

Barn climate solutions



Ideal barn climate =
exact calculation +
perfect implementation



Prevent problems, before they arise

To create high-quality living conditions for farm animals, to establish animal husbandry as a fixed and recognized part of society in the long term and sustainably – VET.SMART started its mission with this objective in 2014. With our systems and solutions, over a thousand satisfied customers have achieved: healthy animals, high yields, happy farmers. Together we solve climate and husbandry problems, even before they can be observed in the barn. Trust our experts! With veterinary know-how and technical expertise, we also equip your farm for the climatic and husbandry challenges of the future.

Jakob Neumayer
CEO



Team spirit is in the air

Delivering sustainable barn climate solutions of the highest quality for you and your animals - that is what we do! This requires clever minds, nimble hands and keen eyes that work well together. This is exactly what distinguishes our VET.SMART team. We are farmers, technicians, veterinarians. We are old-experienced and young-dynamic. We are women and men who want to make a difference and work hard and tirelessly every day on your solutions for the future. But above all, we are one thing: a family!

VET.SMART BARN CLIMATE SYSTEMS

Animal welfare and
profitability
on the same level





Barn habitat

The keeping of animals in barns is necessary and good from both a veterinary and an economic point of view. However, the protective outer shell poses challenges for the climate inside the barn:

Periods of lack of natural air currents lead to heat (stress) and/or humidity in summer. During the cooler season, natural cold air movements attack the respiratory organs of the animals due to cooling and the resulting inflammation. If you close the air inlet and outlet openings, there will be more waste gas fumes, germs and dust particles in the barn, which also pollute the respiratory tract.

The resulting animal health problems not only reduce the welfare of your animals, but also your hard-earned income. Do not wait any longer and get your specialist advice from our experts!



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Six steps to the right ventilation system

What is ventilation design

Every barn has different requirements, every farm has different requirements. In order to create a perfect barn climate and thus optimum conditions for maximum animal welfare and best performance, the ventilation system must be precisely adapted to your barn. We ask the right ques-

tions, measure the relevant barn climate parameters, gather your personal requirements and plan tailor-made ventilation solutions for you. You will receive an optimum basis for decision-making - objective and individual.

Six steps to the right ventilation system



Barn without ventilation design

Ceiling fans were hung in this barn, although the barn geometry is not suitable for them. The result: the stalls were mostly empty even at moderately warm temperatures.



Stall with ventilation design

With the vet.smart.ventilation design, the optimum cooling system for this type of barn was found. The result: the stalls are perfectly filled even at high temperatures.

The comparison makes things sure for you

The ideal basis for decision-making

On the basis of objectively collected data on your company, your animal husbandry and your animal barns, we design different variants of ventilation systems. You will receive 3D plans of your barns with the respective system components, a

technical description of these and a clear comparison of the systems in terms of effect, appearance, costs and efficiency. This offers you the best possible basis for a success-oriented decision.

Tunnel ventilation*



Brief description

Tunnel-like ventilation of the entire barn with many fans in series

System components

20 axial fans with 75 cm diameter with ON/OFF switch

Climatic effect



Energy efficiency



Noise level



Large room fans*



Brief description

High circulating air movement by large horizontal fans with indirect fresh air supply

System components

3 large room fans with a diameter of 5 m and frequency control

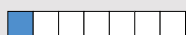
Climatic effect



Energy efficiency



Noise level



Tubes for cooling*



Brief description

Precise fresh air cooling of the relevant animal areas by several tubes

System components

4 cooling tubes with a length of 70 m and automatic temperature control

Climatic effect



Energy efficiency



Noise level



*illustrative example. The type of ventilation system to be compared is individually adapted to the respective requirements.

Why vet.smart.ventilation design:

- Planning based on your measured barn climate
- Objective comparison of different systems
- Cost and profitability analysis
- 3D preview of all systems in your barn
- Animal welfare all along the line!



{ **Optimum air conditions =**
exact calculation + perfect implementation }


vet.smart.tubes for cattle

HIGH PERFORMANCE AIR SYSTEM

Draft-free fresh air in winter, precise cooling in summer – this can only be done by vet.smart.tubes.



vet.smart.tubes - successful cooperation of veterinarians, physicists and technicians

Our goal is to make the life of stabled animals worth living. Therefore, in 2014, in cooperation with experienced veterinarians, technicians and physicists, we developed ventilation and cooling systems that are unique in terms of precision, accuracy and their mode of action.

Thanks to our technical and veterinary knowledge, we have found a calculation method that enables us to plan an exactly adapted ventilation system for each barn.



Profitability and animal health – no compromise



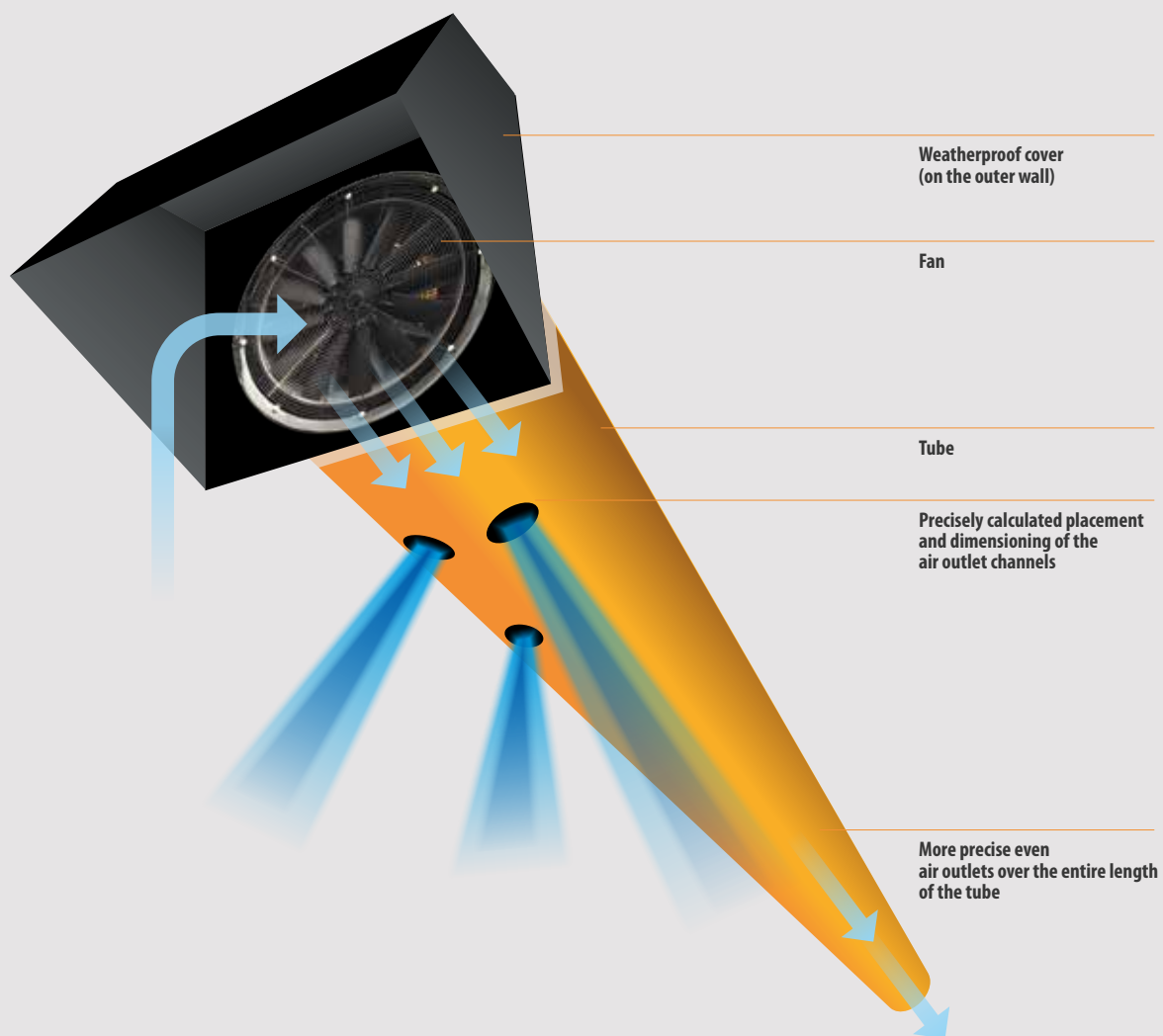
The use of our ventilation systems has two clear objectives: Increase animal health and thereby optimize yields. Fresh air directly to the animal – that is a must! We are dedicated for the best living conditions from birth to old age. And our customers benefit from this, because only all-round healthy animals make profitable farming possible.

Tailor-made systems make the difference



The systems are precisely calculated and dimensioned with regard to air speed and exchange of the air volume, taking into account the geometry of the barn, including the exhaust air situation and the constitution of the animals. Whether an old building or a new building – the tube corrects seasonal and structural factors so that every place in the barn becomes an animal-friendly

Optimum effect by means of exact calculation



vet.smart.tubes are available in the following colors:



Orange



Dark gray



Green



Red



Blue



This is how we plan, calculate and implement the ideal vet.smart system for your individual barn

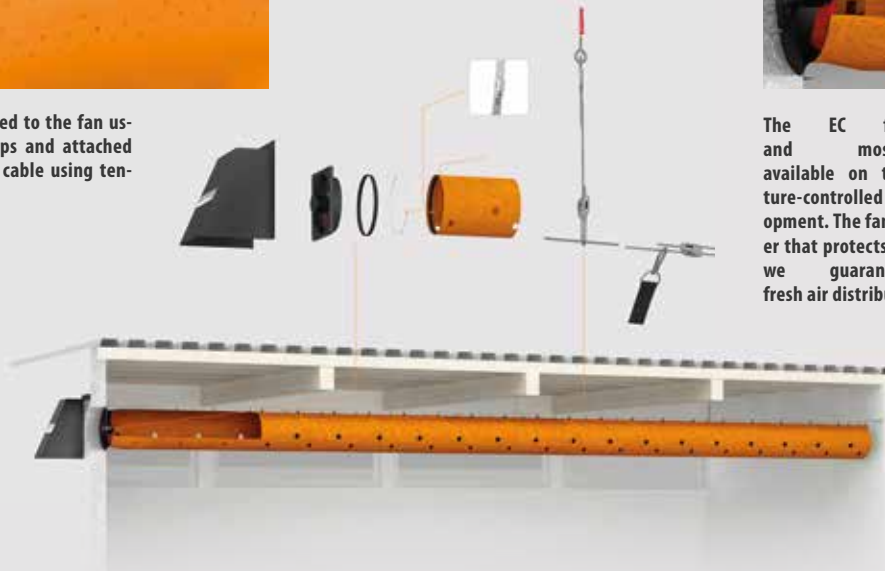
Well thought out system for every barn



The tube is connected to the fan using tensioning straps and attached to a stainless steel cable using tensioning devices.



The EC fans used are the best and most energy-efficient fans available on the market. They enable temperature-controlled operation with minimum noise development. The fan is protected with a weatherproof cover that protects against outside influences. Therefore we guarantee even and draft-free fresh air distribution.



The temperature-controlled regulator is robust and easy to use. This automatically adjusts the fan output to the measured temperature.



The tube is delivered with an individually calculated diameter and hole pattern as well as a suitable length.



If possible, the fan is built into the outer wall of the barn or is connected to the outside by means of an adjacent room with sufficient air volume. This is connected to the tube and supplies the barn with fresh air. 24 hours a day, 365 days a year.

1

Analysis of needs and targets

Initial analysis of the building to be ventilated by our on-site specialist. Measurement and recording of the relevant data of the building to be ventilated, taking into account all factors influencing the ventilation system.

2

Individual planning & detailed analysis using the barn geometry

Pre-dimensioning of the system based on the recorded data.

3

Exact calculations

Based on veterinary expertise, the system is precisely calculated in terms of air volume, air distribution and target speeds.

4

Installation / Commissioning

High-precision planning requires installation that is centimeter-accurate. This last important point in the system implementation is also fulfilled by the optional installation management and joint commissioning.

Cooling or ventilation – the decisive difference in animal health.



**VET.SMART Systems –
inspired by natural behavior**

The mother
instinctively protects her
calf from harmful drafts.

Ever more extreme climates are leading to ever hotter summers and shorter transition periods. This brings with it new requirements for the barn climate. Shorter lying times, reduced feed intake, a decline in fertility, which are all effects of heat stress, can already be observed in early spring. On the other hand, the first cool days at the end of summer bring such an unpleasant climate

with them that calf coughing, watering eyes, hanging ears and shaggy fur are immediate signs of bad air conditions. In order to guarantee optimum animal welfare, there is only one possibility for every future-oriented animal husbandry enterprise: Draft-free ventilation all year round in the entire barn and additional cooling of sensitive areas from spring to autumn.

Cooling – high air speeds in the right place

Moving air costs energy and that costs money. That is why the full focus is on cooling the sensitive areas in the barn and on the animal. But cooling also means refreshing, and that requires fresh air. vet.smart.tubes meet both requirements to technical perfection.



Ventilation – even draft-free fresh air supply

If it gets cold outside, the barn openings must be closed in such a way that the outside air does not reach the animals in the form of uncontrolled drafts. In order to supply the animals with the optimum amount of fresh air, exactly the right amount of air is needed, evenly distributed over the animal area and at speeds below the animal-specific draft limit. This is exactly what our ventilation systems deliver.





Ideal air conditions in an open-plan barn

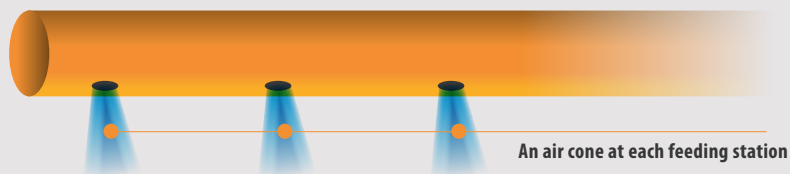
Feeding table / feeding places

Cooled cows eat more often and more quantity!

vet.smart.tubes for feeding places generate high air velocities on the neck of the eating cow and thus cool it. This increases the visit frequency of the animals and a constant feed intake is guaranteed even on hot days.

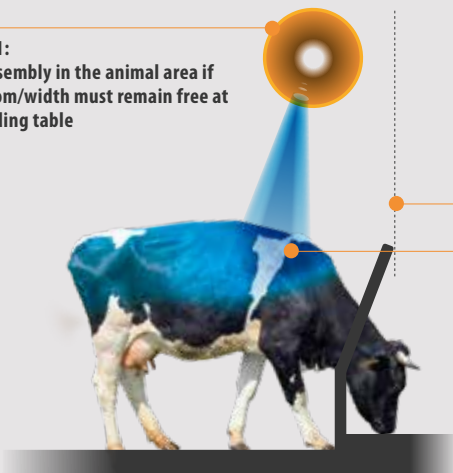


Constant feed intake and regular feeding times even on hot days

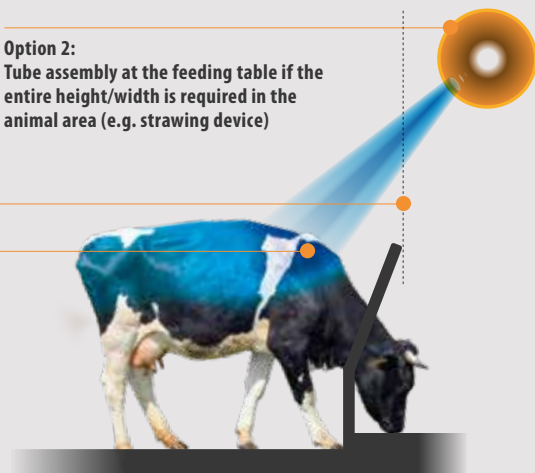


An air cone at each feeding station

Option 1:
Tube assembly in the animal area if headroom/width must remain free at the feeding table



Option 2:
Tube assembly at the feeding table if the entire height/width is required in the animal area (e.g. strawing device)



Feeding grid

Target point of the airflow

Why vet.smart.tubes:

- The cooling leads to an increased frequency of visits and thus to a more constant feed intake
- Reduction of heat stress by means of precise cooling
- No ranking fights between cows
- No influence on the moisture content or no drying of the feed
- Proven increased milk yield



Ideal air conditions in an open-plan barn

Stalls

Outstanding cooling keeps the animals lying longer!
vet.smart.tubes for stalls bring targeted air cones for each animal to its place. The point of impact on the cow's body is selected in an optimum way for effective cooling. This increases the lying time and an even occupancy of the stalls is achieved even at high temperatures.

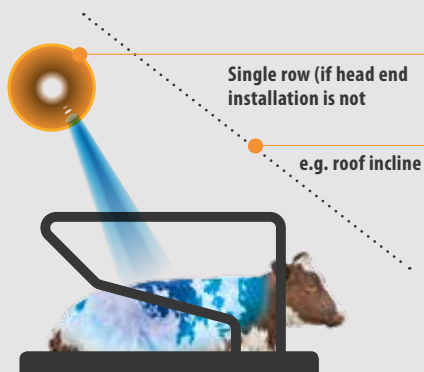
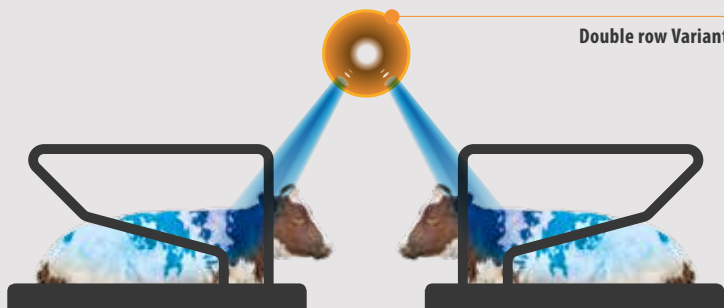


Increased air speed and permanent air movement prevent heat build-up

Single row



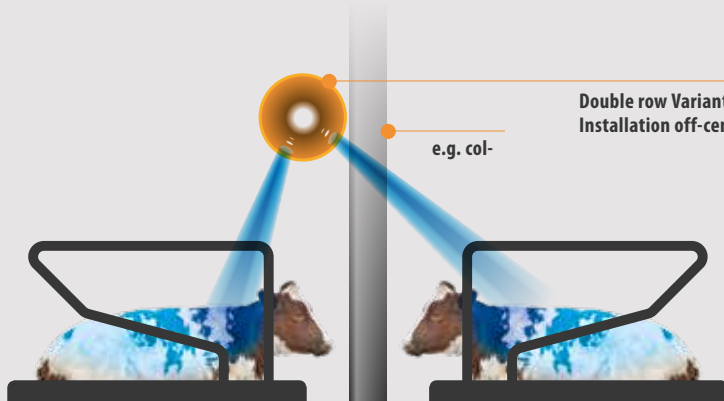
Double row Variant 1



Single row (if head end installation is not

e.g. roof incline

Double row Variant 2
Installation off-center



e.g. col-

Why vet.smart.tubes:

- Reduction of heat stress by means of precise cooling
- Each stall is supplied with fresh air
- Longer lying times lead to longer rest periods and therefore lower veterinary costs
- Reduced fly burden
- Proven increased milk yield





Ideal air conditions in the compost barn and dry area

Compost areas and straw areas

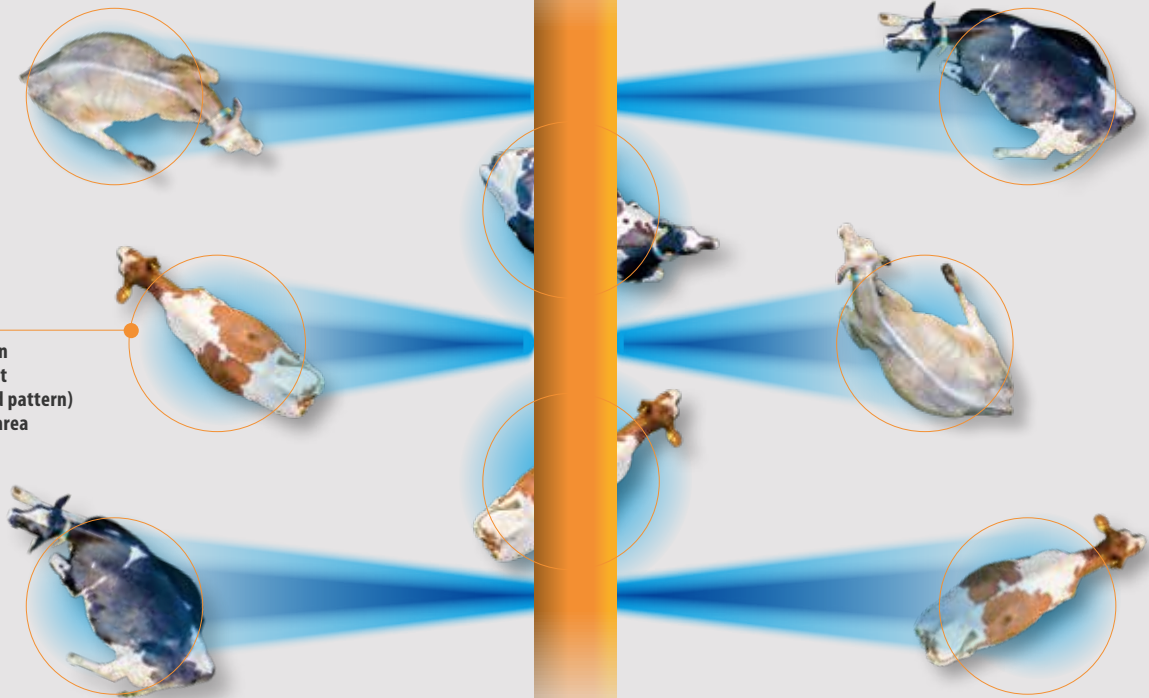
Fresh air supply over the entire group area

The cooling cones are arranged in a checkerboard pattern and serve to distribute the animals more evenly over the area, thus reducing social stress. In the summer months, vet.smart.tubes help to cool the compost surface in addition to reducing heat stress. On cold days, vet.smart.tubes promote the drying of the compost area.



Space, air and cooling for the most sensitive cows in the herd

Even distribution
the fresh air spot
(in checkerboard pattern)
over the entire area



Why vet.smart.tubes:

- Reduction of heat stress by means of comprehensive cooling
- Dissipation of animal and radiant heat in summer
- Reduced fly burden
- Less grouping / More even distribution of the animals
- Optimum preparation for the birth



Ideal air conditions in the milking area

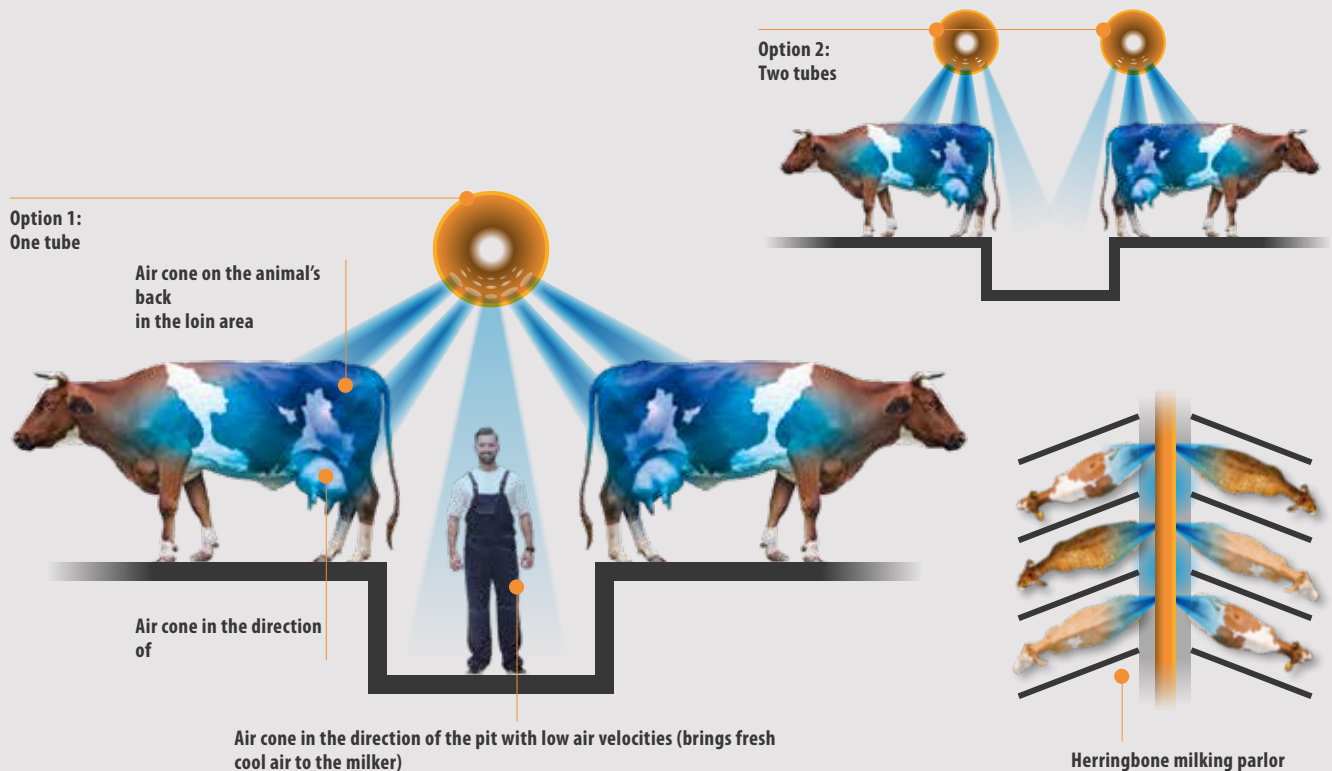
Milking parlor incl. waiting area

No stress, please!

vet.smart.tubes for milking parlors reduce stress when milking. High air speeds at the cows' ideal positions in the milking parlor and gentle air movements in the milking pit ensure optimum conditions for cows and milkers. The precise guidance of the cooling air currents reduces fly stress.



Fresh air and a pleasant climate for animal and farmer



Why vet.smart.tubes:

- Reduced fly burden
- Fresh air in the milking pit means better working conditions for the farmer / milker
- No unnecessary distances for milkers and cows, as the cows go towards the chilled zone
- More relaxed cows while waiting and in the milking parlor
- Reduction of heat stress and therefore no loss





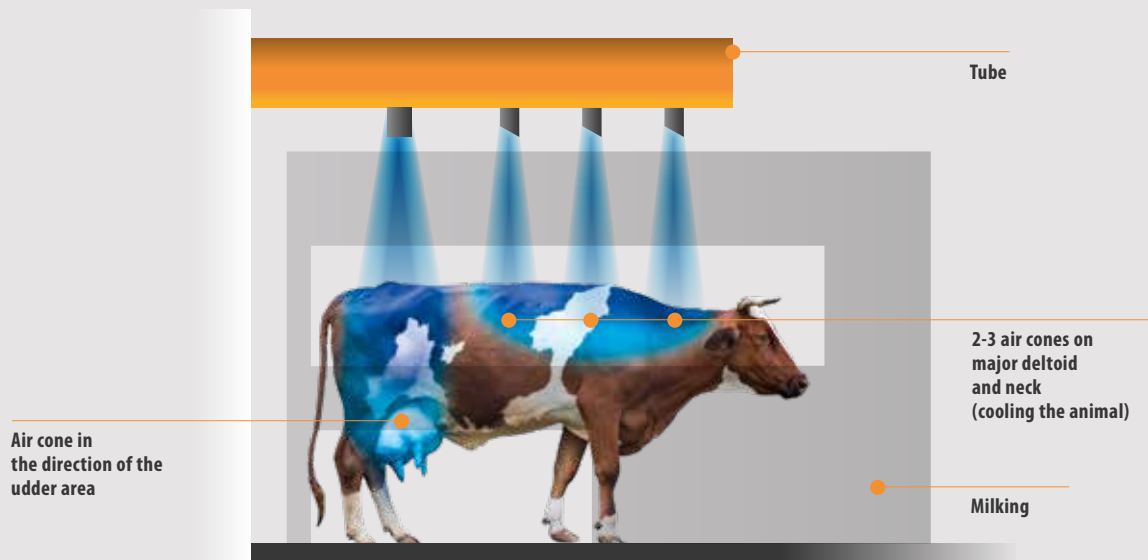
Milking robot

Stress reduction by means of fresh air

vet.smart.tubes for milking robots increase the attractiveness of the milking robot for your cows. A "fresh air path" into the robot chamber is created in front of the robot. In the robot itself, the cow is pleasantly cooled on the body and fresh air flows around the udder to drive away flies.



Increase the attractiveness of the milking robot with fresh air



Why vet.smart.tubes:

- Increasing the attractiveness of the milking robot for the cows
- Less driving
- Relaxed cows while being milked
- Reduction of heat stress and therefore no loss in milk production
- Control of visit frequency by means of intelligent activation and deactivation



Ideal air conditions in the calf area

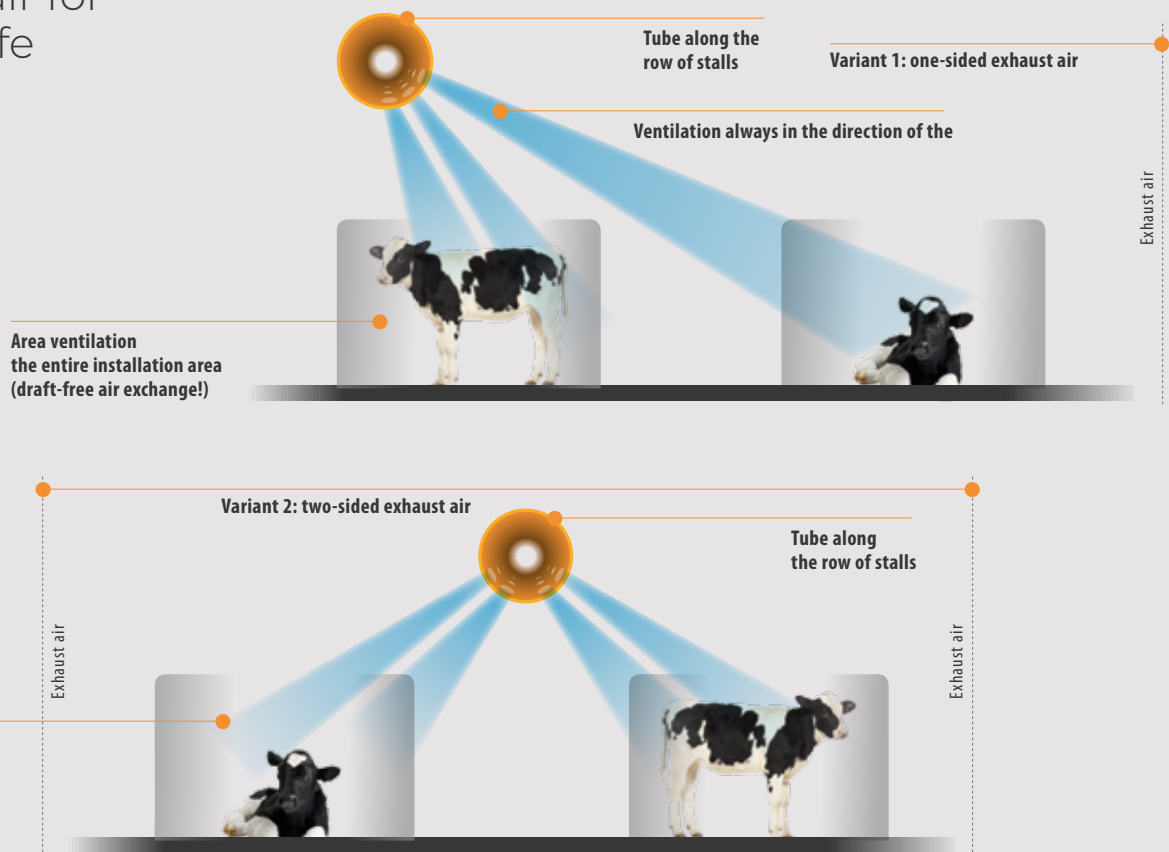
Individual stalls

Fresh air for the freshest investments

vet.smart.tubes for individual stalls supply a defined amount of fresh air draft-free for each calf in each calf stall. The working area for people is gently supplied with fresh air without disturbing drafts. This creates a "germ barrier" between the different rows of boxes, which prevents the transmission of pathogens.



Fresh air for fresh life



Why vet.smart.tubes:

- Continuous, draft-free fresh air supply
- Fewer respiratory diseases thanks to a constant supply of fresh air
- Reduces the germ content in the animal area
- Lower veterinary bills
- Less calf losses





Group area

Fresh air for a refreshing experience!

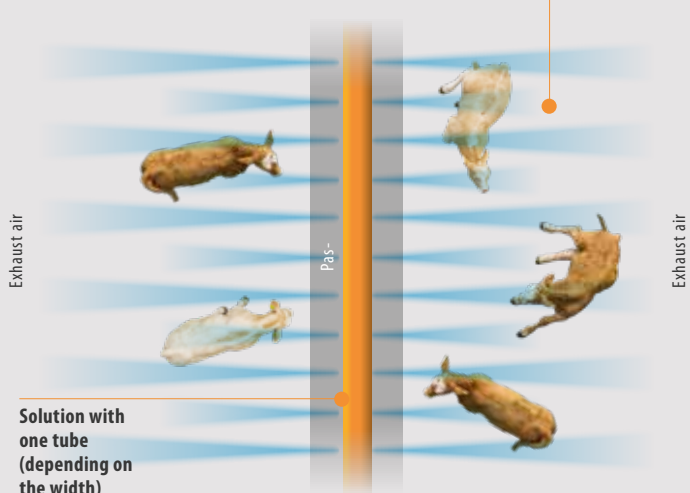
vet.smart.tubes for group areas create the same optimum conditions for every animal. The even air distribution ensures draft-free, sufficient fresh air supply. The result is an even distribution over the entire lying surface without the formation of groups.



Optimum conditions for optimum growth and the best offspring

Uniform area ventilation (draft-free air exchange!)

Variant 2: two-sided exhaust air



Variant 1: one-sided exhaust air



Why vet.smart.tubes:

- Continuous, draft-free fresh air supply
- Reduces the germ content in the animal area
- More even distribution of the animals
- Fewer respiratory diseases
- Fewer antibiotics and calf losses

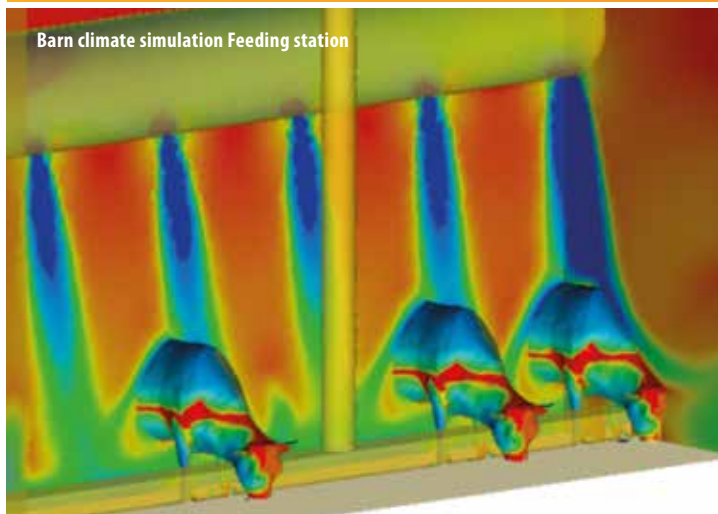


More than just ventilation – Simulate and measure barn climate

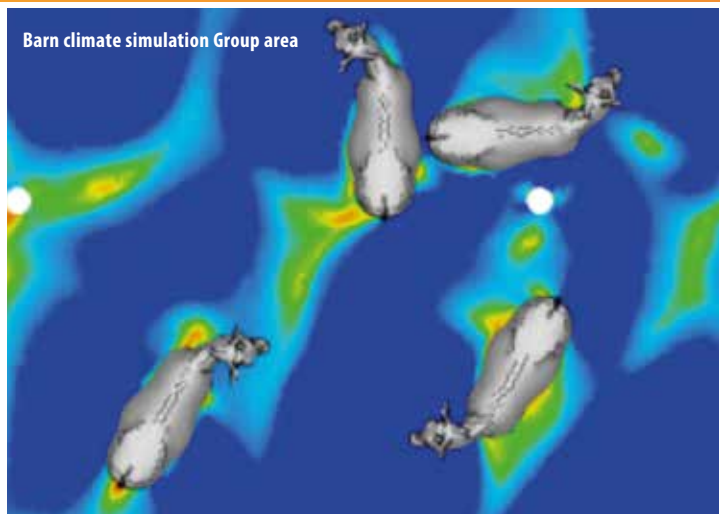
What is a barn climate simulation

Simulate the stable climate, i.e. integrate ventilation-related details of the barn and the animals living in it into a three-dimensional computer model and then calculate the air currents that occur and determine their effects on animal welfare. For this purpose, the propagation of the air atoms is calculated step by step on the basis of the underlying physical laws. In

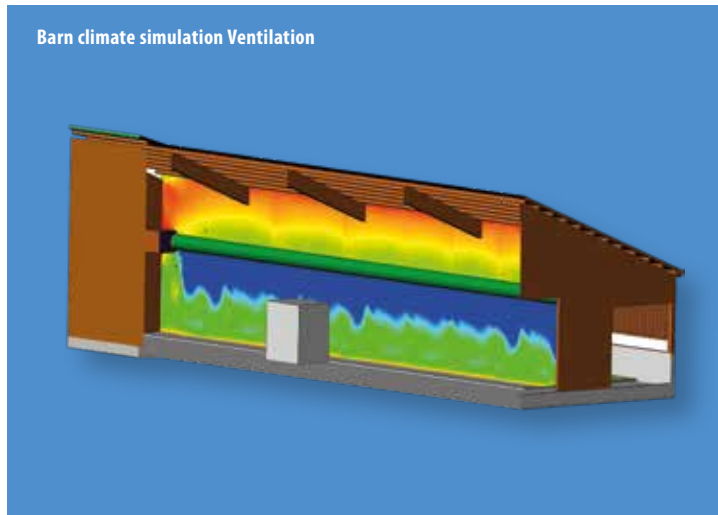
this way, a complete “image” of all air flows generated naturally in the building and generated by ventilation elements is created. This technology makes it possible to design ventilation systems that deliver the optimum veterinary air velocities and air volumes to the appropriate places on the animal surfaces.



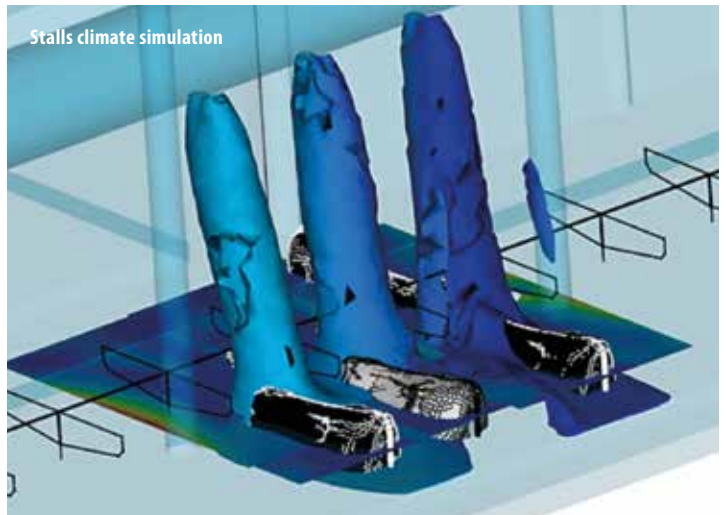
Barn climate simulation Feeding station



Barn climate simulation Group area



Barn climate simulation Ventilation



Stalls climate simulation

Would you like to check your barn climate? We carry out “germ count measurements” – uncomplicated and inexpensive.

Many farmers are faced with the question of whether to invest in a ventilation system: “Is the climate in my barn really the cause of the health problems in my animals?” Measuring the germ content of the air in the animal area can help with the decision-making process. By comparing the germ content with veterinary medical experience, it can be determined how contaminated the air is and whether animal health can be improved by supplying fresh air in a targeted way.

Germ count calf barn *



before ventilation:
> 3,000,000 kbE/m³



after ventilation with vet.smart.
tubes:

*37 farms in the DACH region with calf rearing, study design, implementation and evaluation by FH Weihenstephan-Triesdorf



Probarn.concept – Planning of innovative climate-optimized calf barns

From the initial consultation to the finished calf barn

A new calf barn is a major investment in the future of your farm. We promise to support you with this important decision with the utmost care and to compare each investment step with the expected successes even before the project starts. In order to pave the way for your

gold standard calf barn, we carry out all project steps up to the conceptual planning at a fixed price. This gives you budget security and gives us the opportunity to convince you of the quality of our planning and advice. Your operational success and the well-being of your calves is our goal.

1. Needs and target analysis

In the first step, we evaluate your individual circumstances, needs and expectations and convey the feasibility based on the latest research and veterinary practice at a fixed price.

2. Open up optimization potential

Based on your individual initial analysis, our experienced planning experts will show you various solutions to increase the efficiency of your calf barn. There is no "one" ideal barn, but there is "your" ideal barn.

3. Variant study

We keep to what we promise and allow ourselves to be measured in real numbers. As a basis for decision-making, we create variant studies that reliably visualize operational successes that can be expected in advance for each planning step.



4. 3D Model

In order for our forecast to hold up, we plan your new calf barn down to the smallest detail. In this planning stage, we simulate your individual solution as a 3D model and, if necessary, adapt further measures for maximum efficiency.

5. Design planning

Our concentrated expertise in planning flows into the implementation plans for your planning or architectural office. We will be at your side to help you throughout the entire process. The best planning, the best solution.

6. Purchasing assistance

The qualitative selection of all components is just as important as the right nutrition for your calves. We advise you on the selection of the best products with customized performance and price

Why Probarn

- Optimum workflows
- Sufficient space for each calf
- Enough fresh air
- Intelligent climate control
- Avoid planning mistakes and be successful right from the start



Barn ventilation for calf igloos

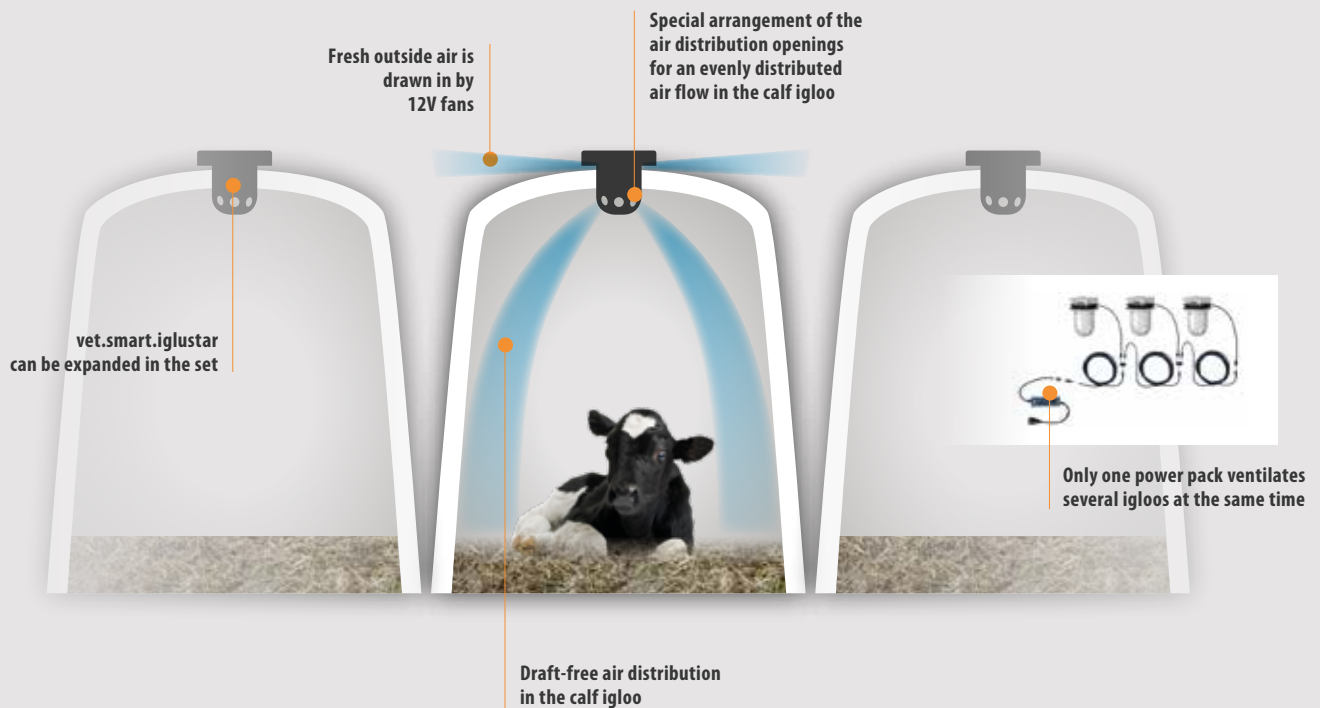
vet.smart.iglustar for single calf igloos

No problems right from the start

Calf igloos are the first homes for the newborns. Accordingly, it is important to make this home as comfortable as possible. The vet.smart.iglustar is an innovative ventilation device for fresh air and against heat stress in calf igloos. No product available on the market can be compared to the vet.smart.iglustar. Heat stress in calves? So far, no company has thought about this important topic.



From a calf igloo to a feel-good oasis



Why vet.smart.iglustar:

- The calves prefer to stay in the calf igloo
- Reduction of heat stress in the calf igloo
- Continuous, draft-free fresh air supply
- Fewer respiratory diseases by means of a constant supply of fresh air
- Reduces the germ content in the animal area



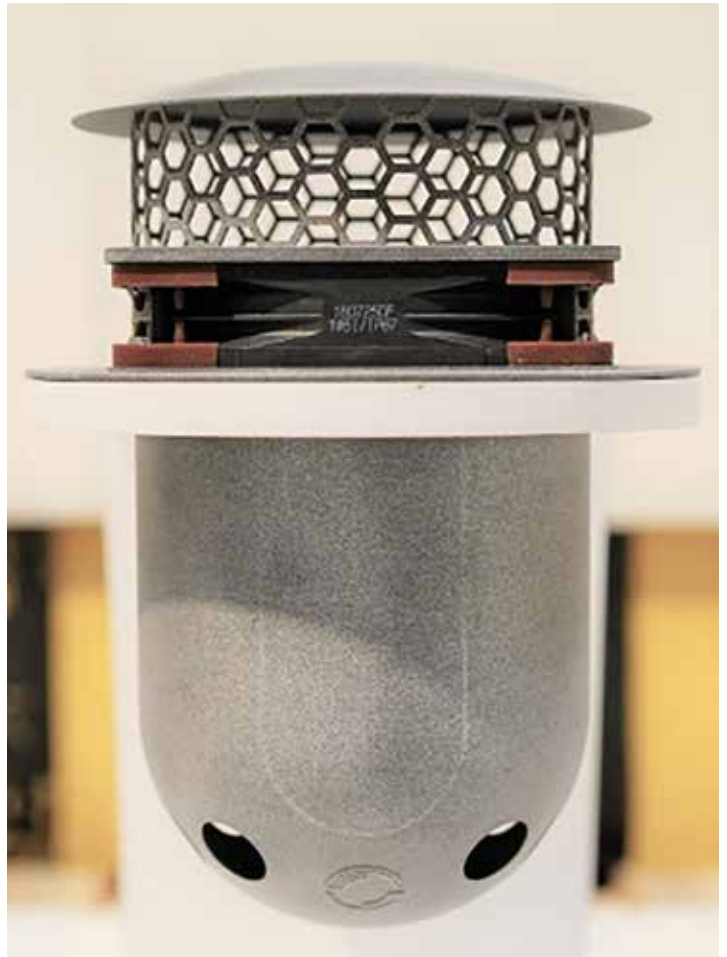
A technical revolution - mechanical ventilation in the igloo

The shape and the special arrangement of the air distribution holes in the vet.smart.iglustar were tailor-made for calf igloos and ensure an optimum supply of fresh air in the igloo.

The way the vet.smart.iglustar works is simple and effective. Fresh outside air is drawn in by a fan and distributed evenly in the igloo by means of the air outlet holes, without creating any disturbing drafts.



Climate simulation vet.smart.iglustar



The vet.smart.iglustar is easy to assemble and fits any standard single calf igloo

VET.SMART also thought about the environment when developing the vet.smart.iglustar. The vet.smart.iglustar is manufactured in Austria and has an energy-saving 12 V fan, which reduces energy and transport costs to a minimum. Plug & Play: The vet.smart.iglustar is already fully assembled and, thanks to the plug connector, is simple and uncomplicated to install. Thanks to protection class IP65, the entire electrical system is resistant to dust, moisture and water jets from any direction. The vet.smart.iglustar is offered in sets; several igloos can be ventilated with just one power pack.

Calves full of life thanks to perfect technology

Ideal air exchange rate and air speed, perfectly adapted to calves. The result: calves full of life. Immediately after installing the vet.smart.iglustar, every farmer will see how the activity of the calves increases and how feed intake increases. Therefore, the vet.smart.iglustar is THE solution for all companies of the future to meet the constantly rising temperatures.

Mobile barn concept with optimum barn climate and the best working conditions

Mobile calf barn

The vet.smart.mobarn is a mobile barn system for keeping calves under ideal room conditions on a floor space of 25 m². The core is the vet.smart.booster, a ventilation system that is adapted to the health of the calves and ensures a draft-free room climate all year round.

The mobile calf barn can be moved on its two wheels and ensures efficient work and quick mucking out.



System components

Basic equipment



1 vet.smart.booster

Tailored to the vet.smart.mobarn, developed for healthy calf lungs, the vet.smart.booster provides fresh air in the mobile barn all year round.



2 Lighting

Efficient LED lights are a fixed component of the vet.smart.mobarn and ensure sufficient brightness, regardless of the time of day or season.



3 Automatic roll-up door

The automatic roll-up door can also remain closed on hotter days, as in the vet.smart.mobarn an air exchange with the surroundings is guaranteed. In addition, the transparent viewing windows allow you to look inside the barn.



Optimum group size

Various stall variants make the vet.smart.mobarn a flexible calf rearing system.

- 8 calves in individual stalls
- 10 calves in a group (up to < 150 kg)
- 8 calves in a group (up to < 250 kg)



Expansions

- 4 Self-locking feed grid including support wheel**



- 5 Metallic crib**



Drinking trough



Live healthier with fresh air



VET.SMART St. Peter-Gürtel 12A, 8042 Graz / Tel.: +43 316 42 35 69
info@allsmart-vet.com www.allsmart-vet.com

Your dealer: