

Ultech Furnaces

There are three stacks of furnaces with each having 3 tubes. There are 4 LPCVD tubes and 5 atmospheric tubes for performing the oxidation, deposition of the various films and to perform Drive-in and annealing. These are three zone temperature controls in the furnaces, to maintain constant temperature along the tube. The load station permits to perform automatic loading and unloading of wafer boats.

Specifications:

- **LPCVD Tubes** [Low Temperature Oxide (SiO_2), Silicon Nitride (SiN), intrinsic polysilicon, N- type Doped polysilicon].
- **Atmospheric Tubes** [Silicon Dioxide, Silicon Oxynitride, Annealing, Wet Oxide and Drive-in]

Process Capabilities:

- **Type of substrate:** 4" silicon wafers **ONLY**.
- **Temperature:** up to 1200°C for growth processes and up to 800°C for LPCVD processes.
- **Process Gases used:** SiH_4 , NH_3 , H_2 , PH_3 , N_2 , O_2 , Ar, N_2 .
- **Loading Capacity:** maximum 50 wafers at a time.
- **Type of Depositions:** Dry and pyrogenic oxidation, Silicon-oxynitride, Low temperature oxide, Silicon nitride, undoped poly-Si, Phosphorous doped poly-Si

Process capabilities for LPCVD

- **Substrate history:** For n-doped polysilicon and intrinsic polysilicon, Si wafers with SiO_2 or Si_3N_4 films are used.
- **Substrate size:** Only 4"
- **Gasses used:** SiH_4 , PH_3 , NH_3 , H_2 , O_2 , N_2O , N_2 , Ar.
- **Chamber base vacuum:** 1 mTorr
- **Substrate Temperature:** max. 800°C

Process capabilities for Atmospheric tubes

- **Substrate history:** Silicon wafers.
- **Substrate size:** Only 4"
- **Gasses used:** H_2 , O_2 , N_2O , N_2 , Ar.
- **Substrate Temperature:** max. 1200°C

