



**INTELLIGENT SOLUTIONS FOR
DATA CENTERS ADIABATIC COOLING**

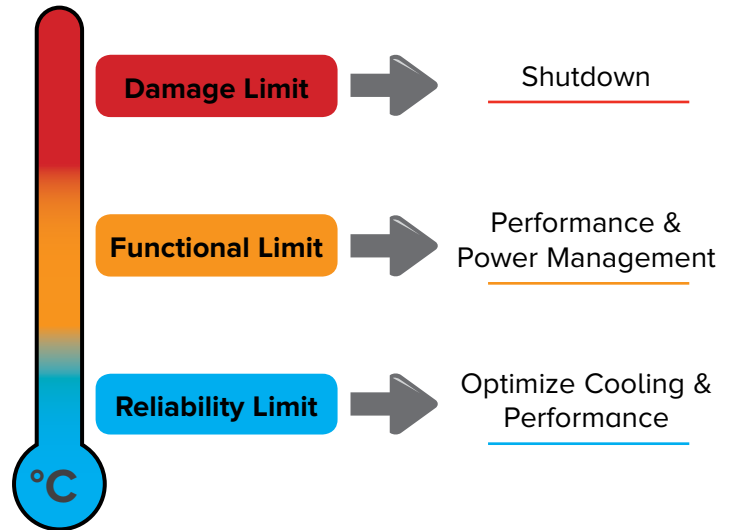
ARMSTRONG IS A TRUSTED GLOBAL LEADER IN HUMIDIFICATION AND NOW OFFERS COOLING SOLUTION FOR DATA CENTERS

At Armstrong, we used our long experience and knowledge of air humidification, in order to design the best adiabatic humidifier allowing a great cooling capacity.

The adiabatic process humidifies and cools down the air using water without any electrical consumption. It is a perfect fit for data center cooling applications where we are trying to reduce our energy footprint.

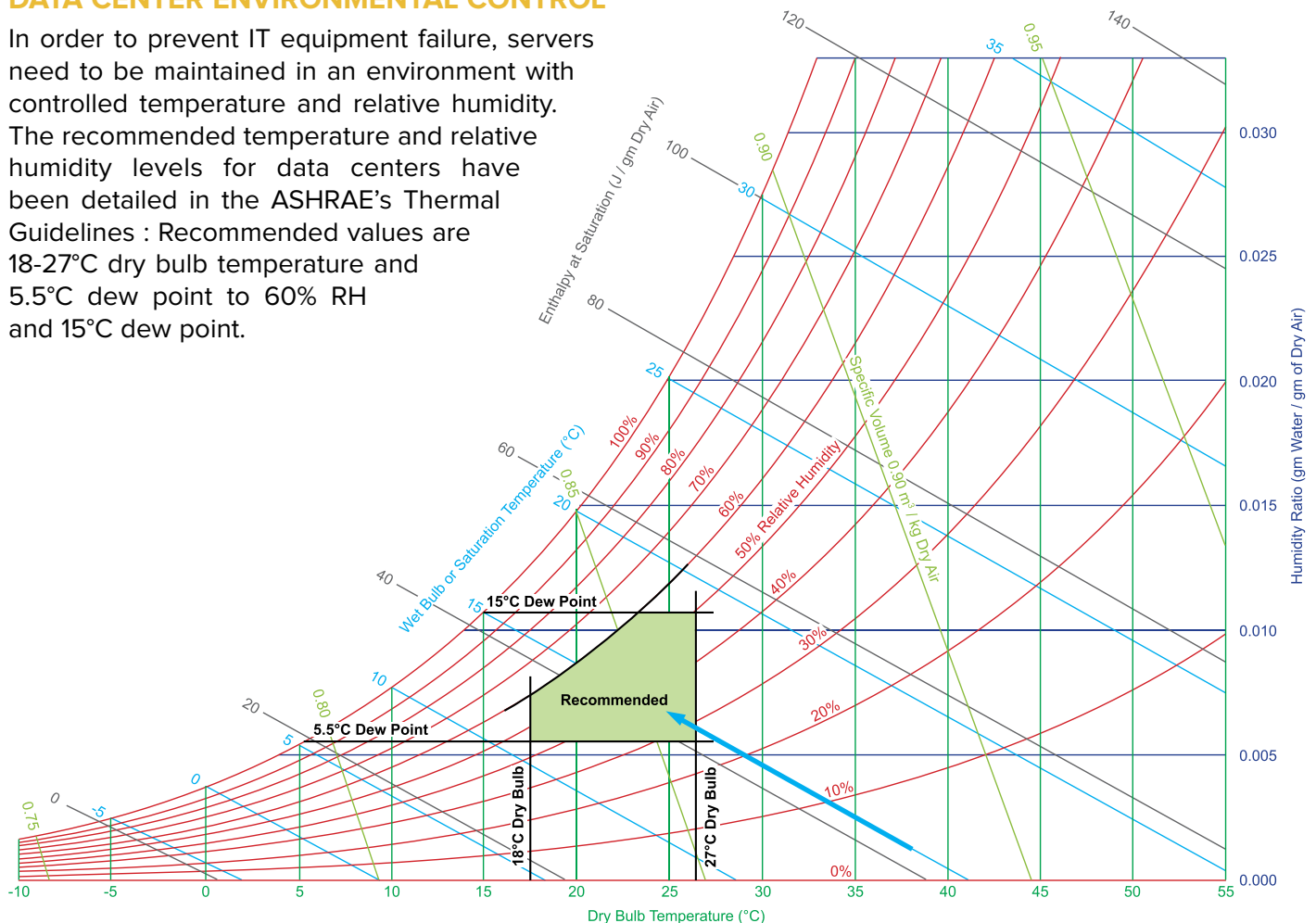
EVAPACK™ ADIABATIC COOLING SOLUTION

EvaPack™ the Armstrong evaporative pad type humidifier, helps you address energy challenges by ensuring efficient cooling and precise control of the relative humidity while minimizing energy consumption and running costs.



DATA CENTER ENVIRONMENTAL CONTROL

In order to prevent IT equipment failure, servers need to be maintained in an environment with controlled temperature and relative humidity. The recommended temperature and relative humidity levels for data centers have been detailed in the ASHRAE's Thermal Guidelines : Recommended values are 18-27°C dry bulb temperature and 5.5°C dew point to 60% RH and 15°C dew point.





AN EFFICIENT & NATURAL PROCESS

Armstrong EvaPack™ Series converts liquid water to water vapor using an adiabatic process. Dry air passes through a corrugated bank of wetted cells media made from non-organic wet fibers. EvaPack™ series uses the sensible air heat to evaporate the water. The air is cooled and humidified.



SMART, SIMPLE & ADAPTABLE

- Compact design
- 60 cm depth including droplet separator
- No absorption distance
- Customized size & configuration — AHU, duct, fan wall, direct or recirculated water ...
- Optimized water contact surface
- Easy maintenance



SAFE, HYGIENIC & EFFICIENT

- No glue or hazardous substance
- No fiber loss
- Incrusted silver ions to prevent bacteria proliferation
- Most demanding fireproof certification — Euro Class A1
- High moisture absorptive capability
- Accepts any type of water
- Minimum pressure drop

ILH **BERLIN**
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Applus⁺

SGS



PRECISE CONTROL & WATER SAVINGS

In direct water configuration, with RO water supply, the EvaPack™ together with the Armstrong wide rangeability water valves allow proportional control of the humidification by injecting the exact quantity of water needed for the cooling process.

- **Precise humidity control**
- **No wastewater**

ENERGY SAVINGS

EvaPack™ offers remarkable pressure drop performances.

For example, for a 500 000 m³/h airflow, a pressure drop difference of 50 Pa represents a saving of 67 500 kWh per year (6750€/year at 0,10€/kWh).



THE OPTIMIZED WATER CONTACT SURFACE HELPS ACHIEVING A LOW PUE

EvaPack™ energy consumption:

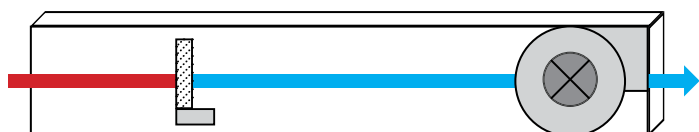
$$\text{PUE} = \frac{\text{Total Facility Energy} + \text{EvaPack™ energy consumption}}{\text{IT Total Equipment Energy}}$$

+ 0W to 250 W



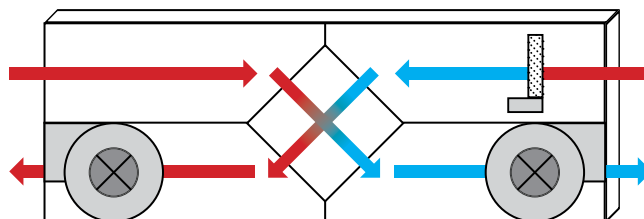
DIRECT ADIABATIC COOLING

Outside air is cooled down and humidified using the adiabatic process and directly injected in the server room.



INDIRECT ADIABATIC COOLING

The exhaust warm air is cooled down using the adiabatic process. That air enters a heat recovery exchanger to cool down the fresh air. This solution is convenient when the outside air needs to be cooled without increasing its humidity.



Contact Armstrong International or your local representative to get your customized configuration and cost estimation with detailed performances. info@armstronginternational.eu

WHY ARMSTRONG ?

We are doing our best to provide our users with an enjoyable experience. Every details of the EvaPack™ have been thoroughly thought through. Its optimum performances allow a precise control of the air humidification and a great cooling capacity while remaining simple to use and service.

Whatever your application, Armstrong is the trusted solution provider for achieving effective, economical, trouble-free control of your humidity.

Armstrong has been sharing know-how in humidification applications since 1938. Through the design, manufacturing and application of humidification equipment, Armstrong has led the way to countless savings in energy, time and money.

We provide extensive design, manufacturing and application of humidification equipment for satisfied customers all over the world, and our humidification sizing and selection softwares help eliminate guesswork from sizing and specifying industrial and commercial humidifiers.



INTELLIGENT SOLUTIONS IN STEAM, AIR, AND HOT WATER

Armstrong International

North America • Latin America • India • Europe / Middle East / Africa • China • Pacific Rim

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