

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: P179631

Luminaire Tested: **LDA6A45840D010TE LARH40FL 6LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179631
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26669)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45840D010TE LARH40FL 6LLWW1
Description: PORTFOLIO 6" Lensed Wall Wash, Self-flanged, 40° Flood
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3980.5 lumens
Efficiency: N/A
Efficacy: 75.1 lumens/watt
Spacing Criteria (0/90/45): 2.14 / 1.07 / 1.49
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

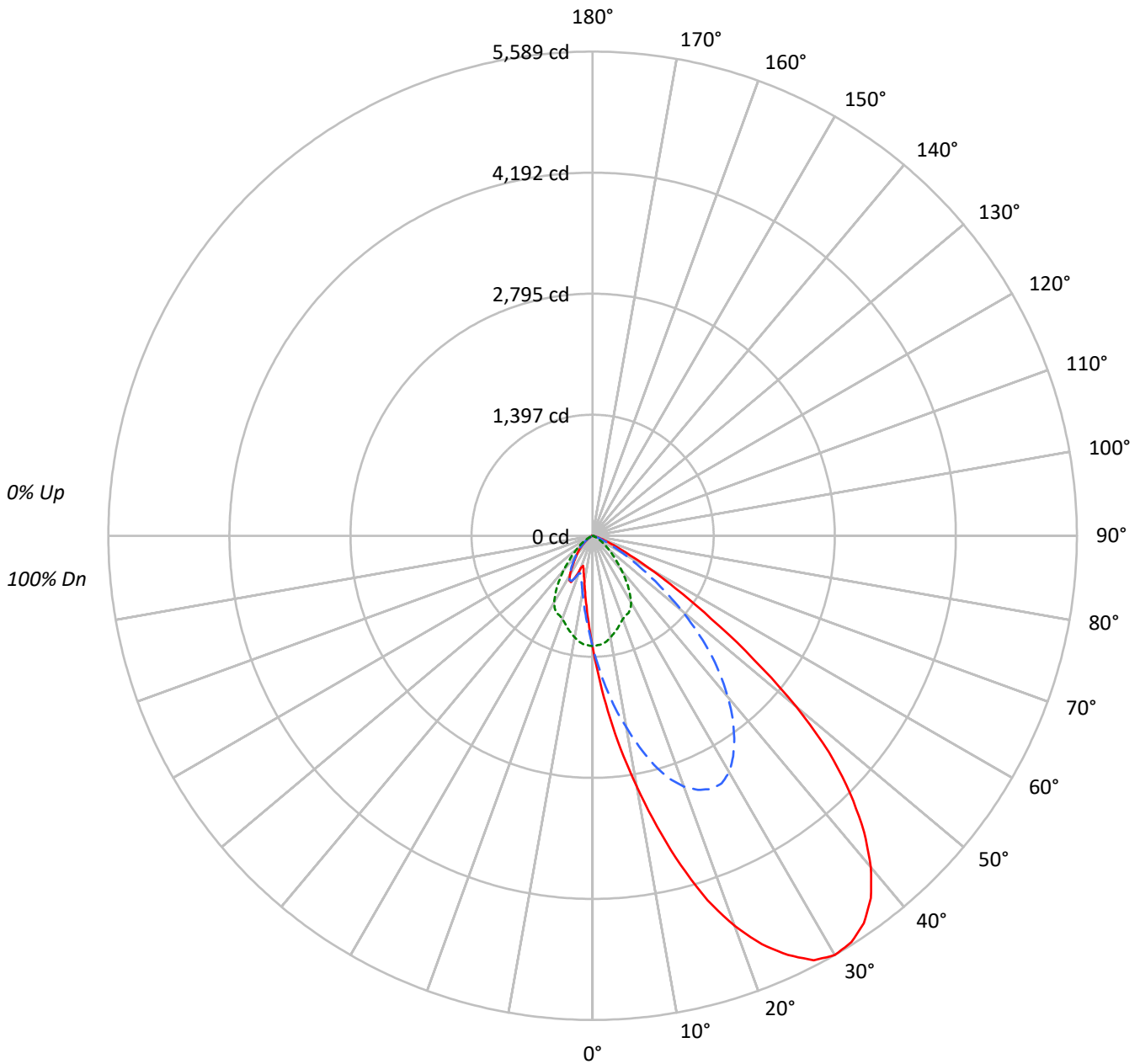
Input Watts (W): 53
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	84	78	74	81	77	73	79	75	72	70			
4	89	79	72	66	87	78	71	66	76	70	65	74	68	64	71	67	64	62			
5	83	72	64	58	81	71	64	58	69	62	58	67	61	57	65	60	56	55			
6	77	65	57	52	75	64	57	52	63	56	51	61	55	51	60	54	50	49			
7	72	59	52	46	70	59	51	46	57	51	46	56	50	45	55	49	45	43			
8	67	54	47	41	65	54	46	41	53	46	41	51	45	41	50	45	41	39			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	37	33	32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	69890	69890	69890
5°	111870	69013	44750
10°	163463	66276	30160
15°	223492	62849	22781
20°	279598	59511	22991
25°	322984	59314	35663
30°	353801	56148	33176
35°	365346	47602	25611
40°	357563	37134	20166
45°	325933	27414	15482
50°	261970	20221	10379
55°	159516	14308	5868
60°	82767	9462	2281
65°	40329	4994	1077
70°	18497	2164	994
75°	7710	1546	1101
80°	3946	1642	1326
85°	2642	3271	1950



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.8	3.3
10°-20°	463.3	11.6
20°-30°	877.1	22.0
30°-40°	1062.3	26.7
40°-50°	889.1	22.3
50°-60°	430.9	10.8
60°-70°	105.6	2.7
70°-80°	17.1	0.4
80°-90°	4.2	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°	1471.2	37.0
0°-40°	2533.5	63.6
0°-60°	3853.5	96.8
0°-90°	3980.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3980.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1275	1275	1275	1275	1275	
5°	2033	1751	1254	917	813	222
15°	3938	2738	1107	506	401	1137
25°	5340	3226	981	577	590	2460
35°	5459	2850	711	411	383	3383
45°	4204	1923	354	215	200	3190
55°	1669	788	150	81	61	1564
65°	311	173	38	12	8	350
75°	36	19	7	6	5	49
85°	4	3	5	4	3	5
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°	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9
2.5°	1618.0	1580.6	1588.9	1595.1	1567.1	1584.7	1554.6	1544.2	1519.2	1525.5	1506.7
5°	2032.9	1980.9	1965.3	1965.3	1918.5	1934.1	1907.1	1859.3	1810.4	1795.8	1751.1
7.5°	2479.0	2421.8	2396.9	2386.5	2317.8	2308.5	2285.6	2211.8	2131.7	2089.1	2010.0
10°	2936.5	2884.6	2849.2	2825.3	2730.7	2714.0	2673.5	2569.5	2468.6	2377.1	2247.1
12.5°	3440.9	3371.2	3324.4	3284.9	3163.2	3137.2	3076.9	2937.6	2778.5	2668.3	2496.7
15°	3937.9	3867.2	3805.9	3748.7	3601.0	3563.6	3482.5	3305.7	3119.6	2955.3	2737.9
17.5°	4411.1	4321.6	4246.8	4169.8	3996.2	3949.4	3843.3	3646.8	3386.8	3200.7	2938.6
20°	4792.7	4705.3	4619.0	4521.3	4322.7	4266.5	4137.6	3904.7	3609.3	3385.8	3080.0
22.5°	5104.6	5005.9	4920.6	4792.7	4569.1	4503.6	4354.9	4090.8	3771.6	3510.5	3174.7
25°	5339.7	5234.6	5147.3	5003.8	4756.3	4680.4	4506.7	4220.8	3872.4	3585.4	3225.6
27.5°	5524.7	5404.1	5305.3	5146.2	4873.8	4788.5	4598.2	4289.4	3913.0	3600.0	3223.5
30°	5589.2	5471.7	5360.4	5188.9	4895.6	4801.0	4603.4	4268.6	3876.6	3539.7	3151.8
32.5°	5561.1	5439.5	5318.9	5136.9	4827.0	4725.1	4525.4	4167.7	3765.3	3410.7	3019.7
35°	5459.2	5335.5	5206.6	5018.3	4693.9	4583.7	4384.0	4013.8	3595.8	3241.2	2850.2
37.5°	5274.1	5150.4	5028.7	4826.0	4494.3	4379.9	4183.3	3799.6	3392.0	3034.3	2653.7
40°	4996.5	4873.8	4761.5	4556.6	4222.8	4107.4	3921.3	3540.7	3147.6	2794.1	2428.1
42.5°	4638.8	4521.3	4420.4	4219.7	3893.2	3783.0	3608.3	3240.2	2873.1	2531.0	2186.8
45°	4204.1	4097.0	4004.5	3815.2	3513.7	3407.6	3252.7	2904.3	2562.2	2241.9	1922.7
47.5°	3702.9	3605.2	3524.1	3349.4	3069.7	2972.9	2839.8	2516.4	2210.7	1918.5	1634.7
50°	3071.7	2986.5	2930.3	2779.5	2530.0	2448.9	2345.9	2073.5	1822.9	1571.2	1336.2
52.5°	2343.8	2277.3	2251.3	2137.9	1944.5	1888.4	1821.8	1612.8	1429.8	1231.2	1048.2
55°	1669.0	1625.3	1608.7	1534.8	1408.0	1371.6	1314.4	1185.4	1063.8	923.4	788.2
57.5°	1136.6	1113.7	1101.2	1055.5	977.5	952.5	920.3	837.1	759.1	667.6	570.9
60°	754.9	745.6	735.2	707.1	661.3	642.6	627.0	571.9	524.1	466.9	399.3
62.5°	489.8	485.6	478.3	460.7	443.0	430.5	413.9	377.5	349.4	320.3	269.3
65°	310.9	306.8	303.6	292.2	280.8	268.3	262.0	241.2	223.6	204.9	172.6
67.5°	192.4	189.3	188.2	180.9	172.6	165.3	161.2	147.7	137.3	125.8	105.0
70°	115.4	114.4	112.3	108.1	102.9	97.7	95.7	86.3	80.1	72.8	59.3
72.5°	66.6	65.5	64.5	61.4	58.2	56.2	54.1	51.0	43.7	39.5	33.3
75°	36.4	36.4	35.4	33.3	32.2	30.2	29.1	27.0	23.9	21.8	18.7
77.5°	20.8	19.8	19.8	18.7	17.7	17.7	16.6	15.6	13.5	13.5	11.4
80°	12.5	12.5	12.5	11.4	11.4	11.4	10.4	10.4	9.4	8.3	8.3
82.5°	8.3	7.3	7.3	7.3	7.3	7.3	6.2	6.2	6.2	6.2	5.2
85°	4.2	4.2	4.2	4.2	3.1	4.2	3.1	3.1	3.1	3.1	3.1
87.5°	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1
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°	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9
2.5°	1457.9	1447.5	1426.7	1397.6	1387.2	1380.9	1346.6	1315.4	1293.6	1265.5	1238.5
5°	1670.0	1631.5	1581.6	1521.3	1497.4	1476.6	1413.2	1354.9	1307.1	1254.1	1204.2
7.5°	1889.4	1817.7	1733.4	1637.8	1598.3	1561.9	1466.2	1379.9	1306.1	1230.1	1158.4
10°	2095.3	1986.1	1864.5	1736.6	1677.3	1624.3	1497.4	1386.1	1288.4	1190.6	1102.2
12.5°	2297.0	2148.3	1987.2	1822.9	1745.9	1677.3	1520.3	1384.0	1263.4	1149.0	1047.1
15°	2491.5	2299.1	2100.5	1898.8	1806.2	1722.0	1535.9	1376.8	1237.4	1107.4	994.1
17.5°	2648.5	2421.8	2181.6	1944.5	1840.5	1742.8	1533.8	1356.0	1202.1	1060.7	940.0
20°	2758.7	2497.7	2230.5	1965.3	1852.0	1743.8	1518.2	1327.9	1165.7	1020.1	898.4
22.5°	2821.1	2533.1	2247.1	1965.3	1843.7	1730.3	1496.4	1301.9	1138.6	996.2	879.7
25°	2847.1	2539.3	2239.8	1948.7	1822.9	1706.4	1471.4	1276.9	1116.8	980.6	872.4
27.5°	2826.3	2502.9	2199.3	1902.9	1774.0	1657.5	1423.6	1233.3	1078.3	948.3	845.4
30°	2743.1	2411.4	2108.8	1814.5	1684.6	1571.2	1344.5	1160.5	1011.8	887.0	789.2
32.5°	2608.0	2278.3	1980.9	1693.9	1565.0	1455.8	1239.5	1064.8	922.4	803.8	713.3
35°	2443.7	2120.3	1833.3	1553.5	1429.8	1325.8	1122.0	951.5	820.4	711.3	628.1
37.5°	2258.6	1945.6	1661.7	1404.8	1286.3	1187.5	997.2	837.1	716.5	615.6	541.8
40°	2050.6	1755.3	1488.0	1244.7	1132.4	1040.9	861.0	719.6	609.4	518.9	456.5
42.5°	1831.2	1555.6	1307.1	1079.4	973.3	890.1	726.9	601.0	504.3	430.5	380.6
45°	1596.2	1341.4	1113.7	909.9	821.5	738.3	600.0	485.6	409.7	353.6	316.1
47.5°	1345.6	1119.9	919.2	741.4	664.5	591.7	475.2	387.9	332.8	290.1	262.0
50°	1093.9	903.6	733.1	581.3	515.8	457.5	368.1	308.8	268.3	237.1	214.2
52.5°	854.8	700.9	561.5	437.8	388.9	347.3	286.0	244.4	214.2	190.3	173.7
55°	641.6	519.9	410.7	318.2	289.1	263.1	222.5	189.3	168.5	149.7	137.3
57.5°	464.8	371.2	292.2	234.0	215.2	197.6	168.5	145.6	130.0	115.4	106.1
60°	326.5	257.9	206.9	171.6	157.0	146.6	123.7	109.2	96.7	86.3	76.9
62.5°	219.4	174.7	144.5	121.7	112.3	105.0	90.5	78.0	68.6	60.3	52.0
65°	140.4	117.5	97.7	82.1	75.9	70.7	61.4	51.0	44.7	38.5	32.2
67.5°	86.3	73.8	61.4	51.0	46.8	43.7	37.4	31.2	27.0	22.9	19.8
70°	49.9	42.6	35.4	30.2	28.1	26.0	21.8	18.7	16.6	13.5	11.4
72.5°	28.1	25.0	20.8	17.7	16.6	15.6	13.5	11.4	10.4	9.4	8.3
75°	16.6	14.6	12.5	11.4	10.4	10.4	9.4	8.3	7.3	7.3	6.2
77.5°	10.4	9.4	8.3	8.3	7.3	7.3	7.3	6.2	6.2	6.2	6.2
80°	7.3	7.3	6.2	6.2	6.2	6.2	5.2	5.2	5.2	5.2	5.2
82.5°	5.2	5.2	5.2	4.2	4.2	4.2	4.2	4.2	5.2	5.2	5.2
85°	3.1	3.1	4.2	4.2	4.2	4.2	4.2	4.2	5.2	5.2	5.2
87.5°	3.1	3.1	3.1	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
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°	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9
2.5°	1209.4	1196.9	1174.0	1153.2	1150.1	1121.0	1090.8	1084.6	1074.2	1057.5	1037.8
5°	1154.2	1121.0	1081.4	1052.3	1039.9	998.3	956.7	937.9	917.2	884.9	866.2
7.5°	1089.8	1040.9	985.8	952.5	934.8	882.8	835.0	808.0	779.9	745.6	722.7
10°	1019.1	957.7	893.2	855.8	835.0	778.9	727.9	696.7	666.5	632.2	608.3
12.5°	952.5	882.8	812.1	772.6	749.7	691.5	639.5	606.2	576.1	548.0	519.9
15°	893.2	815.2	741.4	701.9	678.0	618.7	568.8	535.5	506.4	479.4	454.4
17.5°	836.0	754.9	682.1	643.7	619.8	564.6	516.8	486.7	458.6	433.6	411.8
20°	796.5	719.6	650.9	614.6	593.8	544.9	504.3	480.4	460.7	438.8	420.1
22.5°	786.1	717.5	658.2	628.1	612.5	574.0	544.9	530.3	524.1	510.6	500.2
25°	786.1	725.8	675.9	650.9	638.5	609.4	586.5	581.3	577.1	568.8	563.6
27.5°	766.4	710.2	665.5	643.7	633.3	607.3	587.5	581.3	576.1	569.8	563.6
30°	714.4	662.4	620.8	601.0	590.6	565.7	544.9	537.6	532.4	523.0	517.8
32.5°	644.7	594.8	560.5	537.6	528.2	504.3	484.6	476.3	472.1	463.8	454.4
35°	566.7	523.0	489.8	471.1	461.7	440.9	423.2	414.9	410.7	401.4	389.9
37.5°	487.7	448.2	421.1	403.5	396.2	379.5	363.9	357.7	353.6	346.3	336.9
40°	409.7	381.6	357.7	344.2	338.0	324.4	310.9	304.7	301.6	295.3	288.0
42.5°	345.2	322.4	303.6	292.2	287.0	276.6	265.2	258.9	255.8	249.6	244.4
45°	289.1	271.4	256.8	246.4	242.3	232.9	223.6	218.4	215.2	210.1	204.9
47.5°	242.3	226.7	214.2	206.9	202.8	195.5	187.2	182.0	179.9	175.7	170.5
50°	198.6	187.2	176.8	170.5	167.4	160.1	152.9	148.7	146.6	142.5	137.3
52.5°	160.1	151.8	142.5	136.2	133.1	127.9	120.6	116.5	113.3	109.2	102.9
55°	125.8	118.5	111.3	105.0	102.9	96.7	90.5	84.2	81.1	76.9	71.7
57.5°	97.7	89.4	82.1	76.9	74.9	68.6	62.4	56.2	53.0	47.8	44.7
60°	69.7	62.4	55.1	52.0	49.9	43.7	38.5	33.3	31.2	28.1	26.0
62.5°	45.8	40.6	34.3	31.2	30.2	26.0	21.8	20.8	18.7	17.7	16.6
65°	28.1	25.0	20.8	18.7	17.7	16.6	14.6	13.5	12.5	11.4	11.4
67.5°	16.6	15.6	13.5	12.5	11.4	10.4	10.4	9.4	9.4	8.3	8.3
70°	11.4	10.4	9.4	8.3	8.3	8.3	8.3	8.3	8.3	7.3	7.3
72.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
75°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
77.5°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.2	5.2
80°	5.2	6.2	6.2	6.2	6.2	5.2	5.2	5.2	5.2	5.2	5.2
82.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
85°	5.2	5.2	5.2	5.2	5.2	4.2	4.2	4.2	4.2	4.2	3.1
87.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.1	3.1	3.1	2.1
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: P179631

CATALOG NUMBER: LDA6A45840D010TE LARH40FL 6LLWW1

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9	1274.9
2.5°	1035.7	1026.3	1017.0	1031.5	1030.5	1015.9	1026.3	1009.7
5°	855.8	842.3	831.9	841.2	836.0	821.5	827.7	813.2
7.5°	709.2	693.6	681.1	688.4	680.1	666.5	664.5	658.2
10°	592.7	576.1	564.6	569.8	561.5	549.0	545.9	541.8
12.5°	504.3	488.7	478.3	482.5	474.2	462.7	460.7	463.8
15°	435.7	424.3	415.9	419.1	407.6	401.4	399.3	401.4
17.5°	396.2	383.7	377.5	380.6	372.3	366.0	365.0	363.9
20°	412.8	403.5	401.4	406.6	400.3	395.1	398.3	394.1
22.5°	503.3	502.2	503.3	515.8	512.6	510.6	512.6	512.6
25°	566.7	570.9	571.9	585.4	586.5	584.4	589.6	589.6
27.5°	564.6	565.7	564.6	578.2	580.2	576.1	581.3	582.3
30°	514.7	514.7	511.6	523.0	523.0	521.0	523.0	524.1
32.5°	449.2	448.2	447.1	452.3	452.3	449.2	451.3	451.3
35°	387.9	383.7	383.7	386.8	385.8	382.7	383.7	382.7
37.5°	334.8	329.6	329.6	331.7	328.6	325.5	326.5	326.5
40°	286.0	281.8	281.8	284.9	282.8	279.7	281.8	281.8
42.5°	240.2	239.2	239.2	241.2	241.2	239.2	242.3	243.3
45°	202.8	199.7	199.7	201.7	201.7	199.7	200.7	199.7
47.5°	168.5	165.3	165.3	165.3	163.3	160.1	160.1	159.1
50°	134.1	128.9	127.9	127.9	125.8	122.7	122.7	121.7
52.5°	99.8	94.6	94.6	93.6	91.5	90.5	89.4	89.4
55°	68.6	64.5	65.5	63.4	63.4	61.4	62.4	61.4
57.5°	42.6	40.6	40.6	39.5	37.4	36.4	36.4	35.4
60°	25.0	22.9	22.9	22.9	21.8	20.8	20.8	20.8
62.5°	16.6	15.6	15.6	15.6	13.5	13.5	12.5	12.5
65°	10.4	9.4	9.4	9.4	8.3	8.3	8.3	8.3
67.5°	8.3	8.3	7.3	7.3	7.3	7.3	7.3	7.3
70°	7.3	7.3	7.3	7.3	7.3	6.2	6.2	6.2
72.5°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
75°	6.2	6.2	5.2	6.2	5.2	5.2	5.2	5.2
77.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
80°	5.2	5.2	5.2	5.2	5.2	4.2	4.2	4.2
82.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
87.5°	3.1	2.1	2.1	2.1	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)