



**Iskra pio** d.o.o.  
Industrial equipment manufacturer

## PERSONAL AIR LOCKS



Clean rooms, operator and environment protection  
ISO 5 to ISO 8 (ISO 14644-1:1999)  
Class A to D according to GMP



Personal air locks present a barrier between two differently clean areas. They are designed for intensive cleaning and securing safety conditions during passage of personnel between rooms with different properties. During the transition the air lock is locked with two doors by »interlock« function.



### Air shower

Air shower has a ventilation/nozzle system, which blows air into the booth during the transition and de-dusting process. Eventually disposed particles are effectively blown-off by a strong air stream. Air flows towards the wall mounted suction lattices with pre-filters. Time sequence of de-dusting process is pre-set and can be predefined. Complete housing construction is made of stainless steel AISI 304 or metal protected with powder painting. Entire structure is designed and made acc. to GMP norms for finished pharmaceuticals and conforms to CE norms. Main carrying structure is fixed in the ground and on the side wall.

The construction is made that it allows monitoring, servicing and cleaning from the showers interior, especially regarding filters that can be changed inside the shower.

Main sub-systems of the booth:

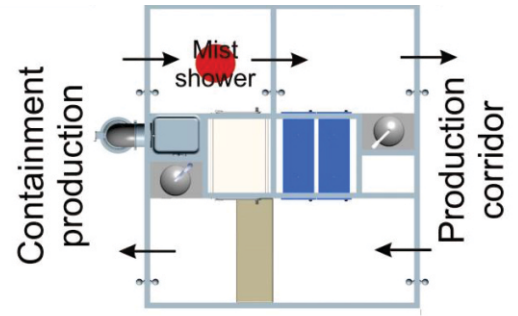
- main carrying structure (housing)
- ventilation/nozzle and cleaning system with filtration units
- two doors in interlock function
- control system and elements

### Main characteristics

- sealant construction and execution of the booth
- fan unit – laminar: 0,7 kW (with frequency controller), fan unit – nozzle: 1 x 1,5 kW (with frequency controller)
- connected to the facility AHU system regarding negative or positive pressure
- air-speed (set): laminar:  $\pm 0,5$  m/s, nozzles:  $\pm 20$  m/s
- laminar filtration – re-circulated and fresh air: pre-filtration F9 (behind suction lattices) and absolute filtration H13 (on the booth's ceiling)
- nozzle filtration – re-circulated air: pre-filtration F9 (behind suction lattices)
- distributional net (PVC net) for laminar air-flow of distributed air
- sufficient number of air changes inside the booth (according to expected clean class), sufficient de-dusting and suitable pressure among zones (over-pressure/under-pressure)
- additional elements: suction lattices, FLUO lights (> 300Lux), control and safety elements

## Mist shower

Mist shower installed in a personal lock is used for personal decontamination when exiting dust contaminated environment. In order to prevent particles from hazardous environment to contaminate surroundings the operator has to wear protective clothing, take a shower in the water mist cabin. The system works automatically. All users have to do is to press the start button of the shower. Mist showers nozzles generate fine water mist which wets the clothes. Dust particles stick to the wet clothes and will not fall off during undressing. After the showering process is done, the operator puts his protective garment in especially intended storage position.



## Exit containment production



## Details

- moistening effect is activated only when exiting the contaminated area.
- the showering system is adjustable according to operator's type of garment and dust level (PLC control).
- usage of water is about 0.5 dl per cycle, but it depends on particular humidity needs.
- humidity adequacy is determined with humidity indicators during calibration tests.
- mist shower process parameters are set through a touch panel, which displays all needed parameters and alarms.



**Iskra pio** d.o.o.  
Industrial equipment manufacturer  
Trubarjeva cesta 5  
SI - 8310 ŠENTJERNEJ



Phone: +386 7 3931 400  
Fax: +386 7 3931 440  
E-mail: [info@iskra-pio.si](mailto:info@iskra-pio.si)  
Internet: [www.iskra-pio.si](http://www.iskra-pio.si)