

**Lens**

COLLABORATORS

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# Chapter 1

## Lens

### 1.1 Lens/Guide

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Lens, Version 1.2

Released Feb. 20, 1995

by John Cowgill

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- 1> What is Lens?
- 2> How the Lens Window works.
- 3> Lens ToolTypes.
- 4> Bugs in Lens. (!?)
- 5> About the Author.

### 1.2 Lens/AboutLens

-> About Lens

Lens is a magnifying program for the workbench (and other screens). To run Lens from the workbench just click on its icon. From a CLI, just type the name of the program (i.e. "Run Lens"). There is nothing to install.

What Lens does is read the display graphics in a rectangle centered about the mouse pointer and magnify it to the dimensions you specify. Lens will allow you to zoom in and out. Here is a list of the features Lens has:

- Displays the current magnification and mouse coordinates in the title bar.
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- Independent zooming in/out of X and Y dimensions.
- Adjustable sampling rate (number of times to update per minute).
- Displays axes (crosshairs) to indicate the mouse position (if desired).
- Allows you to freeze the lens view when the lens window is inactive.
- Has the ability to jump from one screen to another.
- Also allows you to specify just about any screen to open on initially.

These features can be controlled from the Lens Window or by setting ToolTypes.

#### -> Purpose

Lens is really just a toy, but it does have some practical purposes. I use it to check out the details in some of my graphics, just to get a pixel level view of things. It helps when trying to align icons or to look for flaws and such.

I live on a multiscan screen most of the time. So when I want to check out what something would look like on a non-interlaced style screen, I can set my lens to magnify 1x2, which merely doubles the Y dimension. This gives me a good idea of what graphics would look like on a non-interlaced screen without having to change my prefs.

Also, Lens is fun to play with. If you hold your mouse pointer over the lens window itself you can create some fun patterns. (Try it with the axes on.) When Lens is zoomed out as far as it can go, you get an effect much like two mirrors facing each other. Interesting...

#### -> System Requirements

Lens requires AmigaDOS Version 2.0 or higher and, of course, an Amiga.

Version 37 or better of the graphics.library, intuition.library and gadtools.library are necessary for successful execution.

Lens has been tested on an Amiga 500, 600, 1200, and 3000.

## 1.3 Lens/Bugs

#### -> Bugs

This is still a fairly new product, and I'm sure it has some bugs in it. I am aware of few flakey things Lens does, but I haven't taken the time to weed them out yet. (Version 1.3 perhaps?)

Of these, the one worth noting the most involves zooming out and sizing your Lens window too large. It is possible to view various areas of your chip memory when you do this. Nothing to get upset about, however. As far as I know, it's harmless. (=

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If you do find a bug, please contact the Author about it.

-> History

Version 1.0 - Initial release, Feb. 9, 1995.

Version 1.1 - Fixed a silly bug in my menu which made things go bonkers.  
Feb. 12, 1995.

Version 1.2 - Repaired a minor bug with the ToolTypes. Changed the  
PUBLICSCREEN ToolType to the SCREENNAME ToolType, thus  
allowing Lens to open on any screen initially.  
Optimized the code somewhat, reducing the size by about 2k.  
Feb. 20, 1995.

## 1.4 Lens/Author

-> Author

Lens was written by John Cowgill, a graduate student in mathematics  
and computer science at the University of Idaho, Moscow, Idaho, USA.

My Amiga collection includes an Amiga 500, 600, and 1200, the latter  
of which is decked out with a (GVP) 50 MHz 68030 (FPU/MMU) and 6 megs  
(chip + fast) of RAM. I also own a 1084S and a 1942 color monitor.

To reach me by email, write to: cow@laplace.mathstat.uidaho.edu

When "surfing the internet", hanging out on IRC, playing on MUDs, etc.  
I go by the name of "Jagged".

Lens is written in C and should be 100% operating system friendly.  
(No hitting the hardware involved.) It was compiled under SAS/C 6.5

Source code is available upon request. NOT! (But feel free to ask.)

Please send any bug reports, suggestions, flames, comments, insults,  
etc. to the address above. Thanks.

-> Credits

Credit should also be given to Travis Pascoe for some fine tuning,  
debugging, and generally nifty ideas that went into the production of  
Lens, and to Tammy Amos who corrected some of my spelling errors in  
this document.

-> Copyright

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This program is Copyright © 1995, John Cowgill, All Rights Reserved.

-> Distribution

Feel free to give this program away to anyone and everyone. All I ask is that you not charge anything beyond a reasonable distribution fee, if you charge for such a thing, and that this document accompany the executable.

If you feel compelled to compensate me in some way for this product, then send me some email and tell me something wonderful. I don't ask for any \$\$\$\$. This project was purely for fun.

Of course, if you want to send me a really nice modem for my birthday then I could hardly refuse.

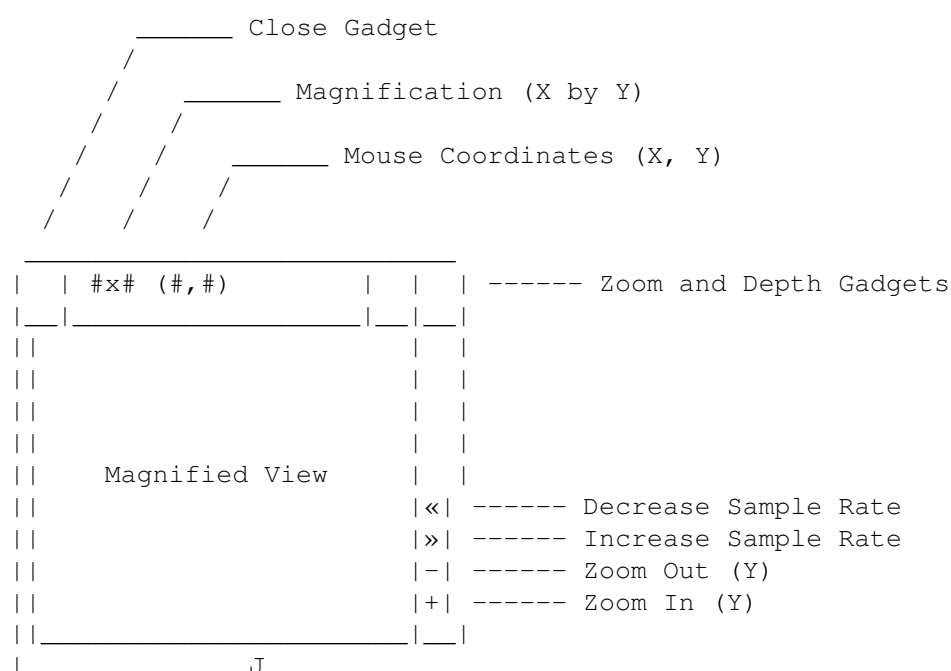
-> Disclaimer

I make no guarantees of any kind whatsoever about this program. I am not responsible for any damages (hard drive crash, loss of life, etc.) that may result from the use of this program. Use at your own risk.

=)

## 1.5 Lens/LensWindow

-> The Lens Window







-> Zooming In/Out

The "+" and "-" buttons along the horizontal and vertical sides of the Lens window are for Zooming the magnified view in and out. The horizontal buttons affect the X dimension, and the vertical buttons affect the Y dimension.

Each click on the "+" buttons will increase the magnification factor, thus Zooming in.

Each click on the "-" buttons will decrease the magnification factor, thus Zooming out.

To set initial zoom values, see ToolTypes.

## 1.9 Lens/Jumping

-> Jumping Screens

By hitting the Jump button, Lens will move itself to the next screen you have open. In this way you can use lens on just about any screen (even ones in HAM mode, although its behavior is a little flakey).

Use care when jumping to non-Public screens with this operation. If Lens is running on a non-Public screen and that screen decides to close, you will end up with a "dead" screen that won't close by normal means.

To have Lens open initially on a any screen, see ToolTypes.

## 1.10 Lens/FreezeView

-> Freezing the View

When the Freeze option is selected, the Lens window will hold its last active position when it becomes inactive. In other words, to keep the lens focused on a particular spot, turn the Freeze option on and go click on the spot you wish to focus on, thus causing the Lens window to become inactive in the process. When this option is turned on, Lens will only follow the mouse pointer when its window is active.

To set the freeze option on initially, see ToolTypes.

## 1.11 Lens/Axes

-> Axes

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Lens will draw axes, or crosshairs, in its window to represent the mouse pointer's location within the magnified view when this option is active. The axes will not appear in zoomed out or frozen views, however.

To have the axes on initially, see ToolTypes.

## 1.12 Lens/Sampling

-> Sampling

Lens will read graphics data from its host screen at a specified sampling rate. The default is 500 times per minute. If you should find this value to be too fast (eating up too much CPU time) or too slow (not following the mouse fast enough) you may adjust the speed in increments by using the SpeedUp and SlowDown buttons:

Clicking the SpeedUp, ">", button will gradually increase the sampling rate (default increment is 10 times per minute per click).

Clicking the SlowDown, "<", button will gradually decrease the sampling rate in a similar manner.

To set the initial sampling rate, see ToolTypes.

## 1.13 Lens/ToolTypes

-> ToolTypes

Lens has the following ToolTypes, which may either be set in the program's .info file or used as command line arguments from a CLI:

WINDOWLEFT=<X coordinate of the Lens window's upper left corner.>

The default value is 0.

WINDOWTOP=<Y coordinate of the Lens window's upper left corner.>

The default value is 0.

WINDOWWIDTH=<The absolute width of the Lens window.>

The default value is 200.  
The minimum value is 135.

WINDOWHEIGHT=<The absolute height of the Lens window.>

The default value is 150.  
The minimum value is 100.

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SCREENNAME=<The name of the screen to open on.>

Lens will first attempt to find a Public screen with the given screen name. If unsuccessful, Lens will search through the list of all open screens looking for any screen with a title that matches the one you specified. If all else fails, the Workbench Screen will be used as a fallback, or whatever you have specified as your default Public screen.

NOTE: Be sure to check for leading or trailing spaces in the titles of your screens. You may have to play around with the names to get an exact match. I have seen at least one program that had a space at the beginning and at the end of its title, which took me a while to figure out. Lens does not check for upper or lower case, however, so you need not type the screen's title in exact case to get a match.

SAMPLESPERMINUTE=<Number of times to refresh the Lens window per minute.>

The default value is 500, which is fairly fast. Values above 2000 are allowed, but you won't get much of a performance boost beyond this value. Negative values will be ignored.

SAMPLEINCREMENT=<Increment value for the SpeedUp/SlowDown buttons.>

The default value is 10 (samples per minute). Negative values will be ignored.

AXESON=<Yes/No>

Set this to Yes to have the Axes option enabled initially. The default value is No.

FREEZEON=<Yes/No>

Set this to Yes to have the Freeze View option enabled initially. The default value is No.

XMAGNIFICATION=<Magnification factor for the X dimension.>

The default value is 1. Values from -2 on up are acceptable. See the Magnification Table for more information.

YMAGNIFICATION=<Magnification factor for the Y dimension.>

The default value is 1. Values from -2 on up are acceptable. See the Magnification Table for more information.

## 1.14 Lens/Table

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The table below shows the meaning of XMAGNIFICATION and YMAGNIFICATION values which may be used as ToolTypes.

-> Magnification Table

Value	Magnification
-2	$\frac{1}{4}$ times normal
-1	$\frac{1}{2}$ times normal
0	normal magnification
1	2 times normal
2	3 times normal
3	4 times normal
.	.
.	.
.	.
N	(N + 1) times normal