



# MISTRAL PLATFORM

# DIESE FACILITY

## DIESE : DEPOSITION OF AEROSOLS IN INSTALLATIONS AND EQUIPMENT FOR VENTILATION AND FOR AEROSOL SAMPLING EFFICIENCY

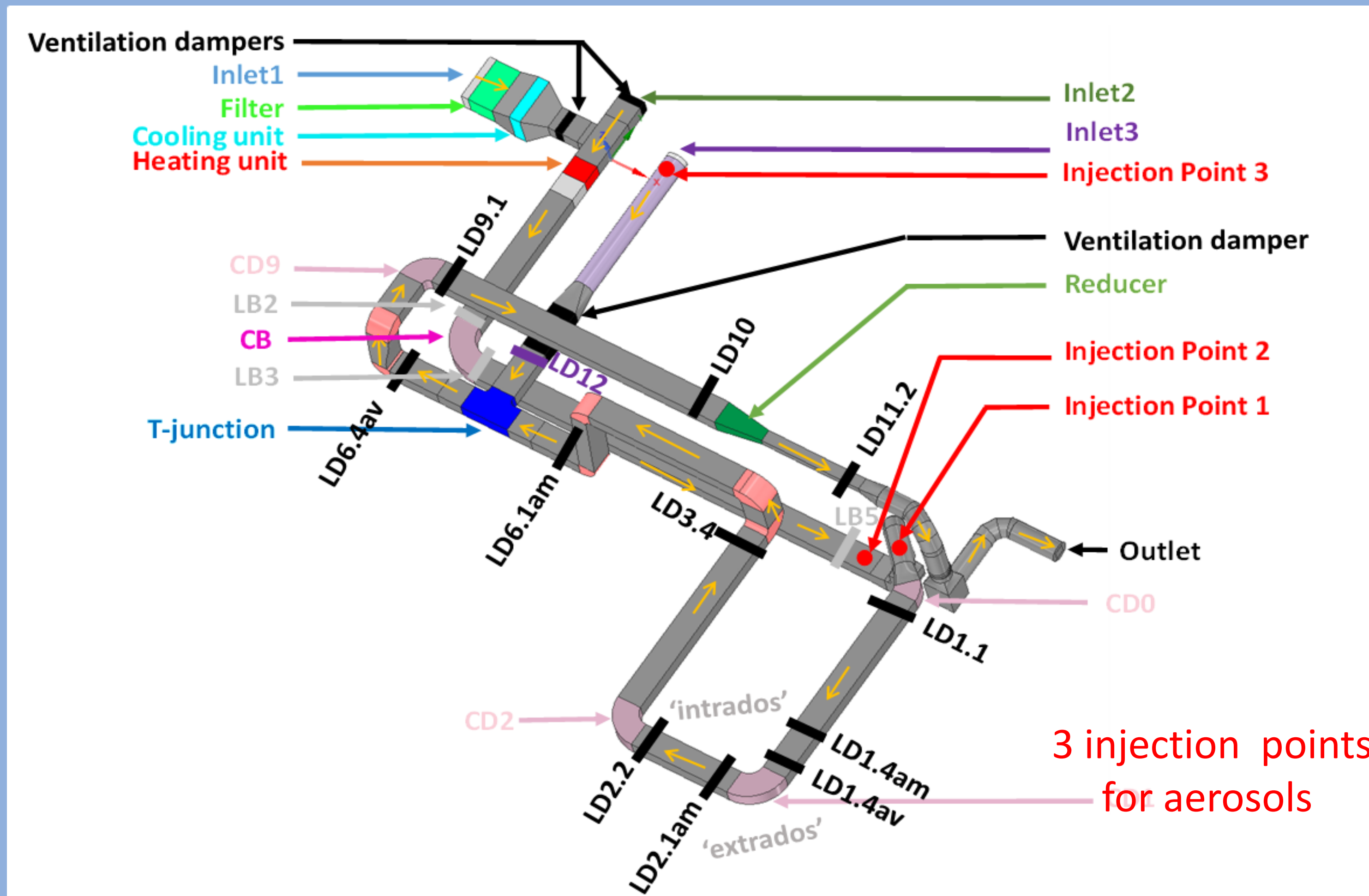
### Objective

An industrial facility for aerosol studies with laboratory-based instrumentation:

- Controlled temperature and humidity
- High level of measurement zones
- In-house developed measurement methods
- Laser diagnostics for flow measurements

DIESE is also a large-scale modular facility that can be used to study:

- Global deposition over all the ducts network
- Transmission efficiency of aerosol samplers
- The response of aerosol small-scale devices under various thermodynamical conditions



### Global measurements

- 5 duct flow-meters
- 10 temperature sensors
- 4 Relative Humidity sensors
- 10 pressure sensors

### Aerosols

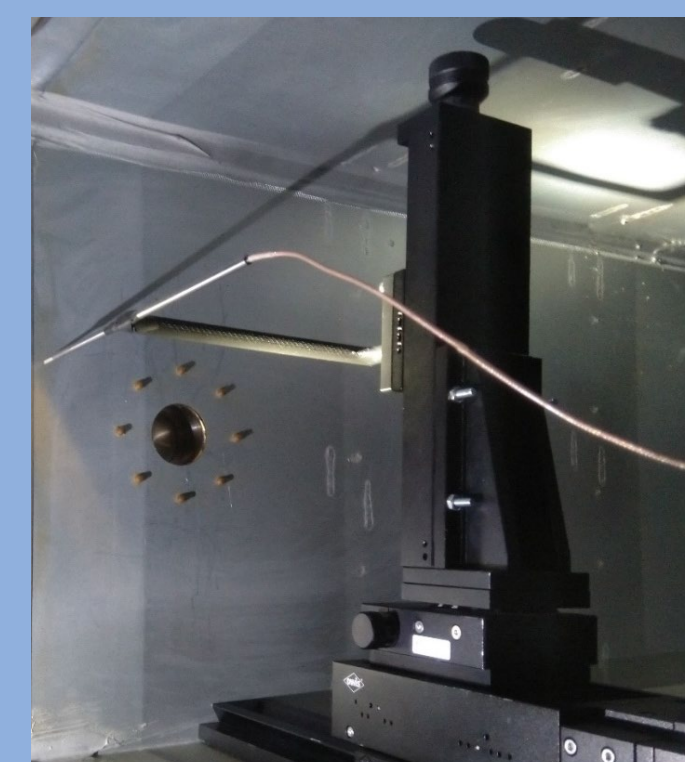
- Vibrating orifice generator
- CMAG droplet generator
- RBG powder generator
- APS for size distribution
- Standard 47mm filter sampling

### Many locations LD over a duct section to measure detailed profiles of mean variables :

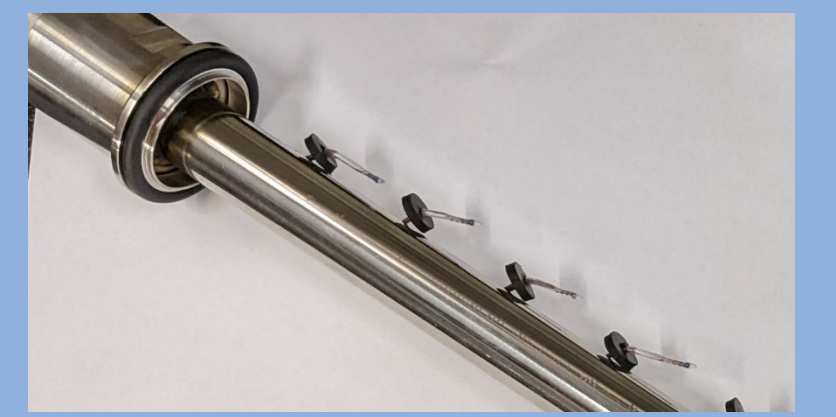
- Mean velocity
- Humidity
- Helium concentration



- Velocity boundary layer



- Temperature
- Aerosol concentration

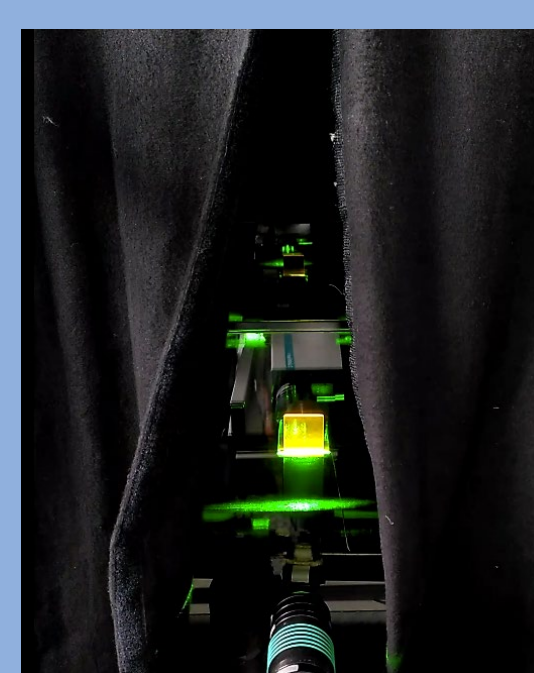


- In-house built motorized displacement systems



- High frequency hot-wires on micrometric displacement

- Specifically designed fixed sensors lines



### Local non intrusive measurements

- PIV for 2-D velocity fields on plexiglass ducts
- BOS for local gas mixing of different densities



### Aerosol deposition in-house developments

- Mass measurement by fluoresceine tracing
- Microscopic counting by surface scanning

