

Munters PureSystem

Total desiccant dehumidification system

For over half a century, Munters has been the leading pioneer within humidity control, and we're just getting started.

- Specially developed for spray drying applications
- Stainless-steel casing, panels, rotor construction and rotor support
- Indoor/outdoor installation
- Energy efficient design (controls and components)
- Hygienic design with food-grade filters and food-safe plastics and lubricants
- Reliability for maximum uptime
- Rotor size up to 4.5 m (14.76 ft)
- Airflow up to 200,000 kg/h (440,917 lb/h)
- Energy-saving recuperation coil



PureSystem is a complete desiccant dehumidification system that controls low inlet air humidity for spray drying applications. This adaptable, engineered system inlet air to prevent sticking, increase production capacity and improve safety, save energy and reduce CO₂. The result is consistent high powder quality, and optimal hygiene thanks to its stainless-steel welded construction.

PureSystem delivers adsorption dehumidification, which ensures more stable operation of the spray dryer and increases efficiency, production output and predictability.

The PureSystem consists of the core Munters desiccant technology and can be configured with more industrial features to fit requirements. The PureSystem delivers humidity reductions of up to 15 g/kg (0.53 oz/lb) in tropical areas and 12 g/kg (0.42 oz/lb) in moderate areas. This complete, high-quality solution is designed primarily for the food, chemical and pharmaceutical industries. All equipment is manufactured in accordance with ISO9001 and complies with the CE and PED standards of legislation.

At the heart of the PureSystem is Munters rotor technology, which represents more than 60 years of innovation and application knowledge for perfect control of the dehumidification process.

Munters creates your perfect climate for the spray drying process to ensure stable operation, higher production output and a more efficient spray drying process.

PureSystem in detail

The foundation of the whole system is the durable welded stainless-steel construction, with removable (40 mm (1.57 in)) double walled insulated panels. The panels are made from double-walled stainless-steel and the whole system is mounted on a stainless steel base frame. Doors and hatches for service and maintenance are placed at agreed locations.

PureRotor

- Corrosion-resistant, stainless-steel construction
- High strength construction suitable for extreme air flows
- Media: HPQ/HPS

Munters air equalizer (MAE)

- Energy saving
- Multiple outlet
- Equalizes air conditions
- Preventing hotspots
- Material Alu /AISI30/AISI304

Regeneration heat recovery

- Waste heat, hot water
- Tubes/fins:
 - AISI304/aluminum
 - AISI304/AISI304

Regeneration heater

- Steam/electric/hot water
- Tubes/fins:
 - AISI304/aluminum

Process fan

- Highly efficient industrial fans
- Plug/external
- Coated steel/AISI304
- Efficiency IE3/IE4
- VFD-controlled
- Nema electrical and Aus/NZL option

Regeneration fan

- Centrifugal direct driven
- Coated steel/AISI304
- Efficiency IE3/IE4
- VFD controlled
- Nema electrical and Aus/NZL

Process cooling/heating

- Ice water, chilled water, glycol
- Tubes/fins: AISI304/aluminum

Air filtration

- Insect/panel/soft bag/compact/box Filters
- G2 - F9; E10 - H14/ISO16890, ePM1, ePM2,5 ePM10 Frame
 - Standard/food-grade
 - Material: AISI 304/Plastic

Winter coil

- Prevent wet and frozen filters
- No process interruption
- Maximum uptime and process stability
- Hot water/steam
- Tubes/fins:
 - AISI304/aluminum
 - AISI304/AISI304

Air damper

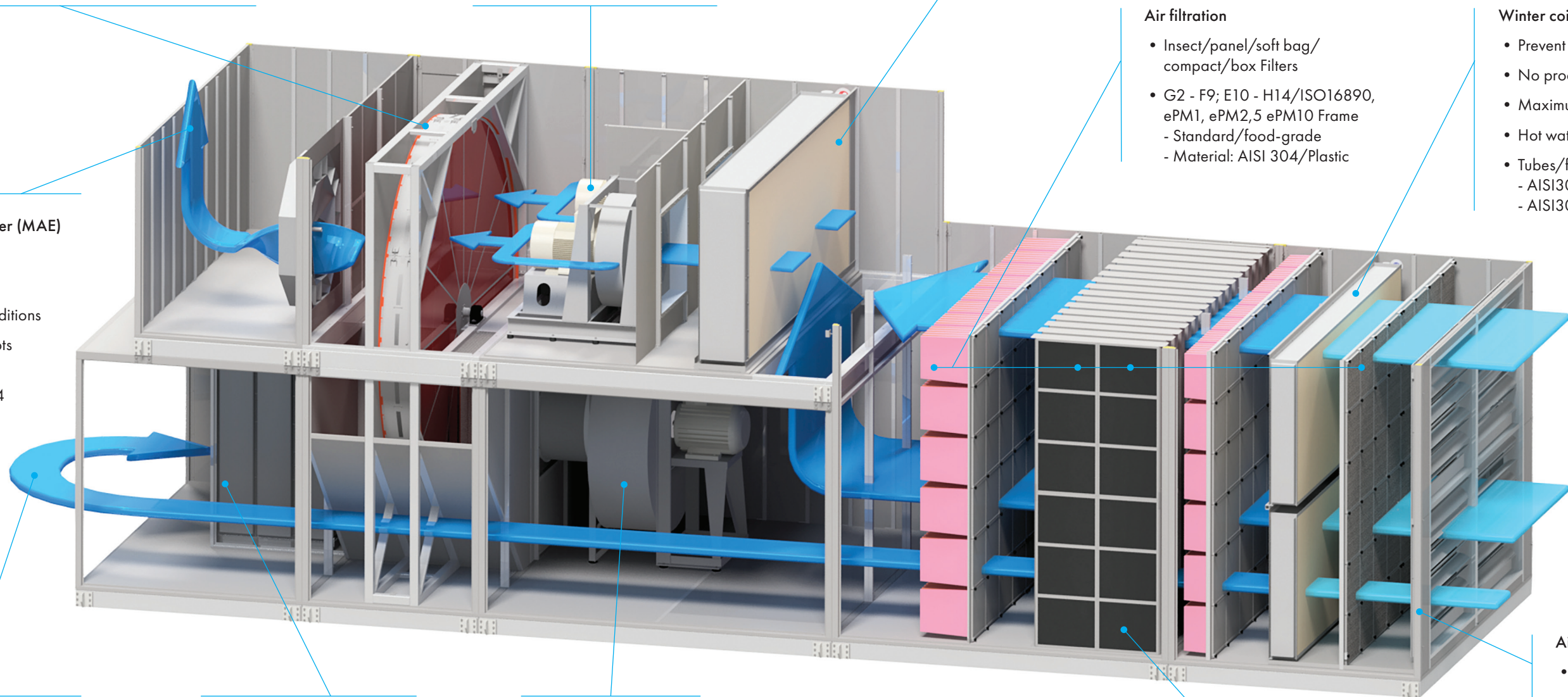
- Material: Alu/AISI304
- Motor-controlled

Sound attenuator

- Durable synthetic fibers (glass/rockwool free)
- Hygienic and cleanable surface
- Material AISI 304

Hygienic package

- Fully welded floors and open profiles for panels. Box profiles are closed
- Food grade filters when available, anti-microbial growth-certified according to ISO846 VDI6022
- Food safe plastics (e.g. fan flexibles, door-seals, construction-seals)
- Sloped drip-tray and "floating" cooling coil (to remain cleanable and prevent bacterial growth)
- "Floating" components & wiring (spacers to prevent dirt traps and remain cleanable)
- Food safe lubricants (e.g. fan motors)



Example of the inside of a supplied unit for a project in Germany

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Process air flow

Type	Nominal kg/h [lb/h]	Minimum kg/h [lb/h]	Max system kg/h [lb/h]	Max rotor ¹ kg/h [lb/h]
1 PureSystem 1300	9,750 [21,495]	4,875 [10,747]	10,750 [23,699]	13,000 [28,660]
2 PureSystem 1500	16,000 [35,274]	8,000 [17,637]	17,600 [38,801]	21,500 [47,399]
3 PureSystem 2000	27,000 [59,524]	13,500 [29,762]	32,400 [71,429]	36,000 [79,365]
4 PureSystem 2500	42,500 [93,697]	21,250 [46,847]	51,000 [112,436]	56,500 [124,559]
5 PureSystem 3000	62,500 [137,789]	31,250 [68,893]	68,750 [151,568]	83,500 [184,086]
6 PureSystem 3500	90,000 [198,416]	45,000 [99,206]	99,000 [218,258]	120,000 [264,550]
7 PureSystem 4000	120,000 [264,555]	60,000 [132,277]	132,000 [291,010]	160,000 [352,734]
8 PureSystem 4500	150,000 [330,693]	75,000 [165,347]	165,000 [363,763]	200,000 [440,917]

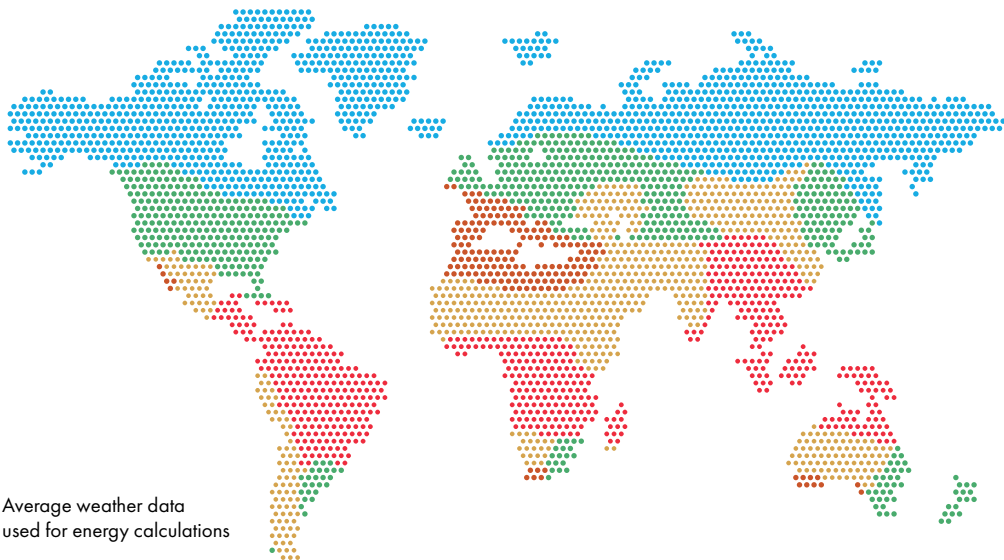
¹ This airflow is only intended for the basic line without pre- post treatment components.

Nominal capacity

Climate	Air inlet (fresh air) °C [°F]	Air inlet (fresh air) g/kg [oz/lb]	Dry air outlet °C [°F]	Dry air outlet g/kg [oz/lb]
Moderate	30 [86]	13 [0.45]	74 [165.2]	3 [0.11]
Sub tropical	30 [86]	18 [0.63]	76 [168.8]	6 [0.21]
Tropical	30 [86]	25 [0.88]	78 [172.4]	12 [0.42]

Note: Indication of dehumidification capacity based on nominal airflow and fresh air intake at local climate. For higher or different performance, please consult your local Munters office.

World climate zones



Average weather data
used for energy calculations

- Polar --
- Moderate 15°C [59°F] 7 g/kg [0.25 oz/lb]
- Sub tropical 20°C [68°F] 14 g/kg [0.49 oz/lb]
- Tropical 25°C [77°F] 18 g/kg [0.63 oz/lb]

Find your nearest Munters office at www.munters.com

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