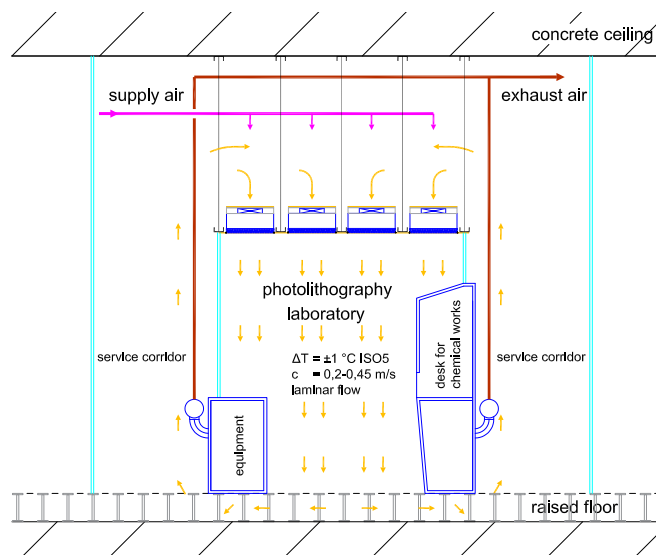


# Temperature stability of $< \pm 0,1 \text{ K}$

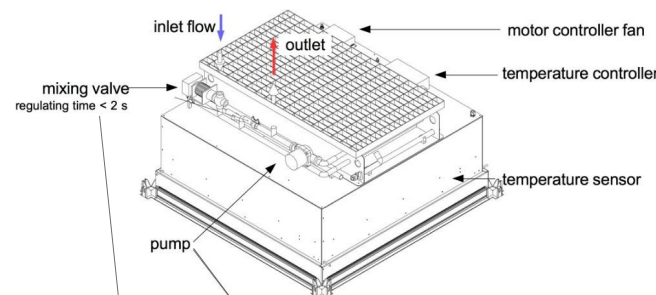
It is often necessary to have high degree of air purity for the use of research equipment. This is achieved by supplying air via filter to these areas under a corresponding air exchange rate. To avoid turbulent flow from contaminating samples with particles (e.g. caused by human activity), air flow is laminar. Particles are transported directly out of the clean room area.



## Requirements of temperature stability

At the same time, the main requirements of temperature stability ( $< \pm 0,1 \text{ K}$ ) are related to a low air speed ( $< 0,1 \text{ m/s}$  laminar). In order to ensure conformity of temperature stability with the essential requirements, filter fan units (FFU) are equipped with own control loops to enable immediate reactions to heat which is produced for example

by measuring instruments of research equipment, lighting or employees.



## Structure of the FFU system

The modular structure of the FFU system guarantees variable adaptation to changing requirements of research laboratory at any time (purity, temperature specification, air speed). Standard modules available on the free market are used exclusively. The modular structure of the grid and the ability of these grid elements to be equipped with FFU allow reacting flexibly to requirements on the one hand, and on the other, to provide appropriate and sustainable opportunities for use in research areas. These claims are derived from the requirements in accordance with HIS (QBAs) (see HIS 3.4 "[...]so that scientific building is sustainable and able to react flexibly to new and changing requirements. ...]").



Measurement recorded of the temperature stability: room temperature with filter fan units

## Features of the FFU system

- modular structure on a 1,2 m x 1,2 m grid
- load-bearing grid made of aluminium profiles, connected by linking pieces at the crossing and nodal points
- nodal points with the possibility to install sprinklers
- height adjustable suspensions on concrete ceiling provided by the customer
- flush ceiling installation of all components as panels and filter fan units
- filter change from the inside
- lighting strings
- accessibility of entire grid system for maintenance of components
- efficiency (investment costs, operating costs)