°	72363	72363	72363
5°	141481	68787	25093
10°	238133	59061	5567
15°	362652	44722	9137
20°	524042	36228	101917
25°	779912	58612	29457
30°	900816	20066	5824
35°	901106	4484	3145
40°	736508	2505	1932
45°	557725	1628	1240
50°	370384	1109	853
55°	59544	956	669
60°	3728	987	548
65°	1167	1297	649
70°	641	1443	801
75°	424	1694	1059
80°	316	2526	1578
85°	629	5032	1887



TEST NUMBER: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.8	3.0
10°-20°	589.1	12.7
20°-30°	1386.9	29.9
30°-40°	1461.3	31.5
40°-50°	911.2	19.6
50°-60°	130.9	2.8
60°-70°	8.4	0.2
70°-80°	6.5	0.1
80°-90°	4.9	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°	2113.8	45.6
0°-40°	3575.1	77.1
0°-60°	4617.2	99.6
0°-90°	4637.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4637.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1320	1320	1320	1320	1320	
5°	2571	2081	1250	649	456	298
15°	6390	3617	788	137	161	1903
25°	12894	4336	969	701	487	5802
35°	13465	3176	67	62	47	8122
45°	7194	879	21	23	16	5630
55°	623	16	10	11	7	1119
65°	9	7	10	8	5	13
75°	2	5	8	8	5	2
85°	1	5	8	6	3	1
90°	0	0	0	0	0	



TEST NUMBER: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0
2.5°	1927.0	1914.0	1918.0	1888.0	1848.0	1866.0	1821.0	1822.0	1794.0	1723.0	1692.0
5°	2571.0	2569.0	2566.0	2511.0	2440.0	2448.0	2382.0	2357.0	2285.0	2160.0	2081.0
7.5°	3370.9	3371.9	3356.9	3222.9	3143.9	3138.9	3034.9	2959.9	2825.9	2629.0	2485.0
10°	4277.9	4305.9	4278.9	4072.9	3925.9	3927.9	3740.9	3596.9	3381.9	3094.9	2889.9
12.5°	5342.9	5346.9	5304.9	5033.9	4809.9	4792.9	4541.9	4266.9	3939.9	3564.9	3266.9
15°	6389.9	6417.9	6363.9	6029.9	5717.9	5670.9	5350.9	4987.9	4581.9	4026.9	3616.9
17.5°	7550.9	7506.9	7363.9	6885.9	6510.9	6441.9	6097.9	5622.9	5104.9	4433.9	3895.9
20°	8982.8	8997.8	8694.8	7980.9	7346.9	7077.9	6678.9	6158.9	5512.9	4732.9	4081.9
22.5°	11028.8	10947.8	10297.8	9142.8	8189.9	7830.9	7261.9	6544.9	5817.9	4959.9	4220.9
25°	12893.8	12680.8	12081.8	10492.8	9000.8	8556.8	7967.9	6873.9	6070.9	5127.9	4335.9
27.5°	13964.7	13869.7	13190.8	11587.8	9655.8	9030.8	8201.9	7115.9	6220.9	5210.9	4368.9
30°	14230.7	14247.7	13643.8	11950.8	9810.8	9096.8	8239.9	7108.9	6119.9	5062.9	4178.9
32.5°	14162.7	14070.7	13315.8	11549.8	9397.8	8747.8	7867.9	6790.9	5717.9	4621.9	3705.9
35°	13464.8	13329.8	12400.8	10506.8	8696.8	8064.9	7266.9	6269.9	5156.9	4059.9	3175.9
37.5°	12136.8	11980.8	10908.8	9254.8	7855.9	7320.9	6630.9	5689.9	4589.9	3535.9	2710.0
40°	10291.8	10097.8	9201.8	8054.9	6951.9	6577.9	5994.9	5027.9	4001.9	3039.9	2280.0
42.5°	8566.8	8473.8	7935.9	6951.9	6208.9	5847.9	5259.9	4359.9	3415.9	2533.0	1688.0
45°	7193.9	7131.9	6774.9	6149.9	5395.9	5057.9	4503.9	3625.9	2599.0	1706.0	879.0
47.5°	6296.9	6138.9	5789.9	5133.9	4295.9	3874.9	3346.9	2389.0	1466.0	756.0	270.0
50°	4342.9	4357.9	3963.9	3240.9	2528.0	2172.0	1794.0	1099.0	485.0	165.0	47.0
52.5°	2287.0	2118.0	1841.0	1375.0	957.0	730.0	533.0	220.0	88.0	33.0	25.0
55°	623.0	547.0	437.0	309.0	167.0	117.0	77.0	41.0	29.0	23.0	16.0
57.5°	61.0	58.0	53.0	43.0	37.0	34.0	31.0	25.0	20.0	14.0	10.0
60°	34.0	33.0	31.0	27.0	24.0	22.0	20.0	17.0	12.0	9.0	8.0
62.5°	19.0	18.0	17.0	15.0	13.0	12.0	12.0	10.0	8.0	7.0	7.0
65°	9.0	9.0	9.0	9.0	9.0	8.0	7.0	7.0	7.0	7.0	7.0
67.5°	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0
70°	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0
72.5°	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0
75°	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0	5.0
80°	1.0	1.0	1.0	2.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
82.5°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
85°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0
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: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0
2.5°	1660.0	1611.0	1562.0	1513.0	1511.0	1482.0	1439.0	1382.0	1335.0	1295.0	1256.0
5°	2002.0	1901.0	1800.0	1699.0	1669.0	1617.0	1524.0	1419.0	1329.0	1250.0	1174.0
7.5°	2345.0	2175.0	2015.0	1857.0	1794.0	1715.0	1570.0	1418.0	1288.0	1172.0	1059.0
10°	2651.0	2404.0	2179.0	1957.0	1866.0	1763.0	1568.0	1375.0	1210.0	1061.0	917.0
12.5°	2932.9	2589.0	2304.0	2024.0	1900.0	1775.0	1537.0	1307.0	1110.0	932.0	766.0
15°	3180.9	2758.9	2392.0	2054.0	1902.0	1752.0	1472.0	1213.0	992.0	788.0	608.0
17.5°	3357.9	2843.9	2421.0	2027.0	1850.0	1682.0	1376.0	1099.0	861.0	648.0	474.0
20°	3465.9	2878.9	2406.0	1977.0	1789.0	1615.0	1305.0	1036.0	805.0	621.0	503.0
22.5°	3536.9	2912.9	2412.0	1976.0	1788.0	1624.0	1335.0	1083.0	895.0	796.0	782.0
25°	3612.9	2960.9	2456.0	2021.0	1846.0	1694.0	1414.0	1168.0	1011.0	969.0	975.0
27.5°	3608.9	2939.9	2414.0	1982.0	1798.0	1644.0	1316.0	1005.0	858.0	740.0	697.0
30°	3393.9	2697.0	2128.0	1644.0	1427.0	1238.0	806.0	524.0	362.0	317.0	272.0
32.5°	2890.9	2185.0	1591.0	1137.0	893.0	667.0	317.0	168.0	143.0	120.0	109.0
35°	2404.0	1742.0	1190.0	687.0	434.0	269.0	114.0	75.0	71.0	67.0	67.0
37.5°	1987.0	1368.0	769.0	290.0	159.0	97.0	55.0	50.0	48.0	47.0	47.0
40°	1554.0	892.0	333.0	96.0	51.0	44.0	39.0	37.0	36.0	35.0	36.0
42.5°	917.0	359.0	97.0	36.0	34.0	32.0	29.0	28.0	28.0	27.0	28.0
45°	312.0	93.0	32.0	26.0	24.0	24.0	22.0	22.0	22.0	21.0	23.0
47.5°	81.0	29.0	21.0	19.0	18.0	18.0	17.0	17.0	17.0	17.0	18.0
50°	28.0	19.0	15.0	14.0	13.0	14.0	13.0	13.0	13.0	13.0	14.0
52.5°	17.0	13.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
55°	11.0	10.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0	10.0	10.0
57.5°	9.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	8.0	9.0	10.0
60°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	10.0
62.5°	7.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0
65°	7.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0	10.0
67.5°	6.0	6.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0
70°	6.0	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	9.0	9.0
72.5°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0
75°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	9.0
77.5°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0
80°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
82.5°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
85°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0
87.5°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
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: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0
2.5°	1202.0	1185.0	1125.0	1117.0	1107.0	1058.0	1038.0	1004.0	956.0	942.0	925.0
5°	1085.0	1029.0	941.0	917.0	891.0	814.0	767.0	711.0	649.0	615.0	583.0
7.5°	936.0	858.0	741.0	694.0	665.0	581.0	506.0	431.0	340.0	288.0	255.0
10°	770.0	663.0	541.0	487.0	448.0	326.0	255.0	222.0	191.0	166.0	144.0
12.5°	603.0	482.0	344.0	282.0	251.0	208.0	169.0	128.0	114.0	113.0	109.0
15°	442.0	307.0	232.0	209.0	187.0	134.0	133.0	133.0	137.0	140.0	141.0
17.5°	326.0	270.0	212.0	198.0	208.0	216.0	230.0	251.0	268.0	316.0	306.0
20°	478.0	474.0	517.0	572.0	611.0	694.0	799.0	918.0	1042.0	1180.0	1285.0
22.5°	820.0	920.0	998.0	1064.0	1099.0	1193.0	1276.0	1317.0	1341.0	1329.0	1312.0
25°	1002.0	1038.0	1014.0	991.0	994.0	909.0	847.0	768.0	701.0	640.0	604.0
27.5°	599.0	548.0	476.0	426.0	416.0	359.0	317.0	273.0	260.0	220.0	203.0
30°	216.0	201.0	178.0	160.0	158.0	143.0	134.0	124.0	123.0	114.0	109.0
32.5°	98.0	98.0	90.0	92.0	90.0	87.0	86.0	83.0	83.0	80.0	78.0
35°	64.0	65.0	64.0	64.0	63.0	63.0	63.0	61.0	62.0	60.0	57.0
37.5°	47.0	48.0	46.0	47.0	47.0	47.0	47.0	46.0	45.0	43.0	42.0
40°	36.0	36.0	36.0	36.0	36.0	36.0	36.0	35.0	35.0	34.0	32.0
42.5°	28.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.0	28.0
45°	23.0	24.0	23.0	24.0	24.0	24.0	23.0	23.0	23.0	22.0	21.0
47.5°	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	16.0
50°	14.0	14.0	14.0	14.0	14.0	14.0	15.0	14.0	14.0	14.0	14.0
52.5°	11.0	12.0	12.0	13.0	13.0	13.0	13.0	13.0	12.0	12.0	11.0
55°	10.0	11.0	11.0	12.0	12.0	12.0	12.0	11.0	11.0	11.0	10.0
57.5°	10.0	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0	9.0	9.0
60°	10.0	10.0	10.0	11.0	11.0	10.0	10.0	9.0	9.0	8.0	8.0
62.5°	10.0	10.0	10.0	11.0	11.0	10.0	10.0	9.0	8.0	8.0	7.0
65°	10.0	11.0	10.0	11.0	11.0	10.0	10.0	9.0	8.0	8.0	7.0
67.5°	10.0	11.0	11.0	11.0	10.0	10.0	10.0	9.0	8.0	8.0	7.0
70°	9.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0
72.5°	9.0	10.0	9.0	10.0	10.0	9.0	9.0	9.0	8.0	8.0	7.0
75°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	7.0	7.0
77.5°	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	7.0	7.0
80°	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	7.0	7.0	6.0
82.5°	8.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	7.0	7.0	6.0
85°	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	5.0	5.0
87.5°	7.0	8.0	7.0	7.0	7.0	7.0	6.0	5.0	4.0	4.0	3.0
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: P179910

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0	1320.0
2.5°	898.0	873.0	874.0	878.0	853.0	840.0	837.0	824.0
5°	540.0	511.0	506.0	502.0	467.0	453.0	442.0	456.0
7.5°	232.0	221.0	219.0	216.0	200.0	192.0	188.0	192.0
10°	115.0	108.0	109.0	110.0	105.0	102.0	101.0	100.0
12.5°	114.0	113.0	114.0	114.0	115.0	113.0	114.0	114.0
15°	148.0	148.0	151.0	153.0	158.0	157.0	159.0	161.0
17.5°	369.0	350.0	360.0	360.0	405.0	365.0	399.0	368.0
20°	1450.0	1518.0	1587.0	1645.0	1704.0	1722.0	1757.0	1747.0
22.5°	1286.0	1294.0	1284.0	1273.0	1270.0	1273.0	1219.0	1227.0
25°	552.0	548.0	532.0	515.0	520.0	524.0	505.0	487.0
27.5°	189.0	184.0	179.0	175.0	173.0	170.0	164.0	160.0
30°	107.0	104.0	102.0	101.0	99.0	97.0	94.0	92.0
32.5°	77.0	75.0	74.0	73.0	71.0	69.0	66.0	65.0
35°	57.0	55.0	54.0	53.0	51.0	49.0	48.0	47.0
37.5°	42.0	40.0	40.0	40.0	37.0	35.0	34.0	33.0
40°	32.0	31.0	31.0	31.0	29.0	28.0	27.0	27.0
42.5°	28.0	27.0	27.0	27.0	25.0	24.0	24.0	23.0
45°	21.0	20.0	20.0	19.0	18.0	18.0	17.0	16.0
47.5°	16.0	15.0	15.0	15.0	14.0	13.0	13.0	12.0
50°	13.0	13.0	12.0	13.0	11.0	11.0	11.0	10.0
52.5°	11.0	11.0	10.0	10.0	9.0	9.0	9.0	8.0
55°	10.0	9.0	9.0	9.0	8.0	8.0	8.0	7.0
57.5°	8.0	8.0	7.0	7.0	6.0	6.0	6.0	6.0
60°	7.0	7.0	6.0	6.0	5.0	5.0	5.0	5.0
62.5°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
65°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
67.5°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
70°	7.0	7.0	6.0	6.0	6.0	5.0	5.0	5.0
72.5°	7.0	7.0	6.0	6.0	6.0	6.0	5.0	5.0
75°	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
77.5°	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
80°	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
82.5°	6.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
85°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
87.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)