

Powerstream airlock Air curtain

Manufacturer: Masterveil AB

Swedish name:Powerstream airlock

European name:Powerstream airlock

Model:Powerstream airlock

This high pressure air curtain is of the decentralized type with a custom made outblow drum with exact size to the specified length. The nozzle is based upon the POWERSTREAM[®] principle and has a 100% free outblow and complete smooth internal surface to avoid mini turbulences to create an airtight screen with higher performance.

The unit is a combination of standard building blocks of dedicated lengths of 800mm, 1000mm and 1200mm or can be delivered in exact length. Each component (building block) is composed of mirrored plates not only to suit better in a logistic environment with high logistic movement, but also to be more flexible in general setup taking in account the position of the freezer door.

The fan of this series has a capacity up to 7000 m³/h and a pressure up to 1200Pa. The fan has an adjustable operating point so a vacuum point or zero point can be reached as proof of proper functioning at the set conditions. This model of air curtain is so composed that even with an ambient air curtain an optimal protection is obtained in all kinds of situations, without using active heating, conditioning of room or dehumidification.

The setup of the system is a 'closed-setup-type'. Meaning, the airstream is not only highly controlled on pressure side, but also controlled on intake side.

The tailor-made bridge makes the unit complete and results in an upside-down self-supporting U-FORM. Through regulatable front and back panels on intake side per building block, the airstream can be further optimized in flow.

You can choose between standard galvanized or stainless steel version.

For optimal humidity control in freezer environments, the outblow drum is combined with a second outblow plenum that creates an induction air layer that can be used as insulation layer between different levels of humidity. The outside shape of the primary outblow drum is adapted to optimize that physical air movement phenomenon.

The insulation layer has an optimal air volume to use reduced conditioning.

Depending on the situation this can be active dehumidifying, heat exchanger or just a small electrical resistance.

Building technical adaptability:

The system is designed to be delivered in following versions:

- a. With or without insulation layer
- b. Placed in AIRLOCK configuration (a unit with insulation placed inside the freezer and on warm side a unit without insulation)

- c. Configurable conditioning line based upon active dehumidification, heatpump or electrical resistance placed on the insulation layer inside the freezer
- d. Reinforced VORTEX setup
- e. Setup of bufferzone between the 2 protection layers
- f. Additional conditioning of the bufferzone between the 2 protection layers.
- g. double outblow with regulated outblowmouth (DS BLOCK)
- h. double outblow with regulated outblowmouth in combination with active dehumidification (DS BLOCK)

Energy saving options:

- a) The system is designed to recuperate the dry air inside the freezer
- b) The low volume of the insulation layer represents a huge energy saving possibility compared with further existing technologies.
- c) very low turbulences so higher efficiency

Application-oriented adaptability:

Through its modular design, it is easy to extend your system with additional components like :

- Heating Line
- Intake plenum
- High automation and monitoring
- Dehumidification with low volume

At the customer's request, we can give additional info about the different possibilities. Please contact your Certified Partner Masterveil.

Technical dataPowerstream airlock:

Dimensions DxH: DRAWINGmm
Drumlength: Custom made
Diameter ducting: rectangularmm
Voltage:400V
Current:7,5A
Power: 4kW
Volume (WP): 6000m³/h
Volume (MAX volume /minimum Pa): m³/h
Pressure (max.): 1200Pa
Sound: 74db(A)
Environment temperature: 44 /-25°C
Heating: EL./Dry
Weight: see packinglistkg
Number of fans: 1
Type of fan: Single inlet radial
Condensator: veld µF
Filter: veld
IP: 44
Motor protection: ext
Design: industrial
Color: galvaRAL
Othercolors: opt
Stainless steel: Opt
Built-in possible: no

steering: see separate file

drawing: see separate cad-file