for images made with floating-point data; it is intended for integer data. It is almost impossible to enter exact matches for floating-point data.

When you select Explicit Mode for the first time, two entries are made for you assigning white to 0 and black to 255. A third blank line is added for you to enter a new value. If you put something into the blank line, another blank line is added.

To remove an entry, click in the blank areas of a line in the list to select it and press Delete (*Macintosh*) or Backspace (*Windows*).

Image X and Y Coordinates

Images display wave data elements as rectangles. They are displayed versus axes just like XY plots.

The intensity or color of each image rectangle is controlled by the corresponding data element of a matrix (2D) wave, or by a layer of a 3D or 4D wave, or by a set of layers of a 3D RGB or RGBA wave.

When discussing image plots, we use the term *pixel* to refer to an element of the underlying image data and *rectangle* to refer to the representation of a data element in the image plot.

For each of the spatial dimensions, X and Y, the edges of each image rectangle are defined by one of the following:

- The dimension scaling of the wave containing the image data or
- A 1D auxiliary X or Y wave

In the simplest case, all pixels have the same width and height so the pixels are squares of the same size. Another common case consists of rectangular but not square pixels all having the same width and the same height. Both of these are instances of evenly-spaced data. In these cases, you specify the rectangle centers using dimension (X and Y) scaling. This is discussed further under **Image X and Y Coordinates - Evenly Spaced** on page II-389.

Less commonly, you may have pixels of unequal widths and/or unequal heights. In this case you must supply auxiliary X and/or Y waves that specify the edges of the image rectangles. This is discussed further under **Image X and Y Coordinates - Unevenly Spaced** on page II-389.

It is possible to combine these cases. For example, your pixels may have uniform widths and non-uniform heights. In this case you use one technique for one dimension and the other technique for the other dimension.

Sometimes you may have data that is not really image data, because there is no well-defined pixel width and/or height, but is stored in a matrix (2D) wave. Such data may be more suitable for a scatter plot but can be plotted as an image. This is discussed further under **Plotting a 2D Z Wave With 1D X and Y Center Data** on page II-389.

In other cases you may have 1D X, Y and Z waves. These cases are discussed under **Plotting 1D X, Y and Z Waves With Gridded XY Data** on page II-390 and **Plotting 1D X, Y and Z Waves With Non-Gridded XY Data** on page II-391.

The following sections include example commands. If you want to execute the commands, find the corresponding section in the Igor help files by executing:

```
DisplayHelpTopic "Image X and Y Coordinates"
```