Precise, Reliable and Innovative Air Conditioning for Information and Communication Technology
Perfect Air Conditioning for Secure ICT Technology
Innovative blade constructions, multi-core processors and UMTS are continuously improving the performance of modern ICT technology. However, as performance increases so do thermal loads and air conditioning requirements, along with operators’ concerns about the operating reliability and availability of their infrastructure. State of the art precision air conditioning technology from STULZ removes these concerns, as it provides maximum reliability for your information and telecommunications equipment.

The entire range can be installed individually

STULZ precision air conditioning units include circulating air systems, cold water systems and high-density racks. Through their diverse designs and dimensions, they can provide the perfect customized solution for your requirements – combining flexible use, the ideal configuration and tried and tested reliability. Find out more and choose precision air conditioning from STULZ.

**Circulating air**
- Compact DX and CW
- MiniSpace
- AirBooster
- CyberAir
- Telecom-Line

**Water**
- CyberCool

**High-density**
- CyberChill
The Perfect Solution for Any Situation

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 technology 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 part of the cooling capacity reduces the temperature, while the latent part dehumidifies the air. Comfort air conditioning units can use up to 50% of their energy for dehumidification, whereas precision units convert more than 95% of the energy used exclusively into cooling capacity. The technology required to achieve this pays off quickly in terms of lower operating 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 thermal 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 relatively narrow temperature range.

STULZ precision air conditioning units ensure optimum temperature accuracy with maximum tolerances of +/- 1 °C, while comfort units can normally deviate from the set value by as much as +/- 3 °C.
**Controlled Humidity**

Unlike 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 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.

This is why STULZ makes such high demands on the quality of their precision air conditioning units and is able to offer high availability systems with 99.999% reliability.
A Breath of Fresh Air for Sensitive Technology

Most precision air conditioning systems for IT, telecommunications and technology rooms are circulating air systems designed specifically for the individual thermal 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 economical air conditioning for small technology and server rooms, the MiniSpace series provides a space-saving, microprocessor controlled solution.

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<tr>
<th>MiniSpace</th>
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<tbody>
<tr>
<td>Cooling capacity, total</td>
<td>kW</td>
<td>5–23</td>
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<tr>
<td>Cooling capacity, sensible</td>
<td>kW</td>
<td>5–21</td>
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<tr>
<td>Air volume</td>
<td>m³/h</td>
<td>2,000–7,000</td>
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Compact DX and CW
If you need to reliably dissipate heavy thermal loads and keep an eye on your investments, Compact DX and CW represent a professional solution based on proven technology.

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<tr>
<th>Compact DX, single and double circuit</th>
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<tr>
<td>Cooling capacity, total</td>
<td>kW</td>
<td>17–104</td>
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<tr>
<td>Cooling capacity, sensible</td>
<td>kW</td>
<td>17–89</td>
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<tr>
<td>Air volume</td>
<td>m³/h</td>
<td>5,500–24,000</td>
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<tr>
<th>Compact CW</th>
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<tr>
<td>Cooling capacity, total</td>
<td>kW</td>
<td>12–118</td>
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<tr>
<td>Cooling capacity, sensible</td>
<td>kW</td>
<td>11–96</td>
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<tr>
<td>Air volume</td>
<td>m³/h</td>
<td>3,200–20,000</td>
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AirBooster

Mounted in the false floor, the AirBooster conveys up to 1,200 m³/h of cold air directly to the front of a high-density rack. This is three times the amount delivered by conventional ambient air coolers and is normally sufficient for targeted rack cooling.

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<tr>
<th>AirBooster</th>
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<tbody>
<tr>
<td>Air volume</td>
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<tr>
<td>Rated electrical input</td>
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</table>
CyberAir DX and Dual Fluid Units
Cooling capacity, total kW 18–104
Cooling capacity, sensible kW 18–89
Air volume m³/h 5,200–24,000

CyberAir Low Noise DX and Dual Fluid Units
Cooling capacity, total kW 18–73
Cooling capacity, sensible kW 18–66
Air volume m³/h 4,900–18,400

CyberAir CW Units
Cooling capacity, total kW 30–146
Cooling capacity, sensible kW 26–120
Air volume m³/h 6,500–29,000

CyberAir CW2 Units
Cooling capacity, total kW 26–103
Cooling capacity, sensible kW 24–89
Air volume m³/h 7,500–26,000
Maximum Performance for a Reliable Infrastructure

With the development of its CyberAir precision air conditioning series, STULZ is setting new standards in energy efficiency, compact design and serviceability. If you want cutting-edge air conditioning technology and to cut your operating costs, put your trust in CyberAir’s innovative EC fan technology and new control concepts.

12% Less Space
For a cooling capacity of 42 kW, a CyberAir precision air conditioning unit requires an installation area of just 1 m².

Central Control and Monitoring of Modular Systems
State of the art control engineering means that up to 31 CyberAir precision air conditioning units can be combined into a single network and integrated into central building services systems. This gives you full control of your air conditioning at all times.

Up To 60% Less Energy
In contrast to conventional technology, CyberAir precision air conditioning units incorporate state of the art EC fan technology and feature a free cooling option. This cuts energy costs by up to 60%.

5 dB(A) Less Noise
Noise-absorbing materials that meet the Öko-Tex 100 standard, ingenious fan configuration and smooth, optimal air path reduce the noise emissions from CyberAir precision air conditioning units by more than 5 dB(A).
Reliable Dissipation of Isolated Thermal Loads

Modern server technologies have higher performance but take up less and less space. This can lead to high thermal loads at isolated points, which are difficult to eliminate with conventional air conditioning technology. This is why STULZ CyberChill server racks are directly cooled with water. This enables thermal loads of up to 35 kW per rack to be reliably dissipated. They can either be added to existing data centres or utilised as a stand-alone solution.
CyberChill Water Cooling, When Air is Not Enough

If the thermal loads in server racks exceed 5 kW, conventional air conditioning systems cannot deliver sufficient air. CyberChill uses a recirculation air cooling circuit to cool the servers, removing the intense local heat load by means of an air to water exchanger.
Cold Water Systems – Efficient and Reliable

Water is the most efficient medium for heat transfer. This is why water is increasingly being used to cool technical equipment in ICT and medical technology. Demand control concepts and free cooling options ensure that energy consumption is low. This enables you to cut your operating costs and reduce the burden on the environment.
CyberCool CSO and CLO Outdoor Chillers: Outdoor Installation for Demanding Jobs

CyberCool Outdoor Chiller units are cold water systems that use speed controlled fans, timed controllers and low-noise, highly efficient scroll compressors to achieve excellent energy efficiency and quiet operation.

An optional controller is available that automatically selects “Free cooling”, “Mixed mode” and “Compressor cooling”, reducing energy consumption by up to 40 % compared to conventional controllers.

In addition to the CyberCool CSO, the noise reduced CyberCool CLO design is available. This unit provides the same options but operates at a noise level around 10 dB(A) lower, making it ideal for use in areas that are sensitive to noise.

CyberCool Indoor Data Chiller: Cooling Water with Minimal Space

With their compact design, CyberCool Indoor Data Chillers produce enough cooling water for a cooling capacity of up to 100 kW and yet require an area of just 0.89 m². They fit through standard doors or and lifts, can be combined on a modular basis into redundant systems with 99.999 % reliability and can be installed in areas of buildings that are sensitive to noise.

CyberCool Pump&Transfer: Compact System Separation

Connecting high-density racks to the central cold water supply requires hydraulic separation to minimise the water quantity, pressure and risk of leaks in sensitive IT areas. CyberCool Pump&Transfer provides this separation and, as a twin circuit system, allows a redundant cold water supply to be set up.

<table>
<thead>
<tr>
<th>CyberCool Outdoor Chiller CSO</th>
<th>Cooling capacity kW</th>
<th>36–235</th>
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<tbody>
<tr>
<td>CyberCool Outdoor Chiller CLO</td>
<td>Cooling capacity kW</td>
<td>36–157</td>
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<tr>
<td>CyberCool Indoor Data Chiller CSI</td>
<td>Cooling capacity kW</td>
<td>21–100</td>
</tr>
<tr>
<td>CyberCool Pump&amp;Transfer</td>
<td>Cooling capacity kW</td>
<td>20–100</td>
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Air Conditioning Units for Telecommunications

Containers, shelters, base stations, distribution centres and switch cabinets for telecommunications make special demands in terms of air conditioning technology. The Telecom-Line includes the ideal design for every situation – factory tested, filled with cooling agent and ready to operate immediately.
» **Wall-Air:**  
Air conditioning unit for outdoor wall mounting

» **Tel-Air:**  
Air conditioning unit for vertical indoor installation

» **Split-Air:**  
Split air conditioning unit for indoor and outdoor installation

» **Wind-Air:**  
Window air conditioning unit for complete or partial indoor and outdoor installation

» **Mini-Air:**  
Switch cabinet air conditioning unit for vertical indoor installation

» **Compact-Air:**  
Switch cabinet air conditioning unit for vertical outdoor installation

» **X-Line:**  
Air/air heat exchanger for switch cabinets

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<tr>
<th><strong>Wall-Air</strong></th>
<th><strong>Cooling capacity, total</strong> kW</th>
<th>3.8–20.8</th>
<th><strong>Cooling capacity, sensible</strong> kW</th>
<th>3.8–19.5</th>
<th><strong>Air volume</strong> m³/h</th>
<th>1,000–5,700</th>
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<tr>
<th><strong>Tel-Air</strong></th>
<th><strong>Cooling capacity, total</strong> kW</th>
<th>3.8–11.1</th>
<th><strong>Cooling capacity, sensible</strong> kW</th>
<th>3.8–10.4</th>
<th><strong>Air volume</strong> m³/h</th>
<th>1,000–3,000</th>
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<th><strong>Split-Air</strong></th>
<th><strong>Cooling capacity, total</strong> kW</th>
<th>3.8–8.4</th>
<th><strong>Cooling capacity, sensible</strong> kW</th>
<th>3.8–7.8</th>
<th><strong>Air volume</strong> m³/h</th>
<th>1,000–2,150</th>
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<tr>
<th><strong>Wind-Air</strong></th>
<th><strong>Cooling capacity, total</strong> kW</th>
<th>3.8–8.8</th>
<th><strong>Cooling capacity, sensible</strong> kW</th>
<th>3.4–7.8</th>
<th><strong>Air volume</strong> m³/h</th>
<th>1,000–2,700</th>
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<tr>
<th><strong>Mini-Air</strong></th>
<th><strong>Cooling capacity</strong> kW</th>
<th>0.8–3.9</th>
<th><strong>Air volume</strong> m³/h</th>
<th>220–1,150</th>
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<tr>
<th><strong>Compact-Air</strong></th>
<th><strong>Cooling capacity</strong> kW</th>
<th>0.8–3.9</th>
<th><strong>Air volume</strong> m³/h</th>
<th>220–1,150</th>
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<th><strong>X-Line</strong></th>
<th><strong>Specific heat transfer</strong> W/K</th>
<th>60–130</th>
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C1002
» Standard controller with 4-digit 7-segment LED display
» Key pad
» Integrated sequencing for connecting two units

C1010
» 4-line text based LC display
» Sequencing for up to 35 units
» Continuous condensing 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 condensing pressure regulation

C7000
» High redundancy and availability due to autonomous controllers
» Integrated sequencing for up to 31 units
» Zone operation
» Filter control management
» CW standby management
» Free cooling control
» User interface with graphic display and remote control (optional)
Intelligent Control and Central Monitoring of Precision Air Conditioning

STULZ’s intelligent CompTrol® control concepts ensure reliable operation of precision air conditioning units and cold water systems. Set-point 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 WIB7000 (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.
STULZ – Expertise and Partnership Bring Tailored Solutions

STULZ precision air condition units 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, the STULZ service organisation provides rapid assistance and maximum availability.

Reliable Air Conditioning Available Worldwide

Whether it is in Rio, New York, Shanghai or Tokyo: Operators of ICT systems throughout the world rely on precision air conditioning technology from STULZ. Put your trust in STULZ with our 30 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
Close to you worldwide.

… with expert contacts in our STULZ subsidiaries, and our exclusive global network of sales and service partners. Our five production plants are in Europe, North America and Asia.