

ML Plus System



## Energy efficient climate control

Desiccant dehumidification system with integrated pre- and post treatment



# Highly flexible and compact full climate control system

## Built up with standard modules

The ML Plus concept is a compact standardised standalone dehumidification system with incorporated temperature and humidity control.

Our ML Plus-system can be configured with booster fan, humidifier, pre- and post coolers and heaters according to your requirements.

The ML Plus system is built up in elements, assembled and tested at our factory - ready for immediate start up on site.

## Small footprint - easy installation

By standardising it has been possible to minimize the footprint measurements.

This enables a simple integration of ML Plus into most moisture sensitive production processes.

ML Plus can be delivered with dehumidification capacity up to 17.5 kg/h and airflows up to 5,500 m<sup>3</sup>/h

The system is quick and easy to connect to existing pipes and ducts.



## ML Plus Benefits

- Highly flexible system - pre-engineered modules to be combined
- Modulated control secures minimized energy consumption
- High quality casing meeting hygienic demands
- Compact design - single, common base frame - small footprint - easy to locate
- Easy installation - plug&play
- Fits to standard ISO ductwork
- Easy service access
- Certified bacteriostatic desiccant rotor highly suitable for use in eg. food and pharma applications



# ML Plus - for preservation and sensitive processing

## Controlling humidity the Munters way

In the 1950's Carl Munters developed and patented the first desiccant wheel dehumidifier. The principle has developed into the most energy efficient technique for creating humidity controlled environments.

ML Plus is a refined unit, based on our famous working horse the ML-unit, of which thousands have been installed worldwide.

Thanks to the high dehumidification capacity and flexibility ML Plus is perfect for use in different parts of moisture sensitive processes or wherever there is a need for controlled humidity.

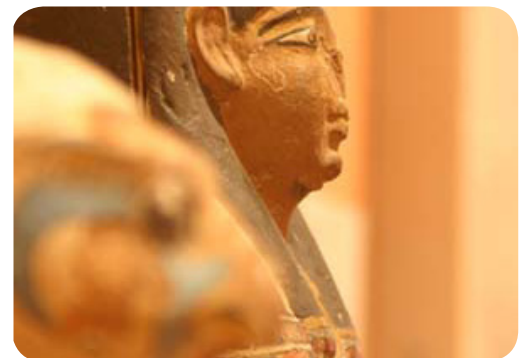


### • Process Industry

For sensitive production processes the ML Plus system offers an energy saving climate control in only one unit - creating optimal production climate around the year.

### • Preservation

Storing valuable artifacts or documents means high demand on humidity control. As our ML Plus System offers both humidification and dehumidification in one and the same unit, the system will ensure perfectly controlled humidity and temperature conditions



# ML Plus - The flexible Process Applications System



When very dry air/low humidity is required

- Coating
- Packing
- Filling
- Capsuling
- Cleanrooms, labs

## A flexible standard system

Short delivery and start-up time thanks to predefined modules creating almost unlimited flexibility.

Easy to install and thanks to the pre-programmed control, only specific customer related parameters need to be changed.

## Hygienious design

ML Plus is easy accessible, easy to clean and meets demanding requirements on hygiene.

- Smooth surfaces, large inspection doors
- Integrated drip pan and excellent drainage system
- Stainless Steel as option
- Clean room filter media as option
- Bacteriostatic High Performance Silicagel (HPS) rotor (tested by the Swedish SIK Institute)



The intelligent MLPlus climate system saves both money and energy:



### Your benefits:

- » Constant climate saves energy
- » Smaller foot print compared to separate units
- » Single point supplier
- » Only one CE mark
- » Only one After Sales partner

# ML Plus - The flexible Preservation System

## Complete climate solution - only one supplier

Ideal, strictly controlled climate around the year for:

- Archives
- Storage
- Museums
- Multiple preservation applications

## ML Plus system controls:

- Humidification
- Cooling
- Heating
- Dehumidification

Thereby creating a completely constant climate around the year - saving energy and costs.



## Options for even higher efficiency and flexibility:

- Mixing box
- By pass
- Mirrorhanded set-up

## Outstanding rotor capacity:

Based on the desiccant rotor technology - originally patented by Munters - our ML Plus systems provides high moisture absorbing capacity year after year.

Energy recovery sector for enhanced performance.

Certified bacteriostatic desiccant rotor



## Flexible humidification options:

- Evaporative
- Steam

Munters' unique Glasdek media for reliable humidification



## Advanced controls:

- First class temperature and humidity control
- Energy saving thyristor control of heater
- Frequency converter for fans
- Variety of communication modules as options





# ML Plus meeting customer expectations



## Faster coating of pills

At Jemo-pharm's facilities in Denmark nutritional supplements are being produced under strict GMP regulations.

To enable coating of garlic pills, high demands are set to both temperature and relative humidity.

A Munters ML Plus system provides air at +20°C/20 %RH around the year, cutting appr. 2/3 off the coating time.

The ML Plus system is configured with both pre- and postcooling to meet the high demands on the production climate.

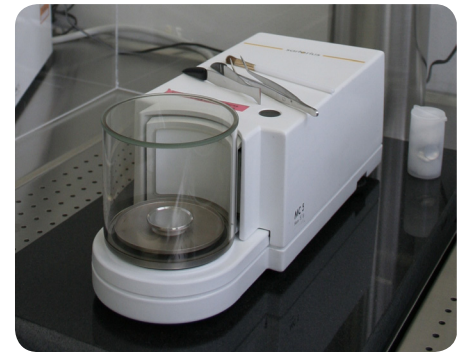


## Protecting artifacts

In Växjö, Sweden, a collection of irreplaceable books and documents of the world famous botanist Carl von Linné is stored.

Two basement rooms provide high security and a carefully controlled environment for books and original drawings that must be preserved under strict conditions to avoid further deterioration.

Around the year a ML Plus system provides conditioned air to these rooms, ensuring that the fragile documents can be safely kept for future studies by scientists from around the globe.

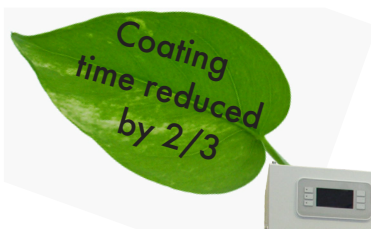


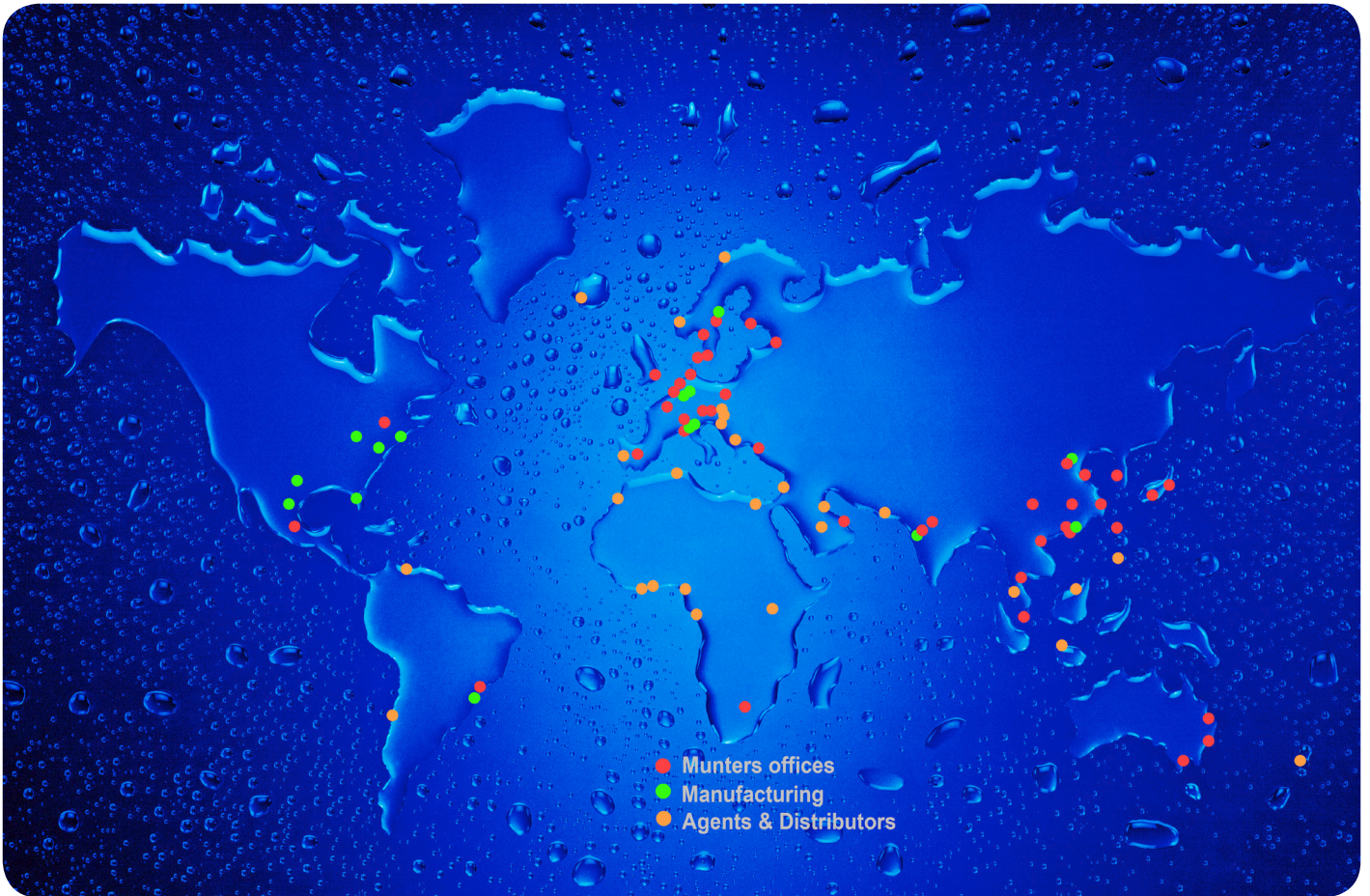
## Fulfilling FDA requirements

The Quality Dept. at Polypeptide, Malmö, Sweden continuously performs strictly controlled weighing procedures of products.

To fulfill the requirements from FDA the climate conditions in the weighing room has to be similar to those in the production area.

Munters ML Plus precisely controls the climate at 20°C/25% RH, enabling hygienic and safe test weighing around the year - performed by an elegant all-in-one unit with a small foot print.





## An international name, where the customer comes first.

Munters, part of Nordic Capital, has offices in 30 countries and over 3,000 employees in many branches around the world. We are global leaders in energy efficient air treatment for comfort, process and environmental protection.

Munters shares ideas within its international network, giving the Group an outstanding reputation as a reliable, fast-acting and customer-orientated expert in air conditioning. Munters philosophy of customer satisfaction is central to our decision-making. When developing and manufacturing our systems, we see happy customers as our number one target. And this is what our employees strive to ensure every day.

For more information on Munters, please visit [www.munters.dk](http://www.munters.dk)

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