

IE3C (Irradiation and Evaporation in Extreme Environments Chamber)

Objectives

Testing instruments and devices in vacuum. Space qualification of instrumentation. DHMR, and outgassing control in planetary protection procedures. Molecular deposition in surfaces. Liquid deposition in vacuum.

Environmental conditions

- Temperature range: From 300K to 1100K in sample holder computer controlled (different samplers holders).
- Atmosphere: vacuum base pressure 10^{-9} mbar by Turbo pump.
- Irradiation: Deuterium lamp, He I-II discharge lamp, electrons (5KV) and ions (5 KV)

Technical parameters

- **TPD** (Thermal Programmed Desorption), in real time with QMS 200 uma.
- **ALI** (Atomic Layer Injection), liquid organic samples injection in UHV.
- Membrane pump and two serial TMP (Turbo Molecular pump)
- Sample size: should fit on a 10x10mm, and 50x50mm with ceramic oven. Possibility of ad-hoc sample holders
- Molecular evaporators in 25°
- QMB (Quartz Micro Balance), for testing outgassing and coating

