



**THERMAL
PRODUCTS** INC.
Engineered Solutions To
Industrial Applications

INFO

ADC High Density

*Adiabatic
Dry Cooler / Condenser*

3,000 - 10,500 MBH in adiabatic fluid cooler operation
225 - 750 TR in ammonia condenser operation
360 - 1,300 TR in halocarbon condenser operation



With hydroBLU™ technology



Güntner – Products for successful refrigeration

Güntner has been developing heat exchangers for the refrigeration industry for more than 85 years now. Not only have we experienced many technical advances, we have also initiated quite a few.

Together with planners and plant contractors, our objective is to develop the optimum concept for the respective application case and to design and deliver the appropriate product, because the variety of application areas in industrial refrigeration means established specialist knowledge is indispensable for planning and design. Optimum functioning, reliable refrigerating capacity, failsafe operation and low operating costs play a crucial role with regard to operation.

With our experience and start-of-the-art technology we are by your side with the complete project schedule, from concept creation through to after sales service.

German solutions – engineered in America.

Adiabatic Dry Cooler / Condenser High Density

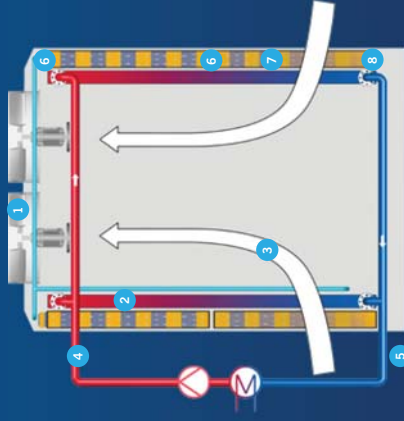
Maximum performance with a small footprint

When developing the *ADC High Density*, achieving maximum power density was a key priority. These units are therefore ideal for high-power applications such as the cooling of IT systems. Guntner's hydroBLU™ water metering controls are included as standard.

Even in dry operation, the extremely compact cube with a minimal footprint offers huge power and thus a high switch point for activating the adiabatic pre-cooling unit – saving you money in the process! hydroBLU™ controls maximum water savings in energy efficiency or water savings modes. Also, the cost of water and energy can be inputted and the controls will find the most cost efficient switchpoint.

The adiabatic pre-cooling unit is attached over the entire height of the cube for maximum performance. All mounted parts and components are integrated into the casing.

Modular industrial design – tidy and practical.



1. EC Fans
2. Heat exchanger
3. Air flow
4. Supply
5. Return
6. Wetting water inlet
7. Humidification pad
8. Wetting water outlet

PROCESS
FREE COOLING

DATA
CENTERS

COMFORT
COOLING

INDUSTRIAL
REFRIGERATION

ENGINE
COOLING



The ADC High Density in detail

One controller – everything under control

- Intelligent hydroBLU™ controller regulates fan speed and humidification
- Large display for operation and visualization
- Very low energy consumption thanks to the use of highly efficient EC fan motors
- Very low water consumption thanks to a high dry/wet switch point
- hydroBLU™ water metering control measures humidity and fan speed to use only as much water as needed to meet process temperature

Perfect adjustment, easy bringing-in procedure

- Ideal dimensions: units ship in two pieces and stacked on site
- Torsion-resistant construction
- Factory-fitted transport lugs
- Simple crane transport without lifting beam

Numerous possible combinations

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

High Density – compact and powerful

- Maximum thermal performance with a small footprint
- Very large heat exchanger surface over the entire height of the unit
- Use of high-performance super low noise fans

Easy inspections, cleaning and maintenance

- Inspection doors ensure easy accessibility
- Easy to clean thanks to robust materials and clever design
- Spare parts available quickly anywhere in the world
- Optional OSHA platform available for easy fan access



- No water treatment required
- No water recirculation
- No plumes
- No aerosols
- No VFD required



Highly efficient humidification system

- Robust and cost efficient humidification pad
- Humidification pad is close to coil along full surface area providing maximum and uniform cooling
- No spraying on coil
- Unlimited wetting duration
- No water recirculation
- No water treatment required

Adiabatic pre-cooling boosts performance

- Fluid cooling to below the ambient temperature is possible
- For high outdoor temperatures or heavy system loads
- Without direct wetting of the heat exchangers
- Energy can be dissipated by convection

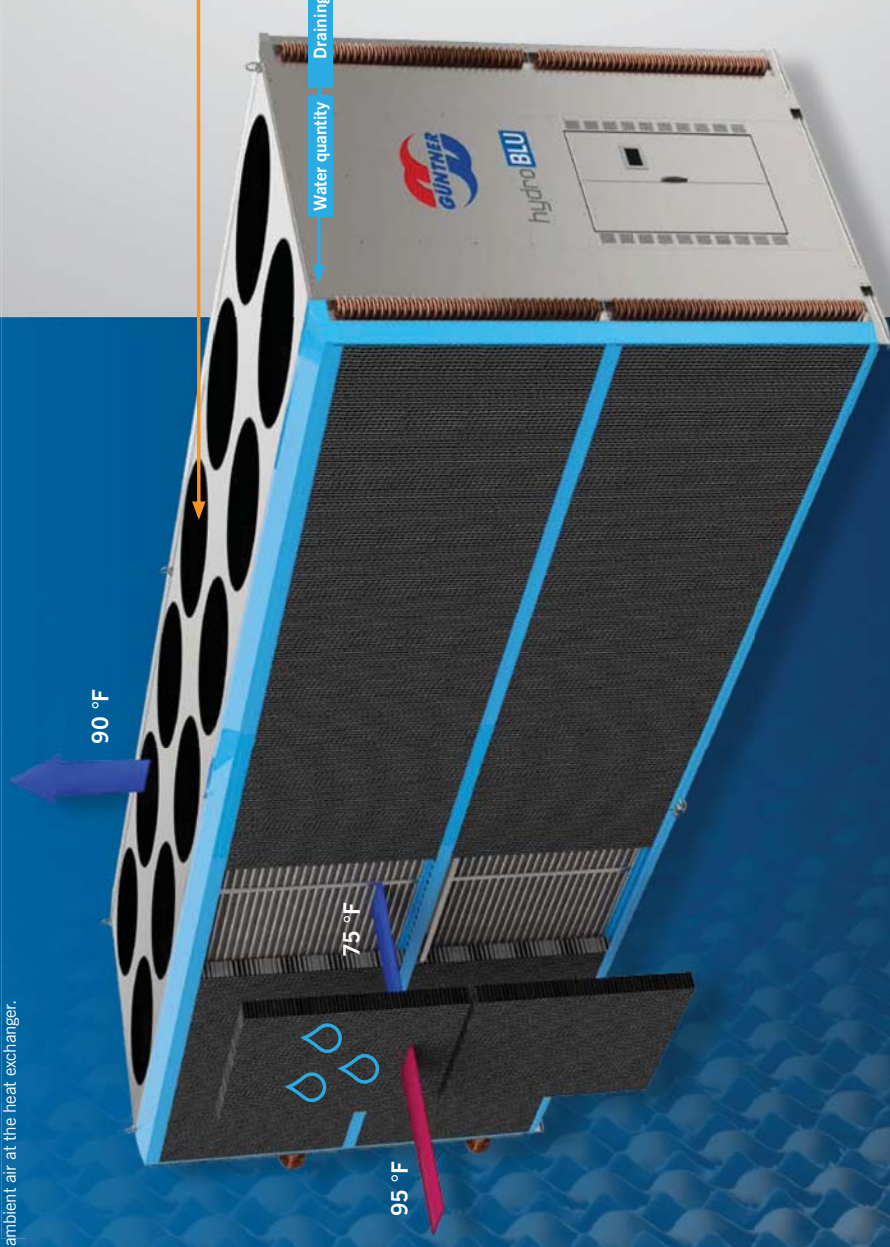
Hygienic operation

- Automatic draining of the adiabatic system
- Dry heat exchanger
- No aerosol emissions
- Plume-free
- Filtering effect of the pads protects heat exchangers

Dry or wet – performance as required

Adiabatic operating principle

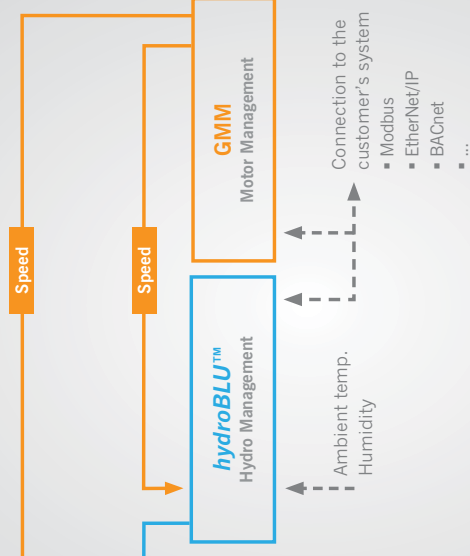
Güntner's ADC HD can be used either wet or dry. Both modes offer excellent dry cooler performance with a small footprint and low operating costs. The cooling limit, i.e. the theoretically best possible return temperature for the ADC HD is tied to the wet bulb temperature of the ambient air at the heat exchanger.



hydroBLU – intelligent controller reduces operating costs

The smart *hydroBLU™* control unit continuously records the amount of water applied, the speed of the fans and the state of the ambient air. This reduces your operating costs without any loss of performance, thus **saving you money**. The necessary information for

this such as the fan speed is read out from Güntner Motor Management GMM via the bus communication. This speed information can alternatively be transmitted using a 0 – 10 volt signal.



Efficiency mode

The *hydroBLU™* is also capable of checking the operating costs during operation. This provides the basis for an **integrated cost management function**, which continually decides whether applying water or changing the speed represents the more cost-saving and therefore more efficient mode of operation. To this end, the water quantity is constantly recorded in this system.

Safe and hygienic operation

The clever design of the *ADC High Density* takes into account the recognized technical rules when it comes to the hygienic operation of evaporative cooling systems. The pre-cooling unit with humidification fluid is completely separate from the heat exchanger.

The humidification controller supplies the easily replaceable humidification pads only with the amount of water needed depending on the particular situation. This minimizes water consumption and prevents standing water. In the event of inactivity, the pre-cooling unit is automatically drained. The factory-fitted feed water line can also be drained or ventilated via the unit.

Güntner offers its customers added value on three levels: expert advice over the entire life cycle of units, safety thanks to carefully constructed units equipped with suitable control systems and certified employees.



Inspection and maintenance

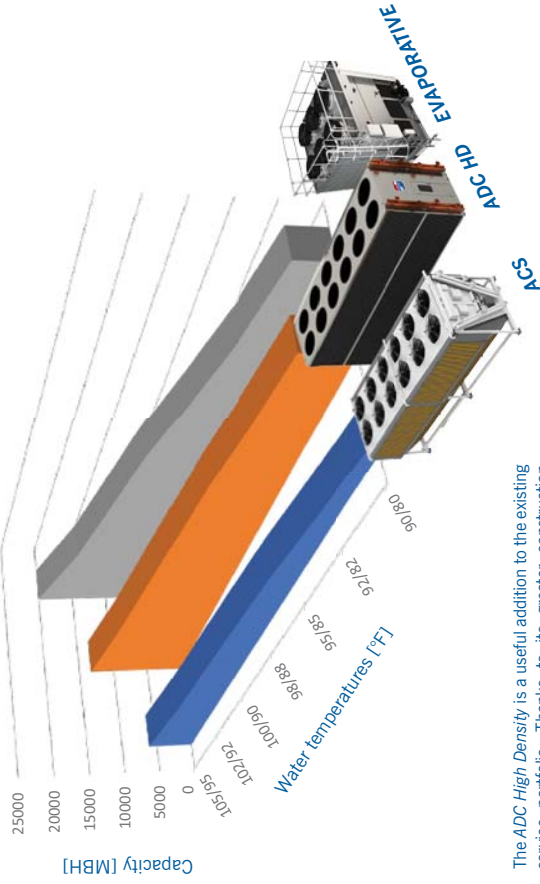
The *ADC HD* is easy to work on.

Not only are all spare parts available anywhere in the world, our service staff can assist you if you request this. The service includes all work which is necessary over the entire life cycle – from commissioning to disassembly.

Complete capacity range

The performance requirements as regards dry cooling technologies have been increasing for years. At the same time, the space available for installing units is becoming more and more limited. By developing our compact *ADC High Density* with an adiabatic pre-cooling system, we cater for these requirements and thus offer a high-performance solution for a wide variety of applications.

Thanks to their large heat exchanger surfaces, *ADC HD* units offer excellent performance even in dry operation. The system thus has a high switch point for activating the pre-cooling unit. With the aerodynamically optimized industrial fans, high airflow volumes and low noise emissions are achieved in spite of the high pressure loss across the heat exchanger and the pre-cooling unit.



The *ADC High Density* is a useful addition to the existing service portfolio. Thanks to its greater construction height, greater cooling capacity can be achieved with the same footprint.

Thanks to the adiabatic pre-cooling section, our *ACS V-SHAPE* dry coolers and achieve approach temperatures much better than a standard dry cooler, making it a great alternative to save power.

The particular advantage of the pre-cooling unit lies in the fact that normal municipal water can be used. As a result, there is no need for water treatment such as softening or demineralisation and no need for biocides.

Because the heat exchangers remain dry, there is no risk of deposits and corrosion – unlike with sprayed coolers.

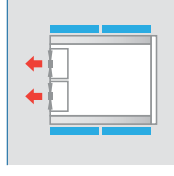
ECOSS evaporative closed loop fluid coolers will get the smallest footprint per capacity due to the direct evaporation of the wetting water on the heat exchanger coil. The *ADC* is a good alternative between our standard *V-SHAPE* adiabatic and our evaporative cooler.

Technical details

Overview

Dimensions	11' 9" – 43' 5" (length) x 11' 9" (width) x 16' 6" (height)
Empty weight	13,800 – 50,500 lbs
Transportation/delivery	<ul style="list-style-type: none"> Delivered in two section with easy assembly Wrapped in plastic film in inclement weather

Unit set-up



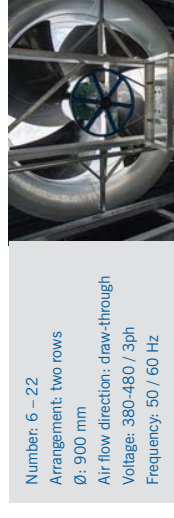
Capacity

	Fluid	Nominal capacity	Pressure stages
Fluid cooler	Water or Glycol	3,000 - 10,500 MBH	16 bar
Condenser	Halocarbon or Ammonia refrigerant	225 – 1,300 TR	16 bar

Available accessories



Fans



Number: 6 – 22
 Arrangement: two rows
 Ø: 900 mm
 Air flow direction: draw-through
 Voltage: 380-480 / 3ph
 Frequency: 50 / 60 Hz

Available materials

	Tube	Fin	Casing	Frame
Aluminium		✓		
Copper	✓			
Aluminium, epoxy-resin coated		✓		
Galvanized steel			✓	✓
Galvanized sheet steel			✓	
Stainless steel	✓		✓	

✓ Standard version

Global Presence

Being your partner, we are committed to offering you global support. We speak the language of your market and understand your local requirements and regulations.



Guntner U.S. LLC
3601 Algonquin Rd, Suite 925
Rolling Meadows, IL 60008
USA

Phone: + 1 847 781 0900
www.guntnerus.com

Members of Guntner Group



PHE for process and industry

Errors excepted. Subject to technical amendments without prior notice.
BRO 121 / V1 / ENG / 01.2020