VILPE®
Innovative and Easy

VILPE® IO

Air intake and exhaust wall elements

- VILPE's IO Wall Element is available for both Air Intake and Air Intake & Exhaust ventilation
- Air Intake & Exhaust option includes adjustable reduction piece for different air flows
- Both versions available for duct sizes Ø 125 - 160 mm, or Ø 200 - 250 mm
- Both versions can be installed in both left- and right-sided air intake / air intake & exhaust configurations
- Exceptional rain rejection
- UV protection prevents colour defects

› VILPE.COM/IO

10 year colour warranty
20 year technical warranty

10 year colour warranty
20 year technical warranty

Contents

Sales and technical support
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VILPE®
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VILPE® IO Air Intake & Exhaust Wall Elements

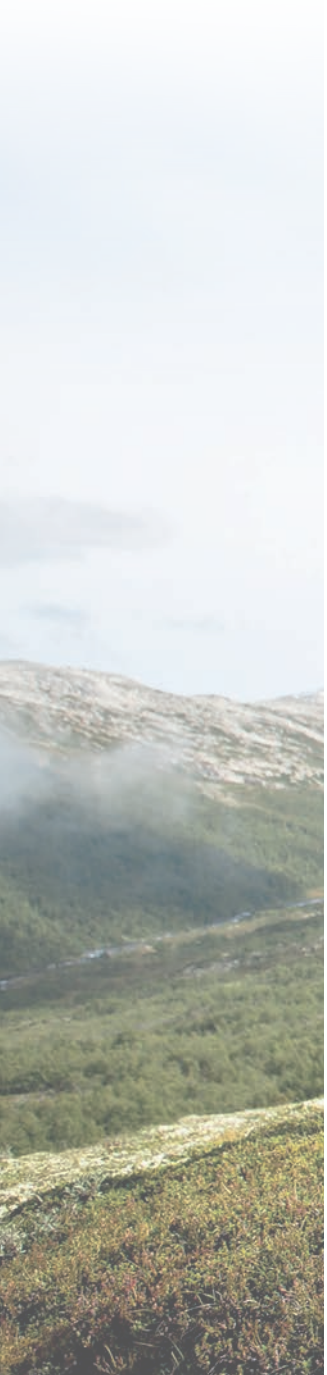
The VILPE IO Air Intake Wall Element and Air Intake & Exhaust Wall Element are exterior wall-mounted products which allow an installer to conveniently direct outdoor air through a building's exterior wall into a ventilation unit, as well as – in the case of the latter product – combining this with an exhaust air vent contained within a single, state-of-the-art package.

Thanks to the ambidextrous design of these products, the same unit can be used with either a left- or right-sided intake/intake & exhaust configuration. VILPE IO Wall Elements can be installed on a wide range of building types, but are primarily designed for individual apartments within a block. Both products are available in two sizes, one for duct sizes of Ø 125 or 160 mm, the other for duct sizes of Ø 200 or 250 mm. The Air Intake & Exhaust Element also includes a reduction piece in its product box, allowing for adjustment of the exhaust air speed depending on the size of the space being ventilated.

If required by building regulations, this Air Intake & Exhaust Wall Element's exhaust air flow can also be directed sideways at specific angles with a custom-made nozzle. Although more expensive than conventional parts, these nozzles are designed and 3D-printed at our Mustasaari factory to ensure complete accuracy – our design team should be contacted directly if this service is required.

The Air Intake Wall Element and Air Intake and Exhaust Wall Element can also be combined – for example, with an Intake Element on one side of a building or apartment and an Exhaust Element on the other.

Because the VILPE IOs' air intake vents are situated on the underside of the products, water and snow are effectively prevented from entering the wall elements. In rain rejection tests executed by VTT Technical Research Centre of Finland, no measurable amount of water was found in the intake air (ISO 5167-1/2:2003; EN 13030:2001). When moisture in the intake air is minimal, the risk of the IO elements freezing is small. In addition, the VILPE IOs' large air intake areas entail a smaller pressure loss. The recommended face velocity range of use is less than 2 m/s.



DESIGNED FOR LONGEVITY

VILPE IO Wall Elements are made of durable and recyclable polypropylene (PP), an environmentally safe material. The material is UV protected, allowing the products to withstand harsh weather conditions and severe sunshine without their colours deteriorating. Both products tolerate a constant temperature of -30°C to +80°C, as well as short periodic temperatures of -40°C to +120°C. VILPE provides the products with a 10 year colour guarantee, as well as a 20 year technical guarantee. Besides the standard colours offered on the last page of this brochure, VILPE also offers a range of custom colours if required, although these are more expensive than our standard colours and should be discussed directly with the sales team.

VILPE IO Wall Elements are also designed to keep the exterior of the building they are installed on clean, thanks to the raised molding on their outer surface. This is designed to minimize the problem of dust and dirt accumulating on the ventilation terminal and eventually flowing down the building's exterior wall, creating a grimy and streaky facade. Instead, the molding prevents the accumulated dust and dirt from reaching the wall, maintaining the building's clean appearance.

An IO wall element in one of the 'custom colours' mentioned on the left: this is 'Pastel Yellow' (RAL 1034)

EASY TO INSTALL

It is quick and easy to install VILPE IO Wall Elements onto exterior walls. All screws and screw plugs are included in the package. Note that, to ensure the proper functioning of the products, nothing should be placed in front of a Wall Element once it has been installed. The table below shows when the reduction piece should be used; this information can also be found in the installation instructions. It should be noted that the IO 125/160 air intake element includes a mounting frame, while the IO 200/250 must instead be mounted directly onto the wall.

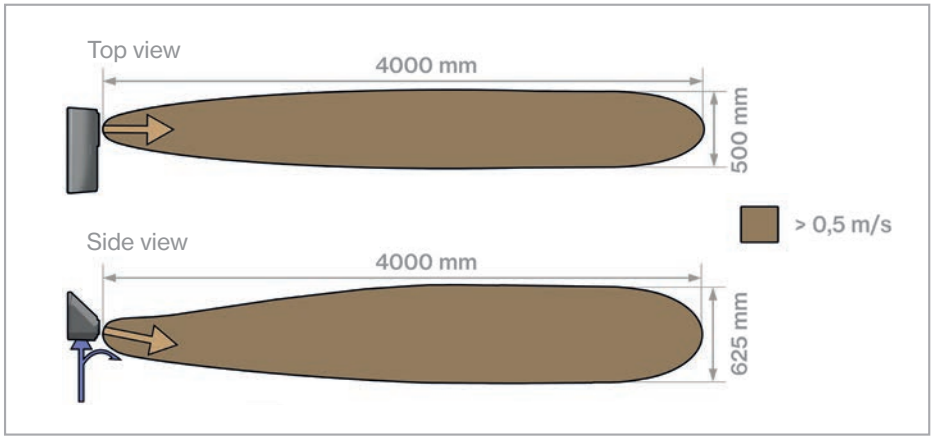
WHEN TO USE THE REDUCTION PIECE

The exhaust airflow needed to reach 5 m/s outflow velocity is listed below.

VILPE IO	Exhaust airflow, l/s (m³/h)	
	Reduction piece needed	No reduction piece needed
IO 125	18-27 (65-97)	>27 (>97)
IO 160	30-44 (108-158)	>44 (>158)
IO 200	48-70 (173-251)	>70 (>251)
IO 250	72-106 (261-381)	>106 (>381)

AIRFLOW PATTERN

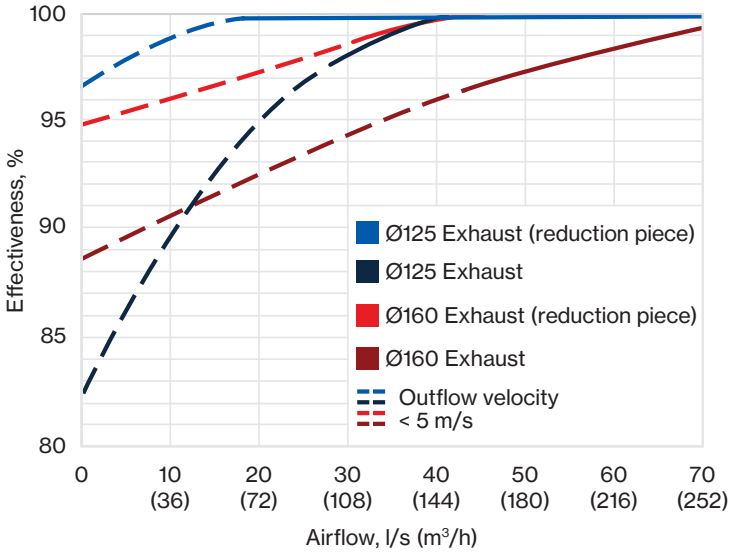
VILPE IO 125 without the reduction piece. Airflow 30 l/s (108 m³/h).



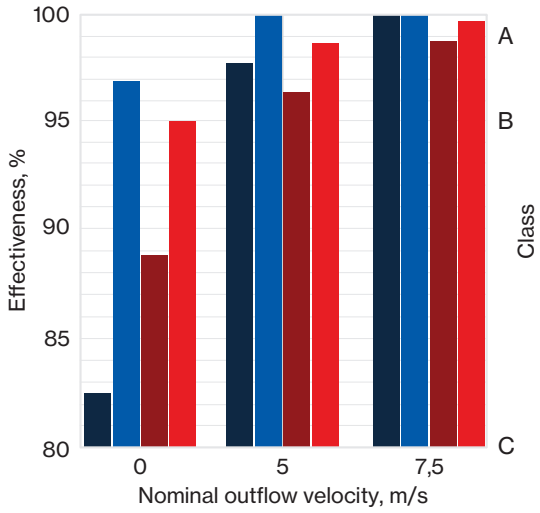
RAIN REJECTION

Rain rejection data for exhaust air. No measureable amount of water in the intake air.

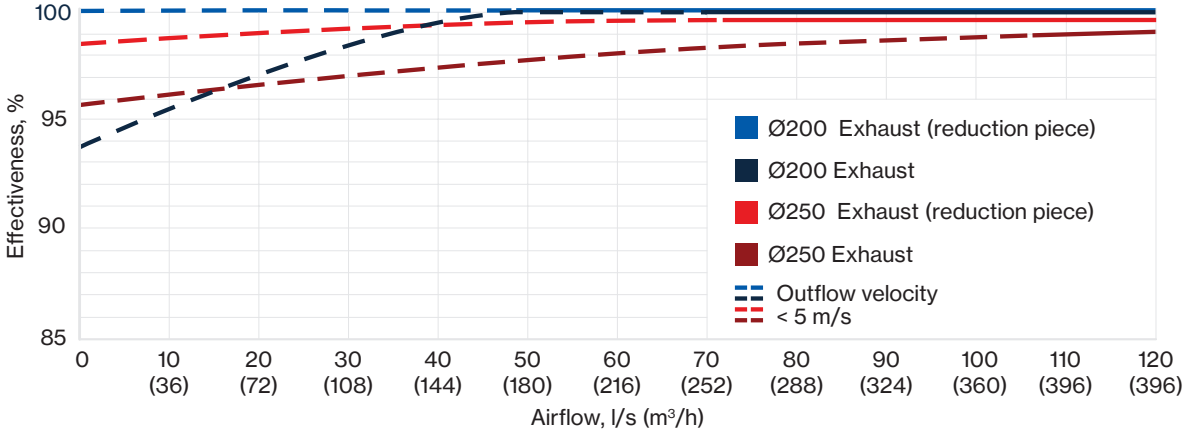
IO 125 and 160



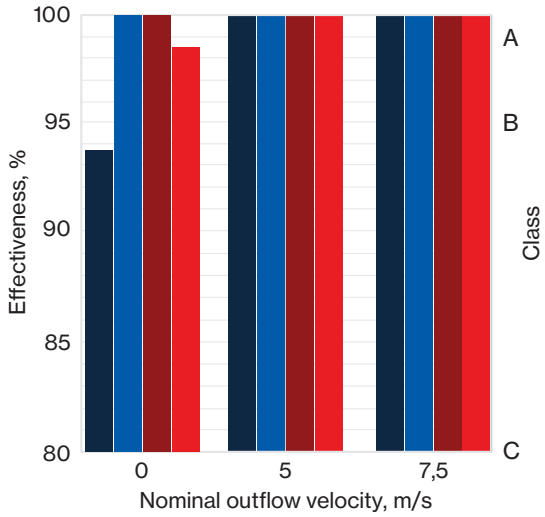
EN 13030:2001
ISO 5167-1:2003
ISO 5167-2:2003



IO 200 and 250

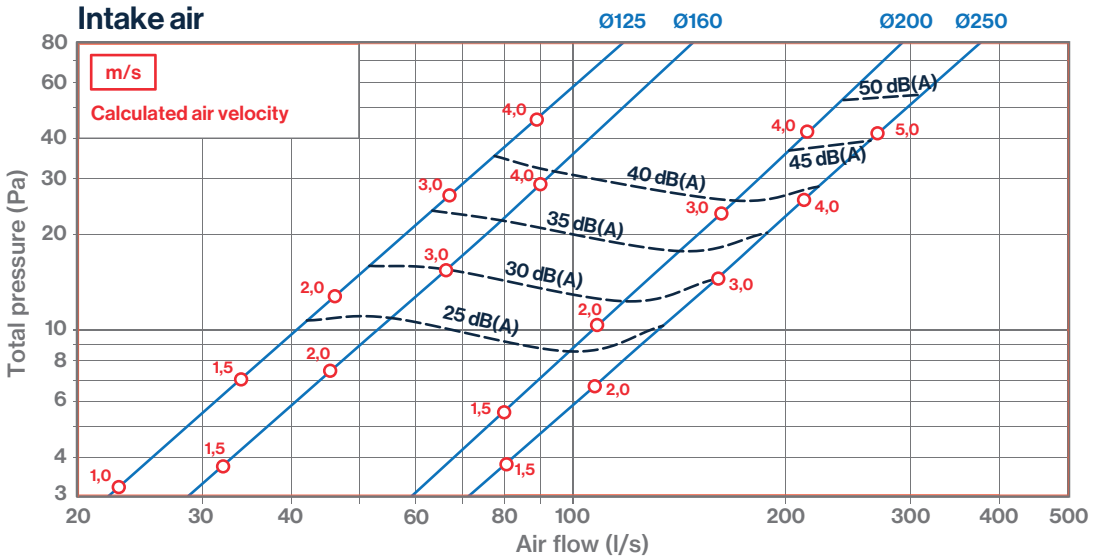


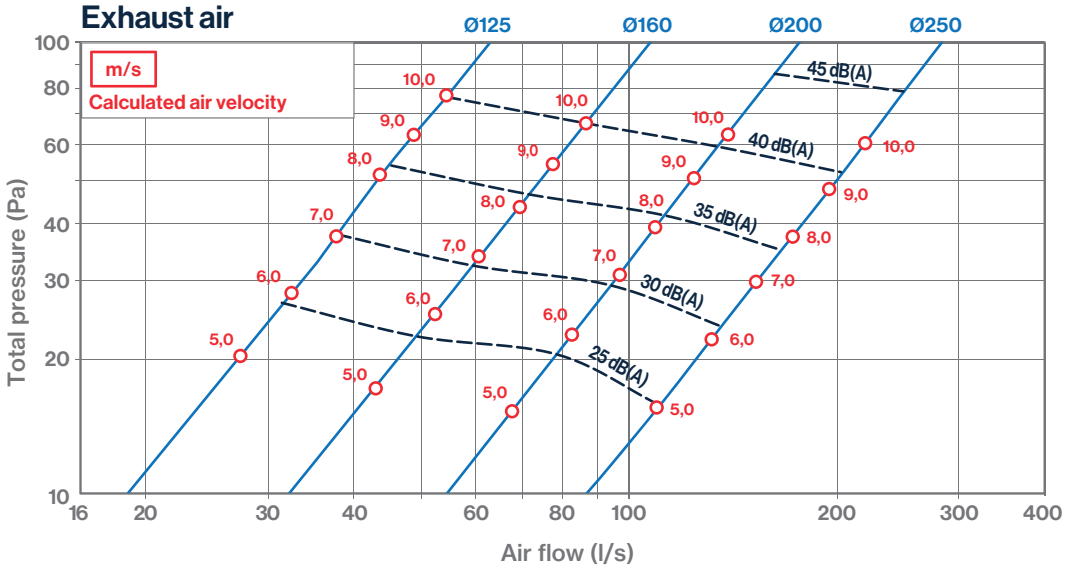
EN 13030:2001
ISO 5167-1:2003
ISO 5167-2:2003

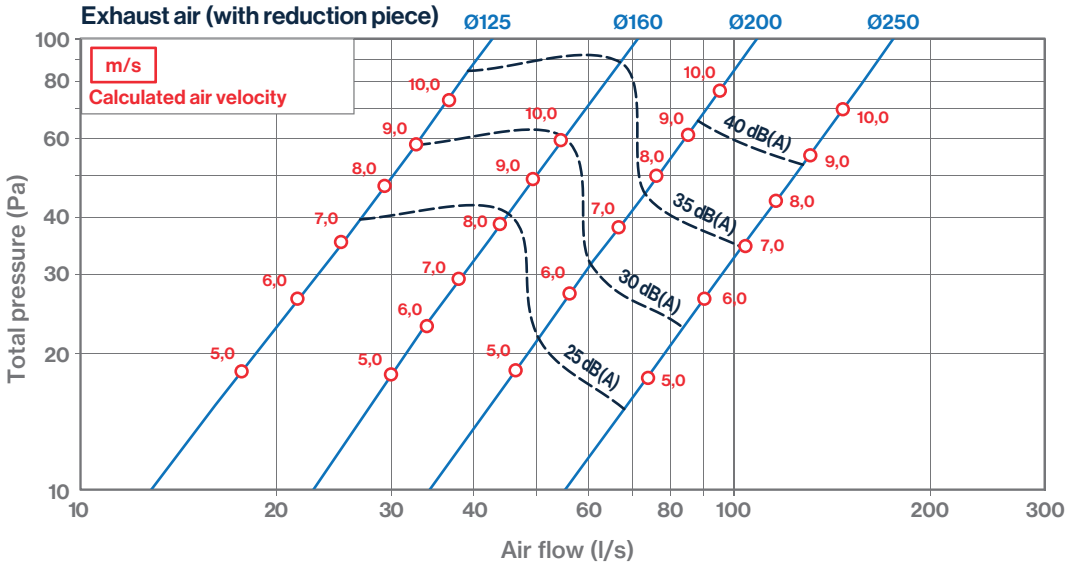


The exhaust air section of the IO Wall Element should be covered if the ventilation unit is switched off or not in use for a longer time period (for instance, in connection with the installation).

PERFORMANCE AND FLOW DATA



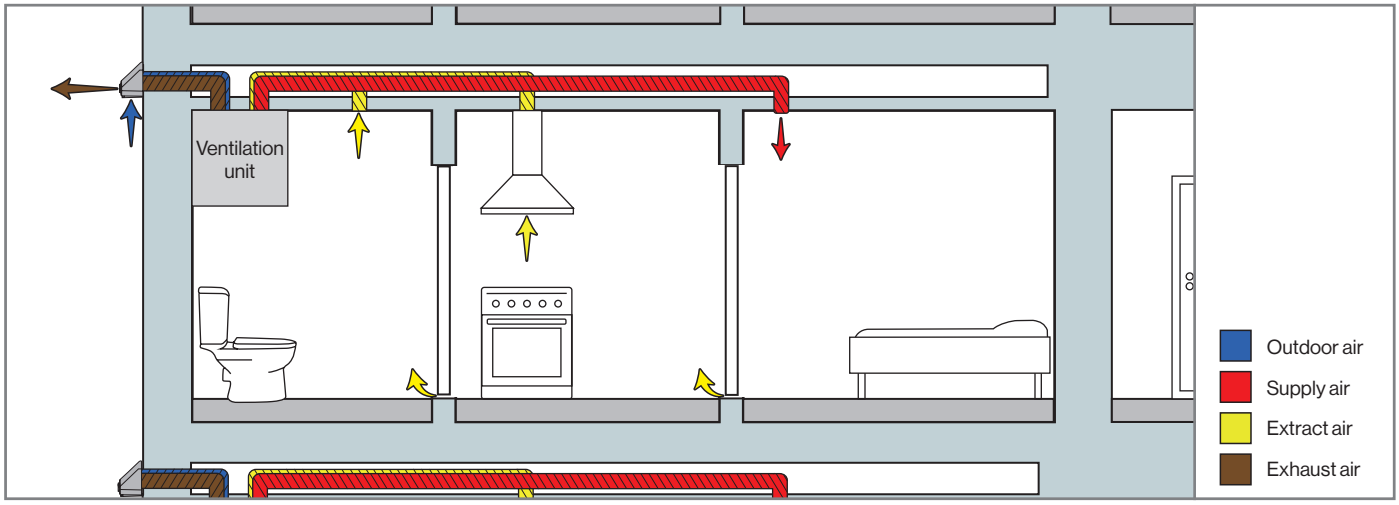




EN 12238:2001
ISO 5135:1997
ISO 5167-1:2003
ISO 5167-2:2003

AIR VENTILATION DIAGRAM

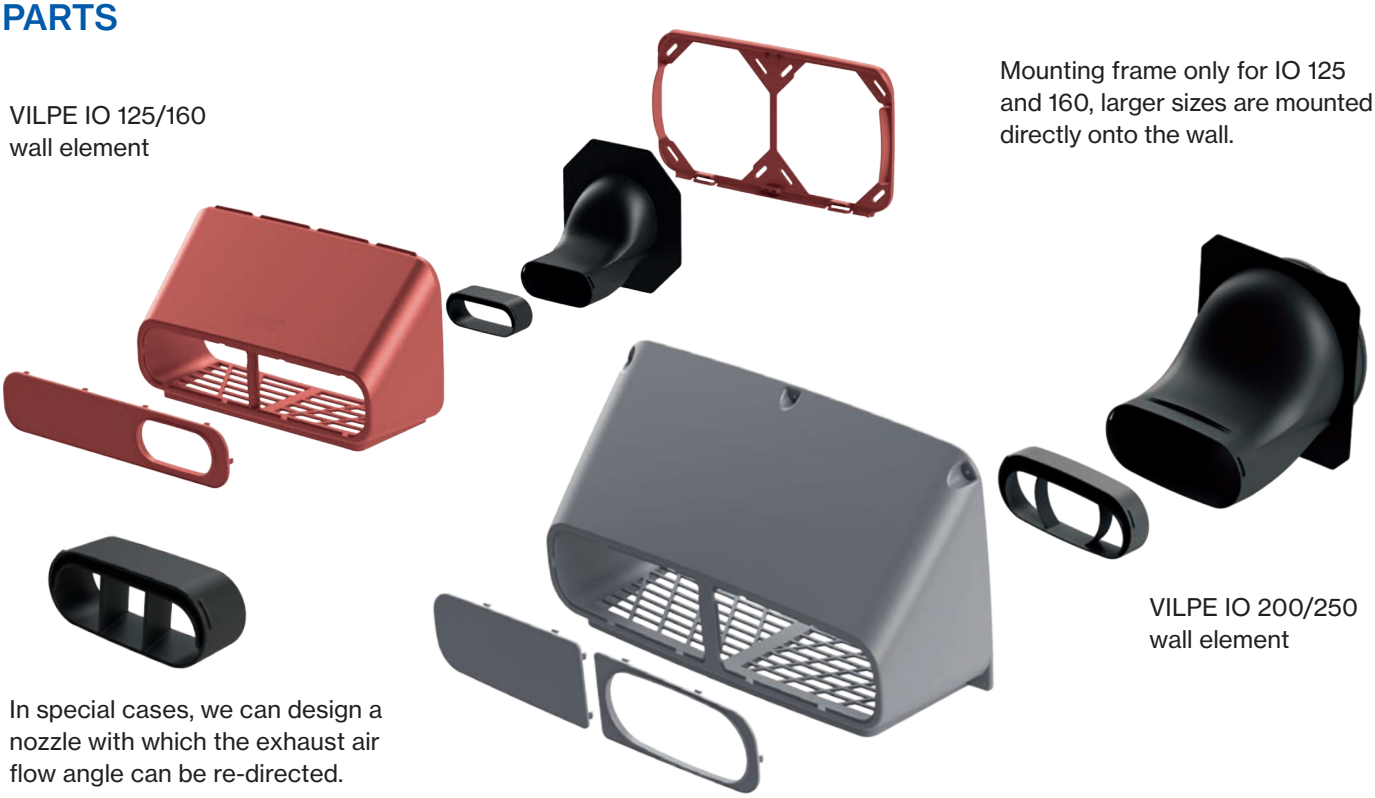
An example of a ventilation system in an apartment with a VILPE IO wall element.



PARTS

VILPE IO 125/160
wall element

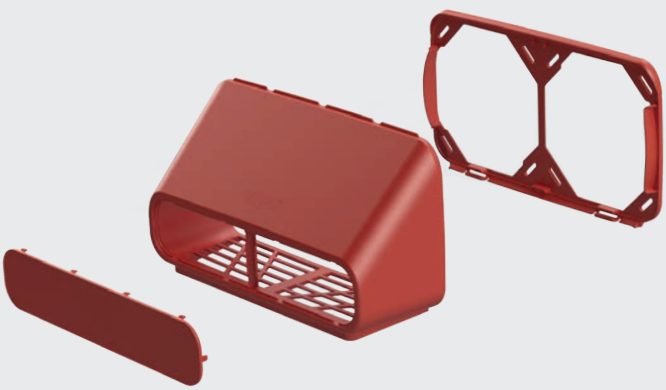
Mounting frame only for IO 125 and 160, larger sizes are mounted directly onto the wall.



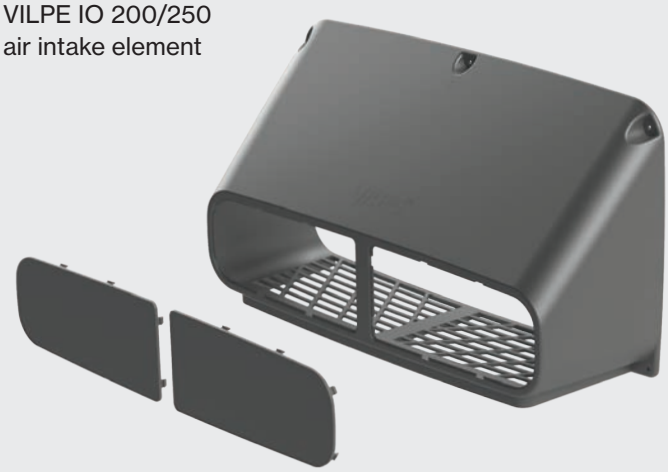
VILPE IO 200/250
wall element

In special cases, we can design a nozzle with which the exhaust air flow angle can be re-directed.

VILPE IO 125/160
air intake element

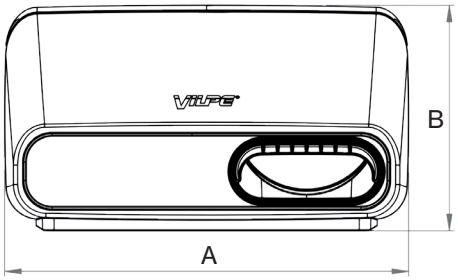


VILPE IO 200/250
air intake element

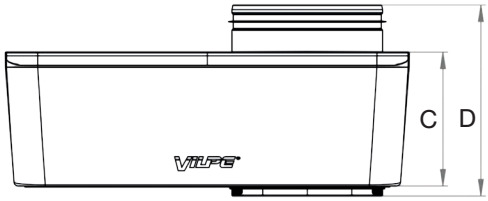


DIMENSIONS

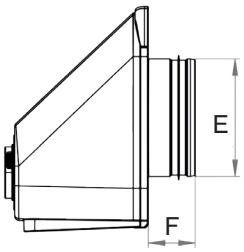
VILPE IO wall element



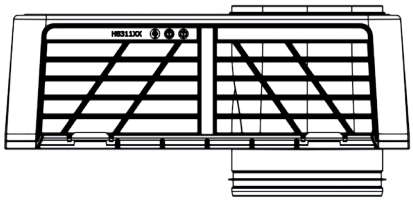
Front view



Top view



Side view



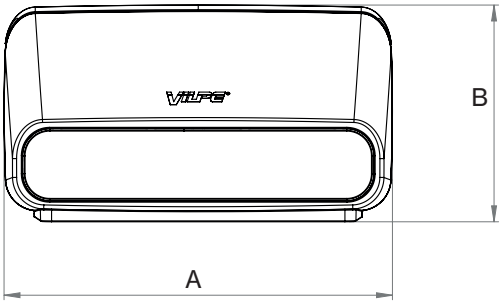
Underside view

Patented in Europe.
European patent pending.

	IO 125	IO 160	IO 200	IO 250
A	427	427	650	650
B	238	238	367	367
C	141	141	200	200
D	201	201	265	265
E	125	160	199	249
F	50	50	50	50

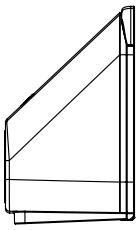
Dimensions of the IO wall elements in millimetres.

VILPE IO air intake element

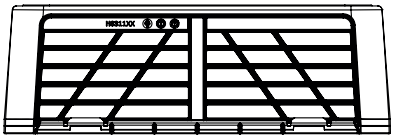


Front view

Top view



Side view



Underside view

IO PRODUCT CARBON FOOTPRINT

Carbon Footprint calculations for all six VILPE IO product models were executed in 2022 by Ramboll, an independent outside agency. Carbon Footprint refers to the total of greenhouse gas emissions caused during the life cycle of a product.

The study follows the standardized methods of Life Cycle Assessment (LCA) and guidelines of the standard ISO 14067:2018 Carbon footprint of products. Results are calculated per one piece of product in kilograms of CO_2 equivalent (kg CO_2-eq).

The following life cycle stages were considered when calculating the carbon footprints of the products:

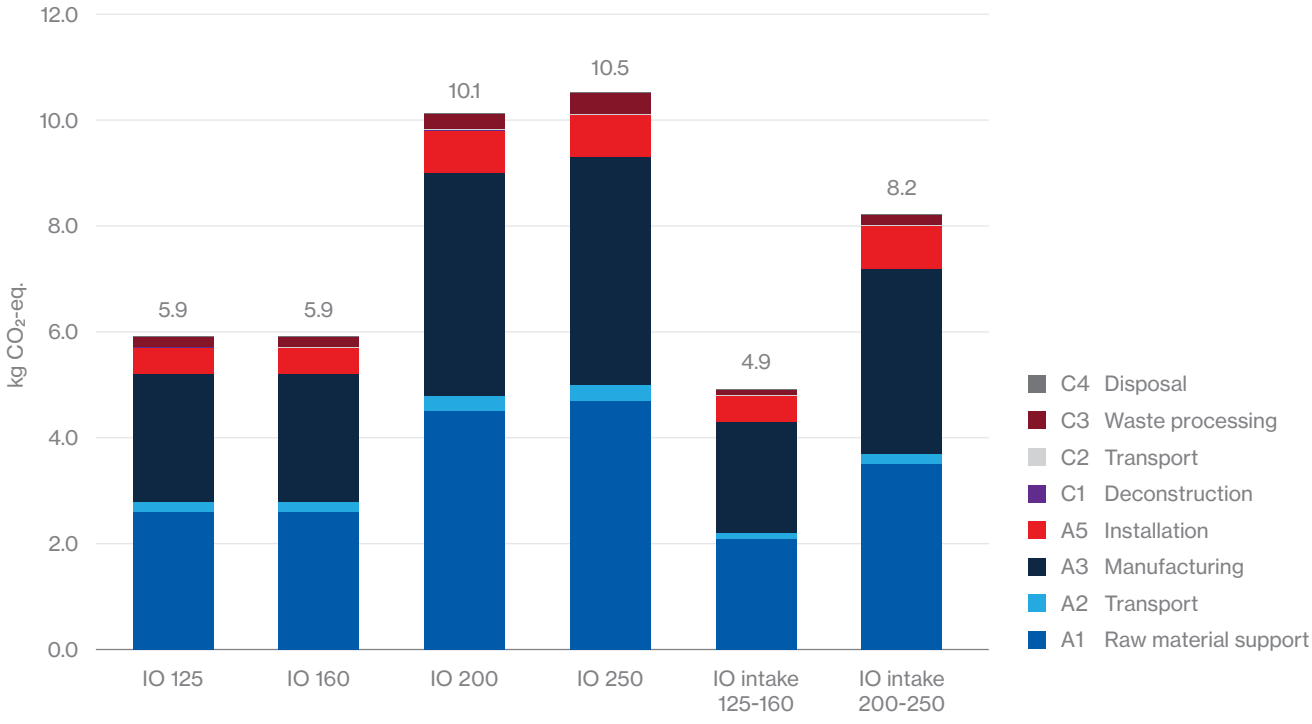
- Raw material supply
- Raw material transportation to manufacturing
- Manufacturing
- Installation
- End of life stage (deconstruction, transport to waste processing, waste processing and disposal)

Optional distribution and use stages were excluded; during the use, IO products are low maintenance, and their emissions are considered very low.

RESULTS

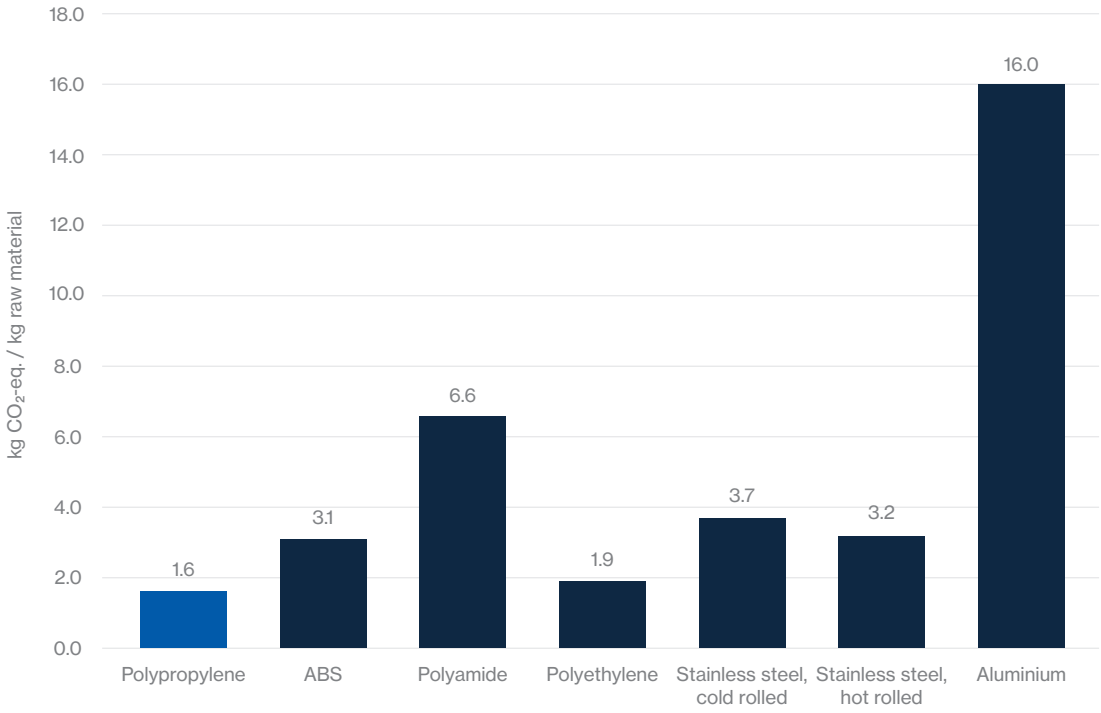
The IO products are made of similar raw materials at the same production facility but vary in size. 42–45 % of the emissions are related to the raw material supply, and manufacturing emissions at VILPE's production facility in Mustasaari form approximately 41–42 %. Installation stage forms 8–11 % of the product carbon footprint, whereas the remaining calculated life cycle stages are only 5–7 %.

Product carbon footprint of the IO product family



Most of the raw material supply related emissions come from polypropylene, the main raw material used in the IO products. Polypropylene's emissions are, however, lower compared to other raw material alternatives – for example, one kilogram of polypropylene is 1.6 kg CO_2-eq, when one kilogram of aluminium is 16 kg CO_2-eq.

Alternative raw material supply



NB. Presented raw material supply related emissions are indicative and based on generic data from Plastics Europe, Eurofer and International Aluminium Institute (IAI).

Most of the manufacturing emissions come from electricity consumption in VILPE's factory. The data for the study was collected in 2021, while installation of ground source heat pump system to VILPE's factory was still in progress. The system began operations in autumn 2021 and has reduced the factory's CO_2 emissions significantly. Combined, both the ground source heat pump cooling and heating systems allow VILPE to efficiently cool its factory buildings, production machinery and molds using ground source energy, with some of the heat from this process being then stored in the bedrock beneath the factory to then be used to help heat the buildings during the colder months of the year.

PACKAGES

IO wall element package contents:

- VILPE IO wall element with exhaust and reduction pieces
- Screws and screw plugs
- Installation instructions

IO intake air element package contents:

- VILPE IO intake air element
- Screws and screw plugs
- Installation instructions

STANDARD COLOURS

Off-white

Red

Black

Brick red

Grey

The RAL colour codes are available on our website: vilpe.com/colour

Please inquire about specialised colour options from our sales team.

NAME	COLOUR	PRODUCT NO.	DELIVERY
VILPE IO 125 wall element	off-white	370000	Stock
	black	370002	Stock
	grey	370007	Stock
	red	370008	Stock
	brick red	370009	Stock
VILPE IO 160 wall element	off-white	370100	Stock
	black	370102	Stock
	grey	370107	Stock
	red	370108	Stock
	brick red	370109	Stock
VILPE IO 200 wall element	off-white	370200	Stock
	black	370202	Stock
	grey	370207	Stock
	red	370208	Order
	brick red	370209	Order
VILPE IO 250 wall element	off-white	370300	Stock
	black	370302	Stock
	grey	370307	Stock
	red	370308	Order
	brick red	370309	Order
VILPE IO 125/160 air intake element	off-white	370120	Order
	black	370122	Order
	grey	370127	Order
	red	370128	Order
	brick red	370129	Order
VILPE IO 200/250 air intake element	off-white	370130	Order
	black	370132	Order
	grey	370137	Order
	red	370138	Order
	brick red	370139	Order

Please note that the VILPE IO air intake elements and some of the wall elements are made to order and are not kept in stock. Always check the delivery status with the sales team before placing your order.

MADE IN FINLAND

DESIGN FROM FINLAND

NORDIC SWAN ECOLABEL
Printed matter
4041 0822

08/2022

› VILPE.COM

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