




IT Cooling Solutions



**The complete precision climate control range  
from STULZ**

**Expertise in all areas of sensitive technology**



A photograph of a server room. In the foreground, there are two large, dark-colored server racks standing on a light-colored tiled floor. Below the racks, there are several rectangular floor vents with metal grates. In the background, more server racks are visible, some of which are white. The ceiling is a grid of white tiles with recessed lighting and fire sprinklers. The overall lighting is bright and even.

Precision cooling, maximum  
availability and energy efficiency

## Total efficiency: The precision climate control range from STULZ

Precision air-conditioning systems precisely regulate temperature and humidity for sensitive technology. In data centres and mobile phone network exchanges, their continuous operation reliably ensures the high availability of computer systems. This is increasingly challenging as the performance of modern information and telecommunications technology improves.

STULZ precision air-conditioning technology operates continuously even with high heat loads and, above all, with exceptional energy efficiency, as a circulating air system or a chiller. Choose the perfect solution for your individual requirements from different designs and dimensions – precisely configured, proven, tested and superbly reliable. Find out more and choose precision air-conditioning technology from STULZ.

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# The perfect climate for every application

In general, a distinction is made between comfort and precision air-conditioning. While comfort air-conditioning creates a pleasant environment for people, precision air-conditioning technology provides reliable cooling that is geared towards the requirements of technical infrastructure. Dedicated equipment rooms in data centres or switching stations require precisely

controlled relative humidity, room temperature, air conduction and air distribution. Precision air-conditioning units from STULZ enable you to create precisely defined climatic conditions – with pinpoint accuracy and outstanding reliability.

## Latent or sensible cooling

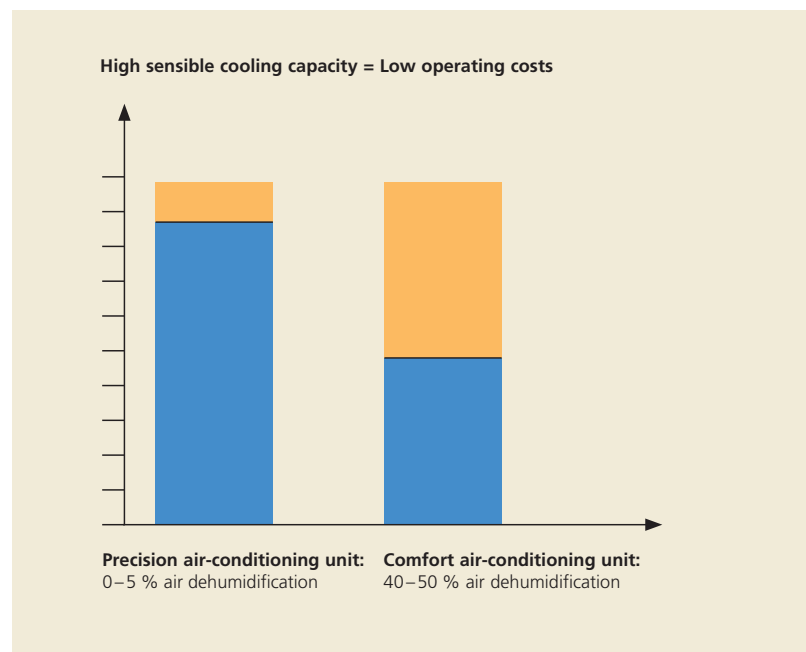
The sensible cooling capacity lowers the temperature, while the latent capacity dehumidifies the air. Comfort air-conditioning units use up to 50 % of their energy for dehumidification, while precision units convert more than 95 % of the energy used exclusively to cooling power. The technology required to achieve this pays off quickly through lower running costs.

## Air distribution, heat dissipation and filtration

Precision air-conditioning units from STULZ filter and circulate three times the amount of air as comfort units with the same rated capacity. They reliably dissipate isolated heat loads even from distant corners of the room, while continuously monitoring and precisely controlling the temperature and air filtration.

## Controlled temperatures

Information and communication technology only works reliably and without faults within a narrow temperature range. STULZ precision air-conditioning units ensure optimum temperature accuracy with maximum tolerances of  $\pm 1^\circ\text{C}$ , while comfort units can normally deviate from the set value by as much as  $\pm 3^\circ\text{C}$ .





### Controlled humidity

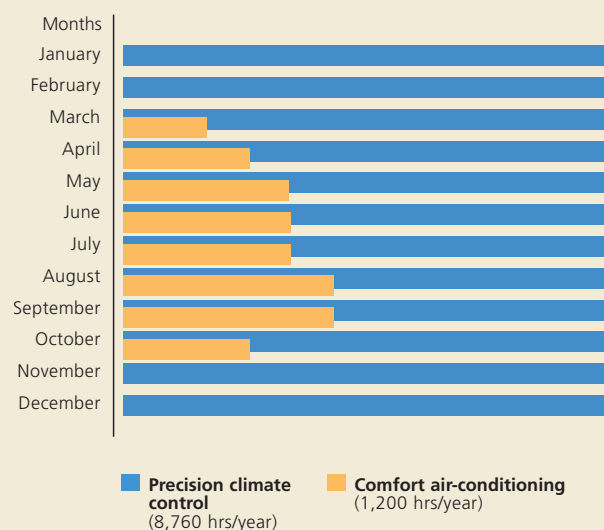
In contrast to comfort air-conditioning units, precision units feature strictly controlled and accurate dehumidification (tolerance +/- 5 % relative humidity), as too much humidity can lead to condensation and corrosion, while too little can cause static charges, data loss and damage to hardware.

### Excellent reliability

Comfort air-conditioning units mainly operate in summer and only for a few hours each day. By contrast, precision air-conditioning units need to be available whenever the electronic equipment to be cooled is in operation. This is normally the case for 24 hours a day, 365 days a year.

As a result, STULZ has extremely high demands in terms of the quality of its precision air-conditioning units and offers high availability systems with 99.999 % reliability.

#### High operational reliability thanks to precision climate control



# Performance up, consumption down

## Half disappears into thin air

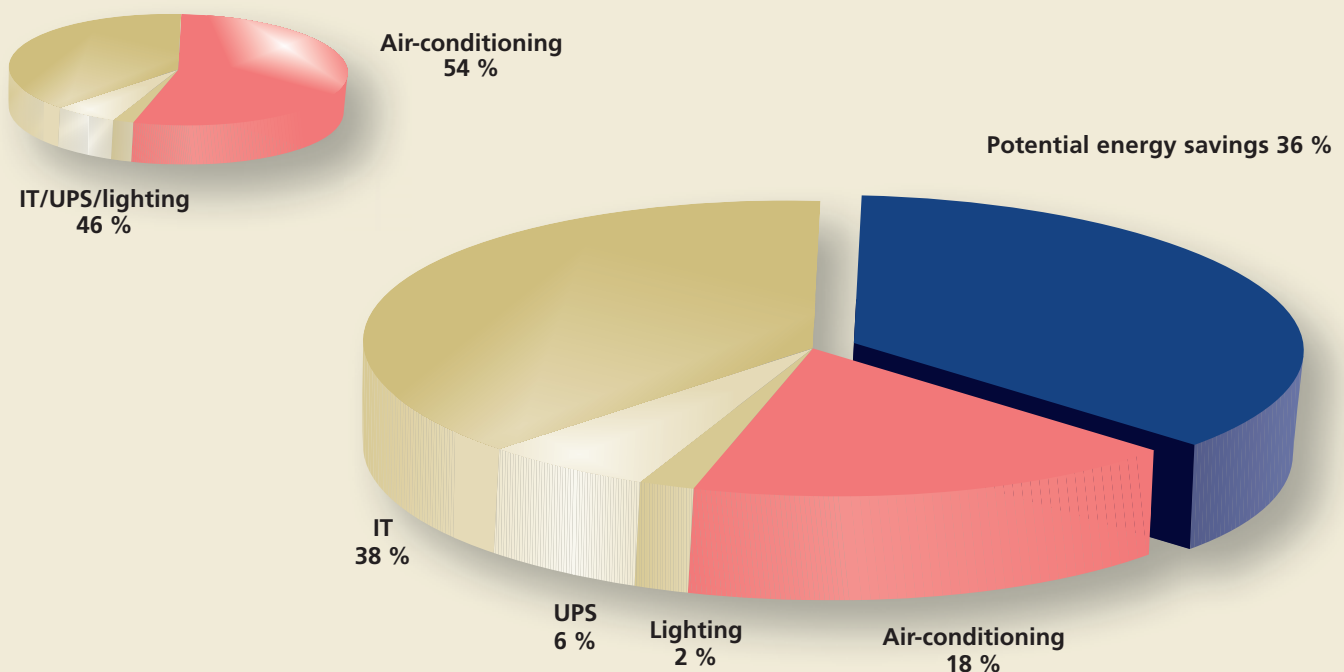
Data centres run 365 days a year. Their tightly packed server racks generate ever increasing computing power in an ever decreasing area – power that is almost entirely converted into heat. Climate control ensures reliable operation. It conveys heat outside right away. But then, the air-conditioning in data centres devours a huge amount of electricity. In the worst cases, it uses more than half of the energy supplied to the data centre.

## Choose energy efficient air-conditioning from STULZ

Whether you are interested in optimisation, construction or operation – STULZ can give you added scope for managing your operating costs. Our energy efficient precision air-conditioning systems cut the power consumption of your data centre by up to 40 %. So: Cut your energy costs – or invest your saved energy in expanding your hardware.



## Example of energy distribution in a data centre



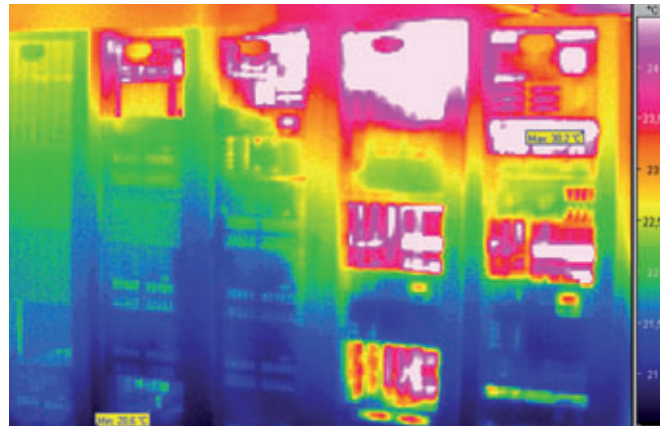
### Greater efficiency thanks to free cooling with outside air

Economical precision air-conditioning systems also make use of cool outside air for indirect cooling of the data centre. Modern control electronics only switch on energy-intensive compressor cooling when really necessary. It continuously monitors the climate in the data centre and selects the optimum operating mode in no time.

Operation of cooling compressors and fans in the air-conditioning system is particularly energy-intensive. Electronic control improves the response in changing load conditions, while additional cooling with indirect free cooling keeps the running time of the compressor to a minimum.

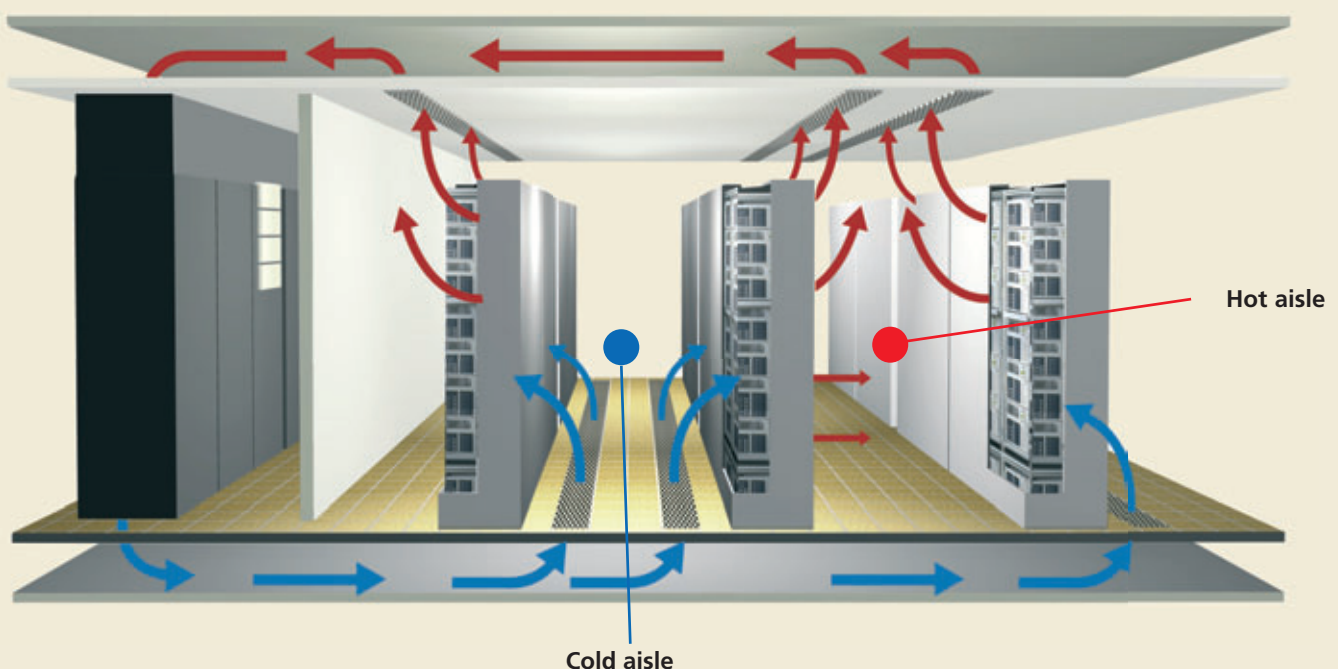
### Greater effectiveness through precise air conduction and even power distribution.

To ensure that the cooled air gets to where it is needed, professional planning of the air conduction and careful configuration of the server racks is part of every good climate control concept. Hot and cold aisles, raised floors and cover panels convey the cooled air to the computer with precision. For example, particularly economical systems make use of closed air circuits, which feed the waste heat from the server racks directly back to the air-conditioning unit via closed air ducts.



A thermographic image visualises the hot and cold zones in the data centre, as on a weather map. This provides you with an early warning system of conditions in the air-conditioning system that may increase consumption.

### Optimum air distribution in a data centre





# STULZ – the natural choice:

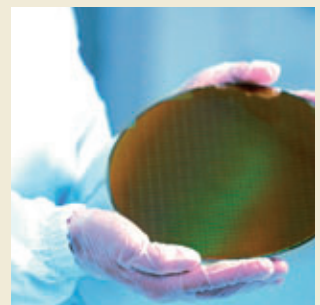
## For information technology

Modern servers have a great deal of power. Their processors reliably control critical business processes 24/7, 365 days a year. But where there's computing power, there's also considerable heat. As computers only operate reliably at certain temperatures, climate control is essential. The more efficient the cooling, the less electricity the data centre consumes.

### For medical technology and clean rooms

In medical technology, availability of life-saving equipment and instruments must be guaranteed. Our STULZ CyberCool indoor data chillers provide you with three different systems for ensuring the required cold water supply on demand, all autarkic and with high availability.

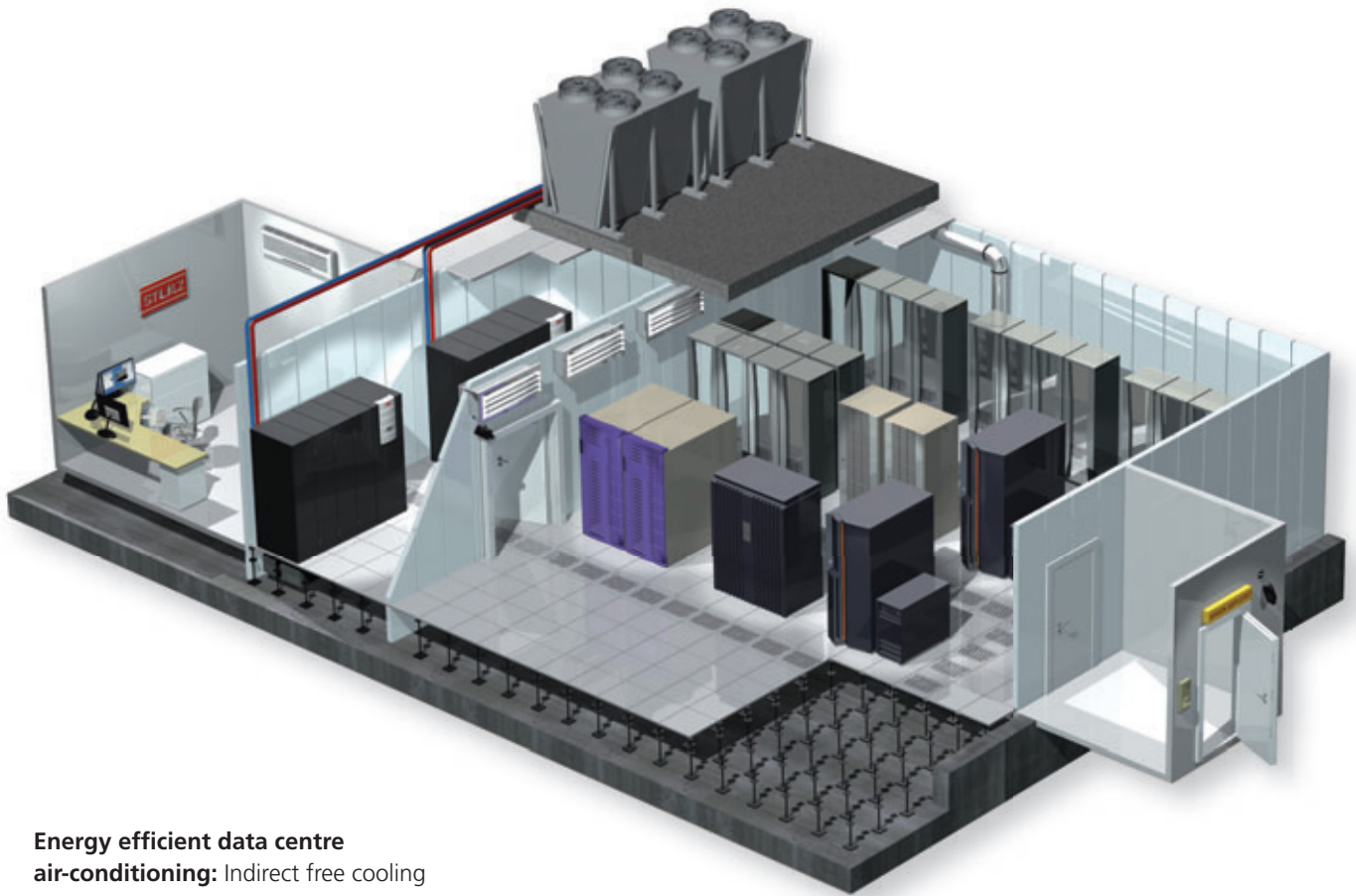
In clean rooms, there are hardly any heat loads. Here, the key is sufficient air throughput, precise temperature and humidity control and constant air quality.



# IT cooling solutions for data centres

IT and telecommunications are of vital importance to the economy, science and administration in general. Even the very shortest downtimes in ICT systems can result in a collective inability to act, and the loss of sensitive data. An ideal operating environment is the prerequisite for continuous, dependable operation ensuring uninterrupted availability.

Stulz expertise in data centre cooling technology, creates the optimum conditions for high-availability IT infrastructure.



**Energy efficient data centre air-conditioning:** Indirect free cooling installation with CyberAir 2 GE

## Circulating air

- MiniSpace/EC
- Compact DX and Compact CWE
- CCD 2300 CWE and 2800 CWE
- CyberAir 2 DX, Low Noise DX and Dualfluid
- CyberAir CW2, CWE and GE

## Water

- CyberCool and CyberCoolXT
- Pump&Transfer
- Air-cooled interior, split
- Pump stations

# Compact and precise air-conditioning

Most precision air-conditioning systems for IT, medical technology and clean rooms are circulating air systems designed specifically for the individual heat loads that occur. The more technology is installed in a room and the greater the waste heat from the hardware, the more care is required in planning and designing the air distribution. STULZ precision air-conditioning units enable you to base your planning on maximum reliability – regardless of whether the performance requirements are simple or complex.



## MiniSpace

If you need precise, reliable and cost effective air-conditioning solutions for small to medium sized server and technology rooms, the MiniSpace series provides a space-saving, microprocessor controlled solution.

Cooling capacity, total	kW	5 ~ 28
Cooling capacity, sensible	kW	5 ~ 24
Volumetric air flow	m³/h	2,000 ~ 7,000

## MiniSpace EC

Cooling capacity, total	kW	6.5 ~ 31.5
Cooling capacity, sensible	kW	6.5 ~ 28.5
Volumetric air flow	m³/h	2,500 ~ 7,500

### The advantages at a glance

- Maximum cooling performance with minimum floor space
- Air-cooled, water/glycol-cooled or chilled water versions available
- Units as down flow and up flow versions
- Simple installation and maintenance through doors on the front
- Air filtering with filter class EU 4
- Continuously adjustable EC fan\*
- C7000 IO controller for controlling and monitoring the air-conditioning system
- Automatic switchover to redundant standby units in the event of problems
- Modbus preinstalled
- Continuous recording of measured values
- Options
  - C7000 Advanced user interface with LCD graphic display, RS485 interface and other pre-installed data protocols for GLT connections
  - Communication via SNMP/HTTP IP protocols
  - Humidifier/heating
  - R134a high temperature refrigerant\*

\*for MiniSpace EC only



### Compact DX and CW

If you need to reliably dissipate large heat loads while keeping an eye on your investments, Compact DX and CW is the professional solution featuring proven, cost effective technology.

#### Compact DX, single and double circuit

Cooling capacity, total	kW	17 ~ 104
Cooling capacity, sensible	kW	17 ~ 89
Volumetric air flow	m³/h	5,500 ~ 24,000

#### Compact CW

Cooling capacity, total	kW	11 ~ 118
Cooling capacity, sensible	kW	11 ~ 96
Volumetric air flow	m³/h	3,200 ~ 20,000



# Low operating costs thanks to special sizes

Are you planning a new data centre and looking for optimum integration of your precision air-conditioning systems from day one? The units have been trimmed for energy efficiency, regardless of previous standard dimensions. The increased depth provides improved air conduction within the unit.

You will notice the results in considerably lower operating costs. The maintenance-free electronically controlled EC fans respond continuously to changing power requirements and can be adjusted to the current conditions with pinpoint accuracy.



## Compact CWE

Energy optimised CW A/C unit in compact design with EC fans installed on top of the raised floor.

Cooling capacity, total	kW	202 ~ 246
Cooling capacity, sensible	kW	202 ~ 246
Volumetric air flow	m³/h	36,500 ~ 43,300



## Compact CWE UF

UF version with EC fans installed under the raised floor for optimised power utilisation and air distribution. In every case, for maintenance the EC fan can easily be accessed from the front of the unit thanks to the "fan slide up system".

Cooling capacity, total	kW	202 ~ 246
Cooling capacity, sensible	kW	202 ~ 246
Volumetric air flow	m³/h	36,500 ~ 43,300

## The advantages at a glance:

- Low power consumption
- EC fan
- C6000 controller
- Standby manager
- VDE and NRTL-C specified (in line with UL 1995)
- All maintenance work can be carried out from the front of the unit

# Efficient climate control with STULZ CyberAir 2

The CyberAir 2 closed-circuit air-conditioning system from STULZ controls the conditions in the data centre with utmost precision, maximum reliability and energy efficiency. Intelligent control electronics ensure that up to 60 % less electricity is consumed than with conventional precision air-conditioning systems. The CyberAir 2 embodies more than three decades of project experience by STULZ. No other precision air-conditioning system offers more flexibility, as every STULZ system is tailored to your requirements. Designed for reliable continuous operation over many years, the STULZ CyberAir 2 is accurate to the nearest degree, quiet and exceptionally economical. It keeps your IT available at all times.

## Seven cooling systems cool with three refrigerants

From a choice of seven cooling systems, data centre operators will find the optimum balance between investment, operating costs and energy efficiency. In addition to water as the cooling medium, the STULZ CyberAir 2 can run with three different refrigerants: standard R407C and R410A refrigerants, and high temperature R134a refrigerant.



CyberAir 2 A/C units in standard door sizes are available as energy or space-saving versions. The six available sizes range from 1,000 to 2,900 mm in width.

## STULZ CyberAir 2

- Closed-circuit precision air-conditioning systems for data centres and equipment rooms
- Standard and low energy versions
- Scalable to 20 air-conditioning modules per bus system
- Up to 60 % more economical thanks to STULZ DFC automatic air-conditioning
- The C7000 microprocessor efficiently regulates all system states, CW standby management, the EC fan and the electronic expansion valve
- Reliability thanks to redundant design and automatic alarm notification via SMS or e-mail
- Compact dimensions
- Filter control management
- All parts requiring maintenance can be accessed from the front

**CyberAir 2 DX and Dualfluid**

Cooling capacity, total	kW	18 ~ 105
Cooling capacity, sensible	kW	18 ~ 89
Volumetric air flow	m <sup>3</sup> /h	5,500 ~ 24,000

**CyberAir 2 GE**

Cooling capacity, total	kW	18 ~ 105
Cooling capacity, sensible	kW	18 ~ 89
Volumetric air flow	m <sup>3</sup> /h	5,000 ~ 24,000

**CyberAir 2 CW/CW 2**

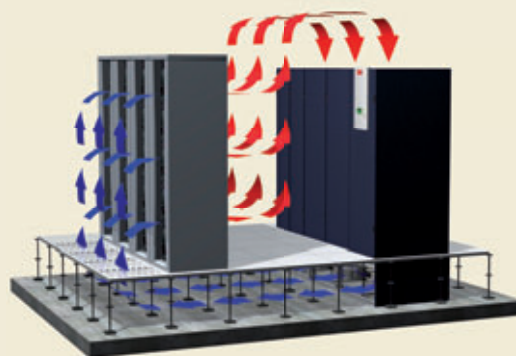
Cooling capacity, total	kW	26 ~ 212
Cooling capacity, sensible	kW	24 ~ 168
Volumetric air flow	m <sup>3</sup> /h	6,500 ~ 39,000

**CyberAir 2 CWE/CWU**

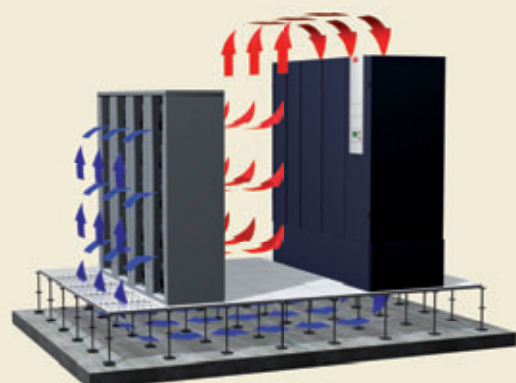
Cooling capacity, total	kW	120 ~ 184
Cooling capacity, sensible	kW	120 ~ 184
Volumetric air flow	m <sup>3</sup> /h	22,000 ~ 35,000

**CyberAir 2 CWE****Two modules, one aim:  
efficient use of space and energy!**

- Unit split into two modules
- Easy transportation thanks to standard door size
- Flexible installation in data centres
- Energy-optimised heat exchanger design for high water and return air temperatures

**Installation options for CyberAir 2 CWE/CWU****CWU version:**

Fan module installed under raised floor (up to 35 % reduction in fan power consumption compared to installation on raised floor)

**CWE version:**

Fan module installed on top of raised floor with low raised floor height

# Up to 80 % more economical thanks to STULZ DFC and DFC<sup>2</sup>

The STULZ CyberAir 2 with DFC is the first precision air-conditioning system in the world that automatically switches to the best operating mode depending on the heat load in the data centre and seasonal variations in ambient temperature. This is due to the combination of compressor cooling and free cooling in a total of four levels. In cool weather, DFC makes use of economical indirect free cooling, which obtains all its cooling power from the outside air. Energy-intensive compressor cooling (DX) is only switched on when absolutely necessary.

## DFC for fully electronic savings

DFC selects the most energy-saving mode, controls the speed of the EC fans in the A/C unit and those of the dry cooler, regulates the position of the control valves, reduces the electricity consumption of the pumps and ensures precise interior climate control. By incorporating standby units as well, DFC keeps all units, pumps and dry coolers in perfect balance in energy-saving partial load mode.

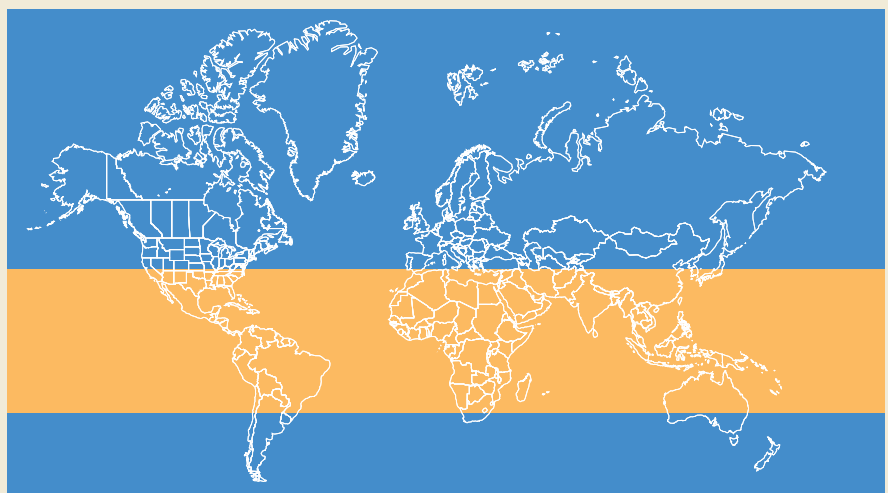
## DFC<sup>2</sup> direct free cooling

With the newly developed DFC<sup>2</sup> (direct free cooling) system, we at STULZ are consistently pursuing our Mission Energy and offering you a further option for providing efficient and economical climate control with our precision air-conditioning systems.

With DFC<sup>2</sup> we are setting new standards for energy-efficient precision air-conditioning systems.



In moderate climates north and south of the equatorial zone, the energy-saving advantages of the STULZ DFC and DFC<sup>2</sup> can be exploited to the full. Electricity consumption for data centre air conditioning falls by up to 80 %.



### Adaptive ventilation with EC technology

The fans in the CyberAir 2 air-conditioning system are smooth running, have a long service life and require no maintenance. They are powered by economical EC DC motors as standard. The electronically controlled EC fans respond continuously to changing power requirements and are especially economical in partial load mode.

### Greater efficiency with EEV

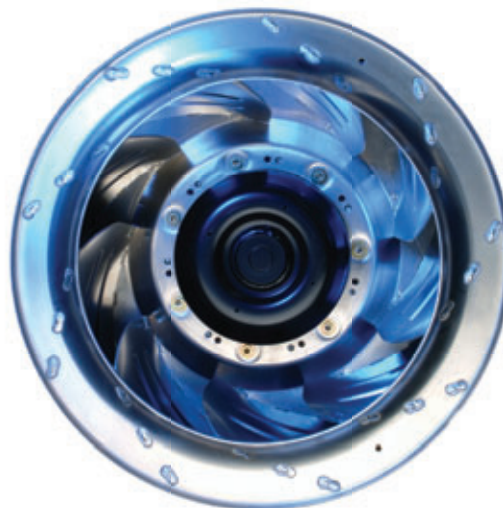
With its pinpoint response to temperature and pressure fluctuations, the electronic expansion valve (EEV) permanently increases the performance and efficiency of your air-conditioning system. In ideal operating conditions, efficiency is raised by up to 37 %. It ensures that sensitive hardware is kept cool with a uniformly high volume of air, even during dehumidification.

### CW standby management

All chilled water cooled CW versions of the STULZ CyberAir 2 are available with the electronic CW standby manager as standard – keeping all A/C units in perfect balance in energy-saving partial load mode. In this way, the fans in the STULZ CyberAir 2 are able to use up to 70 % less energy.

### Using reserves sensibly

The CW standby manager controls the speed of the EC fans and incorporates redundant standby units in a combined system operation. If an A/C unit fails, the standby manager automatically increases the output of the remaining units.



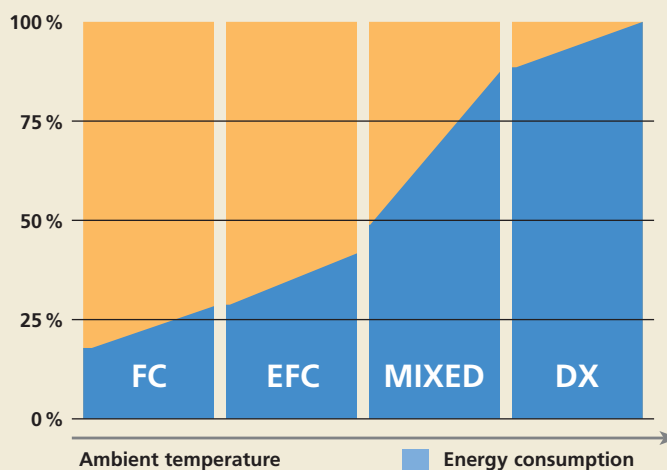
In conventional operating mode, the active A/C units run continuously at full load. The standby unit remains unused.



In partial load mode, the CW standby manager distributes the reserve capacity evenly between all A/C units. If individual units shut down or require maintenance, the remaining units automatically switch to controlled full load operation.

### STULZ DFC automatic air conditioning

- Electronically controlled GE cooling system, combining compressor cooling and free cooling in four stages:
  - FC – Free cooling energy-saving mode
  - EFC – Extended free cooling
  - MIXED – Compressor and free cooling
  - DX – Compressor cooling
- Electronic load distribution for partial load mode
- The efficiency of the compressor is increased in mixed mode thanks to the electronic expansion valve



# Reliable and cost-effective cooling with water

Water is the most efficient medium for heat transfer. This is why water is increasingly being used to cool technical equipment in IT and medical technology. Demand-based control concepts and a free cooling option ensure that energy consumption is low. This enables you to cut your operating costs and reduce the burden on the environment.

## Air-cooled outdoor

Air-cooled chillers for outdoor installation are classical chilled water generating systems. The units are installed on roofs or close to the building. Air-cooled chilled water generators allow outside air to be put to optimum use in the relevant weather conditions.



### CyberCool Outdoor Chiller CSO/CLO

Chilled water generator for closed circuit air-conditioning with water, up to 239 KW, for outdoor installation. With optional free cooling to increase energy efficiency.

Cooling capacity	kW	36 ~ 239
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### CyberCool XT CEO (A)

Chilled water generator for closed circuit air-conditioning with water, up to 72 KW, for outdoor installation.

Cooling capacity	kW	4 ~ 72
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### CyberCool XT CFO (A)

Chilled water generator for closed circuit air-conditioning with water, up to 965 KW, for outdoor installation. With optional free cooling to increase energy efficiency.

Cooling capacity	kW	86 ~ 965
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### CyberCool XT CGO (A)

Chilled water generator for closed circuit air-conditioning with water, up to 1,525 KW, for outdoor installation. With optional free cooling up to 1,200 kW to increase energy efficiency.

Cooling capacity	kW	400 ~ 1,525
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### Air-cooled indoor

Air-cooled chillers for indoor installation are the system of choice if there is no suitable installation space outdoors. The condenser and fans in these chillers are connected to the outside air either directly through a weather-protection grille or by means of a duct system. The advantage of indoor installation is the ability to run a glycol-free water cooling system.



#### CyberCool XT CHI (A)

Chilled water generator for closed circuit air-conditioning with water, up to 144 KW, for indoor installation.

Cooling capacity	kW	25 ~ 144
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#### CyberCool XT CEI (A)

Chilled water generator for closed circuit air-conditioning with water, up to 23 KW, for indoor installation.

Cooling capacity	kW	4 ~ 23
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#### CyberCool XT CFI (A)

Chilled water generator for closed circuit air-conditioning with water, up to 257 KW, for indoor installation.

Cooling capacity	kW	173 ~ 257
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**CyberCool CSI G/GE**

Compact chilled water generator for the direct water cooling of high-density server racks and computer tomographs, cooling capacity up to 100 kilowatts. The GE version is suitable for indirect free cooling.

Cooling capacity	kW	20 ~ 100
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**Water-cooled indoor**

Water-cooled chillers for indoor installation are so-called water/water units. They are ideal in noise-sensitive conditions or if there is no suitable installation space outdoors. They consist of an indoor unit and a dry cooler or cooling tower. The advantage of indoor installation is the ability to run a glycol-free water cooling system.



**CyberCool XT CGI (W)**

Chilled water generator for closed circuit air-conditioning with water, up to 1,537 KW, for indoor installation.

Cooling capacity	kW	468 ~ 1,537
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**CyberCool XT CFI (W)**

Chilled water generator for closed circuit air-conditioning with water, up to 560 KW, for indoor installation.

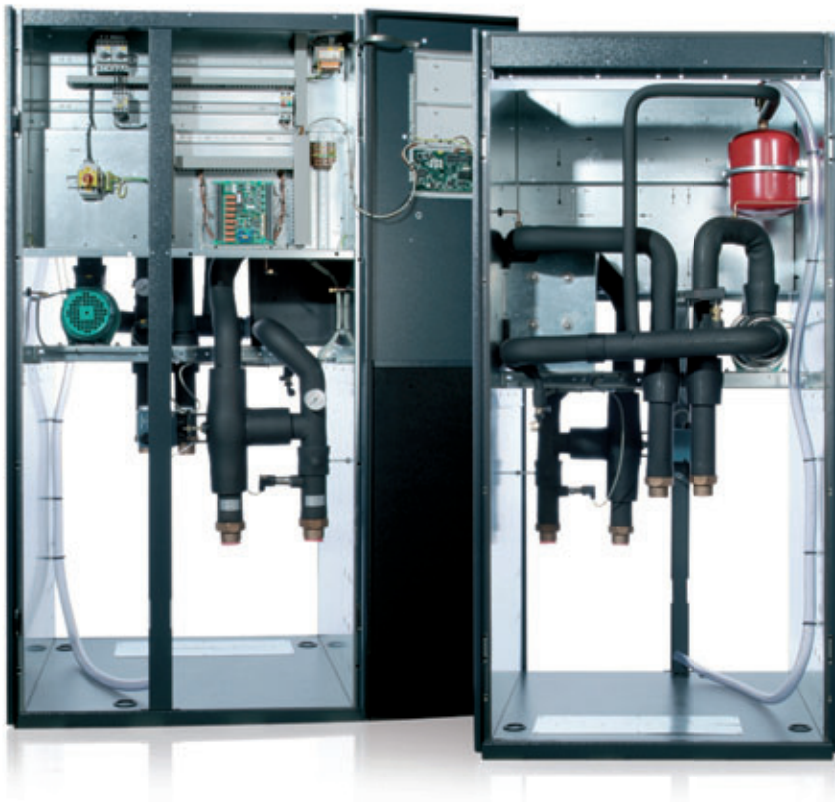
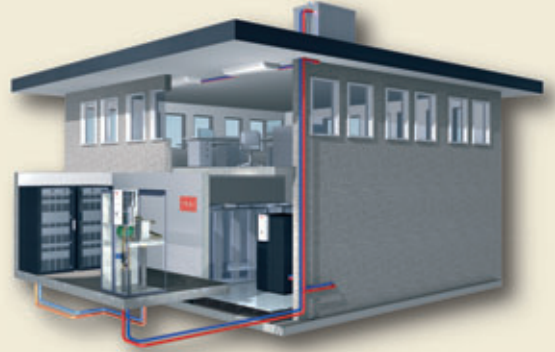
Cooling capacity	kW	195 ~ 560
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### Compact system separation with Pump&Transfer

Some data centres have a central chilled water supply. Direct water cooling of high-density server racks via the central water supply seems an obvious solution, but does not meet the requirements of the racks and also carries a major risk of leakage.

STULZ CyberCool Pump&Transfer ensures that the system is separated into two circuits, keeping the volume of water and pressure in the rack as low as possible. In the primary circuit between the central chilled water supply and the transfer station, CyberCool Pump&Transfer works with a water/glycol mixture at low temperature. In the secondary circuit, the transfer station feeds glycol-free water to the server racks, while adapting the temperature to the level required by the racks.

CyberCool Pump&Transfer stations are available as single or dual circuit systems. The dual circuit system ensures 100 % redundancy whilst taking up the same space. The integrated microprocessor monitors all functions, processes signals from water warning systems when required, and enables the CyberCool Pump&Transfer to be incorporated in the central building services management system.



#### CyberCool CPI-CW series, single circuit

Cooling capacity	kW	20 ~ 100
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#### CyberCool CPI-CW2 series, dual circuit

Cooling capacity	kW	2x20 ~ 2x100
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**Air-cooled indoor split**

Split-version air-cooled chillers for indoor installation are the systems of choice for applications that are sound-sensitive or if there is no suitable installation space outdoors. They consist of the indoor unit and an air-cooled outdoor condenser. The advantage of indoor installation is the ability to run a glycol-free water cooling system.



**CyberCool CSI A**

Compact chilled water generator for direct water cooling of high-density server racks and computer tomographs, cooling capacity up to 100 kilowatts.

Cooling capacity	kW	20 ~ 100
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**CyberCool XT CGS (A)**

Chilled water generators for water-cooled closed circuit air conditioning, up to 1,517 kilowatts, for indoor installation in a split system.

Cooling capacity	kW	380 ~ 1,517
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**CyberCool XT CFS (A)**

Chilled water generators for water-cooled closed circuit air conditioning, up to 487 kilowatts, for indoor installation in a split system.

Cooling capacity	kW	174 ~ 487
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## Pump stations

The new CyberCool pump stations work alongside our air-conditioning systems to provide even greater reliability and optimised use of space. Fully assembled and containing all the components required for pumping chilled water.



### CyberCool CPP-CW pump station

Compact pump cabinet with two speed controlled pumps, for indoor installation. The CyberCool station exactly matches the design and dimensions of the CyberAir 2 precision air-conditioning systems.

Water volume in flow	(m <sup>3</sup> /h)	10 ~ 50
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### CyberCool XT CDI 0-9

Pump stations with integrated buffer tank for chilled water, up to 108 m<sup>3</sup>/h, for indoor and outdoor installation.

Water volume in flow	(m <sup>3</sup> /h)	4 ~ 7
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### CyberCool XT CDO 0-12

Water volume in flow	(m <sup>3</sup> /h)	3 ~ 17
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### CyberCool XT CDO 60-99

Water volume in flow	(m <sup>3</sup> /h)	36 ~ 108
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STULZ – the natural choice:



## The Telecom line from STULZ

- Wall-Air
- Tel-Air-2
- Split-Air
- Mini-Air
- Compact-Air
- Free-Air



## For telecommunications

With its Telecom line, STULZ offers a range of professional air-conditioning solutions for telecommunications infrastructure and switch cabinets. All units are designed for 24/7 operation, 365 days a year, and offer maximum reliability and availability. In the unlikely event that a problem does arise, STULZ's network of expert partners and branches guarantees fast, trouble-free service.



# Stable level for transmission technology

Mobile phone base stations are installed in the tiniest space on roofs, towers or masts. Compact Telecom air-conditioning systems in switch cabinets, containers and shelters keep the operating temperature of the sensitive transmission technology stable.

## Wall-Air

In telecommunications containers, space is at a premium. Wall-Air units are installed outside the container, therefore enabling the space inside the container to be used to the full. Wall-Air is available in two versions – upflow and displacement.



- Energy saving operation thanks to proportional free cooling facility
- Available as upflow and displacement version
- C2020 microprocessor control
- 48V DC backup operation
- Mixed mode for energy saving operation

Cooling capacity, total	kW	4.0 ~ 17.0
Cooling capacity, sensible	kW	4.0 ~ 15.0
Volumetric air flow	m³/h	1,000 ~ 3,600

## Tel-Air-2

Tel-Air-2 is designed for installation in telecommunications containers and equipment rooms. As they are installed indoors, noise is kept to a minimum and the units are protected against environmental influences and vandalism. Tel-Air-2 is available in upflow and downflow versions, and as an energy efficient displacement version.



- Energy saving operation thanks to proportional free cooling facility
- Available as upflow, downflow and displacement version
- C2020 microprocessor control
- 48V DC backup operation

Cooling capacity, total	kW	4.0 ~ 13.0
Cooling capacity, sensible	kW	4.0 ~ 13.0
Volumetric air flow	m³/h	1,000 ~ 3,200

## Split-Air

Split-Air is the energy and space saving option for reliable cooling of telecommunications containers – consisting of a free cooling function and an evaporator and compressor/condenser unit. The indoor unit can be mounted on the ceiling or a wall, i.e. Split-Air is ideal where space is at a premium. Thanks to its low noise level, the outdoor unit can also be used in residential areas with no problems.



- Energy saving operation thanks to proportional free cooling facility
- C2020 microprocessor control
- 48V DC backup operation

Cooling capacity, total	kW	3.0 ~ 11.0
Cooling capacity, sensible	kW	3.0 ~ 11.0
Volumetric air flow	m³/h	1,000 ~ 3,000



### Mini-Air

Mini-Air is the professional switch cabinet air-conditioning unit from STULZ for reliable use in switch cabinets, shelters, cabins and all applications where the air-conditioning unit must be installed indoors for operational and safety reasons.



- Integrated control thermostat
- 24 or 48V DC backup operation

### Compact-Air

Compact-Air is a switch cabinet air-conditioning unit for professional use in switch cabinets, shelters and cabins. However, in contrast to the Mini-Air, the unit can be installed outdoors.



- Integrated control thermostat
- 24 or 48V DC backup operation

### Free-Air

In base stations that use comfort air-conditioning units for cooling, the possibilities of free cooling are not exploited. Now, with our Free-Air free cooling unit, these telecommunication networks can be retrofitted with an energy-efficient system. Whenever the ambient temperature allows, free cooling mode is activated and the comfort air-conditioning units are switched off.



- C2020 microprocessor control
- Energy efficient operation
- 24 or 48V DC backup operation
- EC fan

Cooling capacity, total	kW	0.7 ~ 4.0
Volumetric air flow	m³/h	220 ~ 1,150

Cooling capacity, total	kW	0.7 ~ 4.0
Volumetric air flow	m³/h	220 ~ 1,150

Cooling capacity, total	kW	3.0 ~ 6.0
Volumetric air flow	m³/h	1,050 ~ 1,700

# Intelligent control and central monitoring of precision air-conditioning

Intelligent control concepts ensure reliable operation of precision air-conditioning units and chillers. Setpoint entry and adjustment, unit monitoring and operating data output using separate control units, PC or connection to existing building services systems. This allows you to maintain an overview and keep control at all times.

## Interfaces to building services and Internet

The STULZ MIB7000 (Multifunctional Interface Board) has an integrated sequencing function for up to 32 units. The RS485/RS232 serial interfaces support all standard building services systems. The STULZ WIB8000 (Web Interface Board) communicates using the IP protocols SNMP and HTTP. Configuration and operation are browser-based. The STULZ LIB7000 (Lon Interface Board) enables all units to be integrated into LonWorks® technology.



## Network connection for convenient control

With intelligent network solutions from STULZ, you will always be in control of your precision air-conditioning system.

### C1002

- Standard controller with 4-digit, 7-segment LED display
- Key pad
- Integrated sequencing for connecting two units

### C2020

- 4-line text based LC display
- Sequencing for up to 5 units
- Continuous condensation pressure regulation
- Software update and system

configuration using hardware key (optional)

- Separate control unit for remote control (optional)

### C6000 Chiller

- LCD graphic display
- Integrated sequencing for up to 6 units
- High pressure management
- Free cooling management
- Continuous condensation pressure regulation

### C7000

- High redundancy and availability thanks to independent controllers
- Integrated sequencing for up to 20 units
- Zone operation
- Filter control management
- CW standby management
- Free cooling control
- User interface with graphic display and remote control (optional)



### Gateways for STULZ controller systems

ALARM

Remote monitoring and control



SMS/  
E-mail



Alarm/Voltage  
free contacts



HTTP/  
SNMP



Display/  
Visualisation



Operation



Remote  
maintenance

CUSTOMER

#### CyberCool XT "small" controller:

- For units with one compressor
- Up to a cooling capacity of approx. 30 kW
- Key pad with LED status display
- On some units, only available as remote control

#### CyberCool XT "medium" controller:

- For units with 2 compressors and one refrigerant circuit
- Up to a cooling capacity of approx. 30-80 kW
- 7-digit, 7-segment display plus 12 LEDs
- Key pad
- Sequencing for up to 3 units (optional)

#### CyberCool XT "large" controller:

- For all units with cooling capacity above 80 kW
- Graphic display
- High redundancy and availability thanks to modular design of autarkic controllers
- Sequencing for up to 7 units (optional)
- Free cooling management

# STULZ quality. Or: Precision climate control put to the test!



High availability under test: Even during the planning phase, with temperatures ranging from -20 °C to +55 °C, the STULZ Air-Conditioning Test Centre simulates the load conditions of the planned A/C system. Fully assembled air-conditioning systems undergo extensive practical testing in the climate chamber.



## STULZ – expertise and partnership for tailor-made solutions

STULZ precision air-conditioning systems feature optimum quality and reliability. From individual units with a cooling capacity from 0.3 kW through to modular systems with several megawatts of capacity, STULZ offers a complete range of products that provide optimum solutions for every situation.

Air-conditioning experts support you in design, realization, installation and maintenance of your system. In case of emergency, STULZ's global service organisation provides rapid assistance and maximum availability.

### **Reliable air-conditioning available worldwide**

Whether it is in Rio, New York, Shanghai or London: Operators of ICT systems throughout the world rely on precision air-conditioning technology from STULZ. Trust STULZ's 40 years of experience, high availability quality products, expert advice and reliable service. Wherever you need us, we are not far away.

[www.stulz.com/global](http://www.stulz.com/global)

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## IT Cooling Solutions

### Close to you all over the world.

... With specialist, competent partners in our subsidiaries and exclusive sales and service partners around the world. Our five production sites are in Europe, North America and Asia.