

# VENTS

MAGAZINE

ABOUT VENTILATION AND MORE

№ 1 (3)  
June  
2018





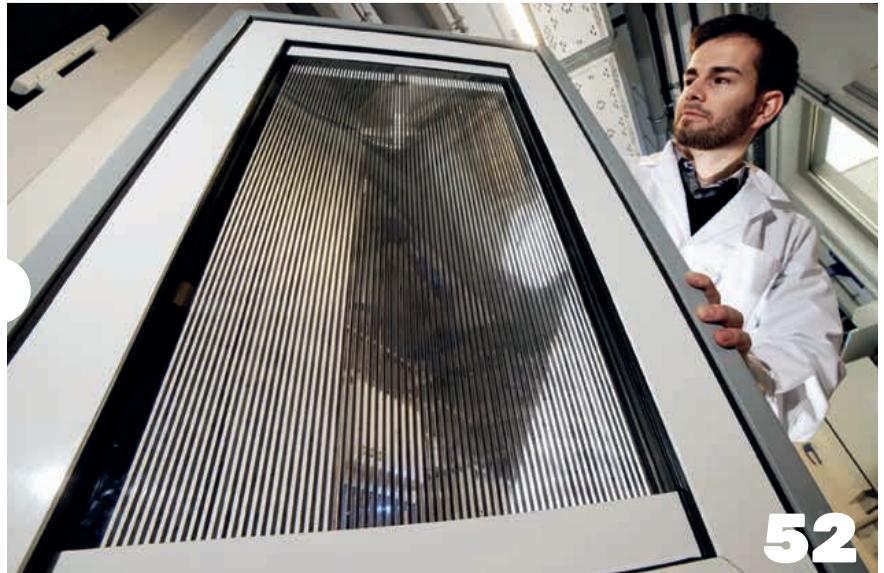
Riding  
*the fresh wave*

# VENTS WAVE

*A new decorative axial fan.  
Air flow up to 85 m<sup>3</sup>/h.  
Built on a new technical  
platform which incorporates  
unique innovative know-how  
of VENTS*



# CONTENTS



**Registration certificate**  
KV No. 21977-11877R  
issued by the Ministry of Justice  
of Ukraine on 25 March 2016

**Established and published by:**  
PrJSC "Ventilation Systems"

**Editor-in-chief, design  
and desktop publishing:**  
Oleg Kolodiy  
+38 044 406-36-25  
E-mail: magazine@vents.ua

**Adaptation and proofreading:**  
Olga Fesenko

**Technical consulting:**  
Taras Tkachenko, Tetiana Pelymska,  
Iryna Ionicheva

**Photography:**  
Aleksey Kolomiyets

**Editorial office address:**  
36 Sobornosti Street, Boyarka,  
Ukraine

<http://vents-magazine.com>

Frequency: up to 6 issues per year

Circulation: 3 000 copies

The magazine is distributed  
by subscription, at trade fairs,  
DIY stores and supplied to companies  
doing business in the field  
of ventilation equipment  
and services

**Printed at:**  
"Prime Print" printing house  
Tel. +38 044 592-35-06,  
+38 044 549-87-80

The concept, contents and design  
of the magazine are intellectual  
property of PrJSC "Ventilation Systems"  
protected by law

No part of this publication  
may be reproduced without an express  
reference to VENTS Magazine

The magazine contains images  
from [www.depositphotos.com](http://www.depositphotos.com),  
[www.shutterstock.com](http://www.shutterstock.com)  
photobanks

- 6 Events**  
New VENTS products  
VENTS presented its new developments to Europe  
The Middle East gets even closer
- 14 Modernization**  
With an eye to the future
- 18 Ecology**  
Garbage-free life
- 24 Achievements**  
Our man in SpaceX
- 28 Solutions**  
"Decentralisation" campaign
- 36 The Planet**  
Mysteries of the white continent
- 42 Brand new products by VENTS**  
Guarding your safety  
Transformer channels  
A powerful intellectual  
A silent cleaner
- 52 Energy saving**  
The house will be heated by smart windows  
Light at the end of the tunnel  
Where the sun is on the walls

# Sturdy fellow

If you need a high-performance and quiet ventilation system, with scarce space to accommodate a powerful ventilation unit, consider a new product of the Ventilation Systems company, an inline centrifugal fan of the **VENTS KSB K2** series. The new device is manufactured in a heat-



and sound-insulated casing and features an air flow of up to 7000 m<sup>3</sup>/h.

The design of KSB K2 fans allows to use them in supply and exhaust ventilation systems in premises with high requirements to the noise level and with limited space for mounting.

For example, the fan may be placed right in the room above the suspended ceiling.

The fan casing is made of aluzinc. For convenient installation and operation, the upper fan cover is attached with a special lock. Heat and sound insulation is made of non-combustible mineral wool 50 mm thick.

The fans are equipped with asynchronous external rotor motors and centrifugal impellers with backward curved blades. ■

Meet the latest innovations from VENTS using highly efficient EC motors. Today, these motors are the most advanced energy saving solution. They are characterized by high performance and optimum control over the entire speed range. The EC motor efficiency reaches 90%.



# Quiet and efficient

Recently, the company presented another brand new product, i.e. inline centrifugal fans of the **VENTS VKM EC** series using EC motors. The new equipment is intended for ventilation and air conditioning of various premises.

The use of EC motors in the VKM series fans allowed reducing the power consumption by a third while ensuring high aerodynamic characteristics and low noise level. This is especially important when using the device in ventilation systems of public and commercial establishments. Due to EC motors, the fans can be easily networked with a centralized control point.

The fan casing is made of polymer-coated steel. New technologies



for the manufacture of structural elements ensure excellent body tightness.

VENTS VKM EC fans are designed for connection to round air ducts 100, 125, 150, 160, 200, 250, 315 mm in diameter. ■



# A fan that values silence



Meet the new **VENTS TT Si-lent-M EC** series mixed-type duct fans. The new devices have an air flow of up to 1995 m<sup>3</sup>/h and are compatible with air ducts 100 to 315 mm in diameter.

The new series of duct fans is manufactured in a special noise-insulated casing that ensures silent fan operation with high aerodynamic characteristics. The ventilation units are equipped with high-efficient direct current EC motors, which are the most advanced energy-saving solution by far.

Thanks to their energy efficiency and quiet operation, the new fans are the optimal solution for use in supply and

exhaust ventilation systems in commercial and industrial premises with increased requirements for energy saving and noise insulation, for example, in educational institutions, kindergartens, conference rooms, libraries, etc. The outer casing is made of polymer-coated steel. Internal perforation of the casing transmits sound waves, directing them to the layer of sound-absorbing material at a certain angle. Noise and heat insulation of the casing is made of a 50 mm thick layer of mineral wool. Special perforation of the cabinet and sound-absorbing material provide sound attenuation in a wide frequency range. ■

# An effective maximalist

Another new product from Vents has appeared on the ventilation equipment market; it is an in-line mixed-flow fan **VENTS TT PRO EC**. The new device combines extensive capabilities and high technical parameters of axial and centrifugal fans, providing high pressure and powerful airflow. The device capacity reaches 1995 m<sup>3</sup>/h.

The new fans are designed for use in supply and exhaust ventilation systems with high requirements for efficiency, energy saving and controllability. They are optimal solutions for use in various commercial and industrial premises with high humidity (bathrooms, kitchens), as well as for ventilation of apartments, villas, shops, cafes, etc.

VENTS TT PRO EC fans are equipped with high-efficiency electronically commutated (EC) direct current motors. Due to the conical impeller and special shape of blades, the circular air velocity is increased, providing higher pressure and performance than axial fans.

The casing of TT PRO EC is made of low-combustible polypropylene. The removable central unit with the motor, impeller and terminal box is attached to the fittings using special clamps with latches, which makes fan maintenance extremely simple and convenient.

The fans can be combined into a single computer network with centralized control. All system param-

eters are monitored on the computer display and, if required, you can set an individual operating mode for each fan in the network. ■







# VENTS presented its new developments to Europe

**V**entilation Systems took part in one of the largest international exhibitions, Mostra Convegno Expocomfort (MCE), dedicated to modern industrial equipment and technologies.

On March 13–16, the 41st specialized exhibition Mostra Convegno Expocomfort 2018 was held in Milan. More than 2,400 companies from 55 countries presented their developments in the field of ventilation and air conditioning, plumbing and hydraulic systems, heating, renewable energy sources, and smart technologies.

Ventilation Systems, being a part of the Blauberg Group, traditionally took part in the exhibition. At its booth, the company presented both new developments and well-proven products. New domestic, industrial and commercial ventilation products were exhibited, in particular, stylish energy-saving Wave, Flip and Solid fans, new models of TwinFresh ventilators, TT PRO, VK and VKM industrial fans with EC motors, as well as the FlexiVent semi-rigid duct system using VUT 350 VB EC air handling unit. It is noteworthy that new TT PRO 400 and TT PRO 400 EC

fans were presented at the exhibition for the first time.

Intelligent and energy-saving technologies are a priority for Vents, so a number of innovative new products could be seen at the company's booth. For example, Micra single-room air handling units, which are adjusted and controlled using Wi-Fi, attracted increased interest of visitors. This control method is quite convenient, since it allows controlling the unit remotely from a phone or a tablet. Also, the booth presented a range of heat exchangers, i.e. the devices allowing the heat to be returned to the room by means of heat exchange between the incoming and outgoing air streams.

Interest in Mostra Convegno Expocomfort is growing every year. In 2018, the exhibition was attended by over 162 thousand professional visitors, and this is not surprising, because this exhibition is an excellent opportunity to introduce the latest developments to the public, to exchange experiences, and to find new partners. Vents is a regular and active MCE participant, which is a venue for reaching potential customers in Europe and beyond. ■

# The Middle East gets even closer





In November last year, the largest construction exhibition in the Middle East, The Big 5 Show 2017, was held in the capital of the United Arab Emirates, Dubai, and Ventilation Systems took an active part therein, demonstrating its proprietary high-tech and energy-efficient developments in the field of ventilation.

The UAE is the regional leader in terms of construction volume and pace. Currently, the country is implementing about 1,300 construction projects worth more than USD 418 billion, with more than 300 projects worth USD 143 billion pending the development, planning, or appraisal. Let us recall that in 2020, the world exhibition EXPO 2020 will be held in Dubai, to the opening of which a number of new construction projects is timed, including the tallest structure in the world, the tower in Dubai Creek Harbor, the height of which is designed to be 928 m.

The Big 5 Show in Dubai has been serving as the largest business, information and communication platform for the construction industry for almost 40 years, providing its exhibitors with good opportunities to enter the Middle East and North Africa market. The numbers speak for themselves: in 2016, about 3,100 exhibitors took part in the exhibition, the total exposition area amounted to 73,500 square meters, and the number of visitors exceeded 75,000 persons.

Ventilation Systems has traditionally been participating in The Big 5 Show since 2002. The exhibition provides an excellent opportunity to demonstrate the company's brand new products, innovative solutions, and advanced energy-saving technologies aimed at maintaining a correct and healthy microclimate in any room. Participation in The Big 5 Show helps concluding contracts with new clients and completing the preliminary stage of negotiations, because not every potential client has the

opportunity to visit the company's central office and check the products on the spot.

This year, the exhibition presented the products of VENTS and Blauberg Ventilatoren, members of the Blauberg Group. The list of demonstration equipment included a wide range of both the latest developments and well-known solutions for domestic and industrial ventilation. At the booth, one could see air handling units and single-room heat recovery units, a Blauberg BlauAIR air handling unit, a centrifugal pulse and axial jet smoke extraction fans, a roof fan, industrial and commercial duct fans, a number of domestic extract fans, etc.

Special attention was paid to Blauberg VENTO Expert ventilators. Such units are an effective energy-saving solution for residential premises in conditions of round-the-clock use of air conditioning systems in countries with a hot climate. Air conditioning units do not supply fresh air and do not remove exhaust air from the premises, which is a serious problem in Middle Eastern countries. In many families, parents are faced with frequent respiratory diseases in children, which are complicated by asthmatic syndrome over time. The main problem is associated with the generation of a number of harmful microorganisms on the surface of the air conditioner radiator, which enter the living space, having a negative impact on the human well-being. To solve a similar problem in residential and commercial premises with a large area (villas, offices, etc.), the company presented VENTS VUT and Blauberg KOMFORT air handling units as well as Blauberg CIVIC single-room ventilation units – the newest addition to the product range.

According to the company representatives, The Big 5 Show 2017 delivered the expected result, as the planned agreements with new clients were signed and a number of new orders was received. ■



[MICRA 100 WiFi](#) is intended for single-room ventilation of public and commercial spaces, flats, and houses. It is a simple yet effective ventilation solution for newly erected and renovated spaces which does not require dedicated air ducting.

# Oxygen for your child genius

## VENTS MICRA 100 WiFi

*Single-room heat recovery  
air handling unit*



- Fresh air
- Energy efficiency
- Compact footprint

- Versatility
- Ease of installation
- Low noise

# With an eye to the future

The program of production modernization and expansion at the Vents is in full swing. Rapid company development and a steady sales growth require the introduction of advanced high-performance equipment at the enterprise. In this regard, 2017 was one of the most productive years for the company, when dozens of new machine tools and machining centers were commissioned at the plant.





## TRUMPF TruPunch 1000

CNC turret punch presses

Optimum machine tools for professional punching. Despite their small dimensions, they feature a high level of versatility in processing: the equipment allows not only conventional punching, but also thread rolling, flanging drawing, and plate bending.



## Haitian Mars 2

Injection molding machines

They are designed for the manufacture of parts made of thermoplastics by injection molding. They demonstrate high indicators of reliability, productivity and quality of work. The Mars 2 series is characterized by a high level of energy saving combined with high-precision casting.

## TRUMPF TruBend 7036

CNC press brakes

They are designed for bending parts made of carbon, alloy, stainless steel and aluminum with the highest machining accuracy, are remarkable for their small dimensions and reduced desktop area.



## TRUMPF TruBend 5085

### CNC press brakes

They are designed for economical and high-quality bending of parts of any geometrical shape. The main advantages of TRUMPF TruBend 5085 press brakes include the optimal design of the working area, the unique shape and dimensions of which allow accommodating even large workpieces.



## Hilectro XTA Servo

### Manipulating robots

They are designed for joint operation with injection molding machines, allowing to automate the entire process of manufacturing the plastic parts.



## Bole BL EKII

### Injection molding machines

They are designed for the manufacture of various plastic parts by injection molding. They feature high productivity, efficiency and quietness, while higher positioning accuracy ensures the manufacture of the top quality products.

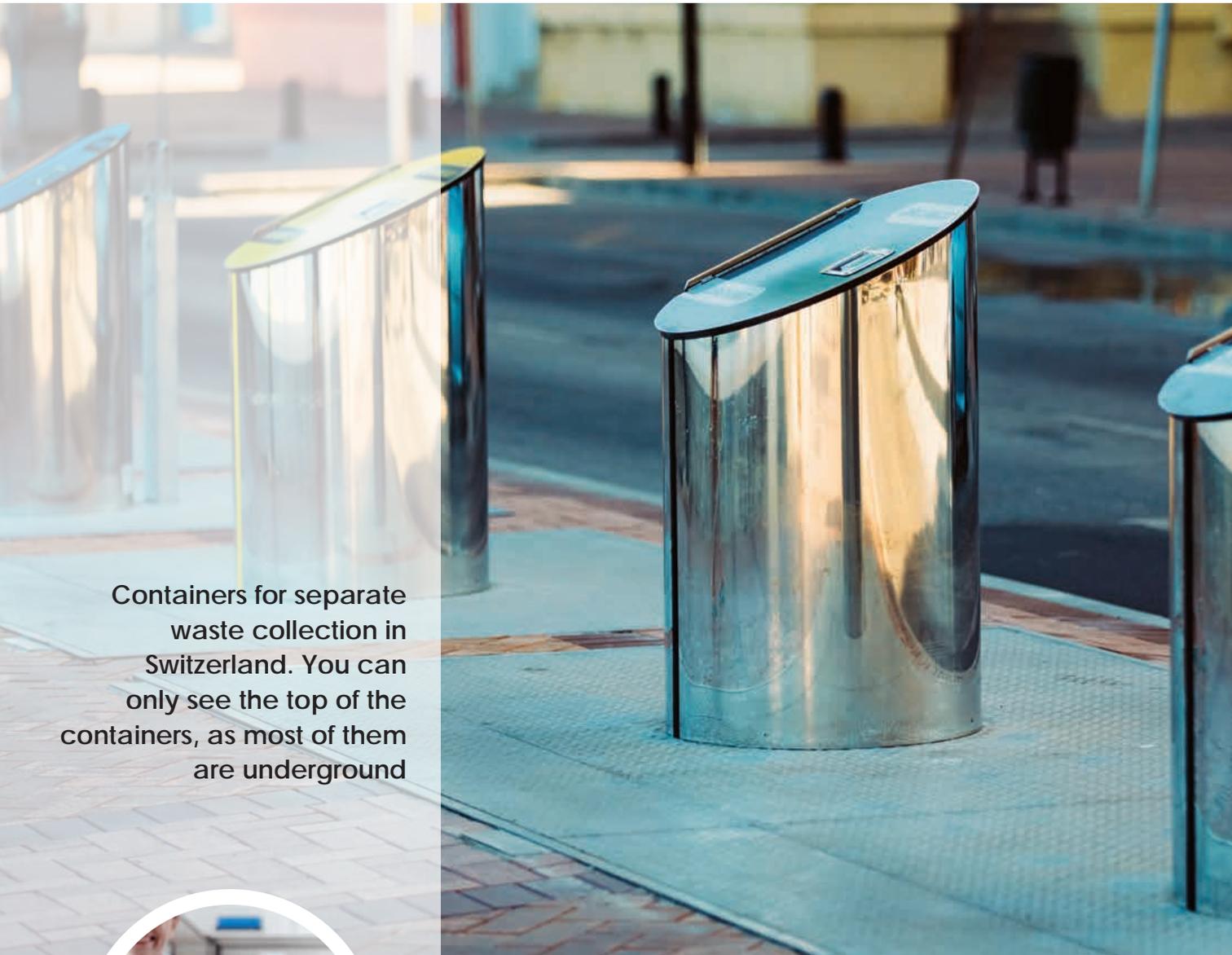


# Waste-free life



The ecological situation is close to a disaster: reservoirs are polluted with phosphates and nitrates, the soil – with heavy metals, the amount of waste is growing from year to year... Sounds familiar? Yes, unfortunately, these are our realities. However, we are not talking about Ukraine, but about Switzerland, about the situation with waste disposal in this country in the 80s, and how the Swiss managed to completely solve this problem in the 21st century.





Containers for separate waste collection in Switzerland. You can only see the top of the containers, as most of them are underground



It all started with a legislative initiative, which was supported by the citizens of the country, and with the pedantry inherent in the Swiss, they began to implement it. Today, almost 40 years later, Switzerland is one of the most environmentally safe countries in the world, with clean mountain air, rivers and lakes with clear water that you can drink without fear for your health. All this is despite the fact that in terms of the volume of household waste per capita, Switzerland occupies one of the leading places in the world; this figure has doubled since 1980 and currently stands at 729 kg per person per year. About 54 % of waste is sent for recycling, but for certain groups of waste this

figure can reach 80 %. Among Western European countries, this indicator is higher only in Austria, Belgium and Germany. The Swiss pay for the opportunity to live in a clean country. They pay the main waste collection fee, which is a part of utility bills, and buy special garbage bags. The cost of one such 35-liter bag is about 1.5 euros. We know firsthand that any good law is powerless if there is no will in society to implement it. What is the secret of the Swiss ecological miracle? Probably, it is the mentality, as well as the ability of the state to ensure the implementation of laws, sometimes by rather tough methods. If the waste is thrown out in an unsorted form or in a wrong place, the so-



Small containers for collecting paper, aluminum, glass, plastic containers and other waste

called garbage police begins to operate. With the help of modern technologies, "waste detectives" analyze the waste, find the offender and impose an impressive fine, which can reach several thousand francs. The final amount of the fine is set depending on the offender's income.

### Bottles to the left, plates to the right!

Every Swiss resident is obliged to sort not only organic and inorganic waste, glass and plastic. Here, the waste sorting system, practiced in many countries of the world, from our point of view, is brought almost to the point of absurdity. It should

be noted that the state encourages this process financially: sorted waste is disposed of free of charge, and unsorted waste – in paid bags.

In Switzerland, over 90 % of used glass bottles are returned to factories for recycling. This program started back in 1972 and is still working efficiently. Moreover, the glass is sorted by color: white, green and brown, and bottle caps are sorted separately. An old plate will not end up in the same tank with a bottle or broken window glass – special containers are provided for it.

Plastic bottles are usually returned to the store. Old clothes and shoes are collected separately, and then go to the needs

of the poor and are exported outside the country in large quantities. Of course, batteries, old electronics, light bulbs, cans, paper and cardboard (separately), medicines, household chemicals and much more – all this is carefully separated and either sent for recycling or incinerated at a waste processing plant.

Naturally, you will have to tinker with the disposal of bulky waste and construction waste. Such waste must be delivered by citizens to one of the special collection points, which are not open every day, and where you can get only with an electronic pass confirming the payment of tax.

Biodegradable waste is processed into garden compost or used to generate heat.



Waste reception and disposal center in Reinach



Switzerland is one of the global leaders in terms of the volume of household waste per capita

### The life of waste is short

In Switzerland, landfills have long been abandoned. There is a law here according to which all non-recyclable waste must be incinerated in special plants. Such factories operate in every region of the country and burn about 160 thousand tons of waste per day, providing heat to up to 18 thousand people. Moreover, the Swiss manage to extract tens of tons of aluminum, steel and even precious metals from waste. Even gold can be extracted from the ash that remains after the incineration of waste using a unique technology! Of course, taking care of cleanliness and ecology, the Swiss could not help taking care of the environmental safety of the incinerators. A sophisticated filtering system maximizes the purification of the smoke that comes out of the factory chimney. Therefore, the factories do not

cause any damage to the mountain air of Switzerland.

Despite the generally positive picture, the opinions are spreading among the Europeans that the problem of waste must be approached from the other side, for society is rapidly acquiring the features of one-time consumption. Pointless shopping becomes a disease, especially for residents of large cities. So maybe we can make the environment cleaner by reducing the number of things we use? For Ukraine, Switzerland's experience in the separate collection and disposal of waste is an excellent example of how the country's citizens, with the support of the state, can put modern technologies at the service of man and nature. Living among pristine fields and forests, drinking clean water, breathing unpolluted fresh air is a reality! ■



# Our man in SpaceX



The provincial city of Zhytomyr has already gone down in the history of cosmonautics, having presented the world with the designer of the first space rockets, Serhii Koroliov. On February 6 of this year, another citizen of Zhytomyr, Oleksii Pakhunov, managed to write his name in the history of deep space exploration.



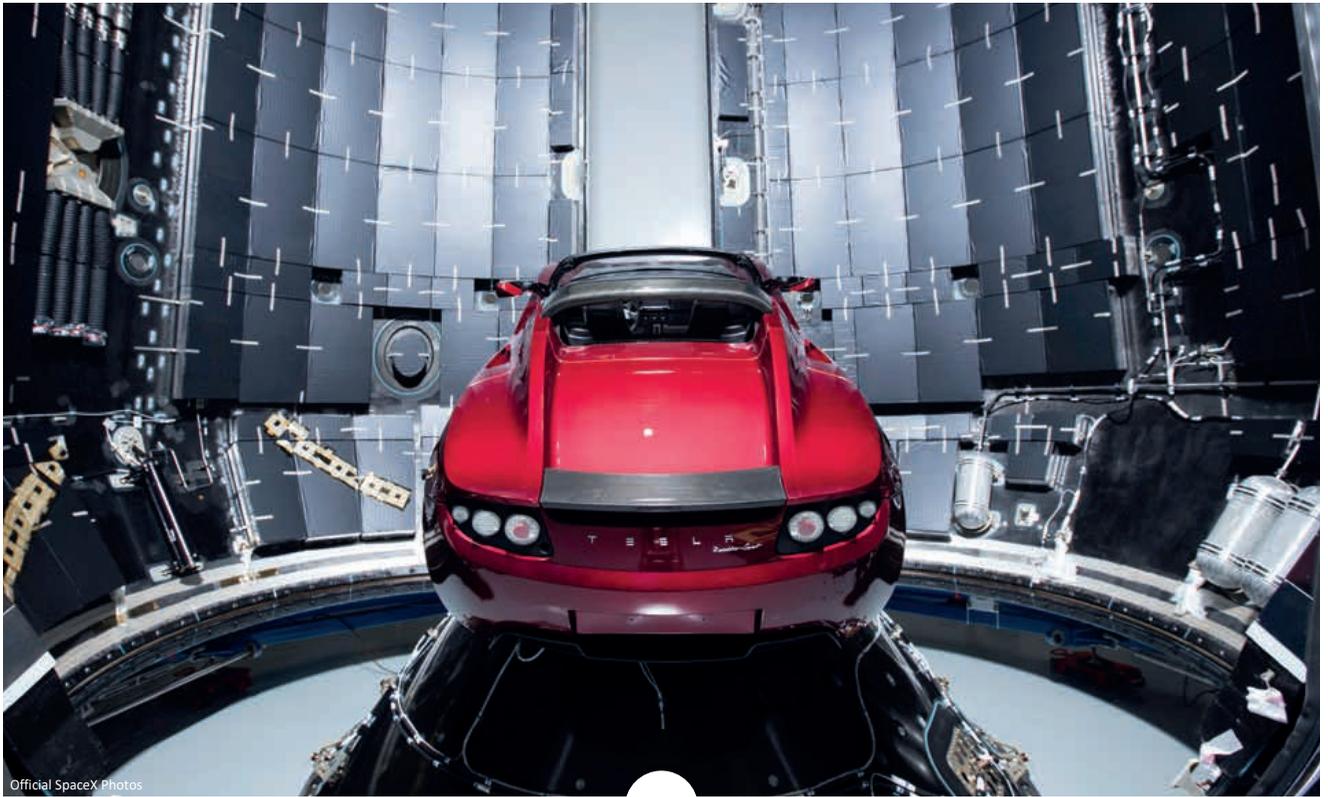
**F**ive, four, three, two, one, blast!.. It seems that in these seconds the whole world, with bated breath, was watching the historic launch of the Falcon Heavy super-heavy launch vehicle with Elon Musk's personal electric car on board. Hundreds of SpaceX employees closely watched every moment of the spacecraft's flight, with the senior software developer of the company, Ukrainian Oleksii Pakhunov, in the first row. A graduate of the Khmelnytskyi Technological University of Podillia (now the Khmelnytskyi National University) with a degree in Computer Systems and Networks, he played an important role in SpaceX's space launches.

### Hobby + hobby = success

It all started in 2004, when Oleksii, after a short experience in Romania, moved to Denmark to work at the Microsoft office in Copenhagen. Then a rapid development of his career started; in 2006, he joined the Windows Kernel team, Redmond, USA. Soon thereafter, he joined one of the Microsoft Research teams, and in 2012 – Google. According to Oleksii, in mid-2013, a recruiter from SpaceX contacted him and offered him a job at the company. By that time, SpaceX was already a very famous and prestigious company, and our compatriot could not reject such an offer. “It was a very interesting experience for me, because at my new place of work I could combine my two favorite hobbies, programming and space,” recalls Oleksii. Pakhunov had only two personal meetings with the company founder: the first time – at a get-together in a restaurant, and the second in a rather stressful environment, when it was required to make a difficult decision quickly. “Of course, I liked the first meeting much more,” the Ukrainian recalls with irony.

### About working at SpaceX

Oleksii is a member of the Falcon Software team of ten. One doesn't need to have any special aerospace training to work at SpaceX. Often, the developers of embedded/server applications, system developers and people from the gaming industry come to work at a project. The systems supporting



Official SpaceX Photos



Official SpaceX Photos



<https://briankoberlein.com>



**The peculiarity of working on a software product for Falcon lies in the extremely tough requirements for reliability, simplicity and predictability**

the flight use the C++ and Linux programming languages. Less critical systems can use Python and other languages.

The difference between working on a software product for Falcon and creating any other software lies in the extremely tough requirements for reliability, simplicity, and predictability. “If the Word editor or a page in the browser can crash with minimal consequences for the user, at launch and during the flight of the rocket it is fraught with multimillion losses and possible human casualties. This affects architecture, data processing, and coding style. Naturally, such responsibility requires absolute commitment in work. Team members work 45–50 hours a week.

At the same time, time for rest and personal life remains,” says Oleksii Pakhunov.

### About Elon Musk's secrets of success

Oleksii Pakhunov assures that Elon Musk is well versed in engineering, and has a great flair for working solutions to complex engineering problems. Moreover, he is good at solving engineering problems using business methods. “Let’s say you are faced with the problem that your main application is processing data too slowly,” continues Oleksii. – A naive engineering approach to solve this problem is to spend some time optimizing the code.



Oleksii Pakhunov assures that Elon Musk is well versed in engineering; he has an excellent flair for working solutions to complex engineering problems



A slightly less naive approach is to buy ten times as many servers. This is probably not very effective, but it can be justified since this is the main function of the company. Musk in this situation can say that, in fact, optimizing data processing is not the problem that needs to be addressed. You just need to reduce the flow of incoming data and not sweat it. This will not only solve the original problem, but it will also help in a dozen of other places where a large amount of data created problems. So the only thing to be done is to find a way to reduce the amount of incoming data. This conceptual thinking is one of the reasons why Musk succeeds in many challenges.”

According to our compatriot, the employees’ attitude to Elon Musk is extremely respectful. This man not only dared to create a rocket startup, which everyone laughed at, but also managed to turn it into the largest company that is now reshaping the space launch market. And now, when Musk talks about the colonization of Mars, people no longer twist a finger to their temples, but listen and speculate to what extent it is possible. After the successful launch of Falcon Heavy, Oleksii emotionally wrote on his blog: “Hurray! It worked!” and thanked all those who were not indifferent: “Thank you very much for your congratulations. It is great to know that the results of our work evoke such a positive response.” ■

### By the way...

On the last day of January 2018, the cult Ukrainian musician Sviatoslav Vakarchuk visited SpaceX. It was Oleksii who gave a tour of the company to the leader of Okean Elzy (by the way, a physicist by education). “Space glands and good coffee made an indelible impression on Sviatoslav. We have a free espresso bar where baristas make coffee from morning to night. The queue never ends,” wrote Pakhunov in his blog.

# "Decentralisation" campaign

The world is becoming more demanding every day. Any sphere of human activity constantly requires new flexible solutions. Ventilation is no exception. Traditional ventilation systems are usually energy-intensive, take up a lot of space and often do not fit into the room interior. The organization of such ventilation systems requires complex construction and installation work and a lot of time for their implementation. To avoid all these inconveniences, single-room ventilation systems have been developed.







**V**ents has set a trend towards single-room ventilation. The company latest developments include **DVUT** and **MICRA** air handling units. The units provide not only the inflow of fresh filtered air into the room, but also the exhaust air extraction. Besides, they are energy-saving devices: built-in heat exchangers return the heat of the removed air to the room, which significantly reduces heating costs.

The advantages of using single-room units are clearly visible in comparison with the so-called natural ventilation. Until now, in many residential buildings, educational and public institutions, traditional ventilation by opening windows and vents is used. Such ventilation has a number of drawbacks, the main of which are large heat losses during the cold season, significant temperature and humidity

drops, drafts, untreated air inflow into the room, etc. DVUT and MICRA units can solve all these problems. They supply heated and purified air to the room at the right time and in the required volume. Unlike traditional ventilation, single-room units do not require the people to leave the premises during their operation, as they operate almost silently and do not create drafts.

DVUT and MICRA also offer benefits in comparison with many centralized ventilation systems is easy and much faster installation. If you decide to install a single-room unit, you do not have to take out furniture, carry out renovations, allocate space for the duct system, etc. All that you need is to make a hole of the required diameter in the outer wall and connect a single-room unit that does not take up much space. You must agree that





it is a fairly convenient and simple way to organize a complete and, most importantly, effective ventilation system.

MICRA units will perfectly fit into the home interior, and DVUT are truly indispensable for schools, offices, conference rooms, libraries and other public spaces.

### MICRAclimate at home

Most private houses and apartments suffer from insufficient or improperly organized air circulation, which leads to oxygen deficiency, excessive humidity and, as a result, the formation of mold. Many hazardous substances are also emitted by furniture, carpets, household chemicals, and paints. At home, a person runs the risk of poisoning with ammonia, benzene, formaldehyde or other harmful toxins.

However, window ventilation, to which many of our compatriots are accustomed, has a number of disadvantages and is not able to solve the problem of air exchange correctly. Nevertheless, there is a solution: MICRA single-room units.

MICRA air handling units are the optimal solution for organizing energy-saving ventilation in apartments, private houses, public and commercial premises. The units do not take up much space and are designed for external wall mounting. Before air is supplied inside the room, the units provide its filtration, as well as heating in the heat exchanger due to the heat of the exhaust air. Depending on the model, heat exchangers allow returning up to 92 % of the heat energy back into the room, which significantly reduces heating costs. When required, some MICRA models can further heat the supply air.

The units are equipped with EC motors, which are characterized by low energy consumption and high efficiency. The unit air flow varies from 60 to 150 m<sup>3</sup>/h depending on the model. The equipment automatically adjusts the air flow rate to maintain the required air quality.

The undoubted advantage of MICRA units is their silent operation. Unlike some other domestic appliances (such as a refrigerator), they work without the slightest noise and do not draw attention to themselves.

## Creating a working atmosphere

Unlike MICRA, DVUT units feature increased capacity, which allows them to be used in rooms with a larger area. As mentioned above, these air handling units do not create inconvenience during installation, so their mounting will not interfere with the training or work process. The equipment does not require a lot of space and can be installed both in finished and reconstructed buildings. Their installation requires minimal intervention in the structural elements of the building and does not damage the interior of the premises. Fresh air enters through a small channel in the wall, so the units do not waste energy to overcome the resistance of the air ducts. The devices can be floor-mounted (DVUT HB EC and DVUE HB EC models) and suspension-mounted (DVUT PB EC model).





Like MICRA, DVUT units are energy-saving devices. They are equipped with counter-flow polystyrene or aluminum heat exchangers. Heat recovery efficiency of DVUT HB EC and DVUE HB EC units is up to 97 %, and for DVUT PB EC units – up to 94 %.

The capacity of the floor-mounted DVUT HB EC and DVUE HB EC units reaches 550 m<sup>3</sup>/h, and suspended DVUT PB EC – up to 510 m<sup>3</sup>/h. The capacity and type of units are selected in view of the individual requirements for each specific room.

The advantages of single-room air handling units include the automatic operation. The performance of the units can be adjusted depending on the concentration of carbon dioxide in the room or on the level of humidity. It is possible to set up a weekly operating schedule by setting the air supply time, its speed and even the air temperature. Besides, DVUT and MICRA units are equipped with failure and filter replacement indicators. The anti-freezing system of the recuperative heat exchanger is also available.

With the advent of such a phenomenon as single-room ventilation, the formation of high-quality air circulation in private and public premises has become much easier and more convenient. Single-room air handling units allow organizing a full-fledged air exchange in the room quickly, efficiently, effectively, without taking up a lot of space and without violating the interior integrity. That is why the use of DVUT and MICRA units is the optimal solution for any premises. ■

# *The taste of fresh air*

*Effective*

*Reliable*

*Energy-saving*

- Supply clean fresh air to the premises
- Remove stale extract air from the premises
- Clean the air of dust and insects
- Prevent penetration of excessive humidity and appearance of mould
- Protect against outdoor noise
- Recover heat and provide humidity balance inside
- Low energy demand

VENTS TwinFresh

*Comfo RB-50*

*Single-room energy  
recovery ventilator*



# The mysteries continent

Antarctica is the southernmost, coldest, windiest and driest, as well as the least explored and mysterious continent, which has long attracted travelers with breathtaking uninhabited landscapes and unique wildlife. The icy expanse of Antarctica spans over 5.4 million square miles, so it's no wonder the land is full of mysteries.



# of the white ment



**N**o place on Earth beats this vast snowy desert ruled by wind, water, ice, and rocks. Antarctica is absolutely amazing. Trips to the southernmost continent of the planet is still inaccessible, but scientists continue to make amazing discoveries about this mysterious world. We invite you to learn the most interesting and little-known facts about the white continent.

### Did you know that ...

- Antarctica contains 90 % of all ice on Earth.

- About 70 % of the world's fresh water reserves are concentrated here. At the same time, Antarctica is the driest place in the world, because it receives only 18 mm of precipitation per year (for comparison: the Sahara Desert – 76 mm). Dry McMurdo valleys are a place where there has been no precipitation for more than 2 million years.
- On July 21, 1983, Vostok station recorded the lowest temperature on Earth, minus 89.2 °C.
- The highest recorded temperature in Antarctica is + 14.5 °C.
- The largest iceberg that broke away from the continent is considered to

be the B-15 iceberg with an area of 11 thousand square km, which detached from the Ross Glacier in March 2000. It took it 10 years to melt completely.

- In Antarctica, there are places where the longest and strongest winds on the planet and the most powerful solar radiation are observed.

### Antarctica and people

- The Russian round-the-world naval expedition led by Thaddeus Bellingshausen and Mikhail Lazarev, which took place in 1820, is officially considered the discoverer of Antarctica.



**Antarctica is the  
driest place in the world  
with only 18 mm  
of precipitation per  
year**

- The first person to reach the South Pole was the Norwegian explorer Roald Amundsen.
- The first woman to visit the southern continent in 1935 was the wife of the captain of a Norwegian whaling ship, Katherine Mikkelson.
- The first and so far the only person born in Antarctica is Argentine Emilio Marcos Palma. In 1978, Argentina wanted to claim part of the continent in this way, but to no avail. Antarctica has remained the only continent, the land of which does not belong to any state in the world.
- There are no permanent residents on the white continent. The population of Antarctica is made up of participants in scientific expeditions from different countries, including Ukraine. In summer, their number is about 5 thousand people, and in winter it decreases to one thousand. By the way, if you want to join the inhabitants of Antarctica, you will have to remove your wisdom teeth and appendix.

### Natural phenomena

- There are two active volcanoes in Antarctica, the eruptions of which

were recorded in 1967 and 1969. The largest of them, Erebus, is 3,794 m high.

- Under a layer of ice from 600 m to 4 km thick, there are the Gamburtsev Mountains, discovered by a Soviet expedition in 1958. The length of the mountain range is 1,300 km, the width is from 200 to 500 km, and the highest point is 3,390 m.
- The Vostok Lake, located under an ice sheet ranging from 600 m to 4 km thick, may contain life. The water temperature therein is maintained at 10 °C.
- The Weddell Sea is considered the cleanest on the planet. The transparency index of seawater here actually corresponds to that of distilled water.
- The largest asteroid crater on the planet with a funnel diameter of 482 km is located in the Wilkes Land area. It was formed about 250 million years ago as a result of the fall of an asteroid with a diameter of at least 48 km.
- Surprisingly, there are rivers in Antarctica. The length of the Onyx River, which flows only two months a year due to the harsh climate, is 40 km long, and its flora and fauna are microorganisms and algae.



The population of Antarctica is made up of participants in scientific expeditions from different countries, including Ukraine

- There is the Blood Falls in Antarctica. The unusual color of the water is due to the presence of iron staining the water when oxidizing on contact with air. Scientists managed to establish the source of this water; it is squeezed under a glacier and is more than a million years old.

And a few more fun facts

- Antarctica does not have the usual division into time zones. People live according to the time of their country or according to the time zones of those who bring them supplies.

- Antarctica has its own dialing code and even its own Internet domain name. The phone code of Antarctica is **672**, and the network name is represented by letters **.aq**.

- Antarctica also has its own, albeit unofficial, currency – the Antarctic dollar, as well as the only ATM in the entire continent.

- It's amazing that it has its own fire brigade.

- 53 million years ago, the climate of Antarctica was so warm that exotic plants grew there.

- There are seven Christian churches on the continent. ■





WHEN EVERYTHING IS DONE RIGHT





# Smoke and Fire Tamer

## Medium pressure axial fan VENTS VPVO

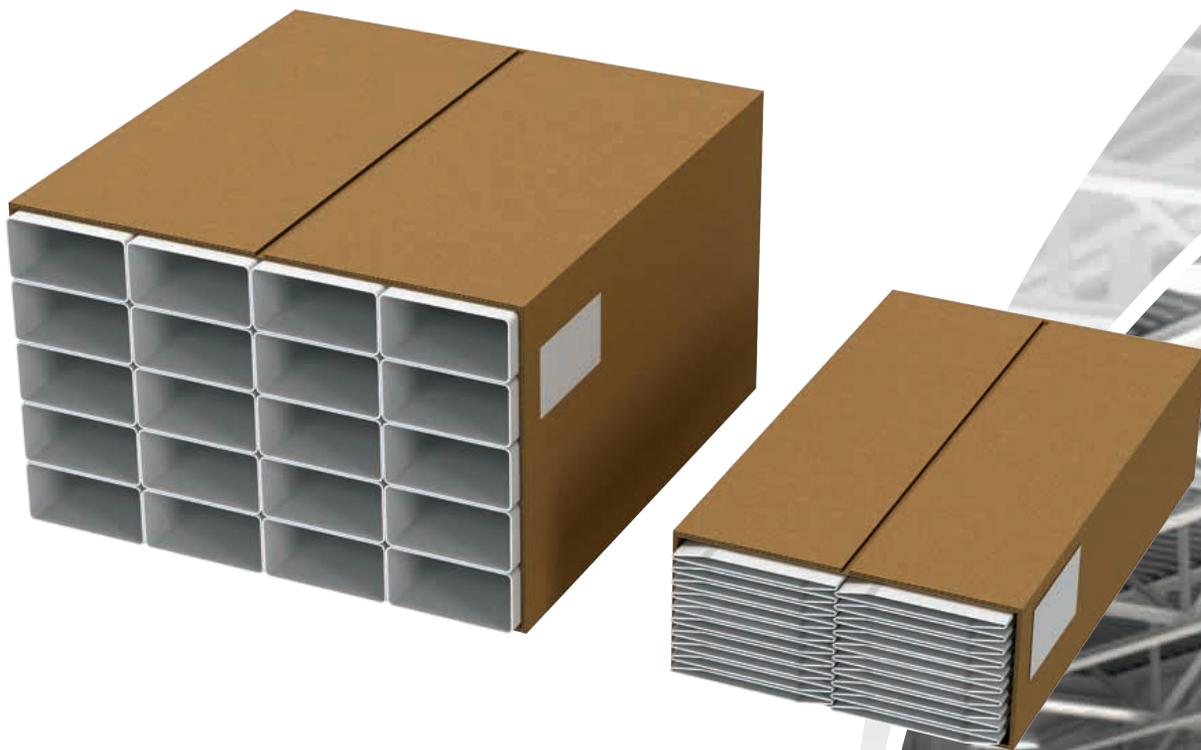
**F**ans of the new [VENTS VPVO](#) series are designed to create air pressurization in smoke extraction systems (up to 55 °C) and have a capacity of up to 41 000 m<sup>3</sup>/h. Such high performance allows them to be used in general ventilation systems with high air flow rates. This brand new product can be used in industrial, public, residential, administrative and other buildings.

During a fire, the main danger to people is posed by smoke, namely the harmful substances released during combustion. The creation of excessive pressure in staircases, air-lock vestibules, and elevator shafts prevents smoke from entering these

rooms, and protects people from exposure to carbon monoxide along their escape routes.

The metal casing of the fan with rolled flanges ensures high rigidity and minimal clearances between the casing and the blades. For convenience, an inspection hatch is provided on the fan casing. All casing elements are powder coated to protect them against damage. The fans are equipped with three-phase single-speed electric motors. The unit can be mounted on any flat surface or directly into a ventilation duct. VENTS VPVO fans can be installed on the roofs of buildings to provide direct supply of outside air to the staircase areas. ■





# Transformer channels

## Round and flat folding PVC duct system

**A**nother innovative solution from the Vents company is the **PLASTIFLEX** folding duct system, presented by round and flat PVC air ducts. A special design allows folding the channels easily, which contributes to efficient logistics organization and significant space savings during storage and transportation of products.

New channels provide:

- 40 % higher transportation efficiency;
- saving space during storage of

products in the warehouse by 60 %;

- the possibility of presenting a wide range of products at the points of sale;
- 20 % less time required for duct processing and fastening;
- easy and mounting, better fit of parts made of elastic polymer material;
- compatibility with standard connectors and mounting elements of PLASTIVENT duct systems.

The ducts are made of white PVC and have a length from 350 to 2,500 mm. ■







# A powerful intellectual

## Low-noise VENTS Style Eco fan

**T**he new innovative silent extract fan [VENTS Style Eco](#) is a record holder in terms of power, energy efficiency and smart options. It is equipped with a DC motor, an automatic damper, a Wi-Fi module, and is designed for installation in ventilation shafts or connection to Ø100 mm air ducts. The maximum air flow (101 m<sup>3</sup>/h) is combined with a low noise level of 22 dBA only. This effect is achieved through the use of a mixed impeller, rubber vibration damping inserts and air rectifiers in the exhaust spigots.

The DC motor ensures extremely low power consumption (3 W). It is designed for 40 thousand hours of continuous operation, is protected from overheating and moisture ingress, making it a perfect solution for bathroom ventilation. The presence of a Wi-Fi module allows controlling the fan remotely by means of an application adapted for iOS or Android operating systems. The LED panel with multi-colored case illumination used in the Style Eco LED model will create a special mood in the bathroom. ■



# Silent cleaner

## KSV/KSV ES sound-insulated fans

**T**he key requirements for modern ventilation equipment are energy efficiency, quiet operation and a high degree of the supply air purification. All these requirements are met by a new VENTS product, a centrifugal fan of the **KSV** series.

This brand new product is designed for supply ventilation systems requiring a high degree of air flow purification and a minimum noise level. The new device stands out for its very quiet operation; the level of noise generated by it is in the range of 14–38 dBA.

Despite its small size, the new fan demonstrates very good performance. When connected to the

air duct system with a diameter of 100 mm, the performance of the KSV fan reaches 190 m<sup>3</sup>/h, and with air ducts 200 mm in diameter – astonishing 650 m<sup>3</sup>/h.

However, the main feature of the new fan is the filters installed in the casing. Moreover, there may even be three of them in the basic model: a coarse G4 filter, a fine F8 filter or a HEPA superfilter of class H13, and a carbon filter with odor elimination can be installed as the third filter. KSV ES fan modification provides for the installation of an electrostatic filter, the use of which prevents small particles and aerosols up to 0.01 microns from entering the room. ■







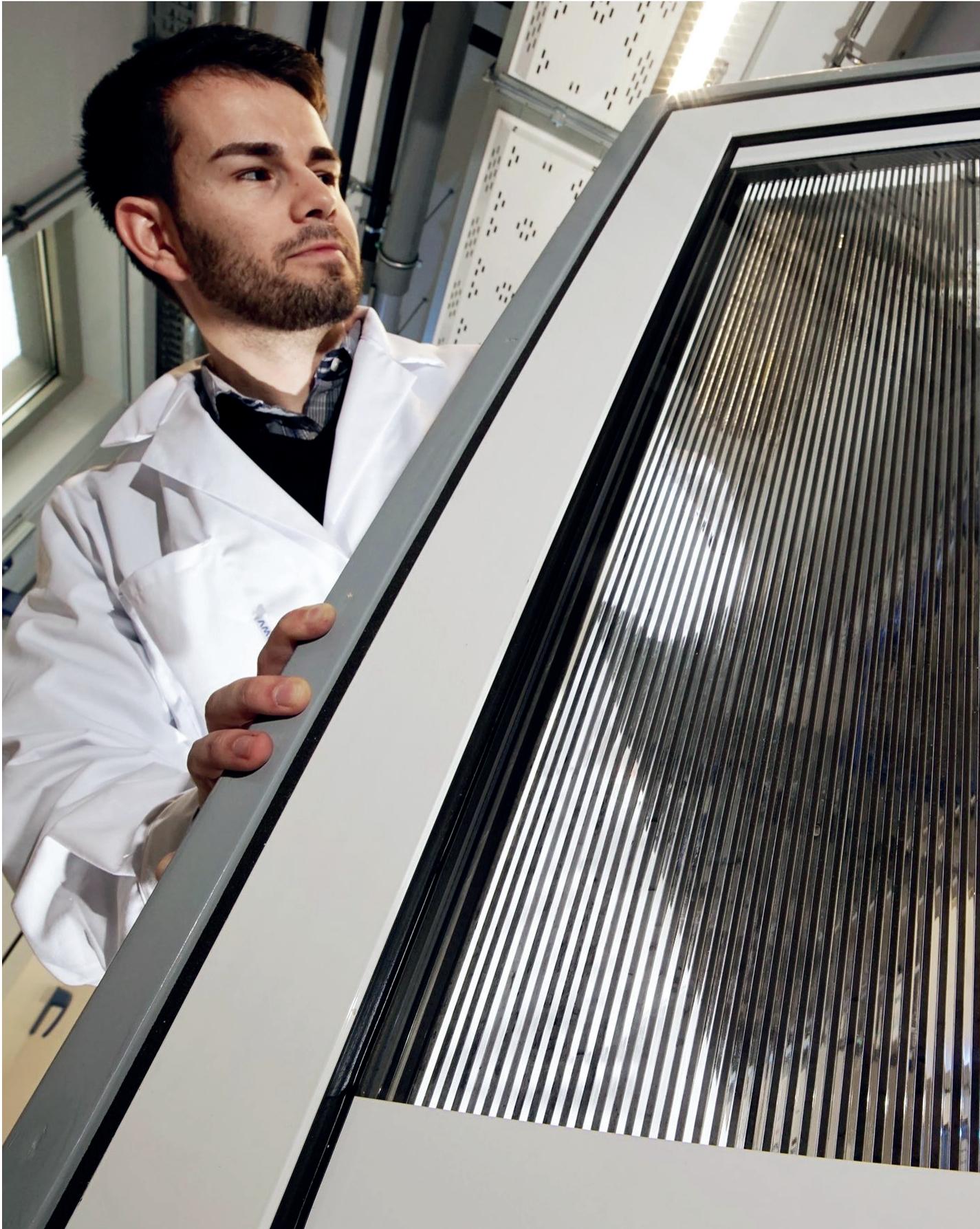
Exhaust decorative axial fans with air capacity up to 310 m<sup>3</sup>/h

# *Ice and flames*

## **VENTS DOMINO**

*The fan is designed for continuous  
or periodic exhaust ventilation of bathrooms,  
showers, kitchens and other  
utility spaces*







# The house will be heated by smart windows

**T**he main task of any window is to let sunlight into the room. However, shading of rooms is required very often, which is usually achieved with the help of blinds, curtains, and other similar means. German engineers from the University of Jena decided to entrust this function to the window itself and created LaWin liquid smart windows, which allow not only to regulate the amount of light entering the room, but also to accumulate solar energy.

LaWin (Large Area Fluidic Windows) are large-sized liquid windows with vertical channels into which a special liquid with iron nanoparticles is poured. Such particles are bound by surfactants, which prevents them from sticking together. Under the influence of a magnet, the arrangement of particles in the channels changes, which makes it possible to achieve a gradient darkening of the glass and thereby reduce the throughput of the window. At the same time, such a window can act as a conventional thermal solar system. Ferrofluid in dark mode absorbs solar heat, which can then be used to heat the room. By increasing the amount of iron nanoparticles in solution, glass can be almost completely opaque. This will maximize absorption of solar heat and efficient room heating.

According to developers, LaWin windows can be used to decorate building facades. A large area of windows will maintain the required level of illumination in the premises effectively, as well as accumulate a significant amount of heat and use it for three other needs. Ferromagnetic liquid can act as a heat carrier. ■



# Light at the end of the tunnel

Lighting technology is improving continuously, becoming more efficient and cost-effective. Incandescent lamps have been replaced by LED-based lighting devices, which maximize energy savings. Seems like the limit of energy efficiency has been reached? It appears not to be the case! How do you like the idea of not paying for illumination at all? This is quite possible if natural sunlight is used to illuminate the premises. And this is not only about buildings with translucent enclosing structures, transparent roofs and dormers. It is possible to provide an inflow of sunlight into any home, even into rooms without windows (bathroom, toilet, pantry,

dressing room, corridor, basement, etc.). Daylight tunnels will help solve this problem.

Light tunnels consist of three main parts: a transparent roof-mounted dome, a corrugated reflective tube, and a light diffuser. The device operation principle is extremely simple: sunlight enters the chimney through the dome on the roof, where it is reflected many times, and without the loss of energy goes to the diffuser with a shade installed in the right place. Thus, the room is illuminated evenly, reducing energy consumption. If illumination is required at night, a LED lamp can be installed in the tunnel. ■





<https://press.vellux.co.uk>



<http://toronto.crafting.ca>



[www.vellux.ru](http://www.vellux.ru)



<http://www.vellux.ca>



*One day you  
will need someone  
like air and  
someone will be  
like the air you  
need.*

*- Colleen McCullough*

# VENTS

MAGAZINE

ABOUT VENTILATION AND MORE

## VENTILATION AS ART



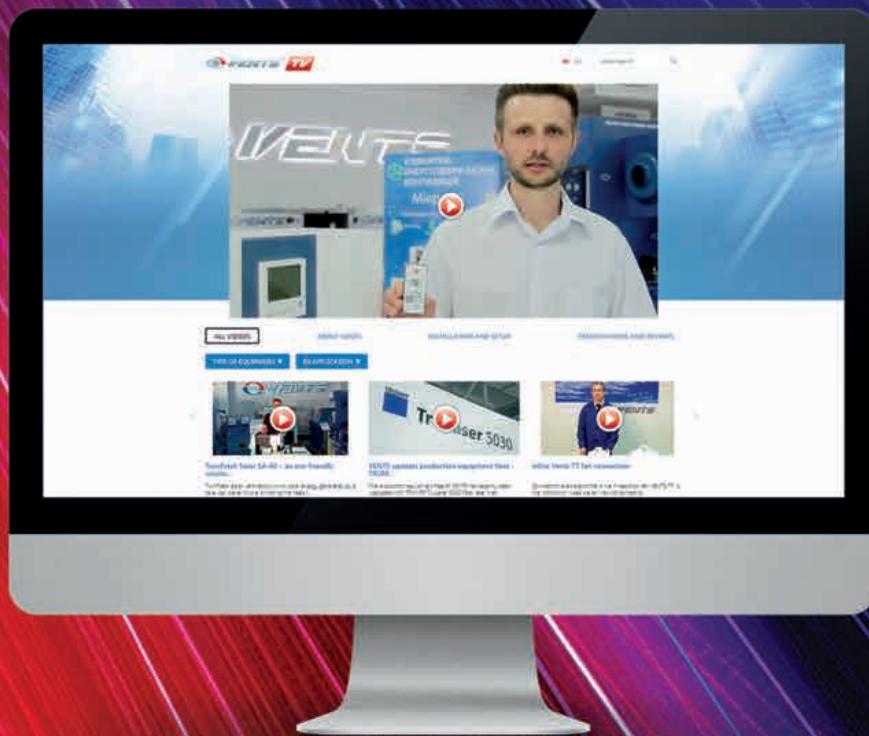
LIKE OUR MAGAZINE?  
ENJOY FREE ACCESS TO IT AT  
[www.ventsworld.com](http://www.ventsworld.com)



**VENTS**



# VENTILATION VIDEO RESOURCE



[www.vents.tv](http://www.vents.tv)