

WHY

multi-stage expansion up to 400 kW room load
Required PUE value: 1.15

HOW

Decentralised air-conditioning, preferably via fresh air cooling, supply via raised floor

WHAT

10 **weisstechnik** DeltaClima®DX FC CRAC units

WHY - The Challenge.

The MK Netzdienste GmbH & Co. KG from Minden is building its second data center at the data network junction in Frankfurt. The data center FRA2 is in operation since summer 2017 and will offer 2,000 m² server space in the final expansion stage.

FRA2 is dimensioned as low-energy data center. The PUE value 1.15 must be observed. In addition, for safety reasons, the air conditioning system has to operate without water.

Since the expansion of the data center is carried out in several stages, the scalability of the air-conditioning technology is an important factor. Other framework conditions are the cooling capacity of 100 % up to an outdoor temperature of 36 °C and the ASHRAE Standards Compliance concerning temperature and humidity.

HOW - The Idea.

In order to realize the most energy-efficient cooling of the IT surfaces the principle of the direct free cooling has been applied. At outside temperatures of up to 26 °C, fresh air is supplied directly into the data center for cooling.

The heat load is dissipated to the outside via a pressure-controlled ventilation system without additional fans. Air-conditioning in recirculation mode only at outside temperatures above 26 °C.

For the Rhine-Main area with moderate temperatures this means: Around 85 % of the year, air conditioning can be provided via energy-efficient direct free cooling. The free cooling principle thus considerably reduces energy consumption and costs.



weisstechnik implements high-efficient scalable air-conditioning for data center

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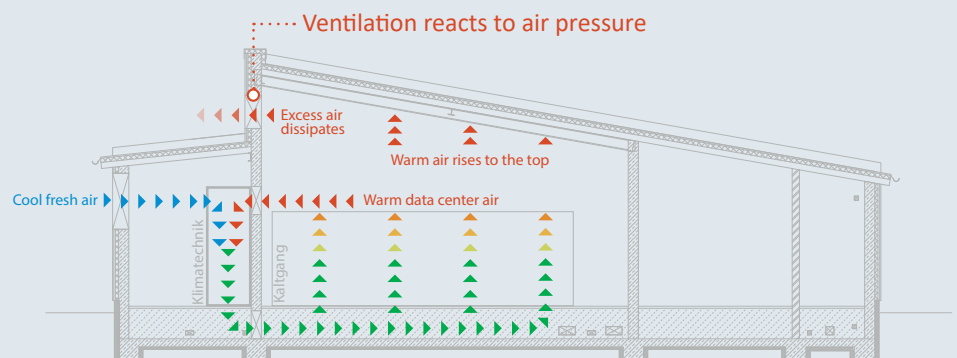
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WHAT - The Solution.

The selected DeltaClima DX FC CRAC units were installed in 2 climate clamps. Each climate cabinet has a capacity of 50 kW.

The supplied fresh air is reliably cleaned via a G4 coarse dust filter and a F7 fine dust filter. The fine dust filter is also used in the circulating air operation.



Source: MK Netzdienste GmbH & Co. KG

Chosen product: **DeltaClima[®] DX FC**

Air-conditioning via cold and hot aisles. If necessary, the cold outside air is mixed with warm inside air to the required temperature and blown into the cold aisle via a raised floor. The exhaust air is led to the outside via overpressure louver flaps without any further conveying effort.

Modifications implemented

Decentralized, easily scalable air-conditioning technology with climate-control cabinets working independently of each other ensures flexible expansion of the data center:

- First expansion stage 2017: Installation of 5 units
- Second expansion stage 2019: Installation of 3 units
- Planned final expansion: Totally 10 units

