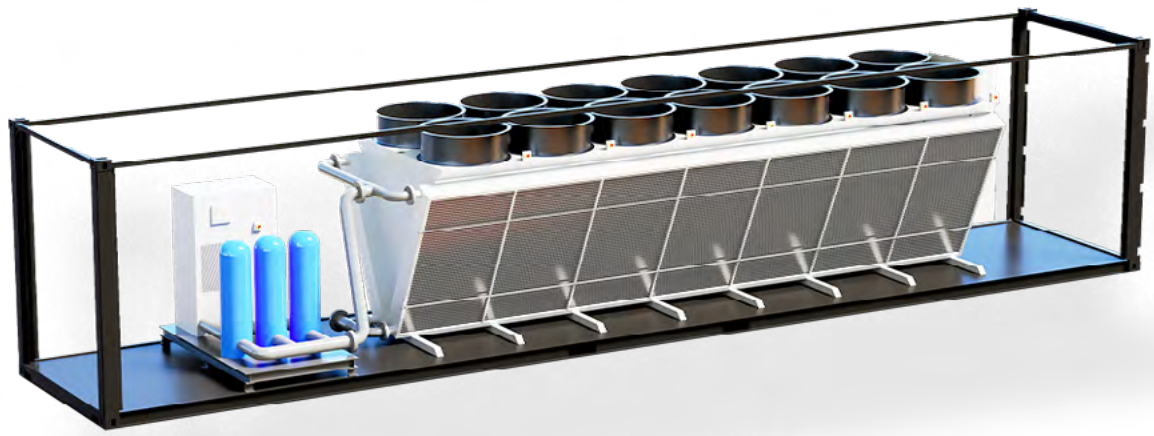
# ICE - COOLING UNIT



KONNECT HPC SOLUTIONS

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KONTENA

# ICE
## COOLING UNIT

**The KONNECT ICE is a plug-and-play containerized cooling unit that seamlessly integrates with the EDGE HPC data room. It consists of an adiabatic dry cooler and pump skid. For hot climates, the cooling capacity can be upgraded with an integrated chiller.**

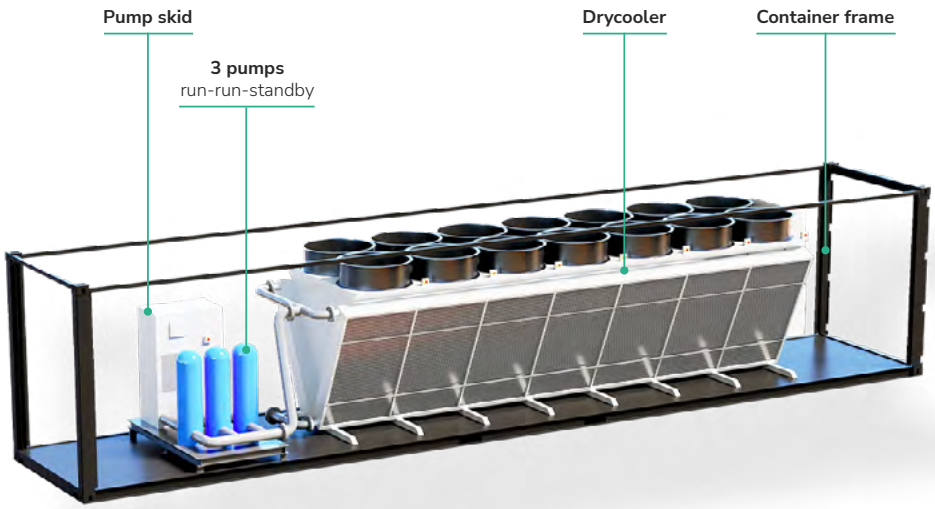
The adiabatic cooler is engineered to operate in both wet and dry modes. It comes with standard UV sterilization to inhibit legionella growth. Equipped with variable speed EC fan technology, it achieves significantly lower energy consumption (up to 75%) and reduced noise levels (20dB).

Paired with the cooler is the pumping skid, a closed-circuit system housing three pumps (primary and stand-by) that alternate to maintain optimal performance. The skid comes loaded with additional features, including a pressurization set, glycol measurement and dosing, pressure-based speed control, local pump isolators and more.

Our materials are carefully selected to suit specific site conditions, ensuring long-lasting durability. All materials are used with the site locations in mind avoiding possible corrosion.

The cooler and pump skid are PLC controlled and are equipped with Wi-Fi & 3G to allow wireless monitoring and control. Electric components are from the trusted Schneider brand, including the variable speed inverters. All are MODBUS and BACnet compatible.

The entire ICE module is preconfigured and internally linked. Just connect the return and supply lines to the EDGE module and it's ready to operate at full capacity.



# ICE
**COOLING UNIT**

## KEY FEATURES

**Shipped as a single unit**
Both dry cooler and pump skid are housed in a single open container frame, stackable on top of the EDGE container for reduced installation footprint.

**Contains pumps and dry cooler (or chiller)**
Redundancies are N+1 but can be built as per the customer's request.

**Easily connects to EDGE**
One power cable and 2 flexible cooling lines (supply and return) are all it takes to get the system up and running.

**Minimal power usage and noise emissions**
By utilizing variable speed EC fans, sound levels and energy consumption are reduced. This is possible because the fan speed of all fans automatically varies alongside with system demand instead of running fewer fans at full speed and shutting the other fans off completely.

**Maintenance solutions worldwide**
Through a strong partner network, maintenance or critical support can be offered worldwide.

**Remote monitoring and control**
Using a central PLC unit to control (read and/or write) all operations, with communication and safety interlock functions.

**Materials to meet specific site conditions**
Constructed using the right materials for saline or corrosive environments.

**Calculated for each project / region**
Depending on the location of deployment, we calculate the ideal cooling options in order to reduce the PUE. Keen to eliminate the use of chillers, but with enough realism to ensure a well dimensioned system that can keep running all year round.

**Premium products = high efficiencies**
To further reduce the PUE and increase longevity, premium brands are used in all areas.

## Type of cooling unit

To significantly reduce the PUE of the system and overall cost, a calculation is performed to determine if the system can be cooled solely with the use of an adiabatic dry cooler. The feasibility of adiabatic cooling depends on the desired data room temperatures and the specific site location.

If at moments external temperatures may occasionally rise too high, the inclusion of a chiller unit will be recommended.

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| | DRYCOOLER |
|---|---|
| Control and electrics | Shared electrical panel with pump skid<br>Magnetic and thermal overloads per fan<br>Panel lamps (Live, fans running, fault, ..)<br>Variable speed control for fans<br>Fan isolators: allows isolation of each fan whilst keeping the system operational |
| Adiabatic system | UV sterilisation system<br>Spray booster pump<br>Standby UV and pump system |
| Piping and valves | Auto air vent on highest connection manifold<br>1/2” drain<br>Cooler isolation valves<br>Flange connections (PN16 - Screwed BSPM) |
| Fans | Variable speed EC fans<br>N+1 |

| | GLOBAL APPLICABLE STANDARDS |
|---|---|
| | HSG274 compliance - Preventing Legionnaires’ disease<br>EN 13487:2003 - Sound measurement<br>CE markings<br>Optional: UL compliant<br>ASHRAE standards possible: ventilation, cooling, air conditioning |

# ICE
## COOLING UNIT

| | PUMP SKID |
|---|---|
| Control and electrics | Lockable IP55 (minimum) steel enclosure<br>24V control circuit<br>Central Schneider PLC control unit (Modbus/bacnet compatible)<br>Inverter for pumps<br>Enclosure lighting<br>Wifi/3G module |
| Pumps | Run - run - standby (N+1)<br>Local pump isolators<br>Pressure based speed control |
| Construction | Sealed loop system<br>Y strainer (cast iron)<br>Flanges (PN16)<br>Expansion vessel<br>Dosing pot<br>Pressurisation set |

| | CHILLER |
|---|---|
| | Tailored to specific project requirements upon request. |