

**merlin**<sup>®</sup>  
SUPERIOR HUMIDIFICATION **TECHNOLOGIES**

# AIR HUMIDIFICATION

## Product catalogue

ENGLISH



# merlin<sup>®</sup>

SUPERIOR HUMIDIFICATION **TECHNOLOGIES**



**MAKE YOUR  
BUSINESS  
SMILE!**

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A modern building with a dark blue facade and large glass windows. The Merlin logo is prominently displayed on the right side of the building. The logo consists of the word 'merlin' in a light blue, lowercase, sans-serif font, followed by a registered trademark symbol (®). Below the logo, the words 'SUPERIOR HUMIDIFICATION TECHNOLOGIES' are written in a smaller, red, uppercase, sans-serif font. The building has a prominent overhang on the right side. The sky is a clear, light blue.

**merlin**®  
SUPERIOR HUMIDIFICATION TECHNOLOGIES

## About merlin®

A healthy climate for people,  
materials and machinery

## Innovation by passion – since 1995

„The company’s determination, ingenuity and the efforts of our motivated team mean that merlin®’s future is looking bright, with the many innovations in the pipeline set to light up the market.“



A handwritten signature in black ink, reading "Johann Reisinger".

Johann Reisinger, merlin® founder

# About merlin®

A healthy climate for humans,  
materials and machines

## Perfect ambient climate has a name: merlin®

**Founded in 1995**, today our family-run company is one of the world's leading suppliers of air humidification systems and moisture measuring devices. Our roots are in Upper Austria and customers around the world reap the benefits of our work. Like, for example Mercedes-Benz, Audi and Volkswagen. Like FACC, BOSCH and IKEA. Like VELUX, Canon, HiPP and Nestlé.

They all appreciate the merlin® reliability, perfection and quality. And we are proud to be able to say that our products and services have contributed to the success of these – and many other – companies. Because only a perfect ambient climate provides the conditions needed to improve productivity, success and well-being.

## Certificates

merlin® has won many innovation awards  
and has multiple ISO certifications:



### Other standards

Austrian standard (ÖNORM) H 6020-1:2007 'Ventilation Systems in Medical Institutions – Planning, Construction and Inspection'

ISO 13485:2012 'Medical Devices – Quality Management Systems – Requirements for Regulatory Purposes'



And all this for a single purpose:

To offer our customers **superior humidification technologies**.  
You can take our word for it.

### Information about our patent statements

Humidification units  
Patented in AT

Step and pressure control  
Patented in AT, PCT patent pending

ORBIT WING® elements  
Patented in AT, PCT patent pending

Quick-Change humidifier nozzle  
Patented by the producer



## Superior humidification technologies

As a specialist for **air humidification systems and measuring devices**, Merlin Technology GmbH, whose roots go back to 1995, stands for excellent quality and top service. We guarantee optimal climatic conditions for humans, materials and machines and create the perfect prerequisites for increasing productivity, success and well-being.

With innovative technologies and industry-specific know-how, we set new standards. For good reason, this is why merlin® air humidification systems are used by renowned companies around the world and offer convincing productivity-increasing advantages:

- ✓ Constant ambient humidity
- ✓ Preservation of high-value products
- ✓ Less dust formation
- ✓ Lower electrostatic charges
- ✓ Tangible quality improvement
- ✓ Lower energy consumption
- ✓ Healthy ambient climate
- ✓ Minimal maintenance
- ✓ Easy handling
- ✓ Perfect system integration

When it comes to controlling moisture content, merlin® is one of the leading suppliers of non-destructive measuring devices for wood, paper and building materials. Our portable measuring devices have enjoyed an outstanding reputation for 20 years and are exported to more than 70 countries.

## Customers extract

### Wood

4B Fenster  
 ATOMIC  
 BENE  
 Bulthaup  
 C. Bechstein  
 Dula  
 F. LIST  
 Fischer Sports  
 Gaulhofer  
 GIR  
 IKEA  
 Josko  
 Lindner Group  
 M. Kaindl  
 MAJA-WERK  
 Pfeifer  
 Schachermayer  
 Scheucher  
 Schösswender  
 Schweighofer  
 STABILO  
 TEAM 7  
 Team Styria  
 VEDDER  
 VELUX  
 Weitzer Parkett

### Electronics

BOSCH  
 DEUTA-WERKE  
 Frauscher  
 Hekatron  
 Novotech

### Construction Automotive

American  
 Embassy Riga  
 Nuremberg  
 University of Music  
 Hoval  
 ÖBB (Austrian  
 Federal Railways)  
 RZL Software  
 Scheuch Ligno  
 Sign  
 The Belvedere, Vienna

### Printing & paper

Canon  
 Flyeralarm  
 Hunkeler  
 Mondi  
 Océ  
 STI Group  
 WRH Global  
 Xerox

### Food

Gölles  
 HiPP  
 KOTANYI  
 Nestlé

### Composite materials

FACC  
 Fischer Sports  
 Lenzing Fibers  
 Model Pack  
 QUIN  
 SINOPLASTICS

### Plastics

Biolink  
 Borgers  
 Greiner Packaging  
 Lenzing Plastics  
 Velcro



# AIR HUMIDIFICATION

merlin® air humidification systems  
for healthy business





## Make your business smile!

The **relative humidity** in indoor areas such as offices, production halls and storage rooms is a key success criterion for a healthy company – economically healthy and with healthy employees. A relative humidity between 40 % and 60 % is ideal for human, materials and machines.

# AIR HUMIDIFICATION

merlin® air humidification systems  
for healthy business



## A healthy climate for humans, materials and machines

If the ambient air is too dry, this can lead to unwanted form and dimension changes in materials and products or to problems resulting from electrostatic charges. A “poor climate” not only slows down production, it also results in more material being consumed and lower employee productivity – and can even lead to longer absences due to sick leave.

The ambient humidity also influences how people experience warmth. If the ambient air is too dry, then its temperature has to be increased by 1 to 2 °C so that people feel as comfortable as when the air humidity is ideal.\*

merlin® air humidification systems solve this problem in a targeted manner! State-of-the-art technologies in many different designs guarantee maximum efficiency. The well-engineered, globally proven solutions from merlin® usually pay off within the first year, because scrap, claims, sick leave and energy costs are all reduced, while productivity increases.

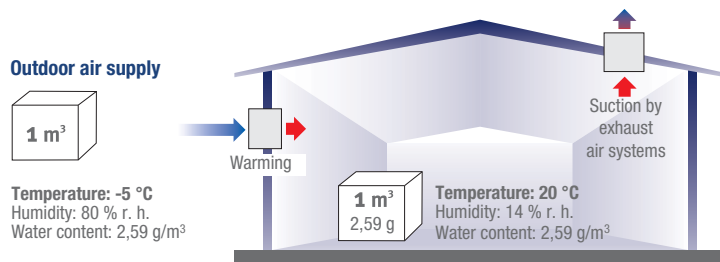
All merlin® air humidification systems are designed to be integrated into existing climate systems as well as to be implemented as standalone solutions.

\* Source: R. G. Steadman (1979)



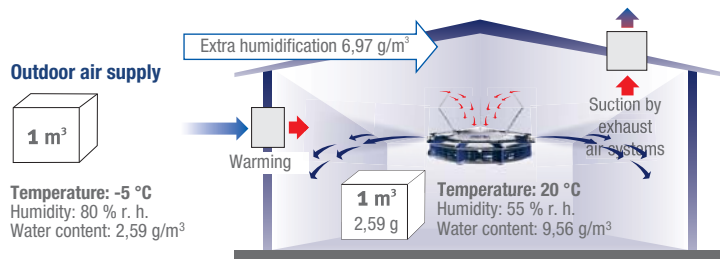
# The theory behind humidification

## Outdoor air supply in winter WITHOUT air humidification



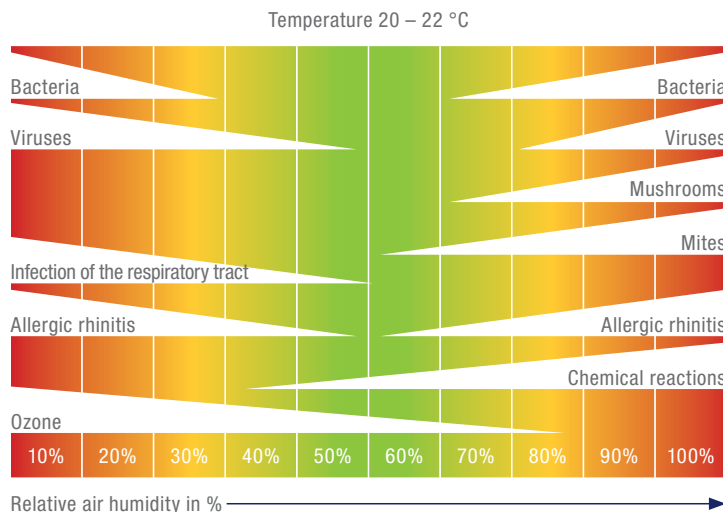
If 1 m<sup>3</sup> of outside air with an average temperature of -5 °C and a relative air humidity of 80 % is fed into a room and warmed to 20 °C, the relative air humidity reduces to 14 % per m<sup>3</sup> with the same water content.

## Outdoor air supply in winter WITH air humidification



In order to obtain the desired indoor relative air humidity of 55 % at 20 °C, 6.97 g of water must be added to each m<sup>3</sup> of fresh air supplied to achieve the necessary water content of 9.56 g/m<sup>3</sup>.

## Air humidification is not a luxury, but a necessity!



Medical experts recommend relative air humidity of 40 to 60 percent. In this state, the individual perceives the air in a room as being optimally humidified. And it is then also ideal for health, for the animals and plants in the room, for furniture, instruments and much more besides.

Furthermore, the individual's heat sensitivity is also influenced. If the air humidity is too low then the room air must be heated approx. 1 – 2 °C higher, in order that the sense of well-being is the same as with optimum air humidity. This naturally also results in significant energy cost savings.

# AIR HUMIDIFICATION

This wouldn't have happened with merlin®!



## Success stories require top-quality!

- ✓ Higher output thanks to fewer paper jams and less machine downtime
- ✓ Perfect print and color results
- ✓ Consistently high paper quality



## Top workability is the norm!

- ✓ Zero-tension wood storage thanks to constant air humidity
- ✓ Less scrap thanks to optimal dimensional stability without waste
- ✓ Perfect production conditions thanks to dust reduction
- ✓ Optimal bonding and gluing conditions



## Only brilliant surfaces put the sparkle in customers' eyes!

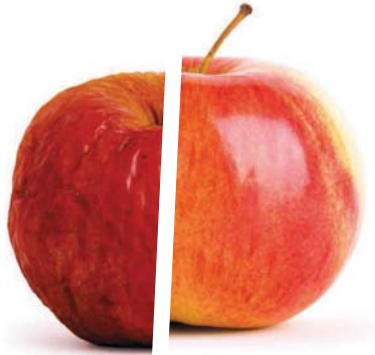
- ✓ Effective suppression of fine dust thanks to binding to the micro spray mist
- ✓ Consistent surface tension thanks to constant air humidity
- ✓ Higher output thanks to less rework



## Because there is simply less tension in the air!

- ✓ Prevention of static charges thanks to constant air humidity
- ✓ Adiabatic cooling effect thanks to micro atomization
- ✓ Top-quality with less scrap thanks to constant production conditions





## True freshness sells better!

- ✓ Constant quality thanks to humidity compensation
- ✓ Less product loss thanks to optimized storage conditions
- ✓ Higher revenue thanks to satisfied customers



## For a perfect working atmosphere!

- ✓ Optimal air humidity for a healthier working climate
- ✓ Fewer absences and interruptions due to sick leave
- ✓ Higher productivity thanks to ideal working conditions



## Because even flexibility needs constants!

- ✓ Optimal workability without distortion or shrinkage
- ✓ Less scrap thanks to humidity control
- ✓ Satisfied customers thanks to constant product quality



## What belongs together is what remains together!

- ✓ Safe handling for sensitive materials
- ✓ Prevention of static charge hazards
- ✓ Homogeneous products in top-quality thanks to optimal workability





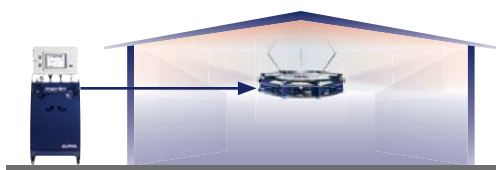
# HIGH-PRESSURE AIR HUMIDIFICATION

MICRO DROP technology from merlin®

Air humidification at its best! All merlin® high-pressure air humidification systems are equipped with our **MICRO DROP technology** for extremely fine atomization. This means that the water will be finely atomized on the ceiling (in the case of direct room humidification) or in a ventilation shaft (in the case of duct humidification).

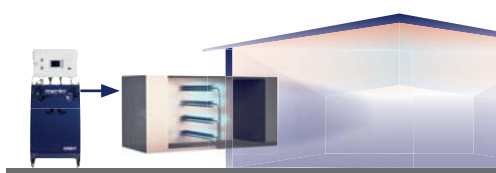
#### The two types of high-pressure air humidification:

## Direct room



The merlin® **ALPHA** and **VISCORE** air humidification systems are used when the room is directly humidified. In this case, the MICRO DROP technology transfers the treated water via a high-pressure system to innovative humidification units. These units are installed on the ceiling or the wall where they emit finely vaporized water into the room.

## Duct



In the new patented\* **ORBIT WING®** air humidification system, the air is humidified by MICRO DROP high-performance nozzles directly inside the duct. Unlike the ALPHA and VISCORE direct room humidification systems, this system does not require any humidification units on the ceiling or wall.

\* Patented in AT, PCT patent pending

# VISCORE

## MICRO DROP direct room humidification



## Your benefits

- ✓ MICRO DROP atomisation
- ✓ Easy self-assembly
- ✓ Almost zero maintenance required
- ✓ Adjustable humidification system for different room sizes
- ✓ High level of reliability and safety
- ✓ High standard of hygiene
- ✓ Intuitive, compact design
- ✓ Minimal operating costs
- ✓ Frequency-controlled water hydraulic pump (MZ)
- ✓ Operation period and pause time individually adjustable
- ✓ Each zone is individually adjustable
- ✓ Expandable at any time: up to 4 zones (MZ)
- ✓ High-pressure monitoring
- ✓ Hygiene interval switching
- ✓ PLC control with graphic touch panel (colour display)
- ✓ Modular design:  
can be combined in one unit with water treatment



## Advanced quality in a intuitive design

Treated drinking water is compressed by a high-pressure pump and conveyed via high-pressure pipes to the individual zones, where it is spread across the humidification units. The **MICRO DROP high-performance nozzles** ensure the finest atomisation over a long lifetime.

A central control unit regulates run and pause time of the humidification process, while humidity sensors transmit the current air humidity value to the graphic touch panel of the PLC control.

The new design not only implements the user-friendly and up-to-date **plug-and-play-principle**, but is also technologically and not least optically future-oriented.

# Features



## FS150 humidity sensor

The sensor measures the relative air humidity in individual humidification zones. If needed, the humidity can be adjusted in each individual zone. The FS150 humidity sensor performs perfectly with its fast reaction time and high level of accuracy.



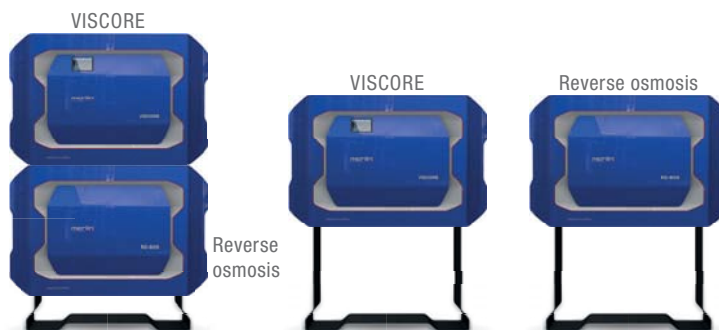
Graphic touch panel

## PLC control

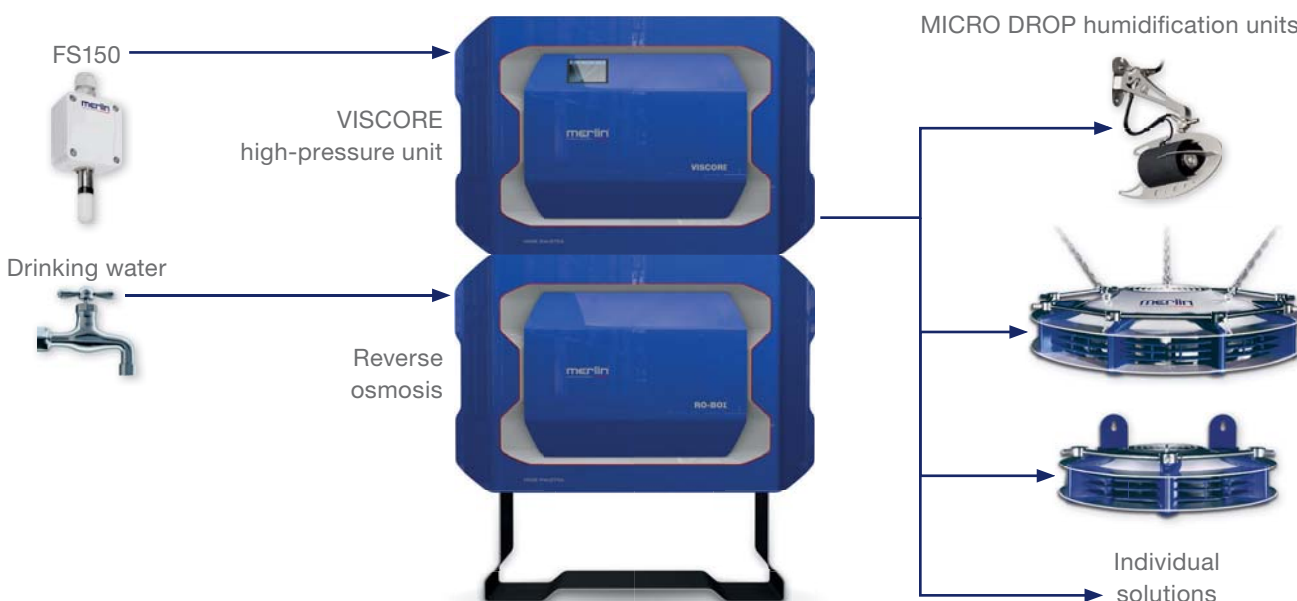
The intelligent PLC control with graphic touch panel and the easy menu navigation reads out the values of the humidity sensors and ensures perfect room air humidity. The zones are individually controllable.

# Flexible in every aspect

The modular design offers the right solution for every requirement. The high-pressure system and reverse osmosis can be combined in one unit or used individually. The system can be expanded from 1 to 4 zones (MZ) at any time.



# Set-up diagram





# ALPHA

## MICRO DROP direct room humidification

### Your benefits

- ✓ Frequency-controlled water hydraulic pump (oil and maintenance free)
- ✓ MICRO DROP atomisation
- ✓ Low maintenance and minimal operating costs
- ✓ Modular and functional design
- ✓ Adjustable humidification system
- ✓ High level of reliability and safety
- ✓ High standard of hygiene
- ✓ All water-bearing components are made of anti-corrosive V2A stainless steel or food-tested plastics
- ✓ Hygiene interval switching
- ✓ PLC control
- ✓ Low energy consumption
- ✓ Easy handling
- ✓ Visualization and data storage on PC possible
- ✓ Individual interface to building control systems

### Multifunctional high-end system

The ALPHA air humidification equipment is the high-end system from merlin® for direct room humidification. It works with filtered and hygienically safe water. If desired, the water can first run through a water softener, a reverse osmosis filter and a disinfection unit. Then the water is pumped through a stainless steel hydraulic pump at a pressure of 70 bar to the humidification units where it is finally atomized with the **MICRO DROP high-performance nozzles**.

The flexible PLC multizone control with touchscreen in combination with high-quality humidity sensors ensures precise and constant ambient humidity.

The optional PC visualization gives you an overview of the entire system at all times. It is also possible to record data.







## Features



### FTS112 humidity & temperature sensor

The sensor measures the relative air humidity and temperature in individual humidification zones. If needed, the humidity can be adjusted in each individual zone. The FTS112 humidity and temperature sensor performs perfectly with its fast reaction time, high level of accuracy and extra mechanical safety humidistat.



### HPD high-performance nozzle

The new nozzle, with its high-quality workmanship and flow-optimised design, is a development based on the MICRO DROP nozzle. Made of noncorrosive, acid-proof stainless steel.

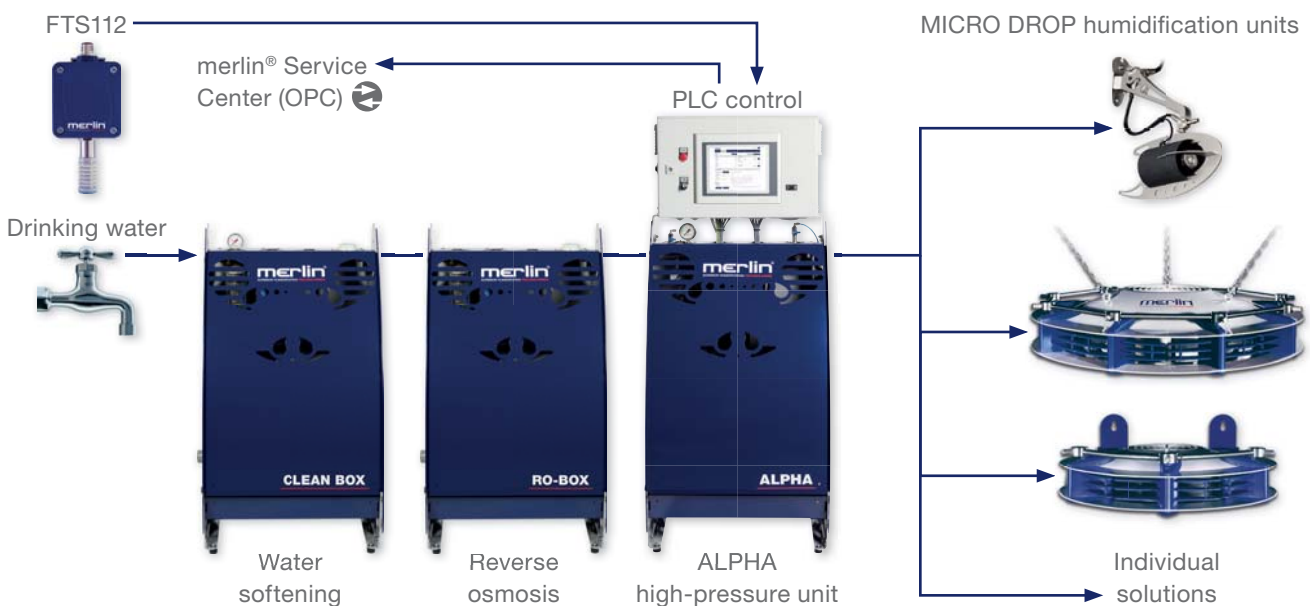


Colour display / touchscreen

### PLC control

The smart PLC control manages the whole water treatment process as well as the humidity and temperature sensors, resulting in perfect air humidity levels in your room. OPC interface as standard. PC visualisation and data recording optional.

## Set-up diagram



# AER

## Humidification units without ventilation



Ceiling & wall mounting



AER 1 work



AER 1 office



AER 2



AER 3



AER 5



AER 5 pipe



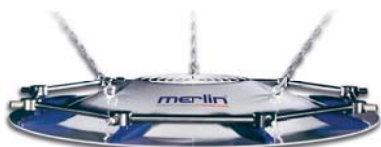
AER 1 pipe



AER 1 pipe end



AER 6



AER 9

Wall mounting

Ceiling mounting

## AER and AER v – the originals

The merlin® humidification units with smallest possible height, low energy consumption and **MICRO DROP technology** for extremely fine atomization are installed to suit the given room situation, ensuring the most efficient humidity quality. There are humidification units for mounting on pillar, ceilings and walls. Special solutions are also available.

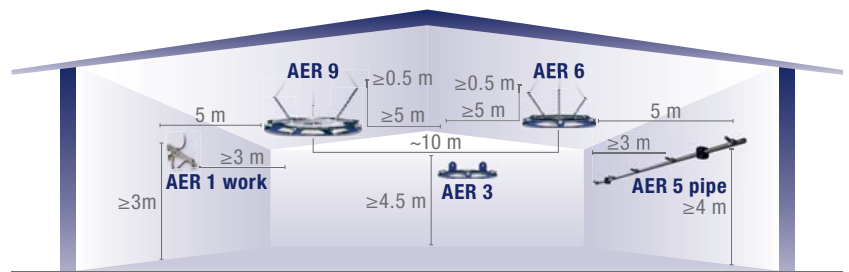
### Automatic self-venting

The special redesigned nozzle ring enables the automatic self-venting of the entire high-pressure system, which practically eliminates the need for maintenance.

## Humidification units without ventilation

can be installed under the right ambient conditions. Due to their **quiet operation**, they are especially suitable for showrooms and offices.

### Mounting options



The number in the unit name indicates the number of nozzles. Optimal distribution of humidity is achieved if the recommended installation distances are observed.

# AER v

Humidification units with ventilation



## Accessories

For all AER and AER v



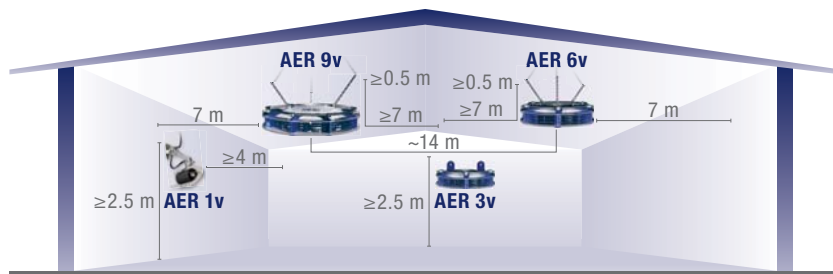
Air filter for AER 3v, 5v, 6v, 9v



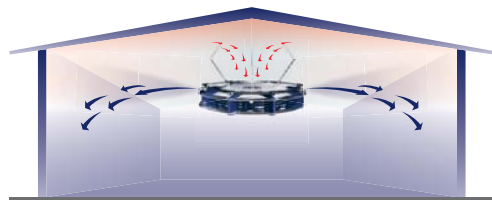
## Humidification units with ventilation

suck in the warm ambient air from above and create a warm air cushion. This enables fast evaporation while ensuring an **even humidity distribution** throughout the room. An optionally installed dust filter actively cleans the air that passes through. Due to the air that is suck in from above, warm air from under the ceiling is actively recirculated.

## Mounting options



## Heat distribution



merlin®  
~ 25 °C  
~ 22 °C

Even heat concentration and lower temperature gradient.

**AER v** suck in warm ambient air from above and ensure fast and optimal humidity distribution.



AER 1v



AER 3v



AER 5v



AER 6v



AER 9v

Ceiling & wall mounting

Wall mounting

Ceiling mounting

About merlin®

Air humidification

High-pressure

Ultrasonic

Rotation lamella

Compressed air

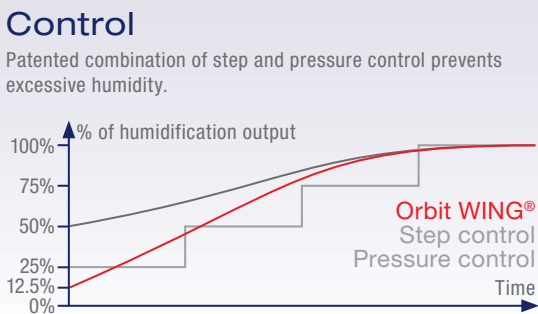
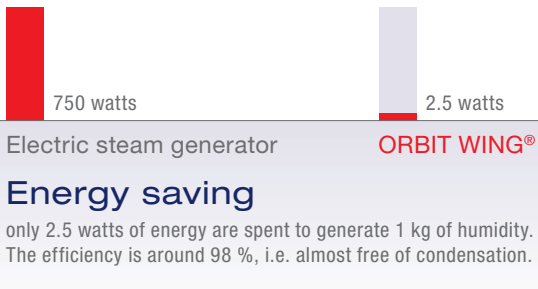
Water treatment

Superior Services



# ORBIT WING®

## MICRO DROP duct humidification



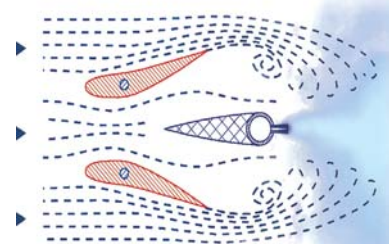
## Your benefits

- ✓ Minimal energy consumption of only 2.5 watts
- ✓ No chemicals used to maintain the water quality
- ✓ Minimal loss of pressure thanks to optimal droplet separator (100 Pa at 2 m/s)
- ✓ Modular design for easiest installation
- ✓ Can be integrated into any duct system (can be replaced and retrofitted)
- ✓ Patented\* combination of step control and pressure regulation
- ✓ High level of reliability and safety
- ✓ All water-bearing components are made of anti-corrosive V2A stainless steel or food-tested plastics
- ✓ Fine water filtration, dry-running and heat protection
- ✓ Minimum maintenance
- ✓ Short evaporation distance (-50 %)
- ✓ Energy-saving alternative to steam humidification (uses 90 % less energy)
- ✓ frequency-controlled water hydraulic pump (oil and maintenance free)

## For integration in ventilation and air conditioning systems

The patented\* merlin® air humidification system ORBIT WING® can easily be integrated into existing ventilation and air conditioning systems. Together with humidity sensors and automatic control system, it delivers efficient and economical air humidification.

The patented\* **ORBIT WING® elements** make it possible to specify the aerosol swirling on the separation edge. The aerosol flies in a circle, flying longer for a shorter distance. This results in extremely short evaporation distances, which has proven to be highly hygienic and particularly space-saving.



\* Patented in AT, PCT patent pending



## Features



## Technical details

Volume of air m <sup>3</sup> /h Max. humidity addition 7gr/mm <sup>3</sup>	High-pressure pump type	Humidification output l/h	Power kW	Voltage V / Hz	Number of nozzles (type #2 / 4.5 l/h), pcs	Number of nozzles (type #3 / 7.2 l/h), pcs
5.000 – 25.000	PAH-2.0	50 – 220	2.2	400 V / 50 Hz	12 – 50	–
10.000 – 45.000	PAH-3.2	90 – 400	2.2	400 V / 50 Hz	20 – 90	–
14.000 – 55.000	PAH-4.0	120 – 500	2.2	400 V / 50 Hz	30 – 110	20 – 70
22.000 – 95.000	PAH-6.3	200 – 850	2.2	400 V / 50 Hz	40 – 190	30 – 110
35.000 – 150.000	PAH-10.0	300 – 1.350	4.0	400 V / 50 Hz	70 – 300	40 – 180





# ULTRASONIC AIR HUMIDIFICATION

The efficiency of aerosols



## Atomization

In this type of air humidification, the water is atomized by ultrasonic vibrations in tiny water aerosols (1  $\mu\text{m}$ ). Meanwhile the **CONTRA-KEIM® disinfection program** and **AQUADRAIN® hygiene management** guarantee an ideal hygiene standard.

# FORTE | SENSO | PURUS | FINESSE

Ultrasonic air humidification



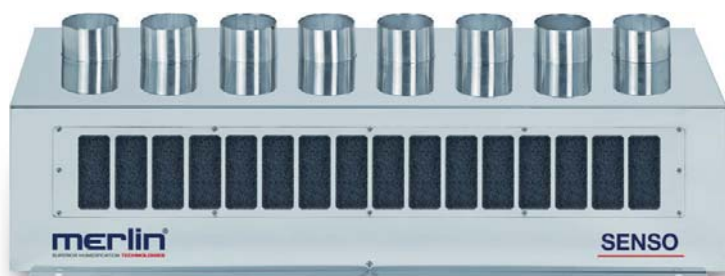
## Variants

### FORTE

#### Duct humidification

Easy to integrate into almost every ventilation or air conditioning system.

**Humidification output up to 25.2 kg/h**



### SENSO

#### Universal humidification

Universal use, easy installation, compact design.

**Humidification output up to 12.0 kg/h**



### PURUS

#### Direct room humidification

Accurate and highly efficient humidification output in the smallest areas.

**Humidification output up to 8.0 kg/h**



### FINESSE

#### Food humidification

Significantly extends the freshness and shelf life of food.

**Humidification output up to 3.0 kg/h**



**PURUS**

## Your benefits

- ✓ Top performance with low energy consumption – up to 93 % energy savings compared to steam humidification
- ✓ Highest hygiene standards
- ✓ 100 % humidity in just a few seconds
- ✓ Continuously adjustable from 0 to 100 %
- ✓ Can be integrated in existing air conditioning solutions
- ✓ Can be used as a standalone solution
- ✓ In normal operation condensate-free
- ✓ In normal operation no waste water

## Always highly hygienic – with ultrasonic!

Osmosis water is atomised into 1 µ aerosols using 1.7 MHz ultrasonic vibrations. The ultrasonic technology consumes an average of only 50 W/h for each kg of humidification.

The **CONTRA-KEIM® disinfection program** and **AQUADRAIN® hygiene management** systems set new hygiene standards for humidification.

merlin® predetermines the ideal moisture parameters for a given application on the basis of the results of measurements and then uses the most suitable ultrasonic air humidification system to create the ideal climatic conditions for your business.

## Technical details

Max. air humidity	up to 95 % relative humidity
Air temperature	5 °C – 45 °C
Water pressure	min: > 1 bar dynamic max: < 6 bar static
Water quality	demineralised (< 20 µS/cm <sup>3</sup> )
Low voltage	48 VAC – 230 V / 50 Hz

## Features

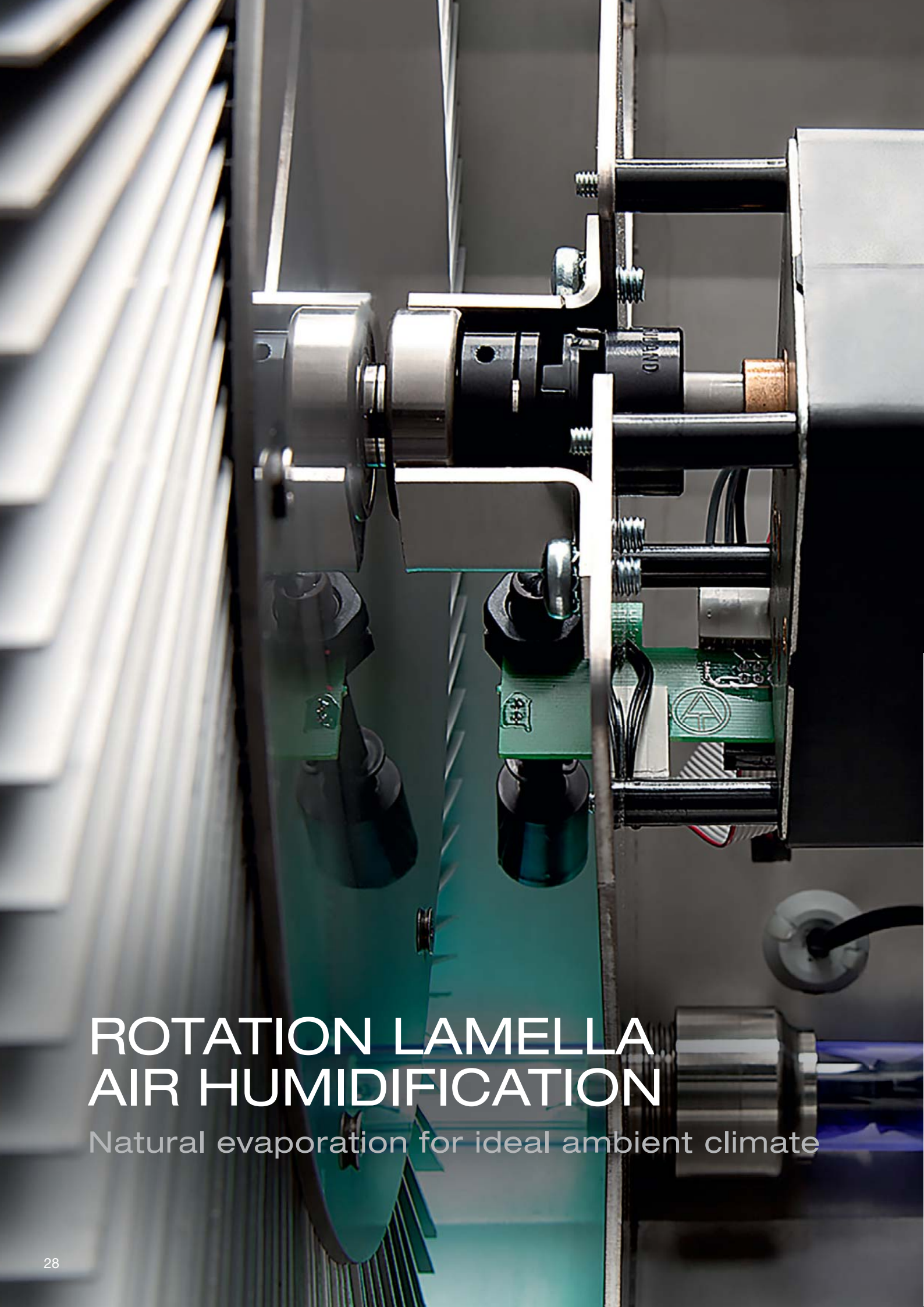
### Device description

- Anti-corrosive V2A stainless steel
- Dry running, heat and overflow protection
- Ceramic piezo vibrating element
- Overvoltage protection
- AquaDrain® hygiene management
- Contra-Keim® disinfection program FINESSE

### Optional accessories

- Duct humidity and temperature sensor FORTE
- Control cabinet FORTE
- 2-step room humidistat for ON/OFF control PURUS
- Control cabinet incl. room humidity transmitter and continuous regulation SENSO + PURUS + FORTE
- Reverse osmosis systems
- Online conductometry
- Transformers





# ROTATION LAMELLA AIR HUMIDIFICATION

Natural evaporation for ideal ambient climate





## Evaporation

Rotation lamella air humidification not only ensures a **natural, aerosol-free** (i.e. fog-free) ambient humidity, it can also be used to regulate the temperature of the emitted air to support ventilation, air conditioning and heating systems.

# AIR-C250 | AIR-C500

## Rotation lamella air humidification

### Variants

#### AIR-C 250 / AIR-C 500 without ventilation unit

For integration into existing ventilation and air conditioning systems. Optionally with electrical or water heating coil.



#### AIR-C 250 / AIR-C 500 with ventilation unit

Can be used as a standalone solution for direct room humidification.



### Your benefits

- ✓ Can be integrated into existing air conditioning solutions and home ventilation systems
- ✓ Can be used as a standalone solution
- ✓ Hygiene tested and certified
- ✓ Integrated reverse osmosis and UV disinfection
- ✓ Electronic signal output
- ✓ Low maintenance
- ✓ Easy installation

### Natural evaporation

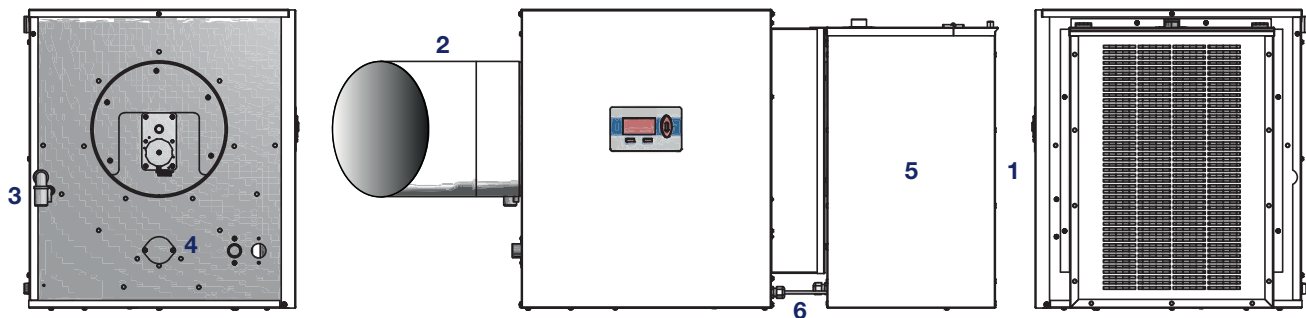
The basic physical principle of rotation lamella air humidification is simple. The rotation lamella evaporator is located in a humidification tank, which is supplied with water. As cold air enters, it is warmed by an integrated heating unit for the generation of evaporation energy.

A **UV disinfectant** ensures that only sterile water is evaporated. Rotating lamellas 'scoop' a precise percent of moisture – which you can set to any value between 40 % and 60 % r. h. – into the ambient air and keep the air humidity constant. This design principle ensures along with ideal relative humidity also tested, maximum hygiene.



## Set-up diagram

- 1 Air inlet
- 2 Air outlet
- 3 Water outlet
- 4 Water inlet
- 5 Ventilation unit
- 6 Mains connection



## Technical details

	Unit	AIR-C 250	AIR-C 500
Air flow rate	m <sup>3</sup> /h	max. 250	max. 500
Adjustable air humidity	%	40 – 60	40 – 60
Adjustable air temperature	°C	15 – 25	15 – 25
Evaporation output	l/h	max. 2	max. 4
Water change	l/day	1 – 10	2 – 30
Loss of pressure	Pa	max. 30	max. 80
Mains connection	V / Hz	230 / 50	230 / 50
Air connection	∅ mm	160	250
Water connection	∅ inches	3/4	3/4
Water inlet pressure min. / max.	bar	3.5 – 7.0	3.5 – 7.0
Water temperature min. / max.	°C	8 – 30	8 – 30
Protection class for wall mounting	IP	20	20
<b>PTC electric heater battery</b>			
PTC heating element output	W	1300	1300
Water outlet	∅	40 mm	50 mm
Input power	W	23 W	23 W



# COMPRESSED AIR HUMIDIFICATION

Clever air humidification with compressed air



## Compact

merlin® IQ compressed air humidification is a versatile and **individually configurable solution** that is also ideal especially for smaller production areas that have nooks and crannies, such as storage rooms and workshops.



# IQ

## Compressed air humidification

### Your benefits

- ✓ Suitable for small spaces – targeted humidity supply
- ✓ Very fine atomisation of drinking water
- ✓ Compact design
- ✓ Easy installation and self-assembly
- ✓ Variable humidification output from 625 to 2,500 m<sup>3</sup> of room air (4.5 to 18 l/h)
- ✓ Easy-to-extend, modular design by adding or removing the Quick-Change nozzles
- ✓ Mechanical or digital humidity sensor
- ✓ Ceiling or wall mounting – can be adapted to any room arrangement



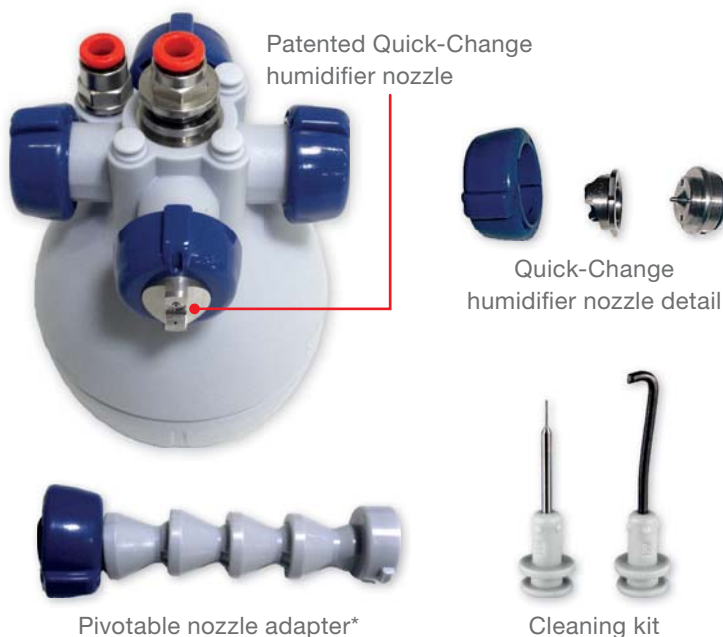
### Compact and multifunctional

IQ is the optimal solution for smaller production areas and storage rooms, with its excellent value-for-money performance.

The compact IQ humidification units can be mounted on the wall or ceiling. The specially designed nozzles ensure fine atomization, even at a working pressure of 1 bar. Thanks to **Quick-Change technology**, the system can be easily extended up to four freely hanging nozzles or three wall-mounted nozzles. The optional humidity sensor control (digital or mechanical) regulates a relative humidity up to 70 %. No water treatment is required.



## Features



## Technical details

### Maximum output

For areas up to **800 m<sup>2</sup>** or suction up to **2,500 m<sup>3</sup>/h** at 21 °C room temperature and 50 % humidity with 4 nozzles in operation

### 2 installation options

- 1 – 4 nozzle operation, free-hanging
- 1 – 3 nozzle operation, wall-mounted

## Set-up diagram

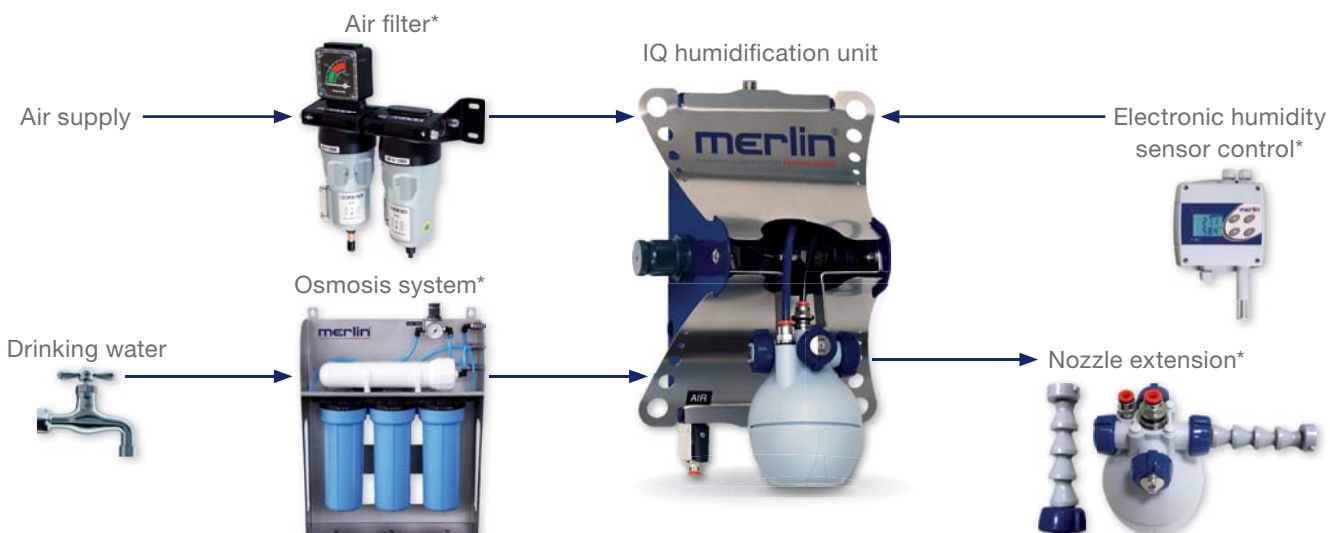


Illustration photo  
\*optional



# WATER TREATMENT AND HYGIENE

The merlin® hygiene principle



## A clean business!

All merlin® air humidification systems work with perfectly filtered and hygienically safe water. Depending on requirements, the water passes through a **filtration, water softening, reverse osmosis and disinfection unit**. You can rest assured that merlin® air humidification systems always provide maximum process reliability, efficiency and hygiene.



# FILTRATION | SOFTENING OSMOSIS | DISINFECTION

## Your benefits

- ✓ Individual water treatment
- ✓ Absolutely perfect hygiene
- ✓ Easy installation
- ✓ Modular design
- ✓ Low maintenance
- ✓ Fast amortization
- ✓ No chemicals used to maintain the water quality (with the exception of online disinfection)

Particle size	0.001 µm		0.01 µm		0.1 µm	1.0 µm	10 µm	100 µm (0.1 mm)
Molecular weight (dalton)	100	200	1000	10000	20000	100000	500000	
Relative size of various materials	Dissolved salts		Humic substances		Activated carbon		Sand	
	Metal ions		Pyrogens		Pigments			
	Monovalent ions		Sugars		Bacteria			
	Divalent ions		Viruses		Legionella			
	Halocarbons		Cigarette smoke		Industrial dust			
					Glass dust & abrasive dusts			
Separation processes	Reverse osmosis				Ultra-filtration		Particle filtration	
	Nanofiltration				Cross-flow microfiltration		Volume filtration	

Drinking water



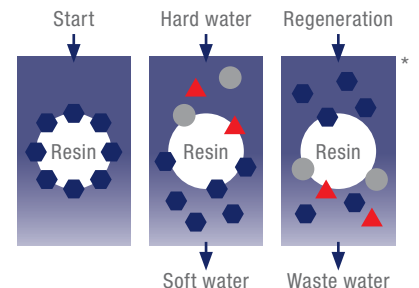
## Filtration unit

The water filter combination, including integrated water counter, prevents the particles and suspended solids in the feed water from entering our air humidification systems. The filtration unit consists of coarse filtration that can be cleaned by backwashing and subsequent fine filtration – for absolutely reliable protection.



## Water treatment unit

To prevent calcify on the high-quality system parts and atomizer nozzles, water softening is introduced. The water previously purified in the filtration unit transforms to 0° German hardness by an ion exchange process. Different systems will be used to meet the individual requirements and needs of customers.



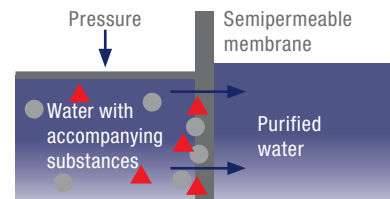
Ion exchangers are small plastic balls (permitted in drinking water) which can absorb ions from water and replace these with other ions. The ‚hard‘ water flows through the system and the dissolved calcium and magnesium ions removed and replaced with sodium ions. This softens the water.



## Reverse osmosis unit

The reverse osmosis unit is used to demineralize water and is an indispensable part of the overall air humidification system in all areas where the presence of minerals is undesired (e.g. pressure and painting applications).

Filtered and also softened water is pressed through a membrane. The result is pure water, the residues are washed down the drain. The special advantage of reverse osmosis is that in addition to removing dissolved minerals, it also separates out bacteria, germs, particles and dissolved organic substances.



Reverse osmosis units with different liter capacities are integrated into the overall project based on customer-specific requirements. Reverse osmosis can also be used for process water (e.g. for printing machines).



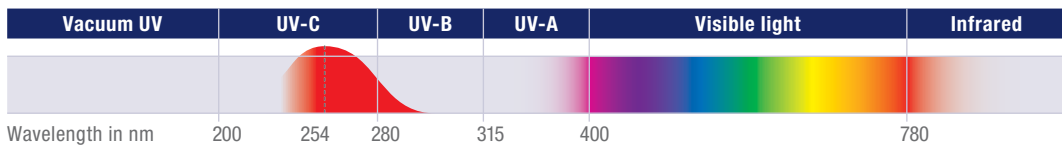
## Disinfection

To guarantee the hygiene in the merlin® air humidification systems, either a selective disinfection process or an online disinfection process is implemented.

### Selective disinfection

Softened water or reverse osmosis water is conveyed under a UV lamp, exposing it to UV light of approx. 200 – 280 nm (UV-C range). This renders any existing bacteria, viruses, etc. harmless.

#### Part of the electromagnetic spectrum



### Online disinfection

For online disinfection of the entire air humidification system, merlin® uses, for example, the additive chlorine dioxide. Continually adding small amounts of this additive ensures that the entire air humidification system – from the feed water to the atomizer nozzle – is kept perfectly hygienic at all times.

# SUPERIOR SERVICES

Make your business smile!

**merlin**<sup>®</sup>  
SUPERIOR HUMIDIFICATION TECHNOLOGIES





## Proven quality since 1995

Whether simple devices for use in the end customer's home or more complex systems for large concerns, merlin® can always offer customers optimal solutions given their high level of expertise and quality standards.



# SUPERIOR SERVICES

Make your business smile!



## Top quality at a fair price

The brand merlin® stands for a dynamic, innovative and international company. Highest quality standards and reliability distinguish our company.

## Hygiene and optimal operations

merlin® air humidification systems are a reliable and energy-saving way of achieving an optimum indoor climate.



### Other standards

Austrian standard (ÖNORM) H 6020-1:2007 'Ventilation Systems in Medical Institutions – Planning, Construction and Inspection'

ISO 13485:2012 'Medical Devices – Quality Management Systems – Requirements for Regulatory Purposes'



## Hygiene and maintenance agreements

The reliable and energy-saving merlin® air humidification systems ensure an optimal ambient climate as long as the components are regularly maintained. You can easily perform the maintenance by yourself. If you do not have the necessary personnel or time resources, we would be happy to perform the maintenance for you as part of a service agreement. This allows you to fully focus on the success of your company.

## Spare parts delivery within 48 hours

Our fast spare parts delivery helps minimize or even totally eliminate downtimes.

## Internationally trained personnel

Our service employees are multilingual and internationally trained. This allows us to quickly respond in (almost) every part of the world.

## Remote support service and customer support

Our remote support service allows us to help you quickly. The customer support of Merlin Technology GmbH is connected to you virtually and provides remote diagnostics for error messages that might occur.

## Technology and hygiene training

We would be pleased to offer you training to ensure maximum operational safety. This training will allow you to perform maintenance and repairs by yourself.

## Service hotline

Our customer service is available for you. We look forward to receiving your inquiry.

### Tel. +43 (0) 7752 71966

Monday – Thursday: 07.30 a.m. – 5 p.m.

Friday: 7.30 a.m. – 12.15 p.m.

### Tel. +43 (0) 699 1400 1452

Our service hotline is also available during our company holidays.



**MAKE  
YOUR BUSINESS  
SMILE!**



Merlin Technology GmbH, Hannesgrub Süd 10, 4911 Tumeltsham  
T: +43 (0) 7752 71 966, F: +43 (0) 7752 71 988  
office@merlin-technology.com, www.merlin-technology.com



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