

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: P179837

Luminaire Tested: **LDA6A65830D010TE LARH30NF 6LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179837  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26684)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65830D010TE LARH30NF 6LLWW1  
Description: PORTFOLIO 6" Lensed Wall Wash, Self-flanged, 30° Narrow Flood  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4739.5 lumens  
Efficiency: N/A  
Efficacy: 60.8 lumens/watt  
Spacing Criteria (0/90/45): 2.21 / 1.07 / 1.54  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

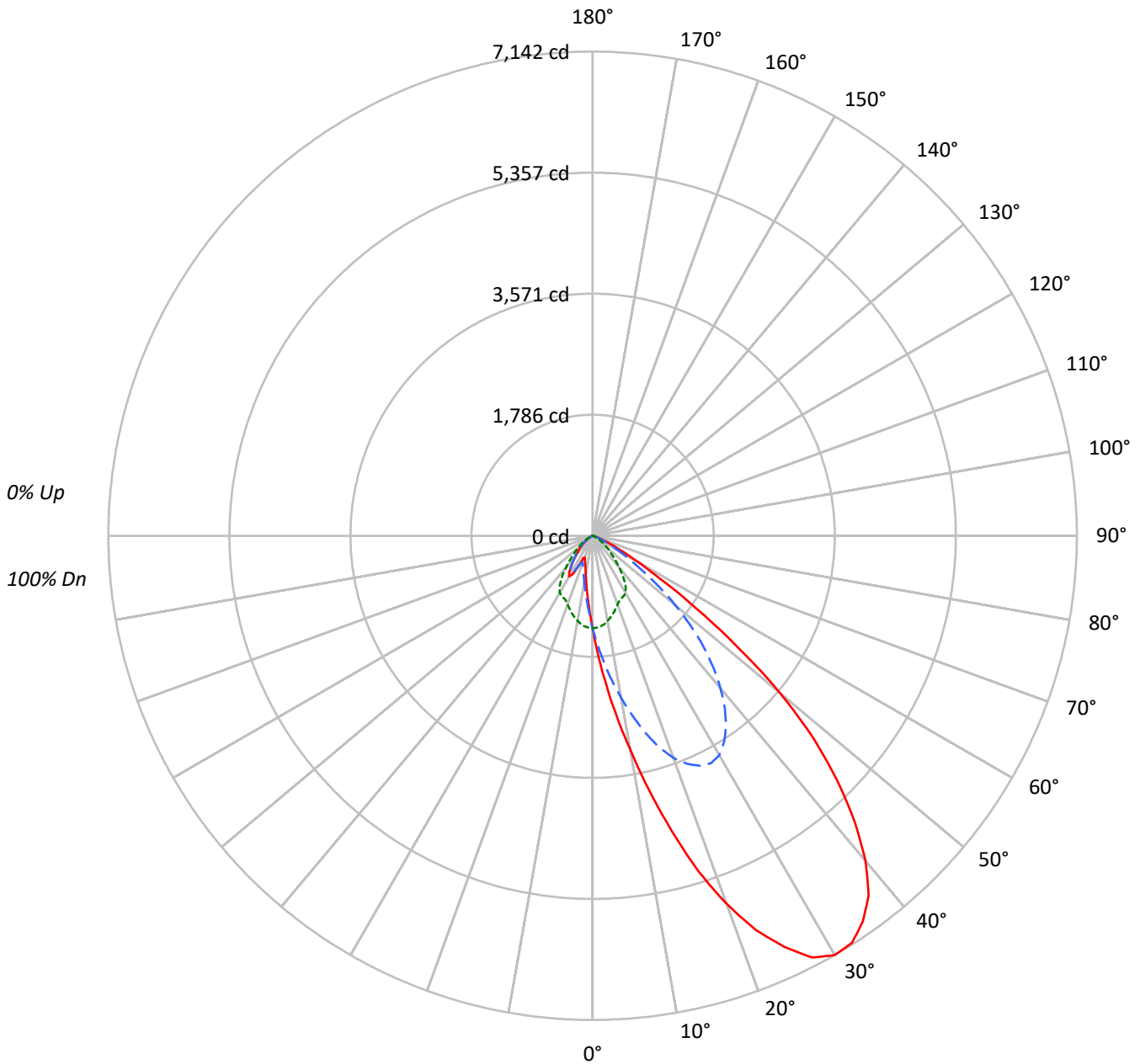
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90								
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70								
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	61								
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54								
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48								
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	43								
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	35								
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31								

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

	0°	90°	180°
0°	74769	74769	74769
5°	118781	73850	47969
10°	178220	70863	32197
15°	255387	67157	23820
20°	337120	62795	19858
25°	404624	61213	29004
30°	452127	61364	43823
35°	464841	54951	37403
40°	447939	43696	27816
45°	394777	32453	21398
50°	307862	24025	14805
55°	178058	17586	9558
60°	83217	12225	4287
65°	38928	6706	1790
70°	18064	2949	1282
75°	7540	1949	1461
80°	3252	2178	1799
85°	692	3585	2893



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.0	3.0
10°-20°	517.7	10.9
20°-30°	1024.9	21.6
30°-40°	1325.2	28.0
40°-50°	1088.9	23.0
50°-60°	503.4	10.6
60°-70°	114.9	2.4
70°-80°	18.7	0.4
80°-90°	4.8	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°	1683.7	35.5
0°-40°	3008.8	63.5
0°-60°	4601.1	97.1
0°-90°	4739.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4739.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1364	1364	1364	1364	1364	
5°	2158	1856	1342	971	872	238
15°	4500	3010	1183	530	420	1314
25°	6689	3744	1012	497	480	3080
35°	6946	3427	821	545	559	4301
45°	5092	2314	419	278	276	3875
55°	1863	900	184	118	100	1751
65°	300	184	52	20	14	344
75°	36	21	9	8	7	47
85°	1	3	6	6	5	3
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°	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9
2.5°	1731.9	1705.4	1721.5	1729.6	1688.2	1697.4	1702.0	1669.8	1660.6	1643.3	1592.7
5°	2158.5	2127.5	2140.1	2140.1	2079.2	2082.6	2080.3	2019.4	1986.0	1942.3	1856.1
7.5°	2661.1	2630.0	2632.3	2620.8	2534.6	2528.8	2492.0	2417.3	2351.7	2271.2	2142.4
10°	3201.6	3183.2	3171.7	3142.9	3029.1	3009.5	2955.5	2837.0	2728.9	2605.9	2424.2
12.5°	3836.3	3799.5	3766.2	3720.2	3571.8	3535.0	3459.1	3287.8	3129.1	2956.6	2716.3
15°	4499.9	4471.1	4417.1	4344.6	4154.9	4096.2	3997.3	3767.3	3569.5	3317.7	3009.5
17.5°	5186.4	5133.5	5054.2	4951.8	4723.0	4640.2	4517.1	4222.7	3960.5	3646.6	3274.0
20°	5778.7	5737.3	5628.0	5495.8	5233.6	5123.2	4978.3	4617.2	4296.3	3923.7	3485.6
22.5°	6292.7	6237.5	6103.0	5943.1	5649.9	5513.0	5349.7	4946.1	4555.1	4122.7	3640.8
25°	6689.4	6648.0	6488.2	6301.9	5979.9	5821.2	5640.7	5183.0	4749.4	4274.5	3744.3
27.5°	7012.6	6942.4	6764.2	6553.7	6206.5	6021.3	5830.4	5329.0	4859.8	4351.5	3783.4
30°	7142.5	7070.1	6881.5	6648.0	6280.1	6076.5	5879.9	5345.1	4851.8	4325.1	3736.3
32.5°	7118.4	7036.7	6835.5	6588.2	6212.2	5994.9	5795.9	5240.5	4736.8	4205.5	3608.6
35°	6945.9	6878.0	6669.9	6411.2	6036.3	5807.4	5599.3	5049.6	4544.7	4020.3	3426.9
37.5°	6686.0	6589.4	6395.1	6135.2	5738.4	5525.7	5319.8	4777.0	4283.7	3763.9	3200.4
40°	6259.4	6143.2	5948.9	5722.3	5345.1	5133.5	4946.1	4438.9	3953.6	3468.3	2930.2
42.5°	5722.3	5631.5	5450.9	5217.5	4871.3	4668.9	4501.0	4013.4	3583.3	3133.7	2632.3
45°	5092.1	5004.7	4850.6	4640.2	4327.4	4151.4	3997.3	3563.8	3176.3	2765.7	2313.8
47.5°	4410.2	4323.9	4189.4	4004.2	3724.8	3573.0	3438.4	3083.1	2717.4	2358.6	1961.9
50°	3609.8	3491.3	3417.7	3262.5	3029.1	2900.3	2796.8	2478.2	2208.0	1919.3	1589.3
52.5°	2694.4	2656.5	2550.7	2441.4	2277.0	2181.5	2113.7	1909.0	1684.7	1475.4	1223.6
55°	1863.0	1828.5	1764.1	1697.4	1587.0	1538.7	1488.1	1363.9	1214.4	1071.8	900.4
57.5°	1177.6	1202.9	1161.5	1123.5	1056.8	1039.6	1000.5	928.0	836.0	746.3	639.4
60°	759.0	772.8	746.3	724.5	687.7	673.9	655.5	611.8	556.6	504.8	432.4
62.5°	480.7	487.6	472.6	460.0	439.3	433.5	420.9	395.6	362.2	331.2	285.2
65°	300.1	305.9	295.5	287.5	274.8	276.0	264.5	249.5	230.0	210.4	184.0
67.5°	185.1	188.6	181.7	177.1	169.0	169.0	162.1	152.9	140.3	128.8	111.5
70°	112.7	113.8	109.2	106.9	101.2	100.0	96.6	89.7	81.6	73.6	63.2
72.5°	65.5	66.7	63.2	60.9	57.5	57.5	55.2	51.7	48.3	41.4	35.6
75°	35.6	36.8	34.5	33.3	31.0	32.2	29.9	28.7	25.3	23.0	20.7
77.5°	18.4	19.5	18.4	17.2	17.2	17.2	16.1	14.9	14.9	12.6	12.6
80°	10.3	10.3	10.3	10.3	10.3	9.2	9.2	9.2	9.2	9.2	8.0
82.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.6
85°	1.1	1.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.4	3.4
87.5°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.3	2.3	2.3	3.4
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°	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9
2.5°	1577.8	1576.6	1523.7	1500.7	1482.3	1453.6	1432.9	1411.0	1391.5	1355.8	1325.9
5°	1812.4	1780.2	1692.8	1637.6	1603.1	1557.1	1506.5	1455.9	1406.4	1342.0	1289.1
7.5°	2058.5	1989.5	1858.4	1766.4	1713.5	1649.1	1564.0	1484.6	1404.1	1315.6	1239.7
10°	2293.1	2180.4	2013.6	1873.3	1800.9	1718.1	1600.8	1490.4	1384.6	1273.0	1178.7
12.5°	2532.3	2371.3	2153.9	1972.2	1880.2	1777.9	1627.2	1490.4	1359.3	1230.5	1118.9
15°	2769.2	2556.4	2286.2	2060.8	1949.2	1827.3	1645.6	1482.3	1328.2	1183.3	1059.1
17.5°	2971.6	2708.2	2382.8	2121.7	1990.6	1852.6	1644.5	1458.2	1286.8	1130.4	998.2
20°	3129.1	2817.5	2450.6	2152.8	2005.6	1854.9	1626.1	1422.5	1239.7	1076.4	940.7
22.5°	3236.0	2888.8	2485.1	2158.5	2001.0	1842.3	1597.3	1386.9	1197.1	1033.8	898.1
25°	3302.7	2924.4	2495.5	2150.5	1984.9	1820.4	1570.9	1355.8	1169.5	1012.0	885.5
27.5°	3315.4	2914.1	2474.8	2117.1	1946.9	1781.3	1532.9	1325.9	1145.4	999.3	885.5
30°	3253.3	2847.4	2404.6	2042.4	1875.6	1713.5	1469.7	1271.9	1102.8	969.4	865.9
32.5°	3134.9	2724.3	2288.5	1932.0	1769.8	1618.0	1383.4	1194.8	1031.5	908.5	815.3
35°	2963.5	2559.9	2137.8	1792.8	1635.3	1493.8	1262.7	1090.2	934.9	821.1	734.8
37.5°	2755.4	2362.1	1961.9	1634.1	1484.6	1352.4	1131.6	969.4	825.7	718.7	641.7
40°	2502.4	2148.2	1764.1	1459.3	1316.7	1197.1	993.6	837.2	701.5	610.6	540.5
42.5°	2237.9	1909.0	1553.6	1263.8	1137.3	1023.5	842.9	702.6	581.9	507.1	451.9
45°	1965.3	1643.3	1332.8	1075.2	979.8	852.1	685.4	571.5	473.8	418.6	374.9
47.5°	1658.3	1385.7	1099.4	872.8	772.8	686.5	547.4	455.4	392.1	343.8	310.5
50°	1328.2	1110.9	870.5	677.3	594.5	529.0	426.6	363.4	315.1	281.7	256.4
52.5°	1021.2	849.8	655.5	496.8	445.0	395.6	332.3	288.6	254.1	228.8	210.4
55°	759.0	619.8	471.5	368.0	331.2	299.0	261.0	226.5	201.2	184.0	169.0
57.5°	534.7	432.4	331.2	266.8	247.2	226.5	197.8	174.8	157.5	143.7	132.2
60°	357.6	294.4	233.4	195.5	181.7	167.9	149.5	133.4	120.7	111.5	100.0
62.5°	240.3	197.8	163.3	140.3	131.1	121.9	109.2	97.7	88.5	79.3	70.1
65°	154.1	131.1	110.4	95.4	88.5	83.9	74.7	66.7	59.8	51.7	44.8
67.5°	94.3	81.6	69.0	59.8	56.3	52.9	47.1	41.4	36.8	31.0	26.4
70°	55.2	48.3	41.4	35.6	34.5	32.2	27.6	24.1	21.8	18.4	16.1
72.5°	32.2	28.7	24.1	21.8	20.7	18.4	17.2	14.9	12.6	11.5	10.3
75°	18.4	16.1	13.8	12.6	12.6	11.5	10.3	10.3	9.2	9.2	8.0
77.5°	11.5	10.3	9.2	9.2	9.2	8.0	8.0	8.0	8.0	6.9	6.9
80°	8.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
82.5°	4.6	4.6	4.6	4.6	4.6	5.7	5.7	5.7	5.7	5.7	6.9
85°	3.4	4.6	4.6	4.6	4.6	4.6	5.7	5.7	5.7	5.7	5.7
87.5°	3.4	4.6	4.6	4.6	4.6	4.6	5.7	5.7	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°	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9
2.5°	1308.7	1290.3	1233.9	1253.5	1217.8	1189.1	1186.8	1169.5	1139.6	1123.5	1115.5
5°	1248.9	1207.5	1138.5	1143.1	1101.7	1056.8	1032.7	1009.7	970.6	946.4	930.3
7.5°	1175.3	1118.9	1037.3	1031.5	987.8	933.8	899.3	867.1	824.5	793.5	773.9
10°	1098.2	1029.2	933.8	926.9	880.9	822.2	783.1	746.3	702.6	671.6	650.9
12.5°	1026.9	947.6	852.1	834.9	790.0	730.2	687.7	648.6	606.0	579.6	555.4
15°	959.1	872.8	771.6	755.5	711.8	652.0	604.9	570.4	530.1	504.8	483.0
17.5°	891.2	802.7	702.6	684.2	642.8	585.3	543.9	507.1	470.3	446.2	426.6
20°	832.6	744.0	646.3	627.9	589.9	534.7	496.8	462.3	428.9	405.9	389.8
22.5°	794.6	708.4	619.8	603.7	568.1	518.6	483.0	453.1	424.3	402.5	389.8
25°	792.3	717.6	638.2	629.0	599.1	557.7	532.4	514.0	496.8	479.5	474.9
27.5°	806.1	745.2	678.5	676.2	652.0	624.4	612.9	607.2	598.0	592.2	600.3
30°	798.1	746.3	690.0	690.0	671.6	652.0	646.3	644.0	638.2	639.4	648.6
32.5°	755.5	708.4	654.3	655.5	644.0	622.1	618.7	617.5	610.6	609.5	616.4
35°	678.5	634.8	589.9	591.1	581.9	561.2	556.6	554.3	545.1	540.5	545.1
37.5°	589.9	554.3	511.7	511.7	502.5	486.4	481.8	477.2	471.5	466.9	466.9
40°	499.1	470.3	435.8	434.7	427.8	411.7	407.1	403.6	397.9	389.8	392.1
42.5°	422.0	395.6	368.0	365.7	361.1	347.3	342.7	338.1	332.3	325.4	325.4
45°	350.7	333.5	309.3	308.2	303.6	292.1	288.6	282.9	278.3	271.4	271.4
47.5°	292.1	278.3	258.7	257.6	254.1	243.8	240.3	235.7	231.1	226.5	226.5
50°	244.9	231.1	215.0	213.9	211.6	203.5	198.9	195.5	192.0	188.6	186.3
52.5°	201.2	189.7	177.1	175.9	173.6	165.6	162.1	159.8	156.4	150.6	150.6
55°	162.1	152.9	141.4	140.3	138.0	131.1	127.6	123.0	118.4	112.7	111.5
57.5°	126.5	118.4	109.2	108.1	104.6	98.9	93.1	88.5	83.9	79.3	77.0
60°	95.4	86.2	78.2	75.9	73.6	65.5	60.9	56.3	51.7	48.3	46.0
62.5°	64.4	58.6	49.4	48.3	46.0	41.4	35.6	33.3	31.0	28.7	27.6
65°	40.2	35.6	31.0	29.9	27.6	24.1	21.8	20.7	19.5	18.4	17.2
67.5°	24.1	21.8	18.4	18.4	17.2	16.1	13.8	13.8	12.6	12.6	11.5
70°	14.9	13.8	12.6	11.5	11.5	11.5	10.3	10.3	10.3	10.3	10.3
72.5°	10.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
75°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
77.5°	8.0	8.0	6.9	8.0	8.0	8.0	8.0	6.9	8.0	6.9	6.9
80°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
82.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	5.7	5.7	5.7	5.7
85°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.6
87.5°	5.7	5.7	5.7	5.7	5.7	4.6	4.6	4.6	4.6	3.4	3.4
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: P179837

CATALOG NUMBER: LDA6A65830D010TE LARH30NF 6LLWW1

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9	1363.9
2.5°	1117.8	1085.6	1098.2	1079.8	1074.1	1069.5	1062.6	1084.4
5°	923.4	888.9	897.0	878.6	870.5	862.5	854.4	871.7
7.5°	762.4	729.1	732.5	716.4	708.4	699.2	691.1	704.9
10°	637.1	606.0	607.2	592.2	584.2	575.0	568.1	578.4
12.5°	541.6	512.9	512.9	501.4	494.5	484.1	478.4	486.4
15°	469.2	443.9	443.9	432.4	426.6	417.4	411.7	419.7
17.5°	414.0	391.0	391.0	382.9	377.2	369.1	364.5	371.4
20°	377.2	357.6	358.8	350.7	346.1	336.9	334.6	340.4
22.5°	380.6	362.2	364.5	358.8	354.2	347.3	345.0	353.0
25°	476.1	462.3	470.3	470.3	472.6	462.3	466.9	479.5
27.5°	611.8	604.9	617.5	612.9	622.1	622.1	626.7	642.8
30°	661.2	655.5	669.3	668.1	677.3	675.0	677.3	692.3
32.5°	625.6	619.8	631.3	630.2	637.1	631.3	632.5	645.1
35°	549.7	543.9	552.0	550.8	555.4	548.5	552.0	558.9
37.5°	469.2	463.4	468.0	466.9	468.0	460.0	464.6	468.0
40°	394.4	387.5	394.4	389.8	391.0	382.9	384.1	388.7
42.5°	330.0	322.0	327.7	327.7	327.7	322.0	323.1	327.7
45°	274.8	269.1	272.5	271.4	272.5	267.9	271.4	276.0
47.5°	227.7	223.1	225.4	224.2	224.2	219.6	220.8	220.8
50°	187.4	182.8	184.0	182.8	179.4	173.6	172.5	173.6
52.5°	148.3	142.6	142.6	140.3	138.0	133.4	133.4	134.5
55°	109.2	104.6	104.6	103.5	101.2	97.7	97.7	100.0
57.5°	73.6	70.1	71.3	70.1	70.1	65.5	67.8	67.8
60°	44.8	42.5	42.5	41.4	39.1	37.9	36.8	39.1
62.5°	26.4	25.3	25.3	24.1	24.1	23.0	23.0	23.0
65°	17.2	16.1	16.1	14.9	14.9	13.8	12.6	13.8
67.5°	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2
70°	10.3	9.2	9.2	9.2	9.2	8.0	8.0	8.0
72.5°	9.2	8.0	9.2	8.0	8.0	8.0	8.0	8.0
75°	8.0	8.0	8.0	6.9	6.9	6.9	6.9	6.9
77.5°	6.9	6.9	6.9	6.9	6.9	5.7	5.7	5.7
80°	6.9	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82.5°	5.7	5.7	5.7	5.7	5.7	4.6	4.6	4.6
85°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
87.5°	3.4	3.4	3.4	3.4	3.4	2.3	2.3	2.3
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)