

Sightech Vision Systems, Inc.

# PC-Eyebot

## Learning Modes Explained – Feature Fixtured Options

By controlling the way our self-learning vision actually “sees”, we can specialize the inspection process. Given the needs of an application, we will discuss how to choose the best Fixtured Modes.

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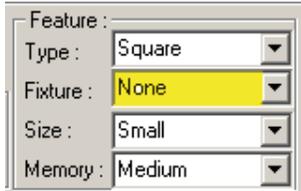
Sightech Vision Systems, Inc.  
6580 Via del Oro  
San Jose, CA 95126  
Tel: 408.282.3770 Fax: 408.413-2600  
Email: [sales@Sightech.com](mailto:sales@Sightech.com)  
Web: [www.Sightech.com](http://www.Sightech.com)

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## Selecting the Fixture Mode.

### Selecting the Fixture Mode:



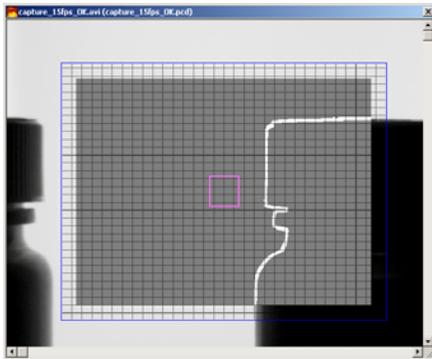
Select one of several fixture modes: Feature→Fixture→<fixture mode>, where <fixture mode> can be: None, Horiz\_Coarse, Horiz\_Medium, Horiz\_Fine, Vert\_Coarse, Vert\_Medium, Vert\_Fine, Full\_Coarse, Full\_Medium, Full\_Fine, and Radial.

### Non-Fixtured Mode (Feature→Fixture→None):

So far, when we have discussed creating views from image data components such as color, shape, etc. This mode of operation is what we call Non-Fixtured mode. This is specified in the diagram above by selecting Feature→Fixture→None. When a Non-Fixtured feature is learned in one part of the image, it applies to anywhere else in the image. If a certain curvature is learned in the upper right part of the image, then that exact curvature is deemed “known” by the vision system anywhere in the image.

This is the default mode and is used often. It is not very XY movement sensitive, but it still inspects very effectively.

### Full-Fixtured Modes (Feature→Fixture→Full\_Coarse/Medium/Fine):

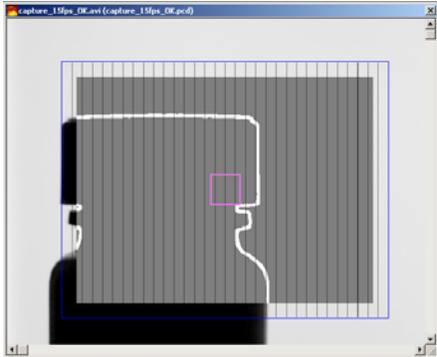


A non-fixtured View acquires information such as color, shape, graylevel, etc. and learns this information regardless of the XY location of the particular feature being acquired. Full-Fixtured mode adds to this information the XY location data. A feature learned in one place in the image is only familiar to the vision system if it is encountered in that location. This feature in other locations would represent defects.

Three feature location strictness levels are available: Coarse, Medium, and Fine. This gives the user the freedom of how much movement freedom should be allowed.

Important: Note that, even in fixtured modes, positional freedom can be easily trained in by moving the target while training.

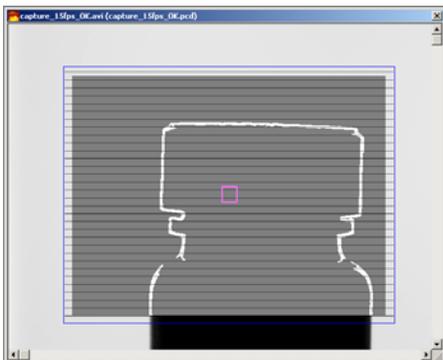
### ***Horizontal-Fixtured Modes (Feature→Fixture→Horiz\_ Coarse/Medium/Fine):***



These modes operate the same way as Full-Fixtured, above, except that only X location data is acquired along with the other feature data. This has the effect of restricting the X position of a target while allowing vertical movement.

Important: Note that, even in horizontal fixture modes, horizontal positional freedom can be easily trained in by moving the target in the horizontal direction while training.

### ***Vertical-Fixtured Modes (Feature→Fixture→Vert\_ Coarse/Medium/Fine):***

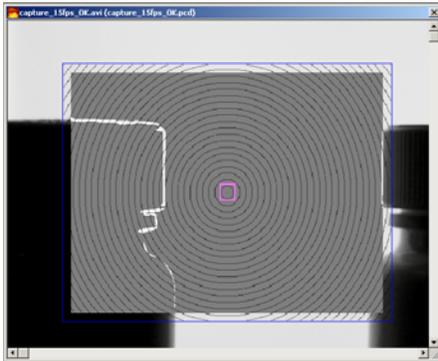


In this mode, only Y location data is acquired along with the other feature data. This has the effect of restricting the Y position of a target while allowing horizontal movement. This mode is

often used on conveyor lines where the product moves only in the horizontal direction. This mode allows easy enforcement of vertical position of label placement, etc.

Important: Note that, even in vertical fixture modes, vertical positional freedom can be easily trained in by moving the target in the vertical direction while training.

### ***Radial-Fixtured Mode (Feature → Fixture → Radial):***



In this mode, only R (radius) location data is acquired along with the other feature data. This has the effect of restricting the distance from the center of the Area while allowing angular movement. This mode is often used for inspection of circular targets that have angular freedom of placement. Important: Note that, even in radial fixture modes, radial positional freedom can be easily trained in by moving the target in the radial direction while training.