

# Hybrid Blue<sup>®</sup>

ADC

Advanced  
Dry Cooler

50 – 2,000 kW



# JAEGGI – The Original



Since 1929, JAEGGI has been engaged in the development, production and sale of heat exchangers. Since 1995, the company has been part of the Güntner Group, a worldwide established manufacturer of components for refrigeration, air-conditioning technology and industrial applications with a total workforce of 2,600 people. Our production centres in Europe, America and Asia secure us direct market access and spare parts service worldwide.

JAEGGI places efficiency and eco-friendliness on an equal footing. Our products and services make an active contribution to lowering your operating costs and conserving resources.

Our heat exchangers carry hygiene certificates and are tested that there are no aerosol emissions. The ISO 9001 quality management system guarantees our customers premium quality and maximum reliability anywhere in the world.

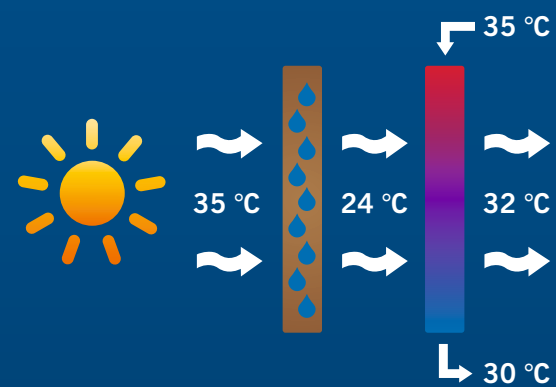
# Adiabatic dry coolers

Efficient re-cooling is an economic success factor in the industry, particularly in air-conditioning applications and data centres. In addition to the overall size, low investment, low operating costs and low noise emissions are all important criteria for choosing equipment.

The Hybrid Blue® ADC is an advanced dry cooler variant. The simplicity of its dry cooler is particularly convincing. When the outdoor temperature is high, the ambient air can also be pre-cooled to ensure low coolant outlet temperatures.

Adiabatic pre-cooling is achieved via humidification pads in an angular arrangement in front of the dry cooler. Innovative, technological details show: JAEggi is consistently developing their intelligent technologies. As an expert in hybrid dry coolers with a high level of system competence, JAEggi delivers premium quality and outstanding service.

Humidification pads are used to pre-cool the ambient air at the air inlet area.





## Tailored solutions for any application

### Intelligent control of speed and wetting

- Water saved by volume control
- Very low energy consumption thanks to EC fans
- Very low water consumption because dry/wet switchover is set at a high level

### Multifunctional use of humidification pads

- Easily removed for dry operation
- Pads locate on cooler during winter, no need to store them elsewhere
- Frames protect the pads from damage
- No spraying
- No water treatment needed
- Unlimited wetting duration

### System checked for aerosol output

- Hygienic operation
- Plume-free
- No water circulation
- Automatic draining
- Dry cooling coil
- No deposits or corrosion

### All controls possible

- GMM step
- GMM phase cut
- GMM sincon
- EC fans with GMM EC
- Wired ready to use

### Crane transport with no need for lifting beam

- Easily transported by crane thanks to two moveable lifting lugs
- Quick and easy installation
- Optimal distribution of forces
- Rigid structure, resistant to deflection

### High power density

- V construction
- Unit height
- Minimal footprint

### Service

- Maintenance
- Cleaning
- Provision of spare parts
- High system competence

### Minimal number of support feet

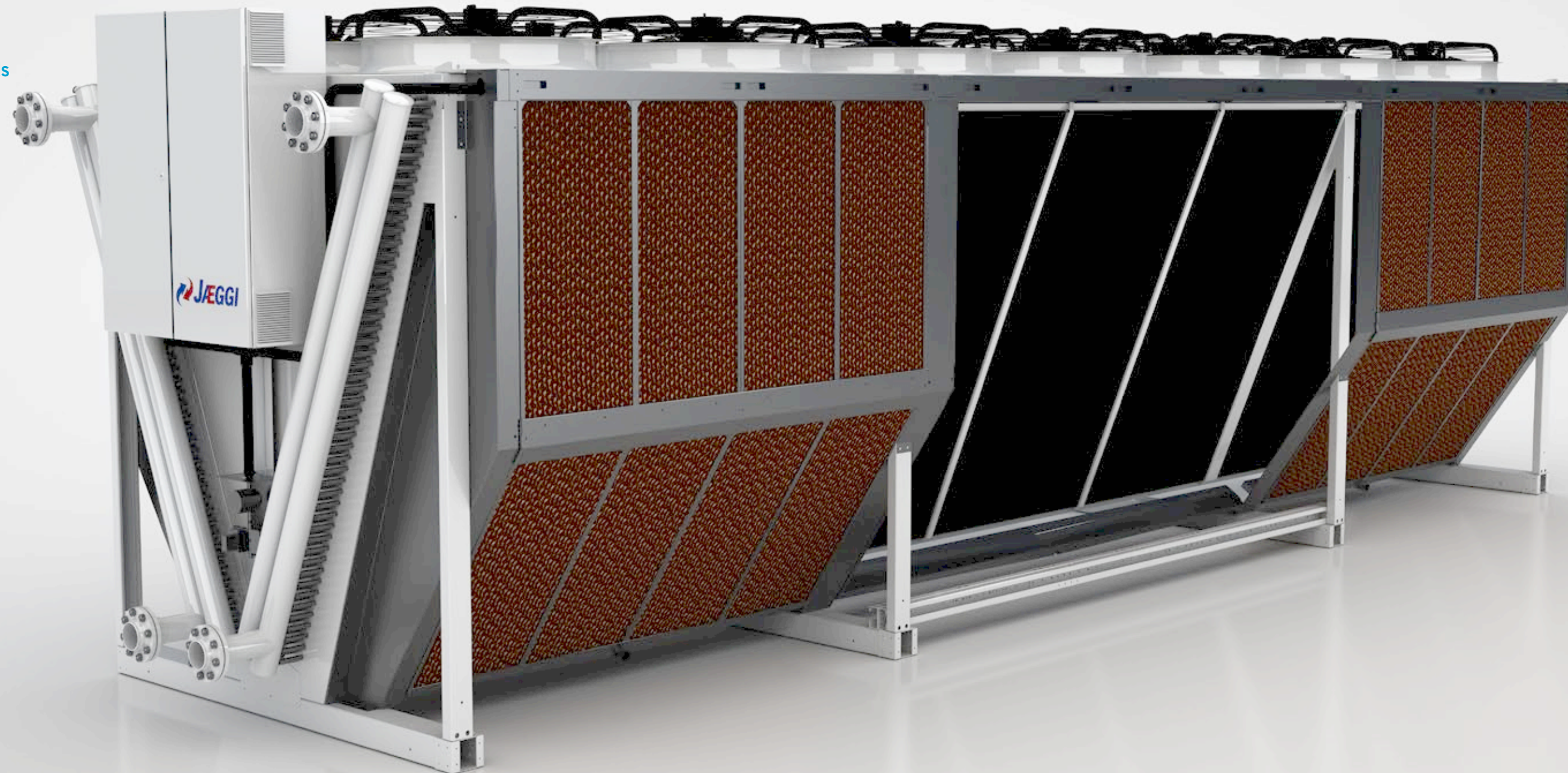
- High level of static stability
- Saves effort on site with sub-construction
- Optionally with spring supports

### Dry operation

- With no wetting of the unit it operates like a conventional finned dry cooler
- Energy is dissipated to the ambient air via convection

### Wet operation

- For high external temperatures or systems subject to higher cooling loads
- Even without directly wetting the heat exchangers, the fluid can be brought down below the ambient temperature
- Energy dissipated by convection



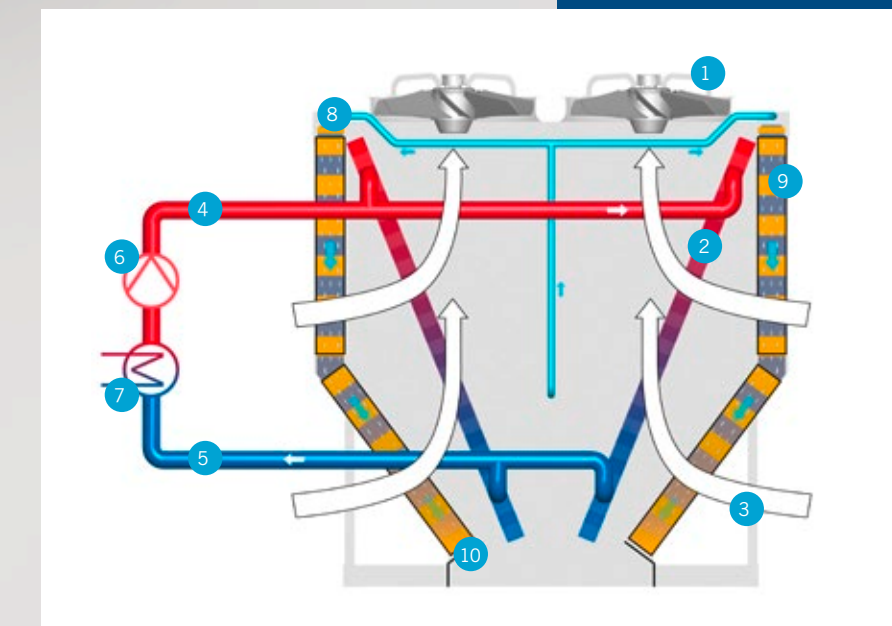
## Dry or wet operation

### Adiabatic operating principle

JAEGGI hybrid dry coolers can be operated either wet or dry.

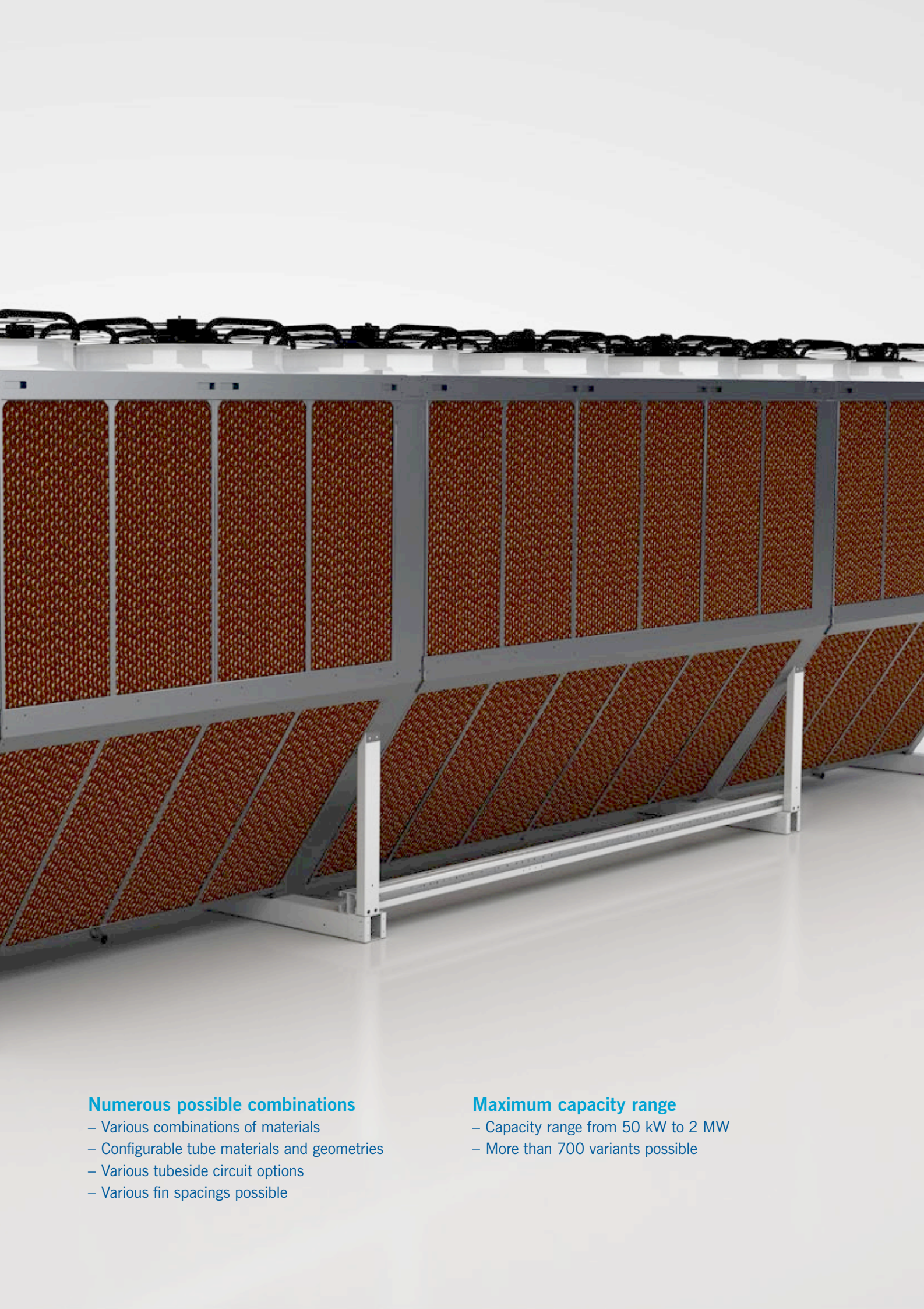
Both modes can provide excellent dry cooler performance with a small footprint and low operating costs. The cooling limit, i.e. the theoretically best possible return temperature for the ADC Hybrid Blue® is tied to the wet bulb temperature of the ambient air at the dry cooler.

Our experts will configure the ADC Hybrid Blue® specifically for your application and optimise it for its intended operation in your system. This is the only way of ideally dimensioning the dry coolers and minimising the operating costs of the complete system. Benefit from our experience!



1. Fan unit
2. Heat exchanger
3. Air flow
4. Coolant flow
5. Coolant flow
6. Primary circuit pump
7. Heat source
8. Wetting water inlet
9. Humidification pad
10. Wetting water outlet





**Numerous possible combinations**

- Various combinations of materials
- Configurable tube materials and geometries
- Various tubeside circuit options
- Various fin spacings possible

**Maximum capacity range**

- Capacity range from 50 kW to 2 MW
- More than 700 variants possible

## HYBRIMATIC – Intelligent control saves operating costs

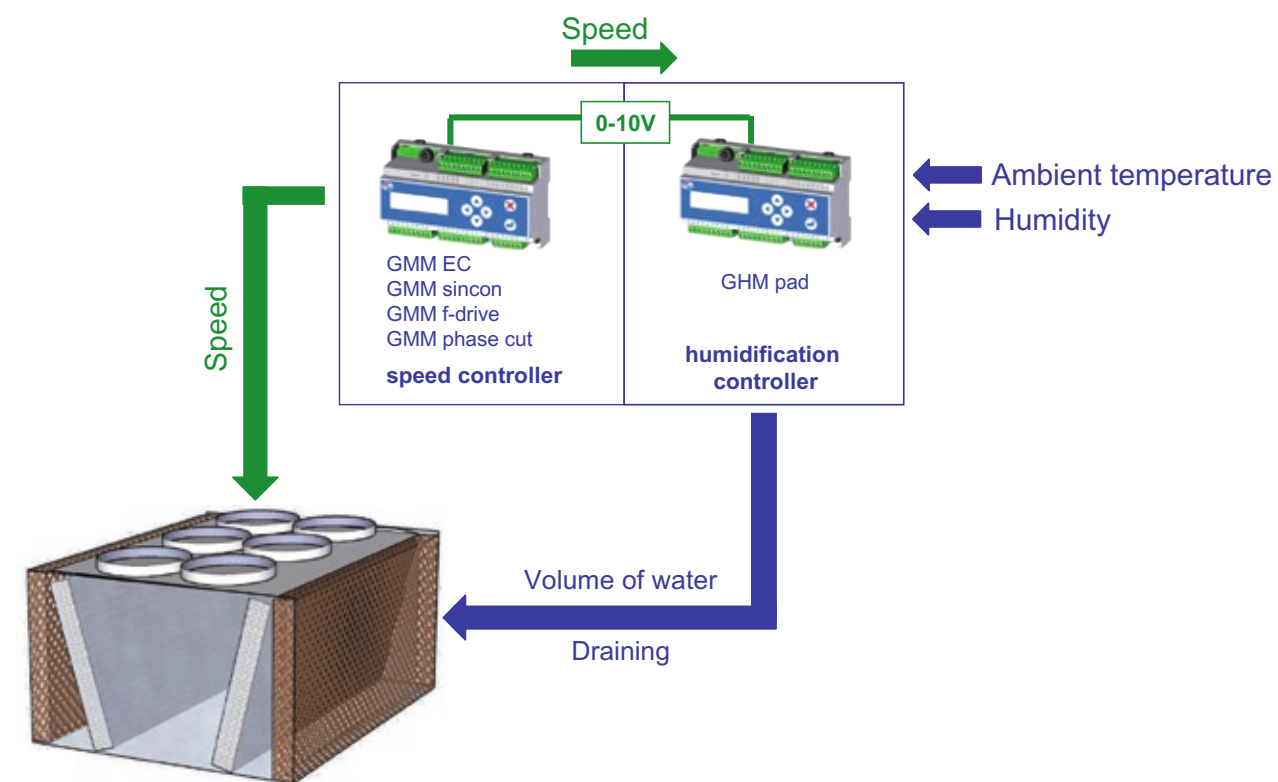
The efficient operation of hybrid dry coolers depends very much on the intelligence and strategy of their functional control. The built-in control continually controls all the significant parameters and automatically adapts the operating mode to the current system state. This guarantees a smooth and efficient unit operation and compliance with the predicted consumption values.

The HYBRIMATIC is designed as a programmable logic controller and allows for:

- Control the cooling water outlet temperature
- Wetting water management
- Output of operational and fault signalling
- Communication with building management systems

**Customer benefits from our controller**

- Optimised operation of individual units
- Parameters can easily be set for ideal use in a variety of applications
- Low operating costs
- Easily integrated into your building management system by conveying operational messages via contacts or a bus system
- Easy to install, supplied ready for connection
- Compact, adaptable and expandable





# GMM – Energy-Efficient Intelligence for all Areas





The GMM system is available for AC or EC fans. A number of different technologies are used, but one feature is common to all management systems: They are equipped with a number of functions that serve to enhance energy efficiency.

## AC fans

A number of technologies are available for AC fans depending on the application.

## EC fans

Maximum efficiency can be achieved with EC fans and the GMM EC.

	GMM phase cut	GMM f-drive	GMM sincon®	GMM EC
Energy efficiency	Cooling circuit ●●●○	Cooling circuit ●●●●	Cooling circuit ●●●●	Cooling circuit ●●●●
	Speed controller ●○○○	Speed controller ●●●○	Speed controller ●●●○	Speed controller ●●●●
Controller	Precision ●●●○	Precision ●●●●	Precision ●●●●	Precision ●●●●
	Noise ●○○○	Noise ●●●○	Noise ●●●○	Noise ●●●●
Investment	Investment costs ●●●○	Investment costs ●●○○	Investment costs ●●○○	Investment costs ●●○○
	Service life ●●○○	Service life ●●●○	Service life ●●●●	Service life ●●●●
				

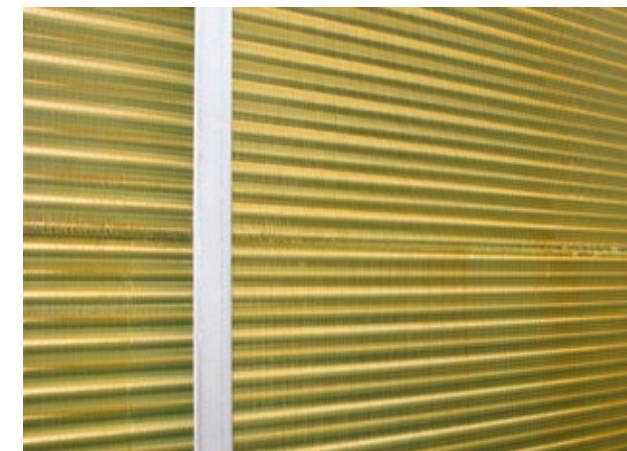
●○○○ not so good      ●●●● very good

# Optional equipment for your Hybrid Blue®



## AxiTop Diffuser

The AxiTop diffuser improves airflow at the fan outlet. This accessory makes it easier to overcome the pressure drop at the air-side. With skillfully adapted geometry the fan can achieve the same performance at lower speed. Lowering the speed reduces both noise emissions and power consumption.



## Epoxy coating

The service life of finned heat exchanger depends very much on the concentrations of the various substances in the air, and hence the application. The service life of these heat exchangers can be significantly increased by using epoxy-coated fins. Epoxy resin is a thermosetting plastic which, once hardened, exhibits high strength and chemical resistance.

## Technical data for the ADC Hybrid Blue®

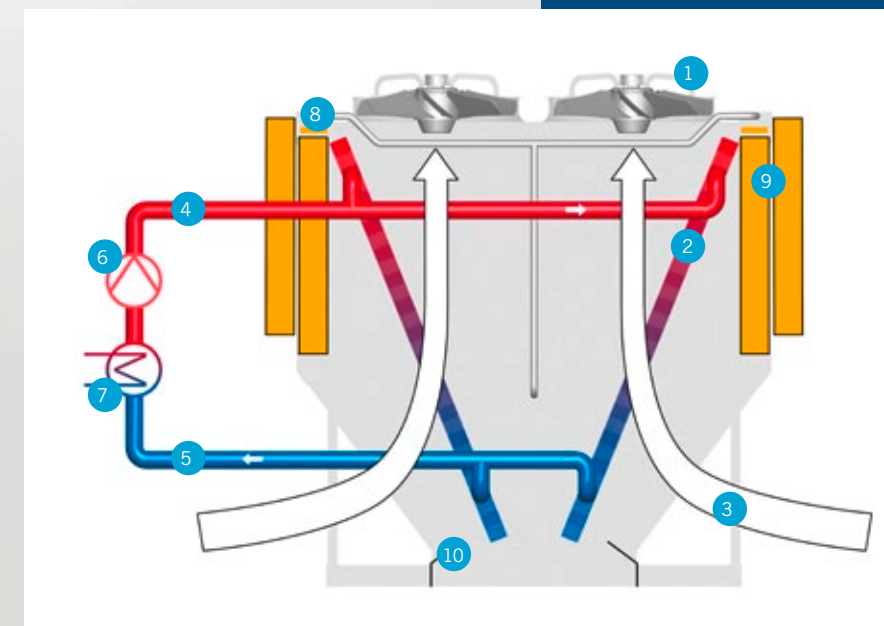
Dimensions in metres	2.4 m to 11.9 m (length) x 2.67 m to 2.77 m (width) x 2.85 m (height)
Weight empty, in kg	1,635 kg to 8,119 kg
Heat exchanger design	Floating coil principle
Certification and marks	Quality standard ISO 9001
Transport/delivery	<ul style="list-style-type: none"> <li>Delivered assembled</li> <li>Unloaded using moveable lifting lugs</li> <li>Wrapped in plastic film in inclement weather</li> </ul>
Safety	High operational reliability and leak containment thanks the floating coil principle
Maintenance	Easy to maintain, with a cleaning system for the heat exchanger and modular system of wetting units
Installation	<ul style="list-style-type: none"> <li>Small footprint, high capacity</li> <li>Modular wetting units, easy switchover to winter operation</li> <li>Storage of humidification pads at the unit</li> </ul>



## Multifunctional use of humidification pads

### Dry operation without humidification pads

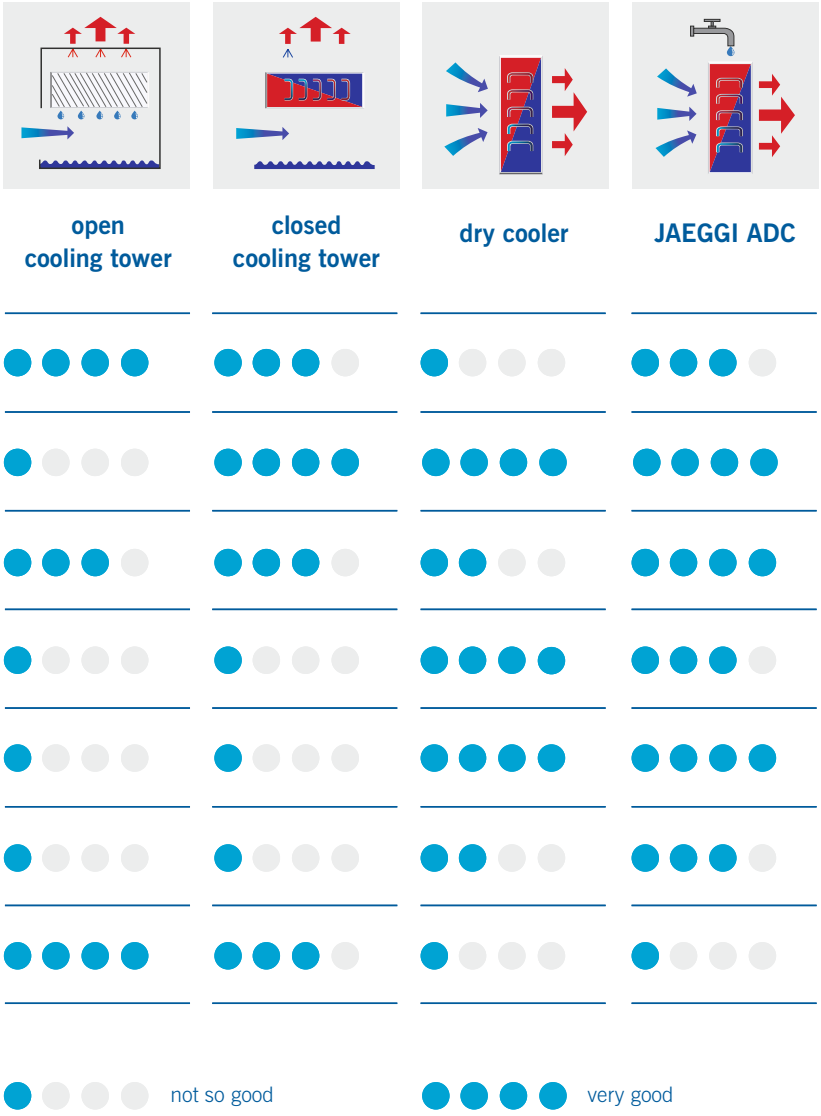
- Humidification pads can be installed to reduce energy consumption
- Reduced pressure loss, leading to savings of up to 10 %.
- Easily removed for dry operation
- Pads are relocated on the cooler, no need to store them elsewhere
- Frames protect the pads from damage
- Very low water consumption because dry/wet switchover is set at a high level
- With no wetting of the heat exchanger it operates like a conventional finned dry cooler
- Energy is dissipated to the ambient air by convection



1. Fan unit
2. Heat exchanger
3. Air flow
4. Coolant supply
5. Coolant return
6. Pump for primary circuit
7. Heat source
8. Wetting water inlet
9. Humidification pads
10. Wetting water outlet

# Comparison

Comparison of the available cooling technologies according to a number of criteria:





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Members of Güntner Group

