

Data-center cooling

The data-center industry is a big industry in full expansion. Their needed cooling capacities grow fast, especially driven by the latest trend in cloud computing.

Typically, data-center owners and operators are looking for reliable, cost-

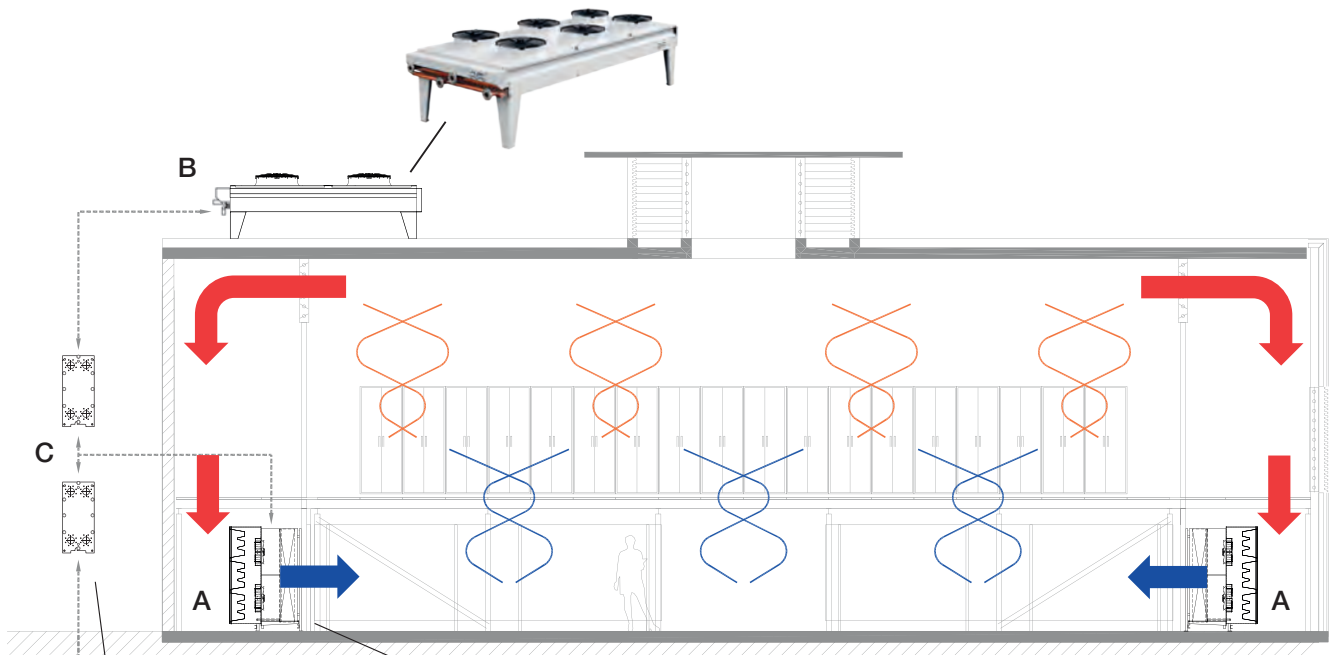
efficient equipment with long lifetime, energy savings, elimination of hot spots in their servers and minimum maintenance.

The Low Speed Ventilation concept for data centers is a completely integrated



building ventilation/recirculation system. It dissipates heat from the servers by means of low-speed controlled-air recirculation. As a result, hot spots are avoided at the lowest energy consumption possible (-30%).

Example of data-center design



Backup cooling (chillers, ground-source cooling, surface-water cooling etc.)

- A) Alfa Laval data-center air coolers
- B) Alfa Laval dry coolers
- C) Alfa Laval plate heat exchangers





Additional benefits of the Low Speed Ventilation Datacenter™ concept are:

- Lower investment compared with traditional Computer Room Air Conditioning units (CRAC): CAPEX -15%
- Very low maintenance cost (OPEX)
- Maintenance happens outside the whitespace, avoiding unauthorized people entering this sensitive area
- Suitable for both cold and hot containment
- Optimal temperature and humidity conditions at any server position
- Possibility to re-use dissipated heat
- No dust accumulation



Alfa Laval THOR LSV Air Cooler

Alfa Laval products used in the Low Speed Ventilation Datacenter™ concept

• **Alfa Laval THOR LSV Air Cooler**

THOR LSV air coolers are heavy duty industrial air coolers specifically designed for cooling servers in data centers that have been built according to “Low Speed Ventilation”. LSV air coolers operate with low fan speed, low air velocities and minimal pressure differences along the route of the air flow. This is achieved by the building itself being part of the system. For this reason all THOR-LSV air coolers have been designed with a nominal of 12 Pa air-sided pressure drop and a sensible heat factor of 1.0. In case direct fresh air is used in the computer room the THOR LSV air cooler contains an F7 or F9 filter, with a pressure drop of just 25 Pa.



Alfa Laval plate heat exchangers

• **Alfa Laval plate heat exchangers**

Plate heat exchangers are used for general heating and cooling duties.

• **Alfa Laval dry coolers**

Alfa Laval dry coolers are mainly used for free cooling duties.



Alfa Laval dry coolers