

## Cooling of high-density server racks



Installation of three eChiller45 at **British Telecom**, leading international provider of communications solutions, for the cooling of high density racks (cubes) in a power range of 40 kW - 100 kW.



### Project and implementation

BT offers room-in-room solutions for high-density racks in its data centers, which place very high demands on the technical infrastructure due to their power density. These „cubes“ are connected to existing central data center infrastructures and existing chilled water or cooling water systems. An additional modularly expandable chilled water generation system was required to provide maximum efficiency, safe redundancy and relatively high system temperatures.

**Three eChillers per cube feed a buffer storage on the cold water side. The evenly distributed running times ensure a high level of operational reliability.**

### Customer:

British Telecom GmbH  
& Co KG, Hamburg and  
Berlin / Germany

### Requirements:

- Operational safety
- Redundancy
- High efficiency, partial load behaviour
- Innovation
- Use of natural refrigerant

## Outcome

Since 2018, BT has been cooling its cubes with three eChillers. High reliability and extremely stable cold water generation have been proven with maximum efficiency with a cold water flow setpoint at 16°C .

‘The use of the eChillers for chilled water generation in the data centre has proven itself over the long term. Both, operational reliability and very high energy efficiency are guaranteed. System malfunctions have not occurred so far.’

**Jens Fischer, Design Authority Manager BT**



**3 x 40 kW**  
Cooling capacity (kW)



**18 °C**  
Setpoint temperature



**R718 (water)**  
Refrigerant



**Water/glycol**  
**40/45 °C**  
Recooling

