



Bulletin # 28

DXair - Max-Evap

ENGINEERING OUTSIDE OF THE BOX

Humidity Control for Indoor Swimming Pools

- DXair builds the most diverse line of pool dehumidification systems designed specifically for indoor pools and natatoriums. The DXair systems utilize R410a and are built on two different platforms to meet any application from small residential to large commercial water parks.
- The DXair base unit can be utilized as a packaged standalone dehumidifier, compressor, evaporator, 100% hot gas reheat condenser, *Max-Evap* option and air handler. If cooling is desired, a matching remote condenser or fluid cooler can be added with the unit or at a later date.
 - ✚ If pool heat recovery is desirable, all DXair systems are built with a cupronickel double walled vented heat exchanger capable of rejecting up to 50% of system capacity to the pool. This option is available on all models up to 60 ton.
- The DXair series reverse cycle liquid source heat pump applicable for open and close loop geothermal and for boiler, building loops and/or cooling tower applications. The packaged base unit comes standard with compressor, evaporator, 100% hot gas reheat condenser, liquid to refrigerant coaxial condenser/evaporator, *Max-Evap* option and air handler.
- The DXair SS series can operate as a typical geothermal heat pump in heating and cooling. In the DH (dehumidification) mode, the liquid cooled condenser/evaporator is not in play. The unit is now operating as a standalone dehumidifier with the *Max-Evap* active.

Max-Evap

The *Max-Evap* option is exclusive and standard on all DXair pool dehumidifiers. The moisture removing capacity and efficiency of any evaporator is based on three factors.

- A- Coil surface area,
- B- B- coil temperature and
- C- C- Dwell time.

On a call for dehumidification, *Max-Evap* is energized lowering and maintaining the evaporator coil temperature just above 32 degrees F without compromising the system supply air flow to the space. While in the DH mode, the unit rejects 100% of the sensible, latent and compressor heat to the space adding an average of 12 degrees F to the EAT.

All Pool heat recovery heat exchangers are cupro-nickel double walled vented. Second stage heating can be electric, gas/propane, hot water coil, or steam coils.

- DXair eliminates the need for large mechanical spaces and rooftop design.
- Service techs unanimously agree that roof top applications are ill advised. With an indoor installation, the internal components and external peripherals as well as duct work, are well protected from the outdoor elements however, when it's 5 below zero in a blizzard and there is a service problem, any tech will tell you that unit will not get the attention required. And, many of the EC and MC Series can be built in take apart construction to accommodate delivery to your inside mechanical area.
- DXair eliminates **un-cleanable** high static 8 row evaporator coils.
- There is no secret to DXair super-efficient 3 & 4 row cleanable evaporator coils that outperforms the high static, impossible to clean 8 row bundles that many manufacturers continue to use. It's all about surface area, coil temperature and dwell time, not how many rows in the bundle. Their inefficiencies don't stop there; they need double the horsepower to overcome the excessive static.
- DXair with **Max-Evap** outperforms all other systems latent removal rate
- The current industry answer to increasing the latent capacity of any DX system is to lower the fan speed. This is contrary to effectively controlling moisture in high humidity envelopes, more air flow is required, not less. **Max-Evap** is an exclusive design on all DXair pool dehumidifiers that allows the dehumidifier to maintain an evaporator coil temperature at 33 degrees F regardless of entering dry bulb or wet bulb temperature.
- DXair **Max-Evap**, A simple innovation when comparing a nominal 5-ton machine @ 2000 CFM in the cooling & dehumidification modes. Cooling mode: EAT 80F, coil temperature 40-45F, air delivered to the space, 2000 CFM. Dehumidification mode: EAT 80F coil temperature, 33F, air delivered to the space, 2000 CFM.
- DXair **Max-Evap** does not compromise system air flow delivery
- Think "good heart, bad arteries" One only needs to consult the ASHRAE standards for indoor swimming pools and natatoriums to understand the importance of air turnover rates and distribution. It matters little how big and efficient the dehumidifier is, it's all about the duct work.

At no additional cost to the client, DXair SS's consulting engineering department works closely on each job to assure every delivery system meets the strict & rigid design guidelines.

- DXair The most comprehensive warranty on the market
- Our standard and extended warranties are included with each pool dehumidification system.

The DXair Advantage

COMPACT:

DXair compact design eliminates the need for large mechanical spaces and rooftop applications. Mechanical surveys have confirmed that 90% of roof top systems do not get proper attention when service techs are working in cold, rain or snow conditions. The DXair mini foot print 60-ton unit will fit through a 36-inch door and many units are now built in take apart construction for easy retrofitting.

COILS:

DXair for years the industry has clung to the theory that 8 row evaporator coils can remove more moisture than a 3 or 4 row coil. From an engineering perspective, this is a myth with whiskers on it. It comes down to surface area, coil temperature and dwell time, not how many rows in the bundle. In addition, 8 row coils are impossible to clean and also require a lot more horsepower on the blower to overcome the excessive static.

- DXair super-efficient 3 & 4 row cleanable evaporator coils have more surface area per nominal ton, are cleanable and outperforms the high static impossible to clean 8 row bundles that some companies continue to use.
- For "Coil Myths & Misrepresentation" Article by Joseph Kielac, [click here](#).

AIR DELIVERY:

DXair

The current industry answer to increasing the latent capacity of any DX system is to lower the fan speed. This is contrary to effectively controlling moisture in high humidity envelopes, more air flow is required, not less. DXair **Max-Evap** keeps the evaporator coil temperature at 33F without altering the pool dehumidification CFM design output.

The Perfect Balance of Water and Air

DXair Dehumidifiers are designed exclusively for use in all indoor swimming pool applications: from lap pools, schools, large hotel/resort indoor swimming pools, where humidity needs to be controlled with dehumidification to prevent deterioration of the pool enclosure.



For more information,
contact DXair. 800/514-7051