

**MBE OPERATIONS**  
4900 Constellation Drive  
St. Paul, Minnesota 55127 USA  
Tel (651) 482-0800  
Fax (651) 482-0600  
Web [www.veeco.com/mbe](http://www.veeco.com/mbe)  
Email [mbeinfo@veeco.com](mailto:mbeinfo@veeco.com)

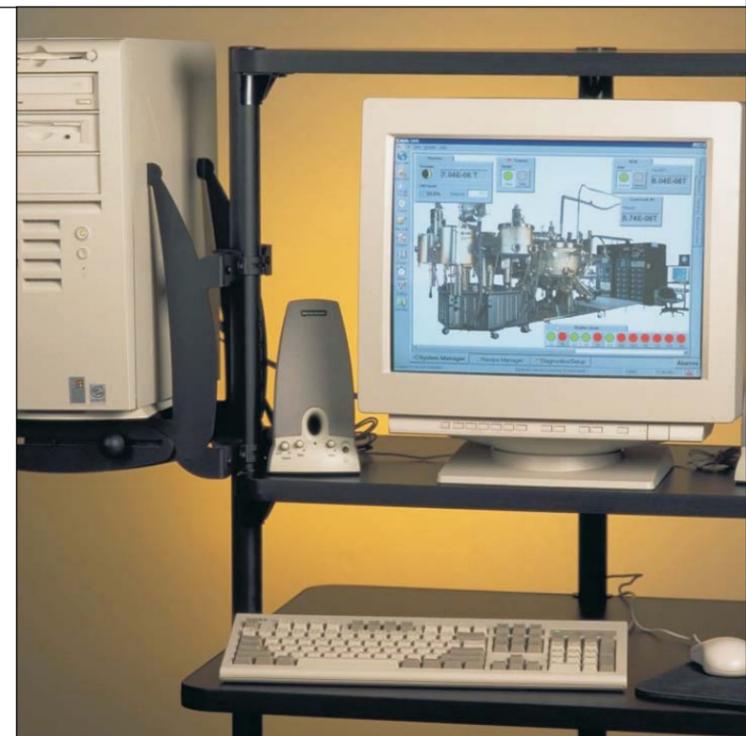
# Molly Growth Control Software



## Getting Started



Solutions for a nanoscale world.



## Welcome

Welcome, and thank you for purchasing Veeco's Molly® 2000 MBE Process Control System. This document outlines the basics to understanding and getting started with Molly. You will find the following topics described here (along with pointers to topics you can find in the full set of online documentation):

- What is Molly?
- Logging into Your Windows XP PC
- Starting and Logging into Molly
- Molly Security
- Molly Online Documentation
- Other Molly User Materials
- Contacting Veeco Software Support

## What is Molly?

Molly is a software and hardware system for automated control of Molecular Beam Epitaxy (MBE) systems. Unique among MBE software-control packages, Molly is entirely system independent; your Molly system can be configured to send and receive signals or record sensor data for most hardware used in the MBE industry.

### What Can I Do Using Molly?

- Automate temperature setpoint control.
- Automate shutter opening/closing for each of your effusion cells.
- Monitor sensors on your system, acquire data, and record data.
- Graphically display acquired data on-screen and save it for future recall.
- Write script files to fully automate entire growth sequences, multiple growth sequences, and system maintenance (such as outgassing).
- Customize the process control system and its user interface to suit your own requirements (or store different configurations for each user).
- Customize the system to incorporate sensor input data as feedback for real-time process control.

### What Software is Included in the Molly System?

- The Molly process-control "kernel" program, which communicates with your MBE hardware and executes "recipes" to perform epitaxial growth and other functions.
- The Molly Simulator, which enables "dry-run" testing of process recipes.
- The Molly user interface to the process-control kernel, which allows you to configure the Molly system, edit and execute epitaxial recipes, and gather and display data in real time.
- Several standalone programs, including an "offline" version of the EpiCAD epitaxial recipe editor and diagnostic programs for use in debugging problems with the Molly hardware and software system.
- Online help files describing the Molly system and how to use it.

## Logging into Your Windows XP PC

Each time you turn on your Molly computer, it will prompt you to log into Windows XP.

### To log into Windows XP:

1. Turn on your PC and wait while the normal boot up process takes place.
2. When you are prompted, use the following login names and passwords:  
Login: **mbe**  
Password: **epimbe1**

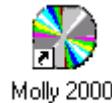
### To log in as administrator (superuser), use:

Login: **administrator**  
Password: **epimbe1**

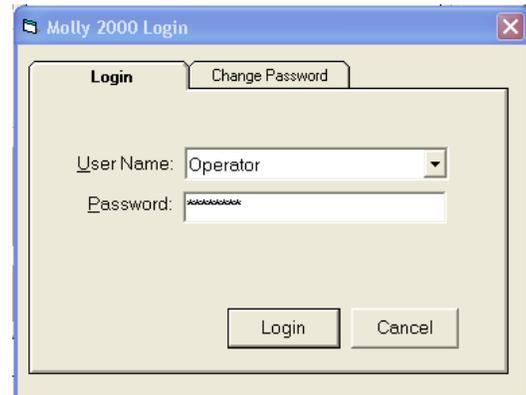
## Starting and Logging into Molly

Starting Molly 2000 is easy: Just double-click on the Molly 2000 icon and log in.

1. **To start Molly 2000:**  
Double-click the **Molly 2000** icon on the Windows desktop.



2. In the Molly 2000 Login dialog, select your user login type for **User Name**. For a description of the default user logins, see *Molly Security* later in this document.



3. Type in your password.

The default password for each user name is the same as user name, except in all lowercase letters.

For Guest, enter **guest**  
For Operator, enter **operator**  
For Supervisor, enter **supervisor**  
For Administrator, enter **administrator**  
For System, enter **system**

*NOTE: To find out how to reset your password, see "Changing your Molly password" in the online User's Guide.*

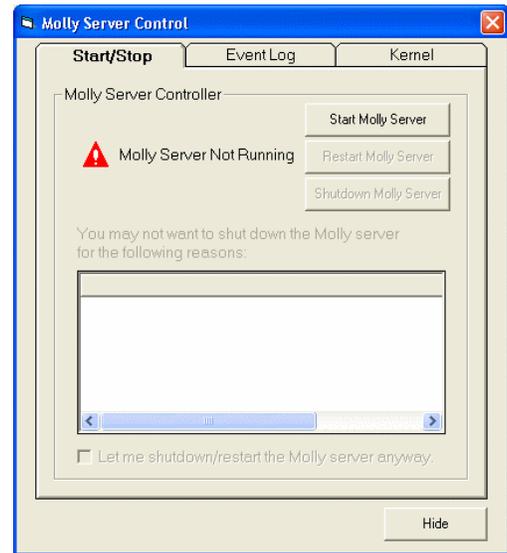
4. Click on the **OK** button.

As the Molly 2000 software loads and initializes, the splash screen displays status messages about the process.



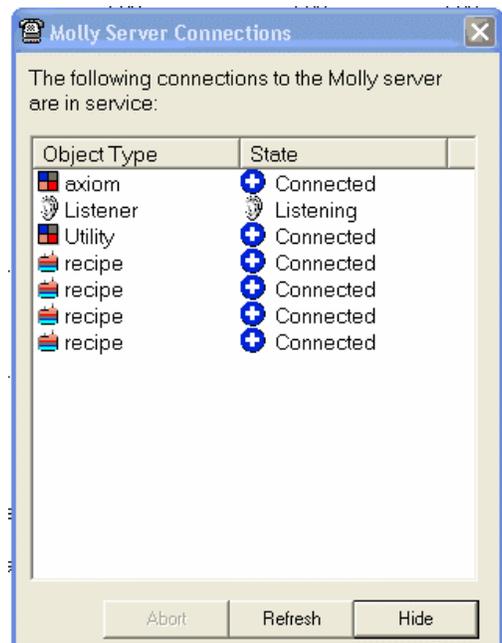
5. If the Molly Server is not running, the Molly Server Control dialog appears. You should:
  - Click on the **Start Molly Server** button.
  - Click on the **Hide** button.

*NOTE: You can start the Molly server automatically with every startup by setting the Molly Start/Stop options—see Setting Up Molly Start/Stop Options in the online User's Manual.*



The **Molly Server Connections** dialog appears and lists all of the connections taking place.

6. On the **Molly Server Connections** dialog, click on the **Hide** button.



## Molly Security

Security on your MBE system through Molly is controlled by a set of predefined user logins. Each time you start Molly 2000, you are prompted to login using one of the available user logins.

### User Logins and Corresponding Privileges

Guest	View data			
Operator		Make some manual changes		
Supervisor			Change the Molly kernel	
Administrator				Change program settings & access restrictions
System				No restrictions

## Molly Online Help

The current online help files include the Molly User's Guide, Hardware Handbook, and Language Reference.

### How Do I Access the Online Help?

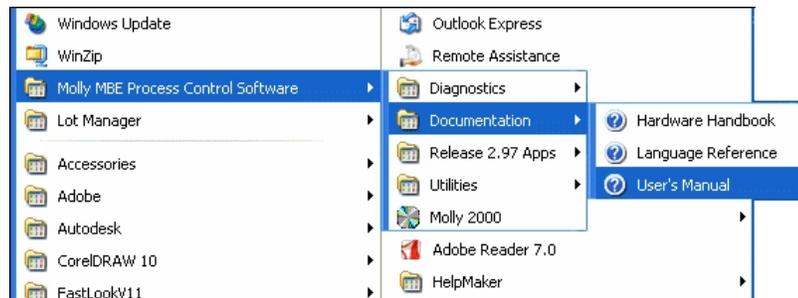
The Molly online help is available from the **Molly Main Menu** and from the **Windows Start menu**.

#### To access Molly 2000 Online Help from the Molly Main Menu:

1. Select **Help** from the main menu.
2. Select the online help that you want to view:
  - Hardware Handbook
  - Language Reference
  - User's Guide

**To access Molly 2000 Online Help from the Windows Desktop:**

1. Select **Start > All Programs**.
2. From your list of programs, choose **Molly MBE Process Control Software > Documentation** plus one of the following options:
  - Hardware Handbook
  - Language Reference
  - User's Manual



## Molly User's Guide

This is the main online help file. It contains both how-to steps for the most common procedures performed in Molly and information about how Molly works.

In the *Molly User Guide* you will find instructions for how to use Molly in the daily operation of your MBE process control system, including:

- Starting and using the Molly real-time process control program
- Using the recipe editor to generate Molly recipe command files for the control of epitaxial growths
- Running recipes generated by the recipe editor
- Recording data
- Manually inspecting and controlling the system

## Hardware Handbook

The *Hardware Handbook* is useful for those who are adding or reconfiguring hardware on their MBE system. It contains the information you need to install Molly-supported MBE process control hardware, and supplies the parameter values needed by the Molly configuration process. The *Hardware Handbook* also provides a thorough reference for cable and connector pinings and a comprehensive hardware glossary.

Specifically, you will find information about using Molly to interface with:

- Serial communications ports
- Data acquisition hardware
- IEEE 488 (GPIB) parallel instrument interfaces
- Effusion cell controllers
- Vacuum gauge controllers
- Miscellaneous process control equipment

## Molly Language Reference Manual

The *Molly Language Reference* manual is designed for advanced Molly users who are creating and editing command files manually. Look here for information on Molly functions and language structures, as well as detailed descriptions of the syntax and library functions of the Molly control language.

## Other Molly User Materials

Along with this *Getting Started with Molly* document, you should have received system connection diagram documentation.

## System Connection Diagram

The *System Connection Diagram* outlines the connection of the process control computer to the electronic equipment connected to your system. It specifies the exact the cables and connectors used to connect the hardware components of the Molly system.

## Contacting Veeco Software Support

When you contact Veeco with questions about Molly 2000, please make sure to have:

- Your customer sitename. To view this, select **Window > Configure** from the main menu and look at the folder name in the top level of the tree view (the window at the left). Your sitename is included in the folder name.

To contact Veeco Software Support, you can:

- Call **(651) 482-0800** and ask for technical support.