

Choice of the cleanroom

Laser specifications → class 10,000

a) Hard wall cleanroom



Entire room = cleanroom



- Special hard wall,
- Powerfull filter,
- Special clothing

b) Softwall cleanroom

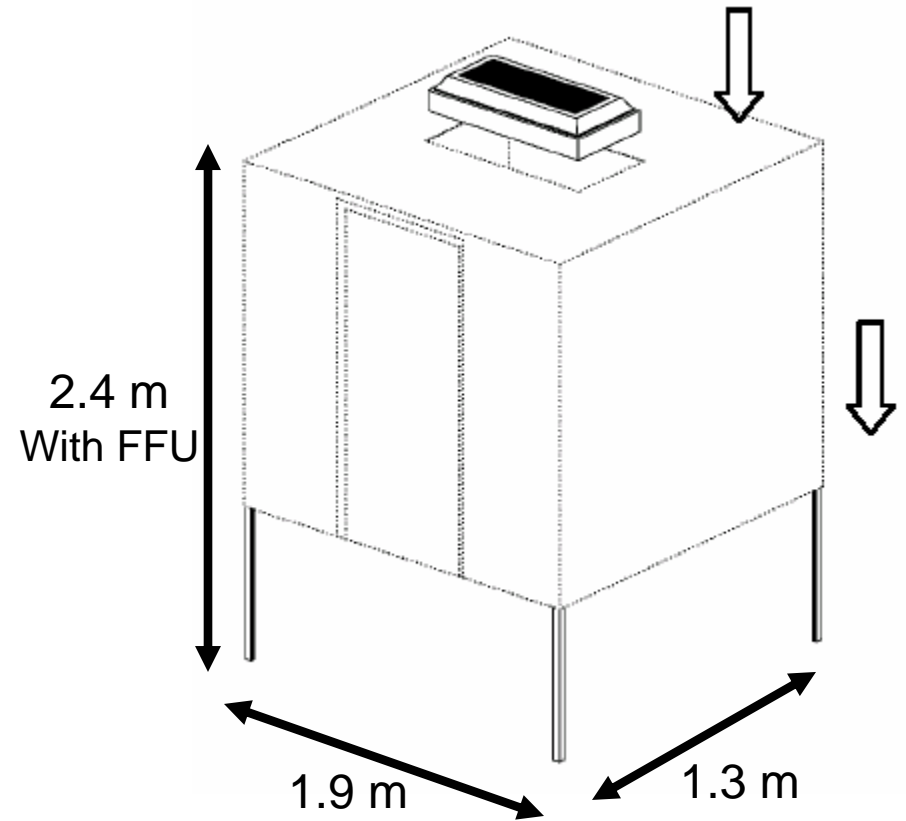


Laser size = cleanroom



- Movable: used in H4/USC55
- best control

Softwall cleanroom → customer design



Main problem:

safety agreement for curtain

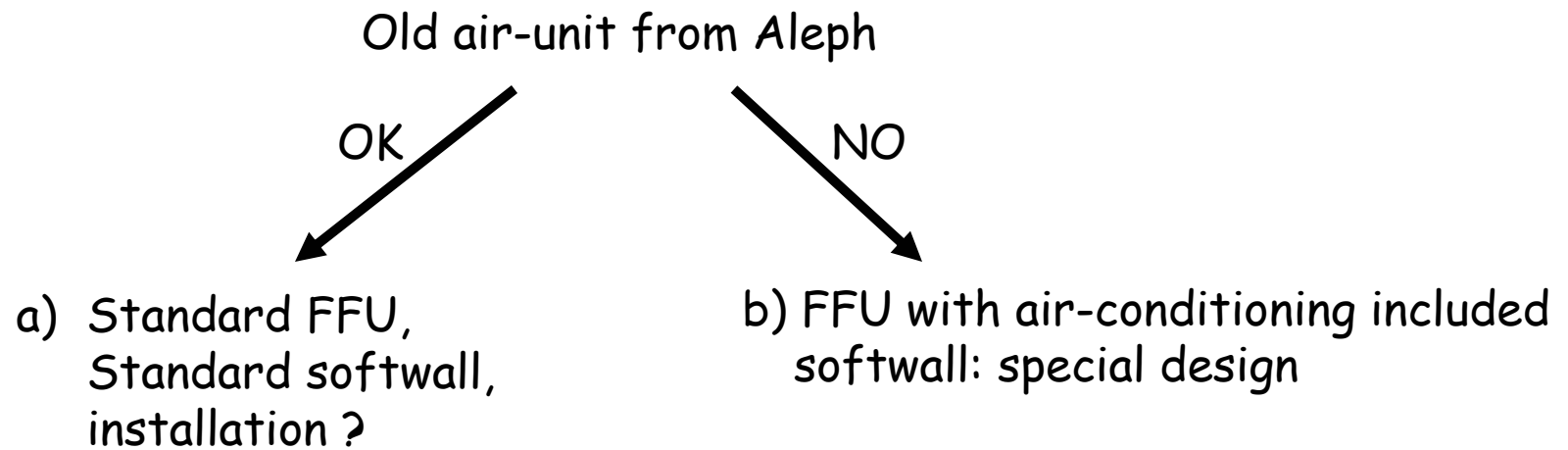


TIS approval for one industrial product (*non-transparency*)



One company agree to apply it.

Fan filter unit (FFU): 2 choices, dependent on air-conditioning



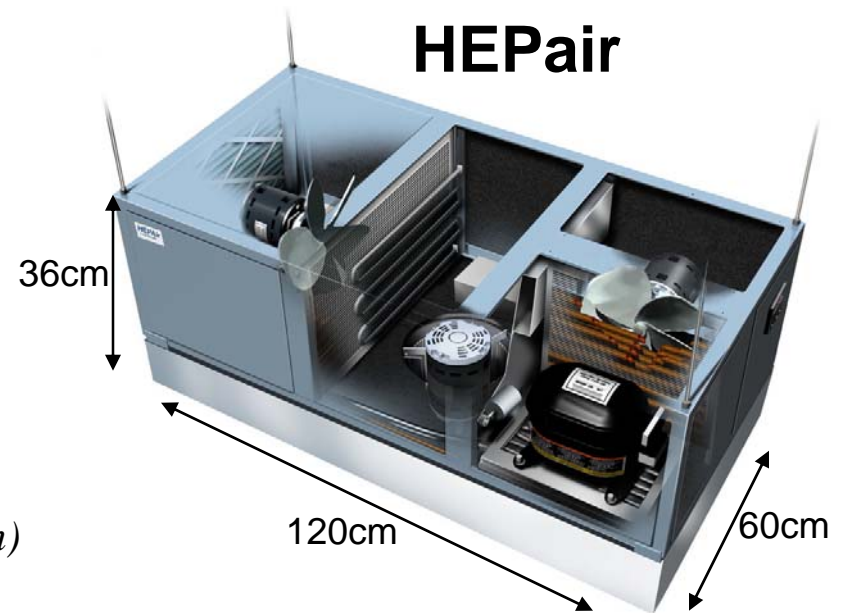
Question: air renewal inside each room ?

Air-conditioning

Laser specifications \rightarrow ± 1 °C

HEPair \longrightarrow Class 10,000 & ± 0.5 °F (± 0.28 °C)

- 208vac, 50Hz
- Cooling capacity: 9050 BTU/H
- Temperature: 0.6/2.0 kW
 - type: PID
 - Accuracy: ± 0.5 °F
- Condenser:
 - Flow rate: 1-2.5 GPM ($0.3 - 0.68$ m³/h)
 - water temperature maxi: 85 °F (29 °C)
 - water side pressure drop: 0.8-3.4 psi (55-234 mbar)



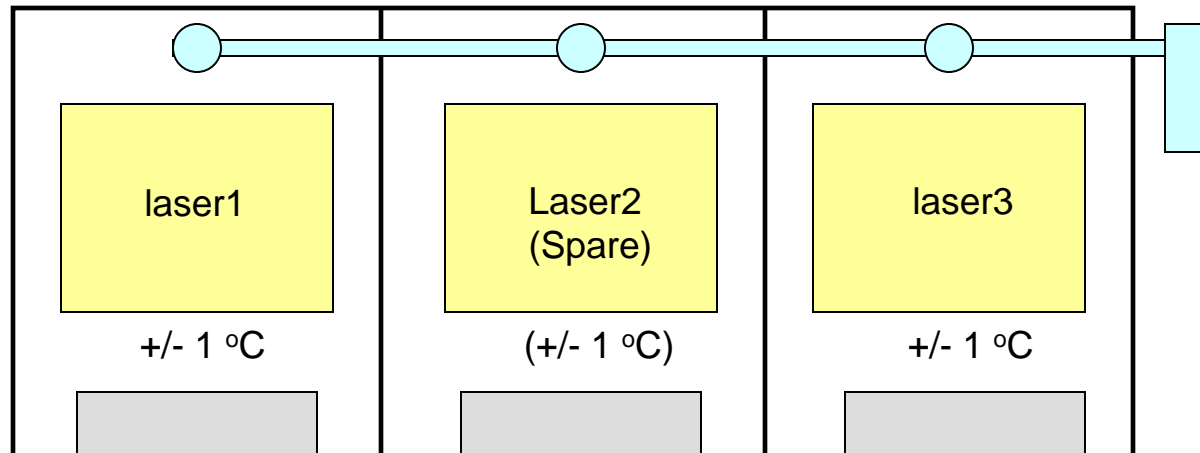
Old air-unit from Aleph: (*R.Pintus*)

12kW, Chilled water air-conditioning unit. → Temperature ?~ 6°C

Control ? (PID, thermostat)...

USC55: mixed water, 16°C for each laser enclosure

} ?



Cost estimation

Softwall :

Solution handling, Germany

3 softwalls with special curtain

~ 12 000 €

+ Fan Filter Unit:

3 units MAC 10XL

~ 2 200 €

+

Old air-unit

Cost installation & test, H4?

+ HEP air:

~ 13 000 €

+

Cost installation H4 ?