

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: P179862

Luminaire Tested: **LDA6A55835D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179862  
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: LDA6A55835D010TE LARH20SP 6LA1LI 30°  
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, 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: 5034.0 lumens  
Efficiency: N/A  
Efficacy: 82.5 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

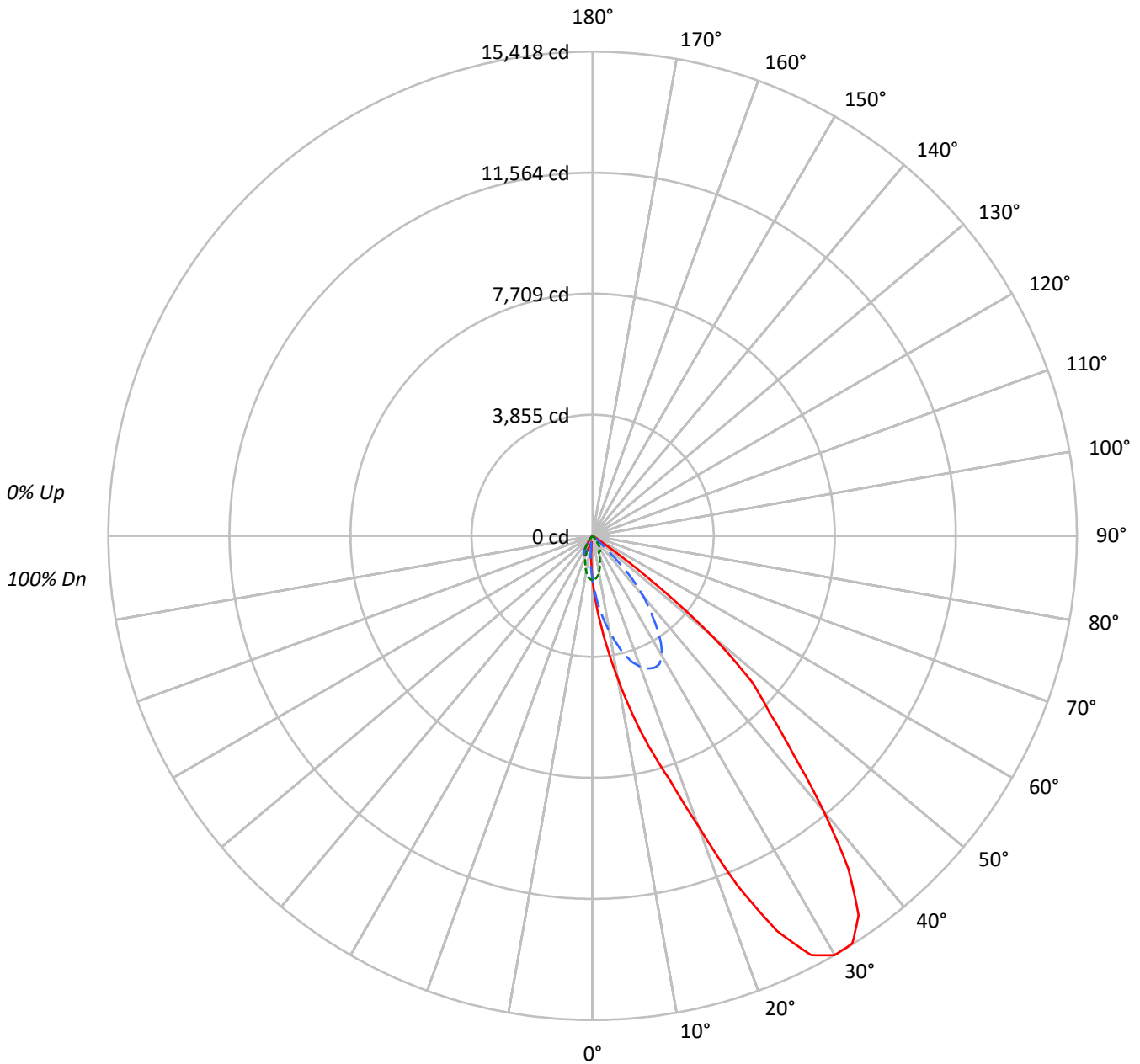
Input Watts (W): 61  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82					82			
3	99	91	85	80	96	89	84	80	87	82	78	84	80	77	82	79	76	74					74			
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66					66			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60					60			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54					54			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49					49			
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	46	44					44			
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40					40			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36					36			

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

	0°	90°	180°
0°	77905	77905	77905
5°	150963	74240	25038
10°	256475	64968	11245
15°	395218	51822	17878
20°	572119	33725	31094
25°	839401	32548	39988
30°	975998	30828	30638
35°	987878	16329	16195
40°	817897	6154	6798
45°	617715	2093	2481
50°	422630	768	768
55°	58789	669	96
60°	1535	658	0
65°	389	908	0
70°	160	1122	0
75°	0	1483	0
80°	0	2526	316
85°	0	5032	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.1	3.0
10°-20°	630.2	12.5
20°-30°	1437.7	28.6
30°-40°	1663.7	33.0
40°-50°	1003.4	19.9
50°-60°	136.3	2.7
60°-70°	4.4	0.1
70°-80°	4.8	0.1
80°-90°	4.5	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°	2217.0	44.0
0°-40°	3880.7	77.1
0°-60°	5020.4	99.7
0°-90°	5034.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5034.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1421	1421	1421	1421	1421	
5°	2743	2246	1349	738	455	319
15°	6964	3914	913	281	315	2062
25°	13877	4638	538	647	661	6280
35°	14761	3536	244	249	242	8896
45°	7968	963	27	33	32	6230
55°	615	7	7	5	1	1206
65°	3	4	7	4	0	5
75°	0	5	7	5	0	0
85°	0	5	8	5	0	0
90°	0	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°	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1
2.5°	2055.2	2036.2	2044.2	2023.2	1970.2	1959.2	1958.2	1944.2	1899.2	1864.2	1822.2
5°	2743.3	2742.3	2747.3	2702.3	2609.2	2580.2	2566.2	2532.2	2423.2	2339.2	2246.2
7.5°	3602.3	3596.3	3590.3	3508.3	3362.3	3306.3	3270.3	3147.3	2997.3	2848.3	2682.3
10°	4607.4	4604.4	4581.4	4437.4	4203.4	4100.4	4030.4	3835.4	3594.3	3382.3	3100.3
12.5°	5774.5	5747.5	5706.5	5495.5	5174.5	5062.5	4908.5	4599.4	4229.4	3904.4	3510.3
15°	6963.7	6924.6	6851.6	6580.6	6182.6	5991.6	5800.5	5393.5	4891.5	4419.4	3914.4
17.5°	8126.8	8083.8	7912.7	7452.7	7063.7	6830.6	6618.6	6059.6	5469.5	4862.5	4222.4
20°	9806.9	9650.9	9352.9	8627.8	7904.7	7484.7	7236.7	6645.6	5915.6	5208.5	4441.4
22.5°	12051.1	11705.1	11070.0	9891.9	8858.8	8252.8	7846.7	7060.7	6236.6	5434.5	4576.4
25°	13877.3	13720.3	12998.2	11322.1	9709.9	8995.8	8430.8	7390.7	6470.6	5585.5	4638.4
27.5°	15054.4	15015.4	14190.3	12506.2	10405.0	9467.9	8836.8	7608.7	6583.6	5617.5	4608.4
30°	15418.4	15479.5	14687.4	12908.2	10606.0	9562.9	8872.8	7611.7	6496.6	5472.5	4416.4
32.5°	15391.4	15394.4	14423.4	12561.2	10279.0	9286.9	8572.8	7358.7	6175.6	5109.5	4051.4
35°	14761.4	14606.4	13508.3	11495.1	9517.9	8642.8	7978.7	6868.6	5646.5	4563.4	3536.3
37.5°	13378.3	13175.2	11895.1	10129.9	8616.8	7807.7	7271.7	6225.6	5016.5	3980.4	3004.3
40°	11429.1	11141.0	10084.9	8860.8	7630.7	7022.7	6572.6	5506.5	4342.4	3408.3	2505.2
42.5°	9477.9	9336.9	8638.8	7643.7	6801.6	6229.6	5759.5	4753.4	3694.3	2844.3	1874.2
45°	7967.7	7846.7	7377.7	6721.6	5895.6	5373.5	4920.5	3968.4	2870.3	1908.2	963.1
47.5°	6867.6	6769.6	6320.6	5631.5	4725.4	4154.4	3687.3	2602.2	1626.2	824.1	241.0
50°	4955.5	4855.5	4415.4	3617.3	2799.3	2321.2	1985.2	1162.1	461.0	167.0	25.0
52.5°	2429.2	2347.2	2048.2	1533.1	1029.1	740.1	541.1	218.0	53.0	18.0	12.0
55°	615.1	565.1	471.0	296.0	145.0	87.0	56.0	20.0	13.0	10.0	7.0
57.5°	35.0	34.0	31.0	23.0	17.0	15.0	13.0	10.0	7.0	6.0	5.0
60°	14.0	13.0	12.0	10.0	8.0	7.0	7.0	5.0	4.0	4.0	4.0
62.5°	6.0	6.0	6.0	5.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0
65°	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0	4.0	4.0
67.5°	2.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0
70°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0
72.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0
75°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
77.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
80°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	5.0
85°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1
2.5°	1768.2	1732.2	1679.2	1644.2	1610.2	1578.1	1525.1	1495.1	1441.1	1391.1	1348.1
5°	2134.2	2044.2	1935.2	1842.2	1782.2	1723.2	1616.2	1537.1	1438.1	1349.1	1267.1
7.5°	2504.2	2345.2	2166.2	2013.2	1920.2	1829.2	1669.2	1541.1	1401.1	1274.1	1153.1
10°	2840.3	2601.2	2348.2	2129.2	2003.2	1885.2	1674.2	1504.1	1324.1	1167.1	1015.1
12.5°	3152.3	2825.3	2495.2	2209.2	2053.2	1911.2	1653.2	1445.1	1231.1	1045.1	868.1
15°	3430.3	3010.3	2602.2	2255.2	2072.2	1904.2	1604.2	1362.1	1121.1	913.1	689.1
17.5°	3641.3	3125.3	2649.2	2248.2	2038.2	1851.2	1520.1	1258.1	1004.1	752.1	499.0
20°	3769.4	3174.3	2639.2	2194.2	1965.2	1767.2	1420.1	1145.1	863.1	578.1	440.0
22.5°	3823.4	3170.3	2592.2	2113.2	1875.2	1675.2	1324.1	1035.1	715.1	523.0	459.0
25°	3832.4	3129.3	2526.2	2024.2	1786.2	1587.1	1227.1	910.1	621.1	538.1	514.0
27.5°	3763.4	3033.3	2402.2	1896.2	1661.2	1455.1	1082.1	723.1	583.1	536.1	552.1
30°	3559.3	2814.3	2183.2	1671.2	1444.1	1238.1	773.1	567.1	484.0	487.0	491.0
32.5°	3200.3	2450.2	1831.2	1342.1	1094.1	816.1	481.0	379.0	368.0	368.0	366.0
35°	2721.3	2005.2	1437.1	849.1	544.1	392.0	249.0	250.0	245.0	244.0	243.0
37.5°	2226.2	1582.1	910.1	351.0	236.0	164.0	147.0	149.0	147.0	150.0	148.0
40°	1755.2	977.1	332.0	112.0	83.0	80.0	82.0	84.0	84.0	86.0	86.0
42.5°	1020.1	324.0	87.0	45.0	45.0	43.0	44.0	46.0	47.0	48.0	47.0
45°	303.0	67.0	28.0	25.0	25.0	24.0	24.0	25.0	26.0	27.0	27.0
47.5°	48.0	19.0	16.0	14.0	14.0	14.0	14.0	14.0	15.0	15.0	16.0
50°	15.0	12.0	10.0	9.0	9.0	8.0	8.0	9.0	9.0	9.0	10.0
52.5°	9.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	7.0	8.0
55°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0
57.5°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
60°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0
62.5°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0
65°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0
67.5°	5.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0
70°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
72.5°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
75°	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	8.0
77.5°	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0
80°	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
82.5°	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
85°	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
87.5°	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	8.0
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°	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1
2.5°	1311.1	1265.1	1243.1	1212.1	1190.1	1141.1	1121.1	1087.1	1059.1	1013.1	1016.1
5°	1197.1	1110.1	1051.1	1005.1	973.1	895.1	843.1	788.1	738.1	676.1	653.1
7.5°	1039.1	932.1	842.1	787.1	746.1	642.1	527.0	437.0	369.0	320.0	301.0
10°	881.1	742.1	599.1	514.0	455.0	355.0	304.0	280.0	258.0	231.0	213.0
12.5°	697.1	499.0	369.0	335.0	311.0	278.0	245.0	219.0	224.0	225.0	232.0
15°	476.0	359.0	318.0	295.0	269.0	250.0	261.0	268.0	281.0	282.0	291.0
17.5°	387.0	337.0	304.0	303.0	305.0	316.0	333.0	342.0	359.0	363.0	376.0
20°	387.0	358.0	386.0	386.0	391.0	406.0	428.0	441.0	460.0	467.0	483.0
22.5°	441.0	461.0	496.0	500.0	502.0	518.0	546.1	559.1	581.1	585.1	602.1
25°	538.1	556.1	588.1	591.1	592.1	604.1	625.1	632.1	647.1	639.1	649.1
27.5°	569.1	577.1	597.1	599.1	594.1	599.1	607.1	607.1	612.1	596.1	599.1
30°	500.0	502.0	512.0	513.0	502.0	504.0	505.0	504.0	503.0	486.0	486.0
32.5°	371.0	371.0	384.0	381.0	369.0	372.0	372.0	372.0	371.0	357.0	355.0
35°	246.0	247.0	258.0	256.0	247.0	249.0	249.0	252.0	249.0	241.0	239.0
37.5°	150.0	151.0	156.0	157.0	154.0	155.0	156.0	155.0	157.0	153.0	151.0
40°	87.0	89.0	93.0	94.0	93.0	93.0	94.0	95.0	99.0	94.0	92.0
42.5°	51.0	52.0	54.0	54.0	54.0	54.0	55.0	56.0	57.0	56.0	55.0
45°	29.0	30.0	31.0	31.0	32.0	31.0	32.0	32.0	33.0	32.0	32.0
47.5°	17.0	17.0	18.0	18.0	19.0	18.0	19.0	19.0	19.0	18.0	18.0
50°	10.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0
52.5°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	6.0	6.0
55°	7.0	7.0	7.0	7.0	7.0	7.0	6.0	5.0	5.0	4.0	4.0
57.5°	6.0	7.0	7.0	7.0	7.0	6.0	6.0	5.0	4.0	3.0	3.0
60°	7.0	7.0	7.0	7.0	6.0	6.0	6.0	5.0	4.0	3.0	3.0
62.5°	7.0	7.0	7.0	7.0	7.0	6.0	6.0	5.0	4.0	3.0	3.0
65°	7.0	7.0	7.0	7.0	7.0	6.0	6.0	5.0	4.0	3.0	3.0
67.5°	7.0	7.0	7.0	7.0	7.0	6.0	6.0	5.0	4.0	4.0	3.0
70°	7.0	8.0	8.0	7.0	7.0	7.0	6.0	5.0	5.0	4.0	3.0
72.5°	7.0	8.0	8.0	7.0	7.0	7.0	6.0	5.0	5.0	4.0	3.0
75°	8.0	8.0	8.0	8.0	7.0	7.0	6.0	6.0	5.0	4.0	3.0
77.5°	8.0	8.0	8.0	8.0	7.0	7.0	6.0	6.0	5.0	4.0	3.0
80°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	5.0	4.0	4.0
82.5°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	5.0	4.0	4.0
85°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	5.0	4.0	3.0
87.5°	8.0	8.0	8.0	8.0	7.0	7.0	6.0	6.0	5.0	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: P179862

CATALOG NUMBER: LDA6A55835D010TE LARH20SP 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1	1421.1
2.5°	979.1	956.1	946.1	962.1	954.1	930.1	935.1	920.1
5°	584.1	549.1	527.0	537.1	505.0	476.0	476.0	455.0
7.5°	282.0	271.0	265.0	267.0	260.0	251.0	246.0	246.0
10°	198.0	194.0	195.0	195.0	201.0	200.0	203.0	202.0
12.5°	235.0	237.0	238.0	242.0	247.0	247.0	250.0	248.0
15°	301.0	299.0	305.0	306.0	314.0	315.0	319.0	315.0
17.5°	383.0	387.0	393.0	392.0	408.0	409.0	409.0	408.0
20°	493.0	496.0	502.0	504.0	523.0	525.0	532.0	533.0
22.5°	613.1	613.1	616.1	620.1	638.1	639.1	642.1	642.1
25°	654.1	648.1	649.1	654.1	664.1	660.1	663.1	661.1
27.5°	601.1	592.1	590.1	597.1	604.1	593.1	597.1	597.1
30°	488.0	480.0	478.0	485.0	490.0	478.0	482.0	484.0
32.5°	357.0	352.0	351.0	356.0	360.0	350.0	354.0	357.0
35°	241.0	239.0	237.0	238.0	244.0	236.0	240.0	242.0
37.5°	153.0	149.0	150.0	152.0	156.0	151.0	155.0	155.0
40°	94.0	92.0	92.0	94.0	96.0	92.0	94.0	95.0
42.5°	55.0	55.0	55.0	56.0	57.0	55.0	55.0	56.0
45°	32.0	31.0	31.0	32.0	33.0	31.0	32.0	32.0
47.5°	18.0	17.0	17.0	18.0	18.0	17.0	18.0	18.0
50°	10.0	9.0	9.0	10.0	10.0	9.0	9.0	9.0
52.5°	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0
55°	3.0	3.0	2.0	2.0	2.0	2.0	2.0	1.0
57.5°	2.0	2.0	1.0	1.0	1.0	1.0	0.0	0.0
60°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
62.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
65°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
67.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
70°	3.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
72.5°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
75°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0
80°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
82.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
85°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0
87.5°	3.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0
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)