



# Ventilation

**Lubratec® Solutions for Animal-Friendly Farm Management**



# Lubratec

## Livestock environments for greater animal welfare

The Lubratec brand offers you first class solutions for animal-friendly livestock farming and breeding. Lubratec products will help you to promote the well-being of your animals by optimising environmental conditions in barns,

encouraging natural behaviour, reducing infections and much more. The high-grade, robust and durable systems will also improve the efficiency and flexibility of your farming operations.



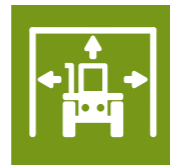
**Promotion of animal-friendly livestock farming**



**Encouragement of natural behaviour**



**Creation of healthy environmental conditions in barns**



**Simplification of farm management**



**Improvement of animal health**

## Lubratec Smart

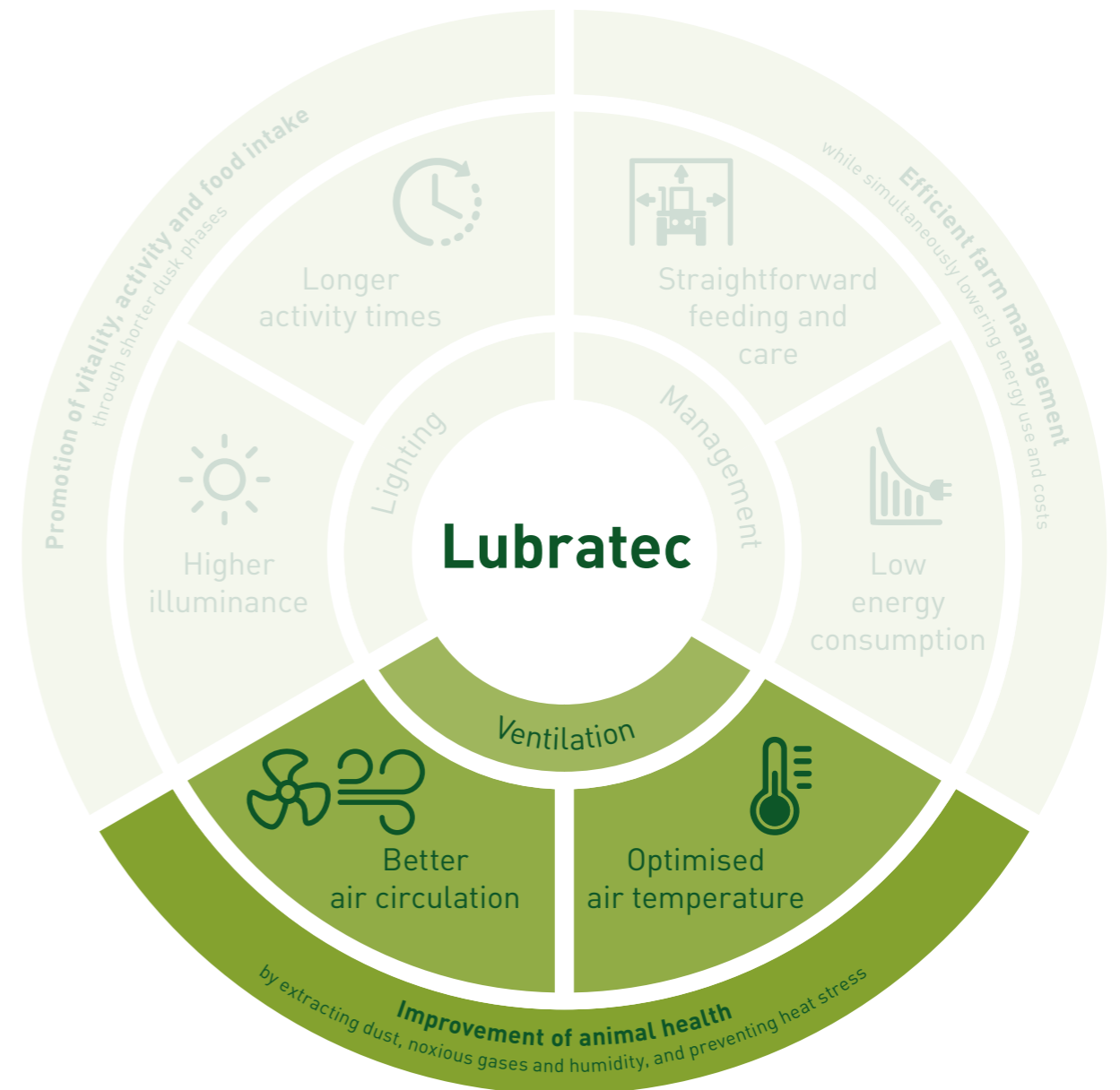
With Lubratec Smart, you can implement modern barn climate control technology through the intelligent networking of Lubratec ventilation and lighting products. Your advantage: You can control and regulate all products centrally. In the Lubratec Smart App, you always have an overall view of your products and the respective settings.

Look out for the Smart Ready logo in the brochure. This allows you to see at a glance which products can be integrated into the Lubratec Smart System. Thanks to the coordinated complete solution of hardware and software, you can be sure of an ideal stable climate at all times.



## Animal-friendly farming is a challenge – Lubratec is the solution

The Lubratec product portfolio features a wealth of professional solutions for cutting-edge, animal-friendly housings for livestock farming and breeding. Lubratec will help you to reconcile animal welfare with efficient barn management



# Ventilation systems

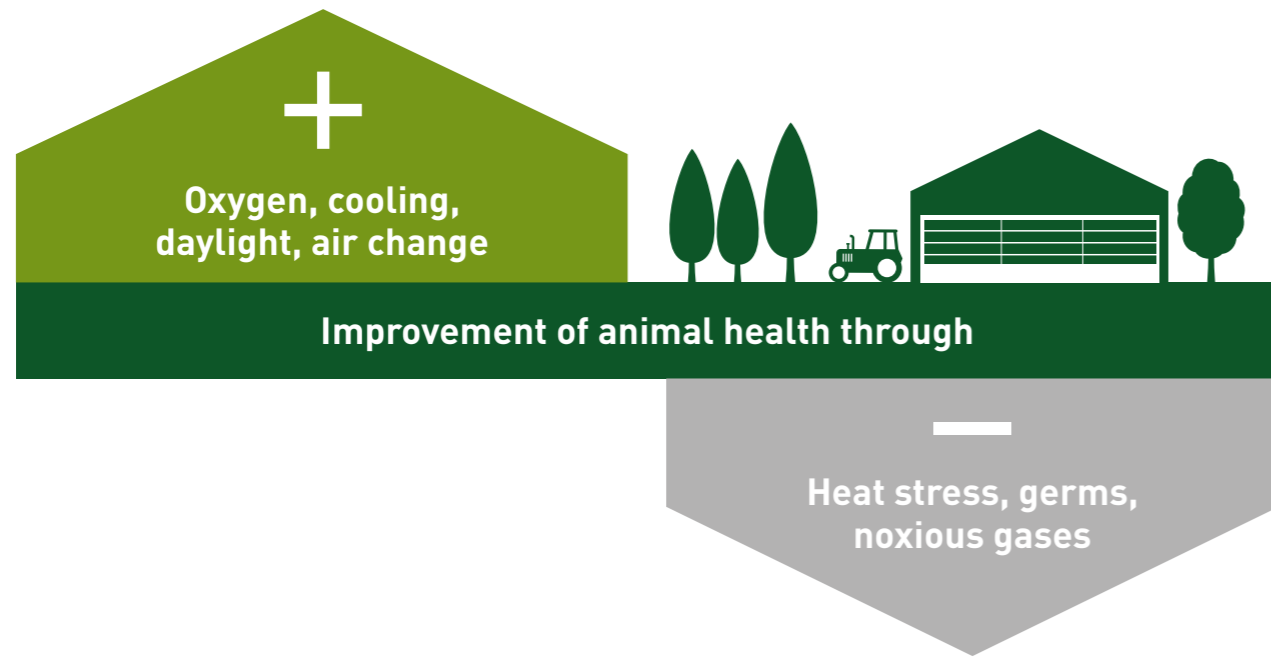
To improve environmental conditions in barn

Creating optimum environmental conditions in barns is an often underestimated success factor in modern day farming. Inadequate ventilation impairs the well-being of livestock. In future, the likelihood of hot summers, along with high barn temperatures, will increase. A poor indoor climate can cause heat stress and severely reduce animal comfort.

The perfect interaction of the various Lubratec products serves to optimise air circulation and air temperatures in barns. Natural and active ventilation improves the ex-

traction of dust and noxious gases from the interior. Our ventilation systems offer the further benefits of reducing humidity and preventing heat stress.

As a full-service provider of ventilation systems, HUESKER's products can provide ideal environmental conditions in barns. Incorporating UV-stable materials, Lubratec products combine maximum daylighting with a long service life. Discover our portfolio of products in the field of ventilation!



# Product overview

Natural ventilation

6-12



Lubratec Roll-Up Ventilation top opening



Lubratec Roll-Up Ventilation bottom opening



Lubratec Double Roll-Up Ventilation bottom opening



Lubratec Roll-Up Ventilation calfs



Lubratec Lift Window



Lubratec Stretched Systems

Material overview

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Active ventilation

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Lubratec Ceiling Fan



Lubratec Axial Fan



Lubratec Tube Air



Lubratec Tube Cool

# Natural ventilation

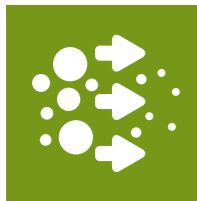
## For more fresh air in barns

Among contemporary side ventilation systems, roll-up ventilation units are the standard solution. Not only do they offer large opening heights, the wide range of models ensures maximum flexibility. Indeed, today's high performance roll-up ventilation systems are nothing more than the culmination of applying modern-day technology to the original ventilation principle of incorporating slots

in window fronts. The roll-up units ensure that fresh air is efficiently admitted into the barn interior along the full length of the long (eaves) front. Our roll-up ventilation systems are custom-manufactured products that can be additionally fitted with temperature, wind velocity and rain sensors.



**More fresh air in barns – better environmental conditions**



**Efficient extraction of noxious gases**

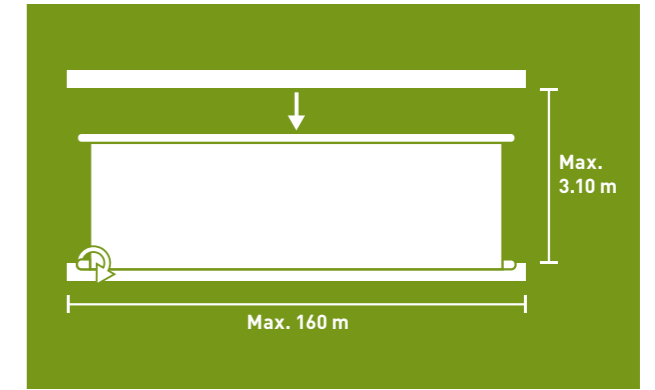


**Individually adaptable to your needs**



**High system reliability – easy to use**

## Lubratec WLO – Roll-Up Ventilation top opening



### Product benefits

- Available in two versions
- Free choice of drive
- Air admitted into building at top, allowing supply of draught-free fresh air deep into plan
- Can be integrated into the Lubratec Smart System

### WLO profile

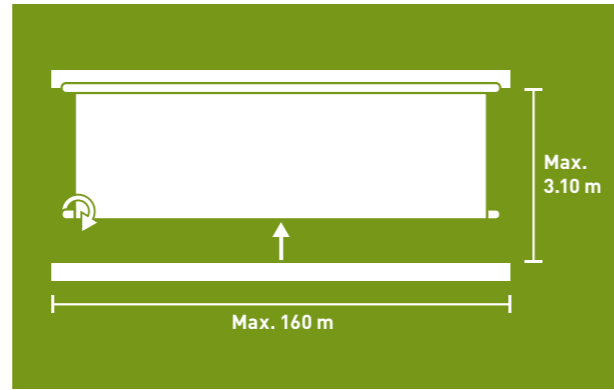
|                   | WLO WITH PULLEYS  | WLO WITH DRIVE TUBE   |
|-------------------|---|---|
| Opening direction | Top opening   |   |
| Opening mechanism | With pull rope system                                       | With drive tube and deflection gears                        |
| Opening height*   | Up to 3.10 m  |   |
| Opening width*    | Up to 100 m for central drive, up to 50 m for lateral drive | Up to 160 m for central drive, up to 80 m for lateral drive |
| Winding           | Bottom roller   |   |
| Drive             | Manual, electric/manual or electric/automatic               |   |

\* Also available as XL model with max. 4.40 m opening height and 100 m opening width.



# Natural ventilation

## Lubratec WLU – Roll-Up Ventilation bottom opening



### Product benefits

- Available in three versions
- Free choice of drive
- Air admitted into building at bottom, allowing direct fresh air supply to area occupied by animals
- Various protective mesh combinations possible to protect animals from draughts
- Can be integrated into the Lubratec Smart System

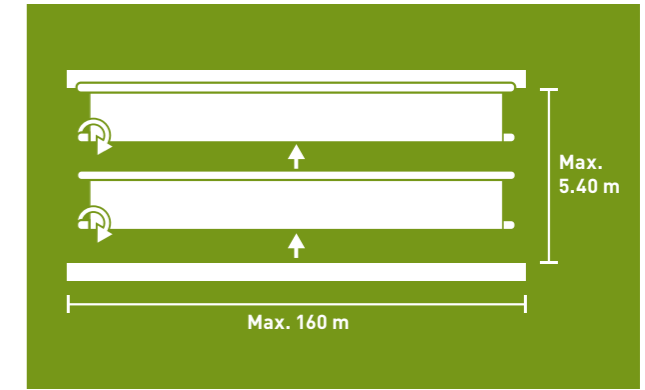
### WLU profile

|                   | WLU WITH TRAVELLING DRIVE                                   | WLU WITH FIXED DRIVE                 | WLU WITH TUBULAR MOTOR                               |
|-------------------|---|--------------------------------------|--|
| Opening direction | Bottom opening  |                                      |  |
| Opening mechanism | With travelling drive in guide rails                        | Fixed drive unit with long telescope | Lateral drive unit with tubular motor and guide rail |
| Opening height*   | Up to 3.10 m  |                                      |  |
| Opening width*    | Up to 160 m for central drive, up to 80 m for lateral drive |                                      | Up to 30 m   |
| Winding           | From bottom upwards   |                                      |  |
| Drive             | Manual, electric/manual or electric/automatic               |                                      | Electric/manual                                      |

\* Also available as XL model with max. 4.40 m opening height and 100 m opening width.



## Lubratec double WLU – Roll-Up Ventilation bottom opening



### Product benefits

- Free choice of drive
- Air admitted into building at bottom, allowing fresh air supply to area occupied by animals
- Air admitted into building at top, allowing supply of draught-free fresh air deep into plan
- High flexibility: separate opening and closing at top and bottom as required
- Can be integrated into the Lubratec Smart System

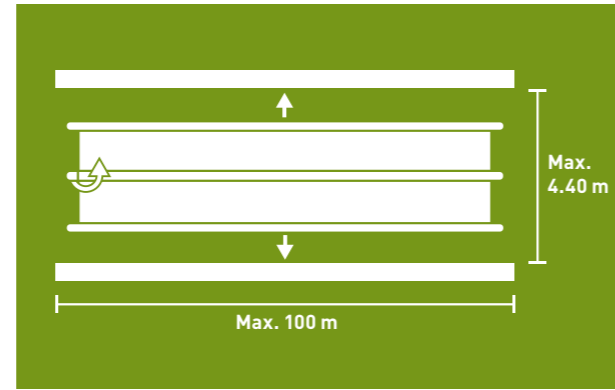
### Double WLU profile

|                   | DOUBLE WLU  |
|-------------------|---|
| Opening direction | Bottom and centre opening   |
| Opening mechanism | With travelling drive in guide rails  |
| Opening height    | Up to 5.40 m  |
| Opening width     | Up to 160 m for central drive, up to 80 m for lateral drive                                   |
| Winding           | Two tarpaulins, from bottom upwards   |
| Drive             | Manual, electric/manual or electric/automatic. Drive with two motors allows separate control. |



# Natural ventilation

## Lubratec Roll-Up Ventilation - calf



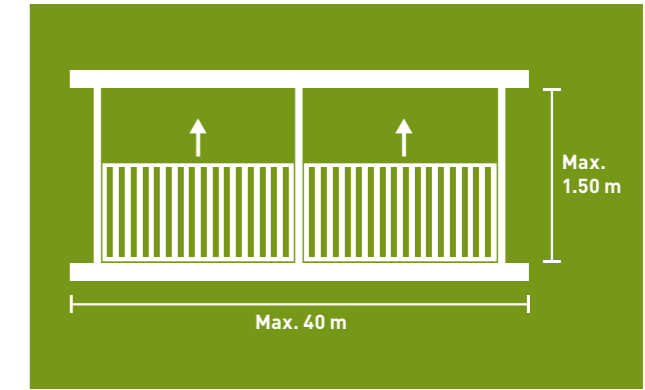
### Product benefits

- Free choice of drive
- Air admitted into building at bottom, allowing fresh air supply to area occupied by animals
- Air admitted into building at top, allowing supply of draught-free fresh air deep into plan
- Various protective mesh combinations possible to protect animals from draughts while regulating wind velocity (through wind break)
- No temperature differences – thanks to top and bottom opening
- Can be integrated into the Lubratec Smart System

### WL calf profile

|                   | ROLL-UP VENTILATION CALF                                    |
|-------------------|---|
| Opening direction | Top and bottom opening                                      |
| Opening mechanism | With drive tube   |
| Opening height    | Up to 4.40 m  |
| Opening width     | Up to 100 m for central drive, up to 50 m for lateral drive |
| Winding           | Central roller  |
| Drive             | Manual, electric/manual or electric/automatic               |

## Lubratec Lift Window



### Product benefits

- UV-stable and translucent
- Perimeter aluminium frame ensures high system reliability
- Available in two versions
- Free choice of drive
- Flexible installation with low space requirement
- Including external wind protection

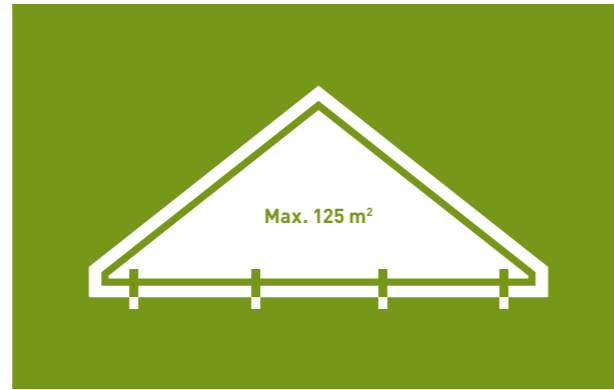
### Lift Window profile

|                   | LIFT WINDOW WITH WEATHERSTR.   | LIFT WINDOW W/O WEATHERSTR.                                |
|-------------------|--|--|
| Opening direction | Top opening  |  |
| Opening mechanism | With pull rope system and pulleys or drive tube  |  |
| Opening height    | Up to 1.50 m   |  |
| Opening length    | Up to 40 m   |  |
| Drive             | Choice of manual or electric   |  |
| Special features  | Perimeter weatherstripping for insulated building areas with intelligent press down system | Simple system running along external wind protection tubes |



# Natural ventilation

Lubratec Stretched Systems



## Product benefits

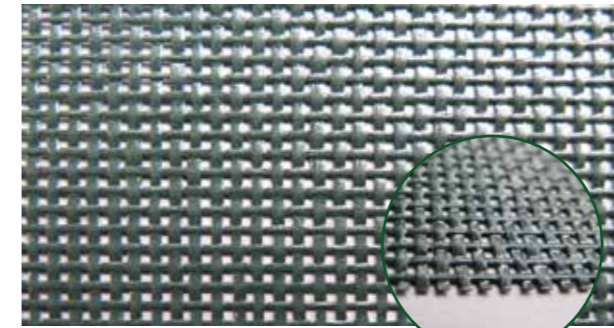
- Wide-ranging applications
- Low-maintenance – permanently taut and crease-free
- Effective wind and weather barrier while simultaneously admitting fresh air
- Custom-manufacture possible in various shapes and sizes
- Robust lightweight assembly to efficiently close off wall area



Reliable, crease-free tensioning with ratchets

# Material overview

Lubratec Wind Protection Systems

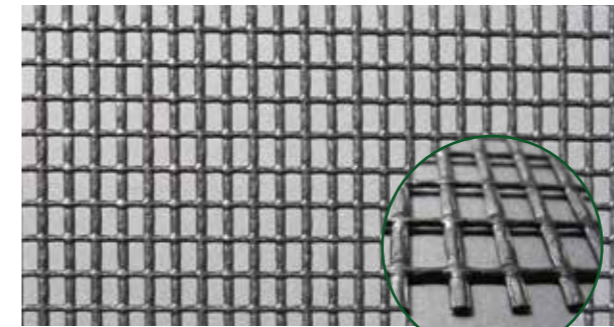


Dark green  
Art. no. FW52.144DGD

## PES-PVC MESH 73 52.144

PES mesh fabric with PVC coating, weight/unit area: approx. 250 g/m<sup>2</sup>, wind break: approx. 80%

|            |                       |
|------------|-----------------------|
| Black      | Art. no. FW52.144SFRA |
| Dark green | Art. no. FW52.144DGD  |

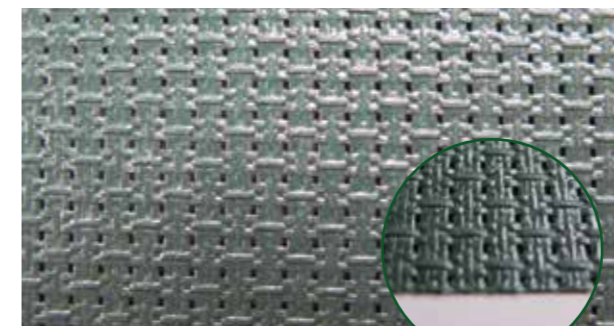


Black  
Art. no. FW40/40-4SA

## PES-PVC MESH 40 40/40

PES mesh fabric with PVC coating, weight/unit area: approx. 360 g/m<sup>2</sup>, wind break: approx. 35%

|            |                       |
|------------|-----------------------|
| Black      | Art. no. FW40/40-4SA  |
| Dark green | Art. no. FW40/40-4WGA |



Dark green  
Art. no. FW60/60-1DGFRA

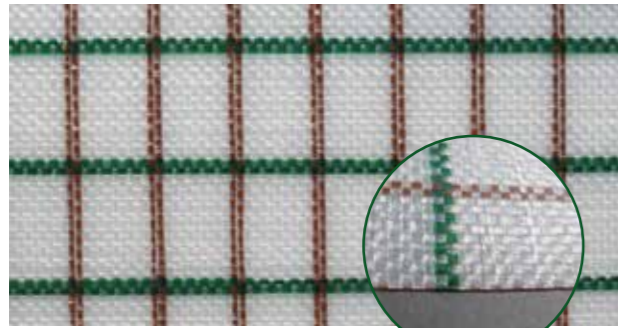
## PES-PVC MESH 92 60/60-1

PES mesh fabric with PVC coating, weight/unit area: approx. 450 g/m<sup>2</sup>, wind break: approx. 92%

|            |                         |
|------------|-------------------------|
| Black      | Art. no. FW60/60-1SFRA  |
| Beige      | Art. no. FW60/60-1BEFRA |
| Grey       | Art. no. FW60/60-1GFRA  |
| Dark green | Art. no. FW60/60-1DGFRA |

# Material overview

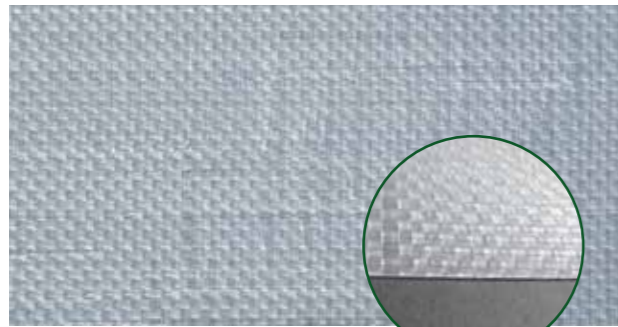
## Lubratec Side Ventilation Systems



White/green-brown chequered  
Art. no. FW80.6108GB/BBSA

### PE HTP 8 TARPAULIN WHITE CHECK GR/BR

Polyethylene woven with PE coating on either side, 5-ply, weight/unit area: approx. 380 g/m<sup>2</sup>, national test certificate (abP)



White  
Art. no. FW80.6108/BBSA

### PE HTP ECO TARPAULIN WHITE

Polyethylene woven with PE coating on either side, 5-ply, weight/unit area:  $\geq 350$  g/m<sup>2</sup>



Green/black  
Art. no. FW80.6387VD/BBB

### PE HTP 8 TARPAULIN GREEN/BLACK






Polyethylene woven with PE coating on either side, 5-ply, weight/unit area: approx. 365 g/m<sup>2</sup>

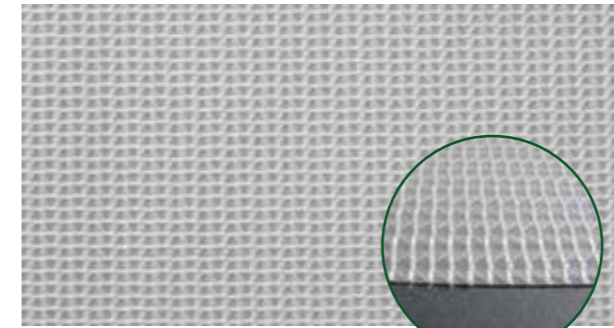


Dark green  
Art. no. FW50.149DGA

### PES-PVC TARPAULIN 6.5

PES mesh with PVC coating on either side, weight/unit area: approx. 650 g/m<sup>2</sup>

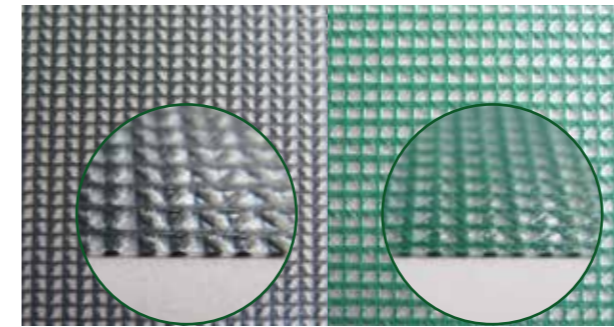
|   |            |                          |
|---|------------|--------------------------|
|  | Brown      | Art. no. FW50.149BFR8.8A |
|  | Black      | Art. no. FW50.149SA      |
|  | Beige      | Art. no. FW50.149BEA     |
|  | Grey       | Art. no. FW50.149GFRA    |
|  | Dark green | Art. no. FW50.149DGA     |
|  | White      | Art. no. FW50.149WFRA    |



Natural colour/transparent  
Art. no. FW50.149TRFRA

### PES-PVC TARPAULIN 6.5 WHITE/TRANSP.

PES mesh with PVC coating on either side, weight/unit area: approx. 680 g/m<sup>2</sup>

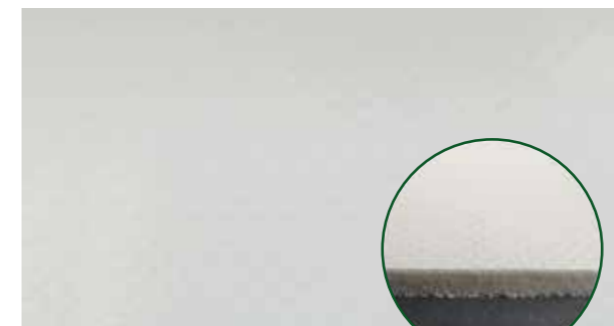


Black/transparent  
Art. no. FW50.149S/TRA

Green/transparent  
Art. no. FW50.149GRTRFRF

### PES-PVC TARPAULIN 6.5 BLACK/ AND GREEN/ TRANSPARENT

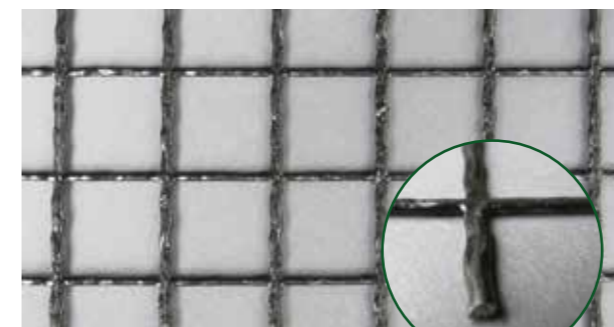
PES mesh with PVC coating on either side, weight/unit area: approx. 680 g/m<sup>2</sup>



White  
Art. no. FW50.149SCHA

### PES-PVC 4M ISO TARPAULIN WHITE

Insulating tarpaulin with 4 mm foam facing, white, weight/unit area: approx. 1,300 g/m<sup>2</sup>



Black  
Art. no. FR25/25-25A

### PES-PVC MESH 18 BLACK 25/25

PES mesh fabric with PVC coating, weight/unit area: approx. 350 g/m<sup>2</sup>



# Active ventilation

## For more fresh air in barns

With large barn buildings, roll-up systems may not suffice to provide adequate ventilation. In such cases, additional active ventilation components may be needed to create the ideal indoor environmental conditions. Through the use of state-of-the-art ventilation tubes, contamination of the barn air by germs and pathogens can be significantly reduced. Respiratory tract diseases are often the result of poor environmental conditions in livestock buildings and remain a common cause of pulmonary illness.

Active ventilation provides an effective remedy. The custom-designed tubes ensure a constant supply of

draught-free fresh air to the animals. Adaptable to any type of housing, modern active ventilation systems thus contribute to maintaining livestock health.

In high-ceilinged barns, ceiling fans guarantee the continuous circulation of air throughout the interior. Air is drawn in by the fan and pushed downwards and outwards in a broad cone. This allows the introduction of fresh outdoor air, which is then circulated across the entire barn.

Axial fans draw in fresh air from outside and move it deep into the stable building.



**Continuous fresh air supply directly to livestock**



**Measurable stress reduction**

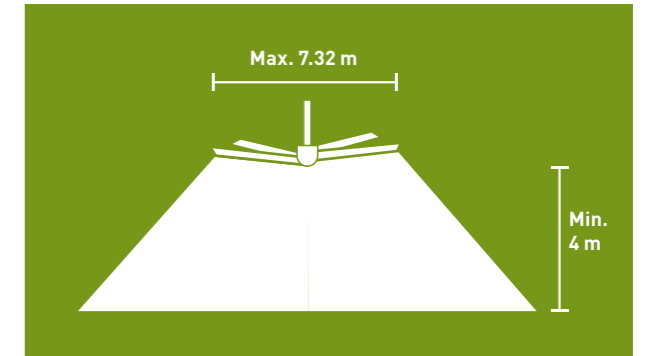


**Continuous change of air achieved with high energy efficiency**



**Reduction in respiratory illnesses**

## Lubratec Ceiling Fan



### Product benefits

- Available in three sizes: (3.66 m, 4.88 m and 7.32 m diameter)
- High efficiency thanks to tapered and twisted blades
- Optimum fresh air circulation and distribution
- Energy-efficient cooling for livestock
- Readily extendable at any time by control systems
- Can be integrated into the Lubratec Smart System

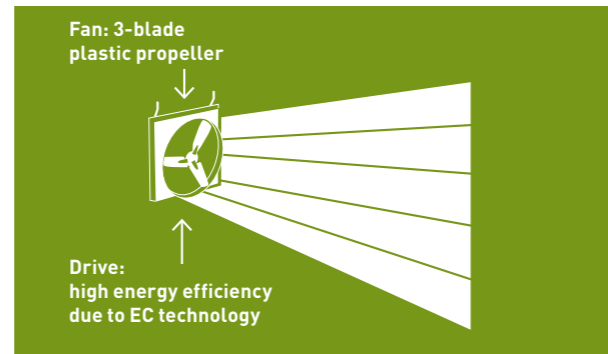
### Ceiling Fan profile

|                             | 3-66  | 4-88                  | 7-32                  |
|-----------------------------|---|-----------------------|-----------------------|
| Diameter                    | 3.66 m  | 4.88 m                | 7.32 m                |
| Area served                 | Approx. 18 m diameter   | Approx. 26 m diameter | Approx. 30 m diameter |
| Installation recommendation | The optimum installation height is equal to the fan diameter. The minimum distances from the roof shall be observed.  |                       |                       |
| Control                     | Manual control box included. Eco-Commander is needed for time programme control. Temperature sensors are additionally needed for systems controlled by temperature. |                       |                       |



# Active ventilation

## Lubratec Axial Fan



### Product benefits

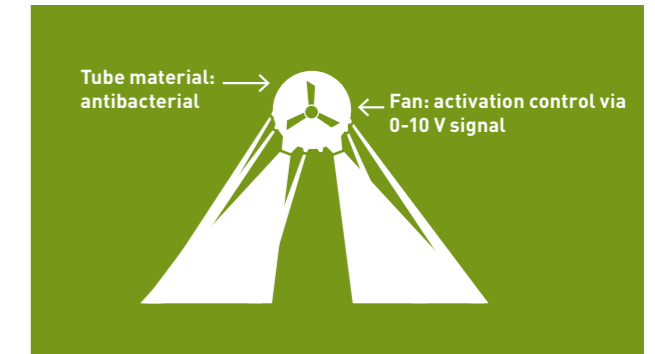
- Fresh air is drawn in from outside and carried deep into the barn
- Higher air velocity at the animal
- Energy-efficient cooling of the animals
- Installation also possible with low ceiling heights
- Optimised flow ring for increased throw
- Control system already integrated in the motor
- Particularly quiet due to plastic blades
- No braking grilles
- Can be integrated into the Lubratec Smart System

### Axial Fan profile

|            | DIRECT DRIVE                      | BELT DRIVE                     |
|------------|-----------------------------------|--------------------------------|
| Drive      | Direct, 0-10 V adjustable         | Wedge bands, 0-10 V adjustable |
| Power      | 48,930 m <sup>3</sup> /h          |                                |
| Voltage    | 3-phase, 380/400 V, 50 Hz, 1.29 A | 1-phase, 230 V, 50 Hz, 2.7 A   |
| Dimensions | 146 x 35 x 146 cm                 |                                |
| Weight     | 46 kg                             | 52 kg                          |



## Lubratec Tube Air

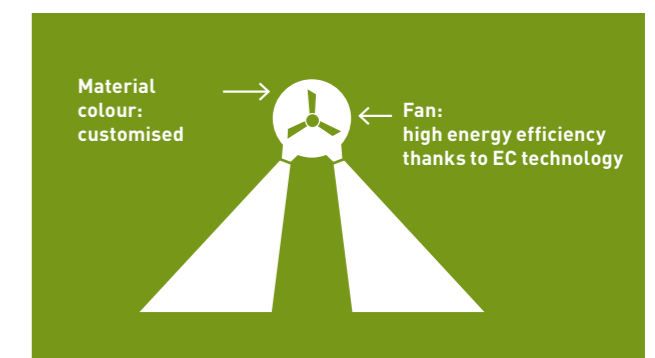


### Product benefits

- Continuous fresh air supply directly to livestock
- Project-specific calculations and design for your barn
- Also ideal for existing buildings with low ceilings and few windows
- Continuous reduction of microbial pressure
- Prevention of respiratory illnesses and infections – reduction in treatment costs (by up to 60%)
- Tubes custom-manufactured for specific application
- Optional on-site veterinary consulting
- Can be integrated into the Lubratec Smart System



## Lubratec Tube Cool



### Product benefits

- Precision-directed air flows prevent heat stress
- Measurable stress reduction for livestock
- Air speed adapted to requirements of specific barn areas
- 3D barn environment simulation as exact calculation basis for cooling tube specification
- Custom-computation and manufacture of tubes for specific application
- Optional on-site veterinary consulting
- System extendable by state-of-the-art control technology to allow automatic environmental control and year-round use
- Can be integrated into the Lubratec Smart System

# Impact of tubes

## On livestock farming

Lubratec tubes can be used to create ideal indoor environmental conditions in all barn areas, regardless of the barn architecture. Given the immense metabolic capacity of modern dairy cows, high levels of body heat arise during the lactation and digestion processes. When rising outdoor temperatures prevent adequate heat dissipation

by natural means, cattle will suffer heat stress. In the case of dairy cows, this condition results, among other things, in a higher cell count, a reduction in milk yield and fertility disorders. Through our stable climate experts, you will benefit from a vast pool of experience and practical knowledge on the subject of tubes.

### Impact on dairy cow farming



**Constant food intake and longer lying times**



**Up to 3 ltr increase in milk yield per cow\*\***



**Shown to be most cost-effective system on market\***

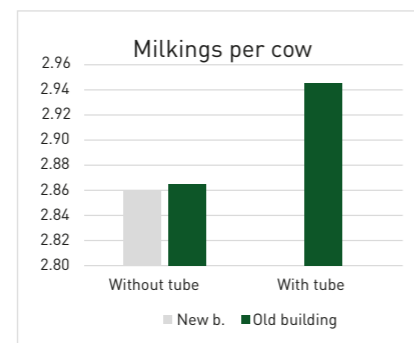
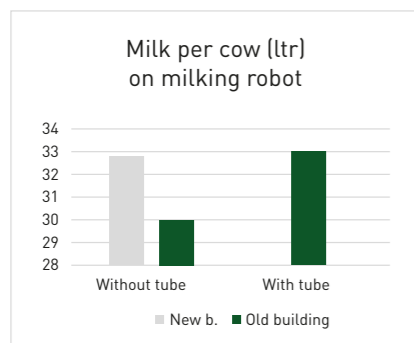


**Measurable stress reduction – healthier cows**

### Higher milk yield thanks to Lubratec tubes

**Initial situation:** Two symmetrical barns, built in 1990 (old building) and 2014 (new building); connected in the middle to two robots. Old building with nearly 3 kg less milk per cow per day.

**Measure:** Installation of Lubratec tube system



**Result:**

- Increase in milk yield in old building by 3.5 ltr
- Increase in number of milkings in old building by 3%

### Impact on calf farming

37 calf barns were fitted with Lubratec Tubes Air. 66-68%\*\* fewer respiratory illnesses were observed as a result, leading to a 72-87%\*\* reduction in the costs for antibiotic treatment.

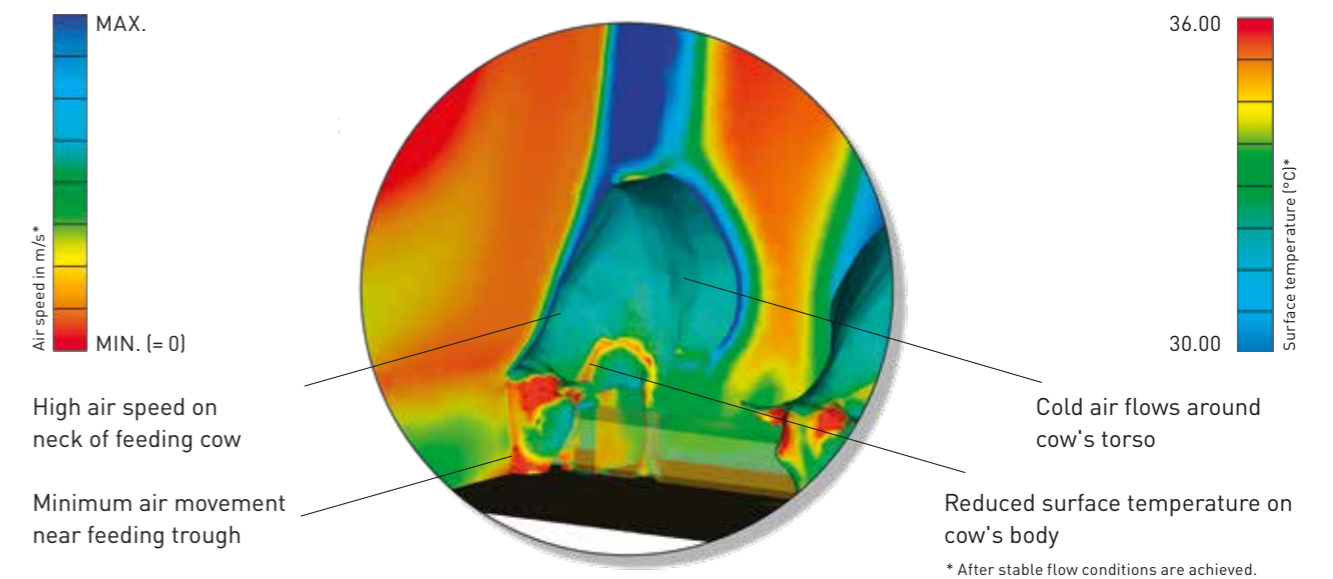
\* Basis of comparison: Cooling systems with wind chill effect; defined air speed per animal; purchase costs and energy costs for a two year period (for a constant fan running time in hours).  
 \*\* Compared to dairy cows kept in unventilated barns and under ideal conditions.

# Air flow simulation

## Efficient cooling with optimum air speeds

The fresh air quantity and air speed can be tailored to the different parts of the facility and the specific requirements of the cattle (e.g. dry and freshly lactating cows, feeding stations, cubicles, milking parlour or holding

area). Lubratec tubes can therefore be used to create optimum conditions in all areas – which, in turn, promotes the well-being of the livestock and the cost-effectiveness of farming operations.



### Air speed on animal's back



**> 1.5 m/s for cubicles**  
**> 2.5 m/s for feeding stations**

### Options for regulating yield

All tube systems can be combined with state-of-the-art control technology to allow year round use.

**Upgrade to EC fans**

- Reduced power consumption through integral performance optimisation

**Simple temperature-driven controller (0–10 V)**

- Temperature measurement via sensors
- For frequency regulation

**Agricultural computer (0–10 V)**

- Temperature measurement via sensors
- For frequency regulation
- Automatic operation
- Multi-function display

**Temperature-driven controller (230 V)**

- Temperature measurement via sensors
- For voltage regulation
- Automatic operation

**Manual controller, continuous (230 V)**

- For voltage regulation
- Separate on/off switch

# HUESKER

## The know-how behind the Lubratec systems

Building on its 150 year plus corporate history, HUESKER boasts a long and successful track record of innovation in the agricultural sector. We offer wide-ranging solutions in the fields of animal welfare, biogas, liquid manure and

silage protection. Described below are our key service offerings that are designed to simplify your work. Please feel free to talk to us about your needs and let our experts assist you with your requirements.

**We will assist you in developing a feel-good package for your animals and yourself.**

### Production

We will fabricate and assemble your Lubratec solution at our production sites in Germany to give you the full benefit of our 150 year plus experience in textile manufacturing. Our products are specially designed for reliability and durability so that our customers can focus their full attention on their livestock.

### Customisation

Custom-fabrication of your products is the centrepiece of our service portfolio. Your job is to specify the size, colour and technical performance. Our job is to deliver the solution. This way, you receive a product to match to your requirements and wishes.

### Digitisation

Smart Farming for maximum animal welfare. With Lubratec Smart, your Lubratec ventilation and lighting products are intelligently networked and controlled. Thanks to the coordinated complete solution of hardware and software, you can be sure of an ideal barn climate at all times.

### Installation

To guarantee that everything functions properly to provide you and your animals with the full benefits of Lubratec from day one, all products are installed by experienced operatives. Our on-site service can also be used to arrange for expert instruction in the operation of our various systems.

### Maintenance service

On request, HUESKER will also perform the annual maintenance on your Lubratec products to ensure that they enjoy a particularly long and trouble-free service life. The time you save on upkeep will then be free for you to spend with your animals.

### Consulting and design

With a wealth of experience gathered on numerous projects, our experts will be glad to advise you on the design of your new-build or refurbishment scheme. If you so wish, we will liaise directly with your architect to ensure the entire design process runs smoothly.



Lubratec® is a registered trademark of HUESKER Synthetic GmbH.  
HUESKER Synthetic is certified to ISO 9001 and ISO 50001.



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 **HUESKER**  
Ideen. Ingenieure. Innovationen.