

Aqua cool
INTELLIGENT COOLING



**INCREASED COOLING
CAPACITY +25%**

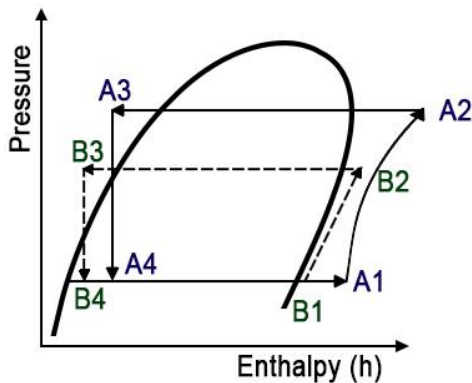
**AQUA COOL adiabatic panels
"INTELLIGENT COOLING" will
save up to 30% of power
required for running
of air cooled chiller**

***Most effective energy saving technology
available for Air Cooled Chiller***



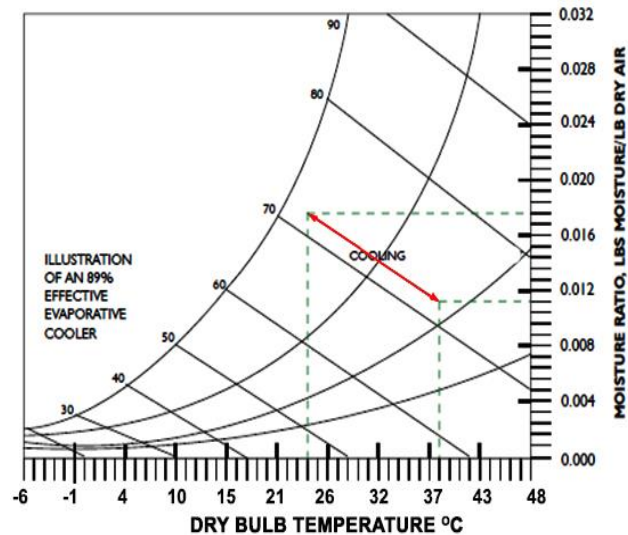
Principle Aqua Cool energy saver

- ❖ In air conditioning system condensing temperature decides power consumption of the compressor.
- ❖ Condensing temperature is temperature up to which refrigerant is compressed so that it can dissipate heat to outside atmosphere and condensed to liquid to continue the cycle
- ❖ Higher the outside temperature, We have to increase temperature of refrigerant i.e. higher compression of the refrigerant to get higher temperature i.e. higher power requirement for compressor
- ❖ Every one degree increase of outside temperature i.e. condensing temperature, Power consumption is increased by two percent i.e. why we get higher Power consumption in summer when ambient temperature is high
- ❖ We place Aqua cool Direct evaporative cooling pad in the path of air entering on the condensing coil to reduce temperature of incoming air close to wet bulb approach i.e. 80 % of difference between current dry bulb and wet bulb temperature.
- ❖ We circulate water around evaporative cooling pad so that incoming air is cooled with the best direct evaporative cooling efficiency.



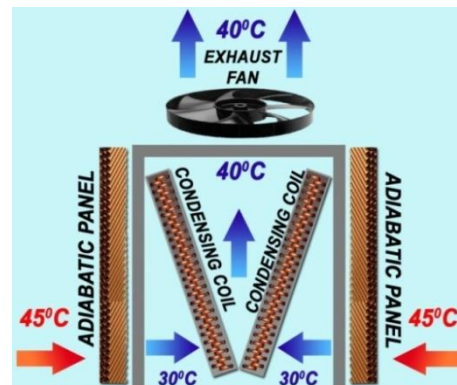
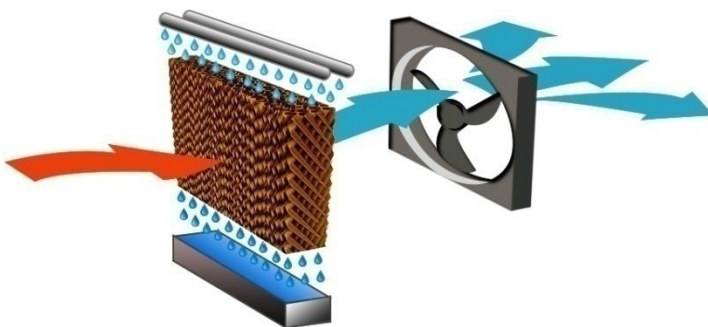
Cycle without pre cooling of condenser
(Normal cycle) : A1, A2, A3 & A4

Cycle with pre cooling of condenser
: B1, B2, B3 & B4



System Operation

Using AQUA COOL adiabatic panels **INTELLIGENT COOLING**, your air cooled chiller will work efficiently even when temperature outdoors reaches +50°C. This technology can cool incoming air temperature in condenser close to wet bulb temperature, resulting in up to 25% energy saving as system now is working close to wet bulb temperature @ +25 not +50°C environment.



AQUA COOL uses a unique and effective - adiabatic pre cooling panel to reduce the energy consumption of the air cooled chiller up to 30% and increased cooling capacity up to 25%

Design of System

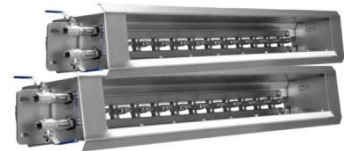
1 Membrane

The AQUA COOL adiabatic panel is situated in front of the heat emission condenser (coil) of the cooling equipment. It provides shading, which prevents the impact of solar irradiation and ingress of direct sun beams on the heat emission radiator. The adiabatic panel works as self-cleaning filter, which protects the heat emission radiator from fur, hair and dust particles. By ensuring shading and cleanness of the condenser (coil) the general efficiency of the system may be improved by another 3-5%.



2 Accurately designed circulation pipes

Throughout surface of AQUA COOL adiabatic panel water is passed in the form of droplet similar to cooling tower, water drops in the size of 1 mm. As the air passed through adiabatic panel water evaporates and energy required for evaporation is taken from incoming air and makes incoming air cool, the heat emission condenser (coil) remains practically dry and the temperature of the air entering the radiator is reduced to closed to wet bulb temperature



3 Preparation of water

To remove limestone molecules from the water, a patented linear AQUA COOL system is used, which allows introducing the exact quantity of additive agents into the water, thereby efficiently preventing limestone formation. Pipes and nozzles are 100% protected from corrosion and the impact of other external factors



4 Pump station

Control module ensures automatic switching on and off. Installation switches on when the temperature rises over 23°C and when the cooling equipments is switched on



5 Control unit and energy monitoring

Pumping installation ensures constant water pressure for the formation of the water particle drops with a radius of 1 mm.



System Benefits

AQUA COOL adiabatic panel system opportunities:

- | | |
|---|---|
| 1. Saves energy
Even up to 30% | 4. Increases lifespan of
cooling equipment |
| 2. Increases cooling capacity even
up to 25% | 5. Increases efficiency of
cooling equipment |
| 3. ROI - within 1 to 2 years | 6. Protects equipment from
overheating |

System parameters



NO CALCIUM CARBONATE RISK

Water before it gets use in AQUA COOL system is treated with BIO-chemistry changing the structure of calcium carbonate molecules so that it does not stick to surfaces and does not create limestone any more. Special BIO component is added to the water to prevent corrosion as well.



NO LEGIONELLA RISK

System is equipped with UV lamps thus providing that all bacteria in water gets killed including legionella.



INCREASED DURABILITY

By using AQUA COOL adiabatic panel the cleanness of the heat emission radiators is preserved, thus ensuring low exit temperatures and reduced pressure in the whole system. In such a way, servicing frequency and the number of emergency calls are considerably reduced, which may have a direct influence on maintenance budget, not to mention safety and durability.



EASY TO SET-UP

The AQUA COOL adiabatic panel is delivered in a kit form, which can be installed both on new or already functioning equipment model or manufacturer. It may be installed from the outside, without any impacts or changes in the interior and no effect on the manufacturers warranties.



INCREASED SERVICE TIME

In addition to air-cooling the AQUA COOL adiabatic panel decreases the basic pressure in the compressor. Decrease of pressure and temperature increases life of the compressor. It considerably reduces excessively high discharge pressure and cooling cycle temperatures, the mechanical stress of the system is considerably reduced, which means safe exploitation and decreases the need for maintenance.

“Reducing cost with energy efficient system”

Aqua cool



Climate Control Awards 2015
High-Tech Equipments L.L.C.
Recipient of Climate Control
Award 2015 for
Project of the Year
(Standalone DX, including VRF System)



Awards for Environmental
Excellence 2012
Recipient of Green Middle East
Award 2012 for
Alternative Energy Project

Hi-Tech Equipments L.L.C.

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