

Chapter 2 – System Operation Guidelines

What Every Operator Should Know Before Operating the System

This section is designed to alert the operator of any details about the operation of the system that they should be well aware of when they operate it. If the operator has any questions or concerns they are encouraged to contact customer service at Angstrom Engineering via email or telephone for assistance and clarification.

1. Users should be aware of the safety practices outlined in Chapter 1 of this manual with regards to interlocking and use of the electron beam source.
2. This system is equipped with substrate heating. The temperature of the substrate is read using a thermocouple that touches the back side of the substrate holder. This temperature is displayed on the stand alone Watlow temperature controller on the front panel of the system. Users are encouraged to allow the substrate to cool to below 200° Celsius before venting the chamber. Caution – the actual temperature of the substrate holder may be hotter than the temperature indicated on the Watlow temperature controller.
3. Follow proper vacuum practices while working within the system. Wear clean Nitrile, latex or cotton gloves and a lab coat to minimize oil, dirt and particulate transfer to the interior of the chamber. Inspect o-rings and seal faces on doors and take care when working around them. Clean door o-rings occasionally with IPA and a lint free clean room wipe.
4. Operators are encouraged to operate the system using the automated sequences for pumping and venting.
5. If the chamber door is open all pneumatic pressure is removed from components inside the chamber. All shutter positions can be manipulated by hand when a door is open. The shutters will re-close if they were moved open by hand when the door is closed.
6. Users should understand the function of the Indexers found on the layer tab of the process edit page in the Inficon Software. See the details in Chapter 4 – Depositing Materials.
7. If the turbo pump has been off for over 45 days the pump should be started using the soft start mode. Soft start mode can be enabled from the manual turbo control page in the software. Further details are provided in Chapter 8 - Main Page Items.
8. Users should be aware of the pressure set points when operating the Electron Beam source. This pressure is hard coded in the software at 9.0×10^{-5} Torr. If this pressure is exceeded the deposition process will be aborted. Exceeding this pressure while the source is running can damage the source.