



STULZ the natural choice

# Chillers CyberCool





## **STULZ quality – now setting standards in Chiller technology**

Through our commitment to product development and quality control, STULZ has established a leading position in air conditioning technology.

To meet the changing needs of the global market our product portfolio has now been extended by the introduction of the CyberCool chiller range.

- » High quality components from leading brand manufacturers and production certified to ISO 9001:2000 ensures the expected high level of quality and reliability throughout the units life. reliability of the units for life.



» **CyberCool** presents a comprehensive range of compact Chillers with cooling capacities from 36 to 235kW, offering optimum choice and flexibility. CyberCool can be tailored to match the installation requirements through a range of standard options and intelligent control strategies which make them amongst the most environmental friendly and energy saving Chillers on the market.

» STULZ is renowned for its dependable applications advice together with the high level of technical support and after sales service provided throughout installation, commissioning and maintenance.



» Compact, fully packaged and pre wired Chillers for external installation.

» 3 sizes and 11 models with a capacity range from 36 to 235 kW

» Simple and rapid installation and commissioning

» External temperature range from -10 C to +40 C as standard

## CyberCool CSO series for the highest efficiency throughout the year

CyberCool Chillers are designed to work reliably and with the highest efficiency, all year round, regardless of the local ambient temperature conditions.

The Chiller uses sophisticated demand-driven control strategies, with "free cooling" to take advantage of lower ambients. This saves on compressor operation and generates energy savings of up to 40%.

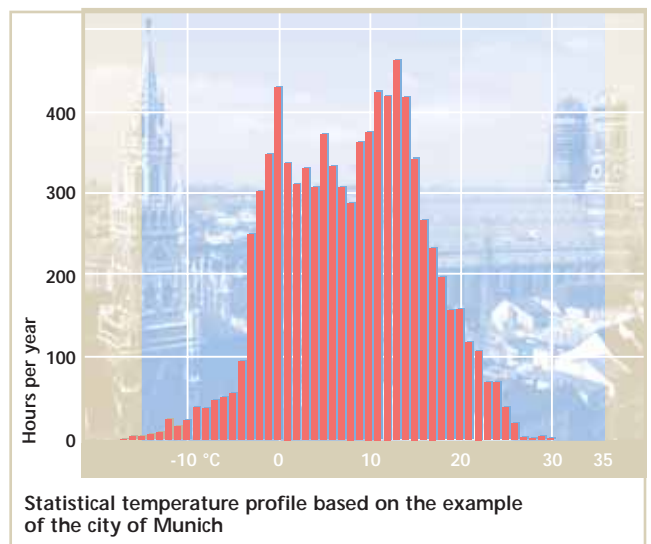
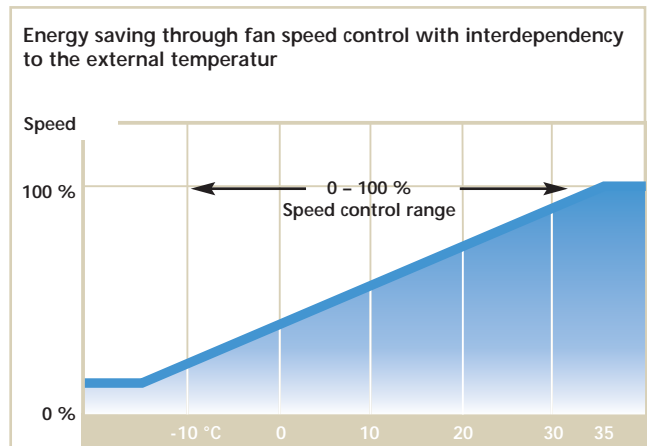
CyberCool units are designed for energy saving and quiet operation.

» **Speed controlled condenser fans**

for slow running operation at low outside temperatures

» **Quiet and highly efficient Scroll compressors**

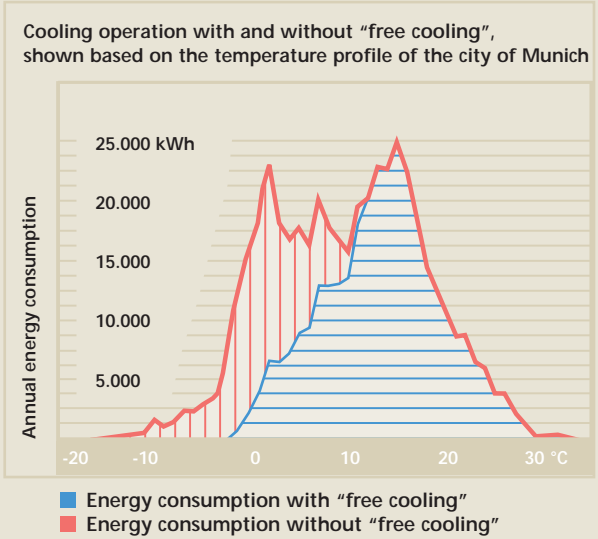
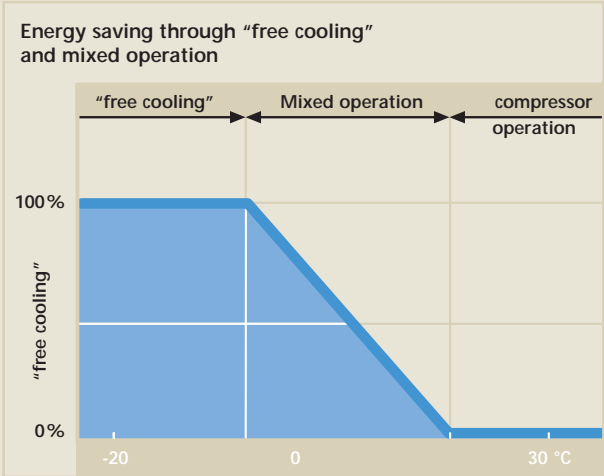
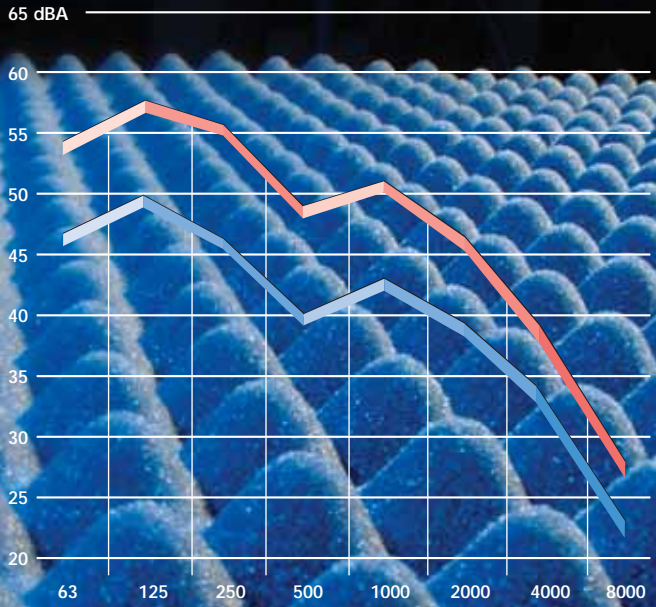
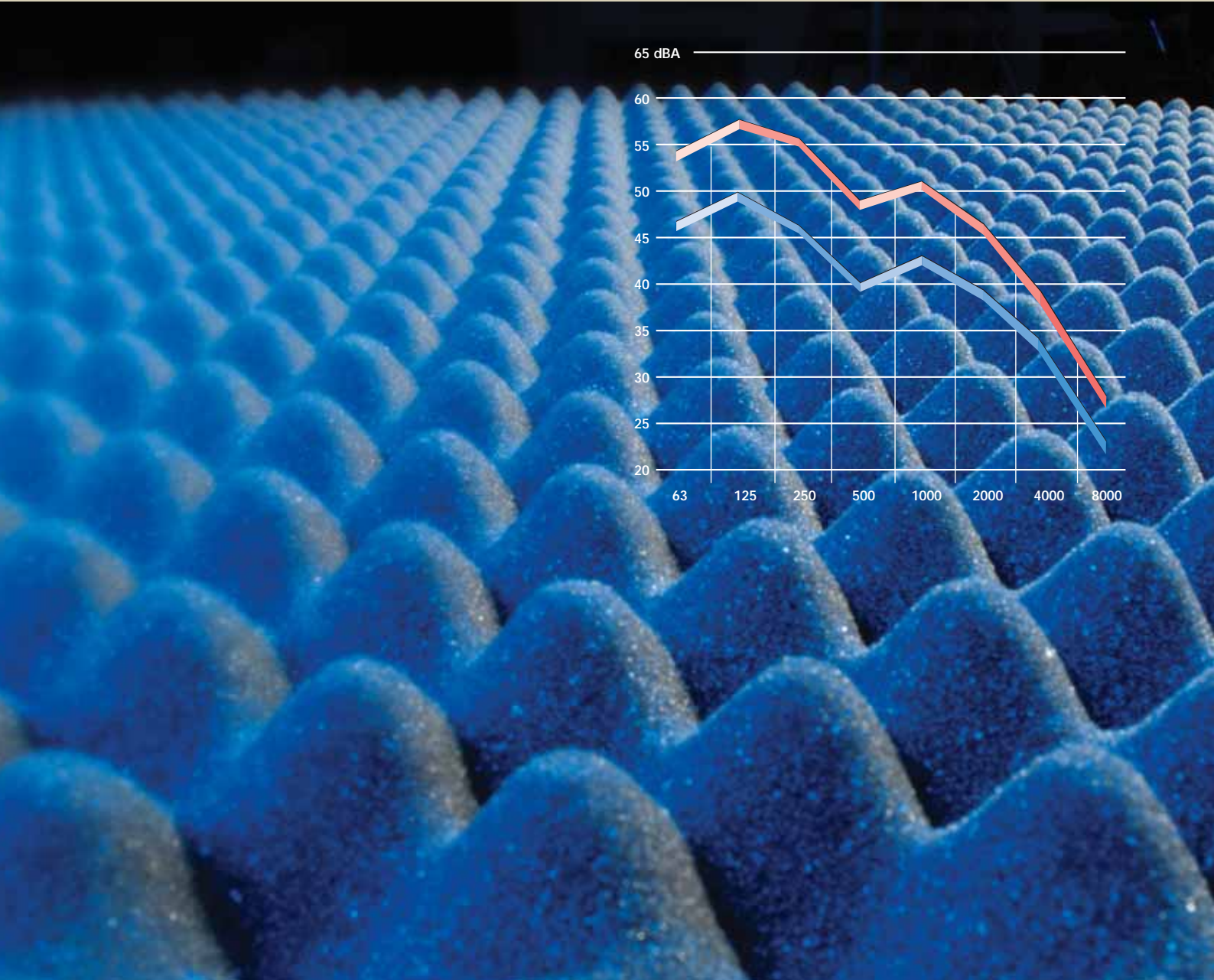
» **Reduced noise emission** through timing control





### **Flexibility and Reliability**

» Air Conditioning Technology – from Comfort to Precision Units » Industrial Technology » Process Engineering



# CyberCool CLO series – the new league in energy and noise reduction

Environmental compatibility and the consideration of life cycle costs play a major part when selecting Chiller units. CyberCool units in CLO design have distinct advantages in this respect:

## » Reduction in life cycle costs

Free cooling operation is available as an option across the complete CyberCool range. The free cooling control strategy makes the best possible use of local ambient conditions, minimizing running costs and maximizing the Chillers operating life.

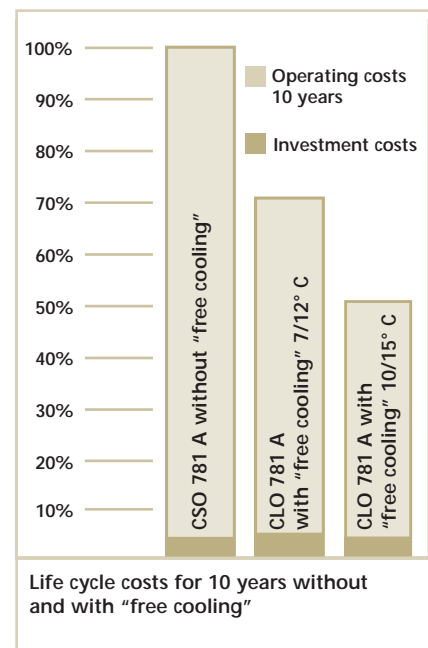
## » Acoustically lined compressor enclosure

## » Sound-optimised layout

of condenser fans at low speed range

## » Reduction of noise level

by up to 10 dBA, corresponding to halving the perceived noise



CLO 1022A with optional extras



- » Uncomplicated & Logical  
**Microprocessor technology** with user-friendly menu structure and large, easy-to-read, LCD display
- » Economic & Quiet  
**Energy and noise optimised** operation through demand-driven system control

- » Safe & Long-lasting  
**Control strategies** for high availability and long life

- » Interfaces and responds  
**Network interface solutions** for today's communications and building management systems



# C6000 – Sophisticated control system for intelligent operation

CyberCool Chillers have the benefit of the STULZ C6000 enhanced microprocessor controller which offers sophisticated control capabilities. This controller incorporates a convenient LCD display interface that is highly regarded by clients of STULZ air conditioning systems.

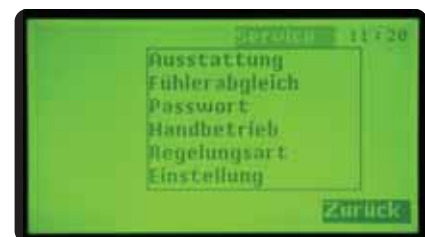
- » Factory presets allow for a rapid and uncomplicated commissioning.
- » Self-explanatory user guidance in Windows technology and several languages.

## Menu technology on 3 functional levels: Information, operation & service

**Information** menu: Shows operating personnel from various application areas all parameter settings and operating conditions

**Operation** menu: Company technicians can now change parameters as required via password protection

**Service** menu: The unit configuration can be changed by trained maintenance personnel via password protection



### The Controller C6000: Maintenance-friendly and cost-saving

- » **Frost protection management**  
Configurable, scheduled multiple restart of compressors and condenser fans in case of frost alarm. Only thereafter will a fault message be passed to Service.
- » **High pressure management**  
Attempted fault remedying in case of high pressure alarm through sequence of restart strategies. Only thereafter does the unit switch off.
- » **Central alarm**  
Potential free contacts for alarm and operating messages
- » **Event log**  
Recording of the most recent 100 system events
- » **Manual operating level for all components**
- » **Remote operation**  
for target values, alarm reset, unit on/off, Status indication

### The Controller C6000: Energy saving and environmentally friendly

- » **Electronic pressure and temperature transmitters**  
For constant pressure through freely adjustable condenser fans. High availability due to absence of fault sources from mechanical control.
- » **PID Control**  
Continuous PID control of the condenser fans ensures the best possible operating conditions over a wide ambient temperature band.
- » **Optional: Freely adjustable control of chilled water pump speeds**
- » **Compressor control according to energy requirement**
- » **Day/week timer**  
Scheduled readiness for operation in "silent mode", e.g. on weekends and after close of business.

### The Controller C6000: High availability, safety and service life

- » **Component sequencing**  
Balanced selection of all compressors and pumps according to operating hours
- » **6 unit bus sequencing**
  - Configurable number of redundancy units.
  - Additional connection of a standby unit during excessive loads.
  - Balanced selection according to operating hours.

Up to 6 chiller units may be interconnected to match duty, load sharing and redundancy considerations. This ensures the continuous availability of the chilled water supply required by mission critical applications like computer centres.

Connection of up to 32 STULZ units (CyberCool, air conditioning units) via the C6000 MIB gateway:

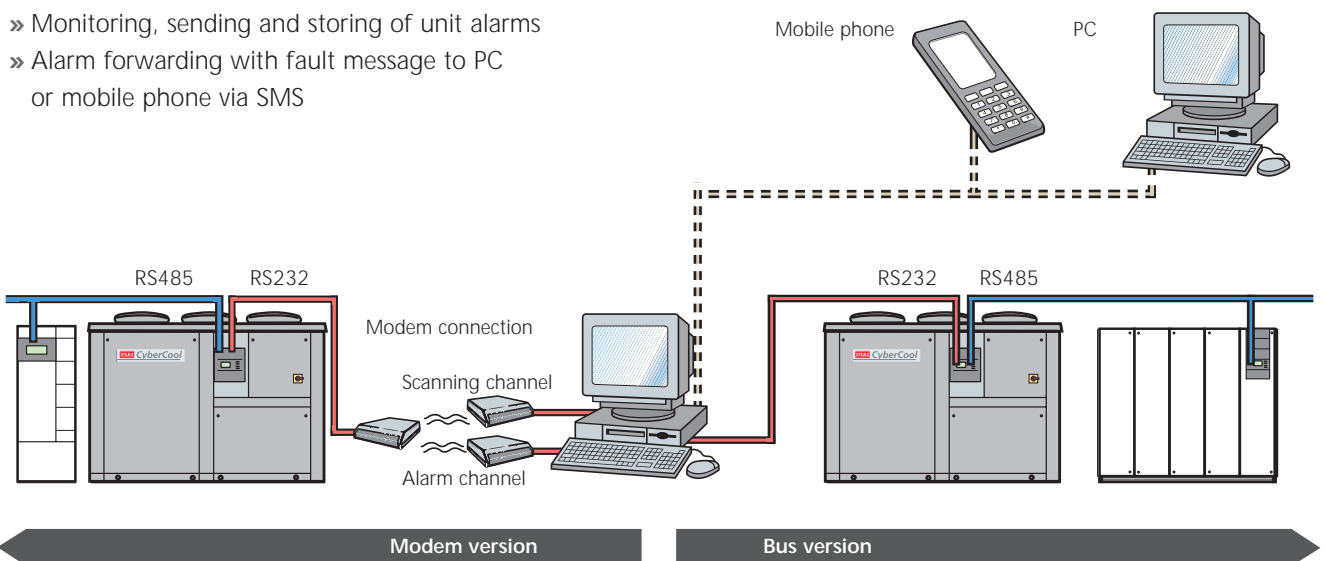
- » STULZ Tele CompTrol building management system via direct bus or modem
- » BMS of recognised manufacturers via Modbus, LON-Works® and manufacturer specific protocols
- » Communication via IP protocols SNMP, TCP/IP

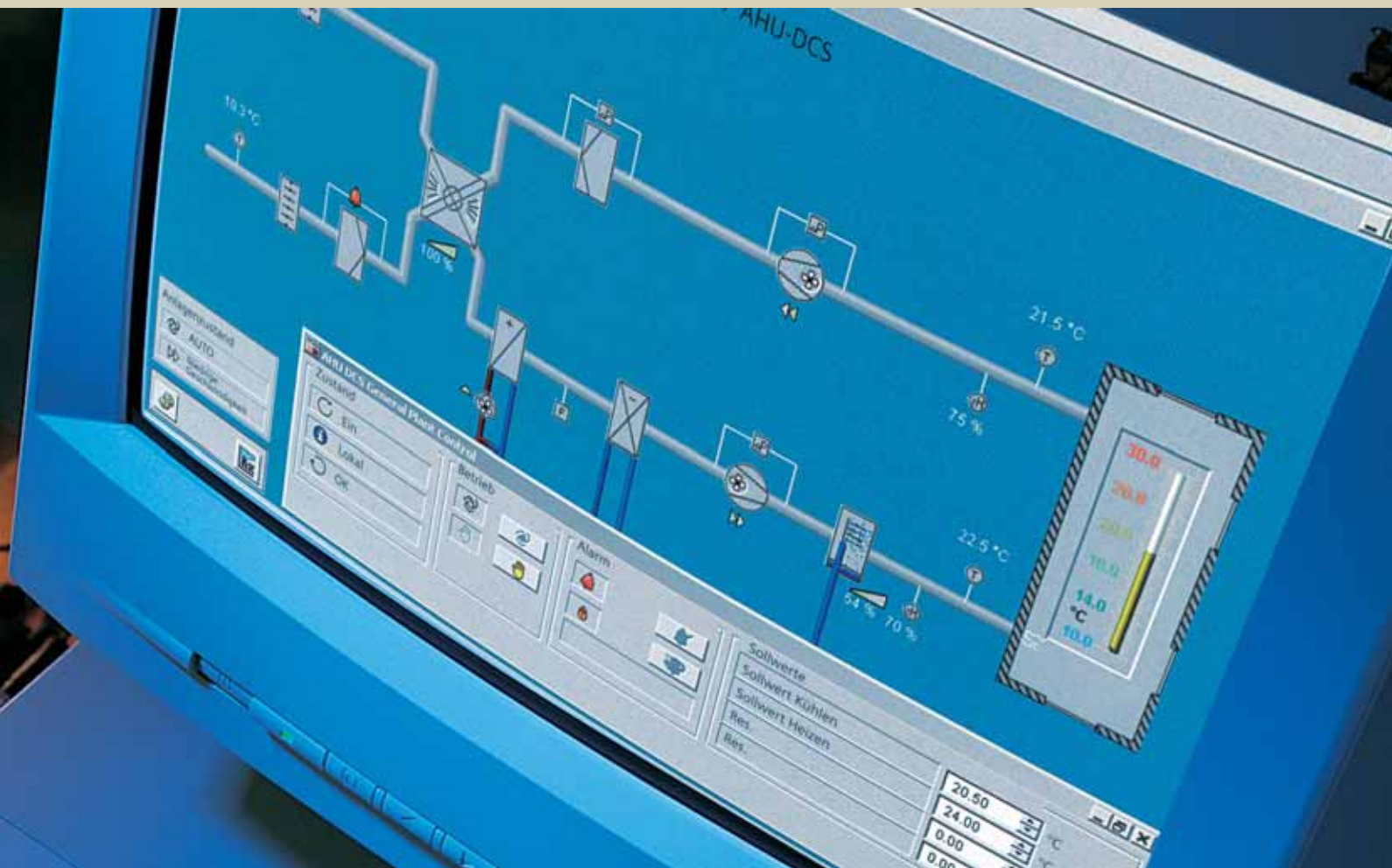


## C6000 Connectivity Network solutions for inhouse and remote monitoring

### The STULZ Tele CompTrol BMS system

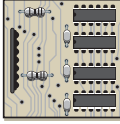

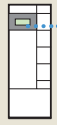
- » Monitoring and control of STULZ Chillers and air conditioning units
- » Graphical display of all unit parameters
- » Monitoring, sending and storing of unit alarms
- » Alarm forwarding with fault message to PC or mobile phone via SMS



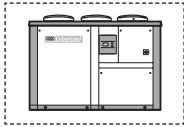


**The C6000 MIB (Multifunctional Interface Board)  
for connection to BMS**

- » Integrated sequencing function for up to 32 units
- » RS485/RS232 interfaces
- » Support of all common BMS protocols

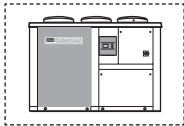
Remote monitoring	BMS supplier	Data protocol	Gateway	Controller
Direct via the respective BMS system- mobile phone or via internet protocols e.g. SNMP, TCP/IP	<b>Various manufacturers</b>  <b>TREND MICRO</b> <b>Kieback &amp; Peter</b> <b>Satchwell</b> <b>LANDIS &amp; STAFA</b> <b>Honeywell</b> <b>STULZ, Tele CompTrol</b>	Mod-Bus LON Works® Network-Bus P90 SNP Ni-Bus PR-Bus SDC	 MIB	 RS485  
	<b>JOHNSON CONTROLS</b> <b>LANDIS &amp; GYR</b> <b>SIEMENS</b>	N2-Bus Unigr-Bus Sinec L2-Bus		

# Options providing the perfect solution for every application



## Mechanical options

- » Anti-vibration mounts
- » Special paint finishes
- » Panel/floor panel system



## Options for the water circuit

- » Manometer for water pressure
- » Throttle valve
- » Hydraulic kit 1 (pump plus accessories)
- » Hydraulic kit 2 (as kit 1 plus standby pump)
- » Hydraulic kit 3 (as kit 1, but with speed controlled pump)
- » Hydraulic kit 4 (as kit 3 plus speed controlled standby pump)
- » Integrated/separate buffer tank
- » Free-cooling operation
- » Evaporator and pipework trace heating
- » Water filter

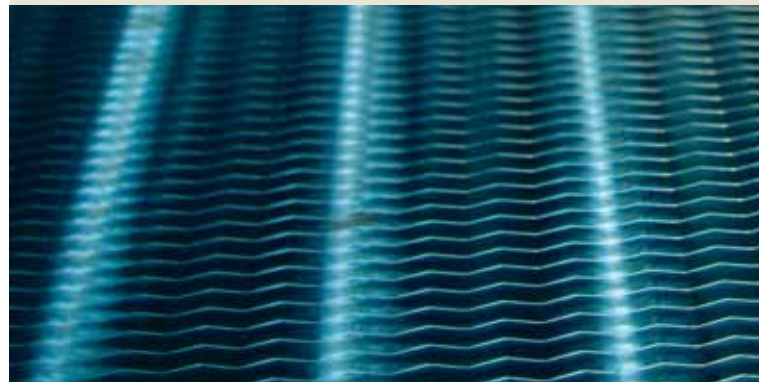


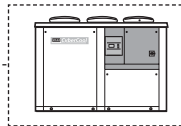
Optional Manometer

Optional pump packages



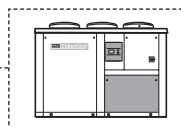
Optional "free cooling"





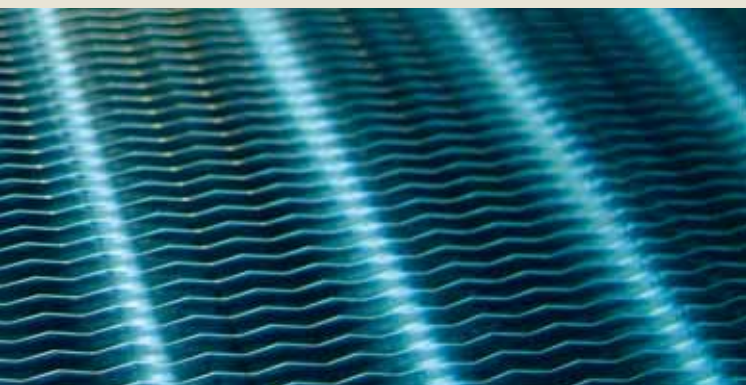
#### Options for control and electrics

- » Temperature transmitter in flow pipe
- » Flow pipe control
- » Phase monitoring
- » Remote on/off connection
- » BMS volt free contacts
- » BMS multi-interface board
- » Power factor correction
- » Remote operation
- » Remote control software Tele CompTrol
- » Alternative supply voltages
- » Outside temperature sensor
- » C6000 extended function board
- » Compressor soft start
- » Signal lamp for operating/fault messages
- » Electrical panel heating



#### Options for the cooling circuit

- » Copper/copper cooling coil
- » Coil corrosion protection
- » Coil anti-vandal guard
- » Solenoid valve in liquid pipes
- » Liquid refrigerant receiver
- » High/low pressure Manometer
- » Hot gas bypass
- » High temperature kit
- » Winter kit
- » Pumpdown kit



# You can rely on STULZ



## Expert advice and planning support

Early planning support and expert advice sets the course for achieving the best possible project solution.

Stulz is renowned for its dependable applications advice, with 35 years of experience in air conditioning technology. Through load calculations and energy analysis for CyberCool Chillers, STULZ can assist the planning engineer and system designer with project development.

## Rapid installation and commissioning

CyberCool Chillers are of a compact design that is factory assembled and pre-wired to offer a fully packaged solution ready for connection to power and water services.

This ensures a rapid and uncomplicated installation for the Contractor and very straightforward commissioning. The controls are factory preset and any necessary adjustments to the operating parameters can be carried out on site by following the clear operating instructions provided. In addition, STULZ specialists are happy to assist with commissioning, testing and certification.

- » Expert advice and planning support
- » Rapid installation and commissioning
- » Customer service without delay
- » Professional documentation



## Customer service without delay

CyberCool chillers are manufactured from high-quality materials and components that have been checked and repeatedly tested during production. In the unlikely event of a fault, STULZ customer service is available at all times to ensure the continuous availability of the system.

## Professional documentation

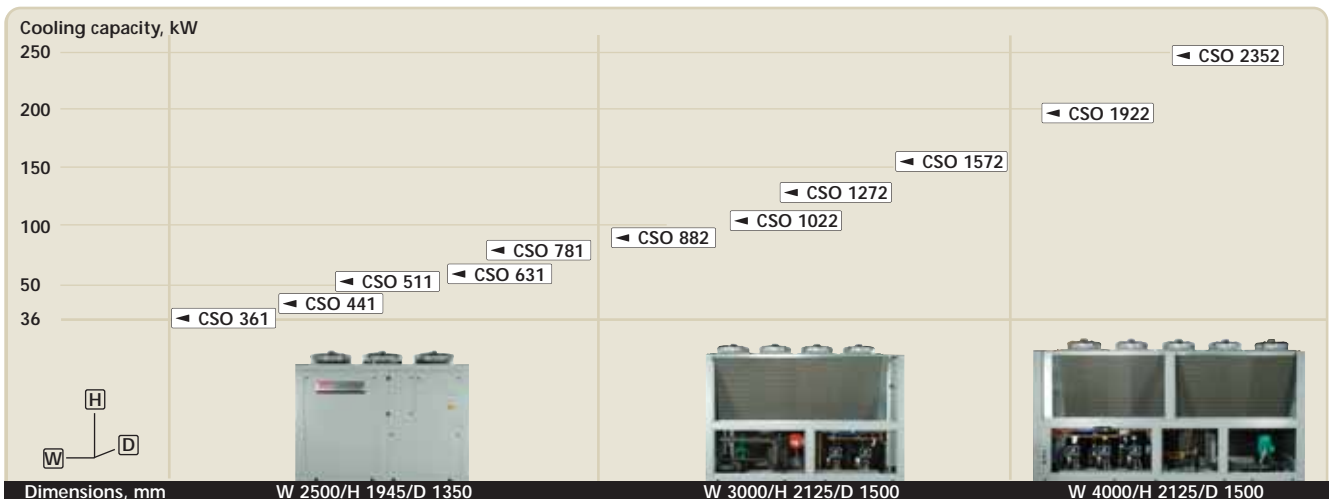
To assist the planning engineer and system designer from tender submission to project completion, STULZ provides professional documentation in form of technical manuals, planning software and layout drawings.





# Technical specifications CSO series CyberCool

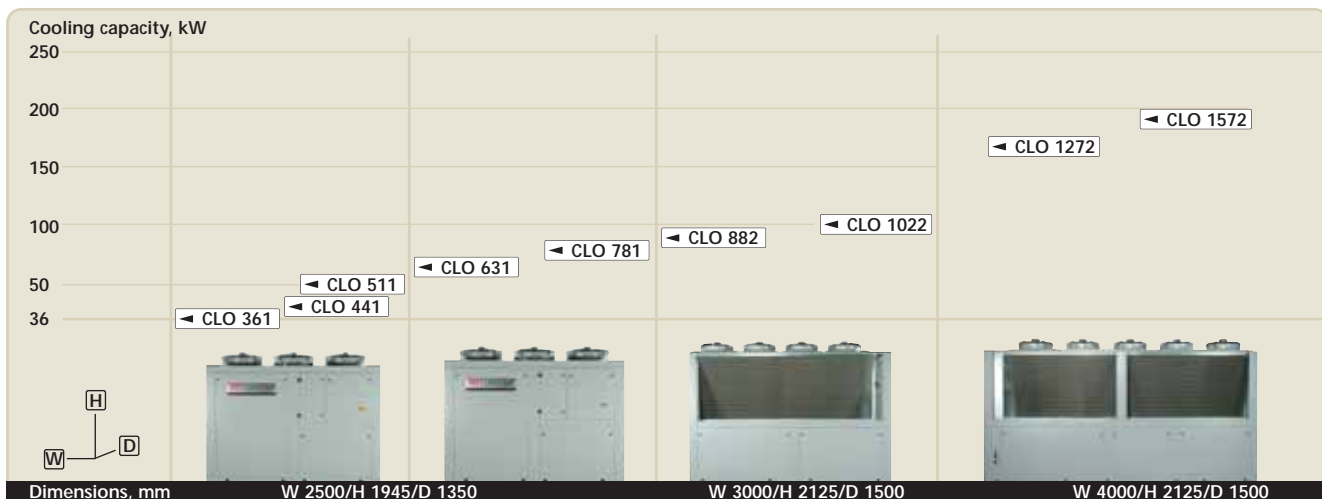
Model	CSO xxx A	361	441	511	631	781	882	1022	1272	1572	1922	2352
<b>Technical specifications:</b>												
Cooling capacity <sup>1)</sup>	kW	36.0	44.4	51.4	63.6	71.9	88.8	102.8	127.2	157.2	192.0	235.0
Performance levels		2	2	2	2	2	4	4	4	4	6	6
<b>Noise data</b>												
Sound level <sup>2)</sup>	dBA	55	56	57	58	59	63	62	62	64	62	65
<b>Compressor</b>												
Compressor type							Scroll					
Number of compressors		2	2	2	2	2	4	4	4	4	6	6
Cooling circuits		1	1	1	1	1	2	2	2	2	2	2
Oil type							Diester oil					
Oil quantity (per circuit)	l	4	4	4	4	4	8	8	8	8	12	12
Energy consumption	kW	11.9	14.3	16.4	20.5	24.6	28.7	32.7	41.0	49.2	61.5	73.7
<b>Coolant</b>												
Coolant type							R407c					
Filling level	kg	16	17.2	18	20	23.5	2 x 16	2 x 17.5	2 x 19	2 x 23	2 x 24.5	2 x 26
<b>Vaporiser</b>												
Vaporiser type							Plate vaporiser					
Cold water quantity	m <sup>3</sup> /h	6.7	8.2	9.5	11.8	13.3	16.5	19.1	23.6	29.2	35.6	43.6
Pressure loss waterside	kPa	57	60	61	56	51	32	36	32	35	42	54
Water connection (inside thread)		DN 50	DN 50	DN 50	DN 50	DN 50	DN 60	DN 60	DN 60	DN 72	DN 72	DN 84
<b>Fan</b>												
Fan type							Axial fan					
Number (A/B) <sup>3)</sup>		3	3	3	3	3	4/8	6/8	8	8	10	10
Nominal power/fan	kW	0.66	0.66	0.66	0.66	0.66	0.86	0.86	0.86	0.86	0.86	0.86
Air quantity	m <sup>3</sup> /h	8,600	11,000	13,200	17,000	22,500	23,300	28,000	36,700	48,500	56,600	75,500
<b>Weight</b>												
Shipping weight	kg	780	780	785	800	840	1,526	1,596	1,675	1,715	2,092	2,210
<b>Elektrical data</b>												
Voltage supply	V/Ph/Hz						380-415/3~/50,N					
Power consumption, max.	kVA	22.7	26.3	29.8	33.9	40.1	51.0	60.3	72.8	84.8	106.7	125.1
Operating current, max.	A	32.7	38.0	43.0	48.9	57.8	74.3	87.6	105.7	123.5	154.6	181.2
Starting current	A	100	116	132	151	181	146	170	199	236	240	284
<sup>1)</sup> Cold water: 7 °C/12 °C/Outside temperature: 35 °C; Glykol: 30 % <sup>2)</sup> Sound level in dBA at 5 m clear distance <sup>3)</sup> A: Standard, B: With optional "free cooling"    Technical data subject to change without notice.												



# Technical specifications CLO series CyberCool

Model	CLO xxx A	361	441	511	631	781	882	1022	1272	1572
<b>Low-energy and low-noise variant</b>										
<b>Technical specifications:</b>										
Cooling capacity <sup>1)</sup>	kW	36.0	44.4	51.4	63.6	71.9	88.8	102.8	127.2	157.2
Performance levels		2	2	2	2	2	4	4	4	4
<b>Noise data</b>										
Sound level <sup>2)</sup>	dBA	48	49	50	50	51	57	60	56	60
<b>Compressor</b>										
Compressor type						Scroll				
Number of compressors		2	2	2	2	2	4	4	4	4
Cooling circuits		1	1	1	1	1	2	2	2	2
Oil type						Diester oil				
Oil quantity (per circuit)	l	4	4	4	4	4	8	8	8	8
Energy consumption	kW	11.9	14.3	16.4	20.5	24.6	28.7	32.7	41.0	49.2
<b>Coolant</b>										
Coolant type						R407c				
Filling level	kg	16	17.2	18	22	25	2 x 16	2 x 17.5	2 x 19	2 x 23
<b>Vaporiser</b>										
Vaporiser type						Plate vaporiser				
Cold water quantity	m <sup>3</sup> /h	6.7	8.2	9.5	11.8	13.3	16.5	19.1	23.6	2.2
Pressure loss waterside	kPa	57	60	61	56	51	36	36	32	35
Water connection (inside thread)		DN 50	DN 50	DN 50	DN 50	DN 50	DN 60	DN 60	DN 60	DN 72
<b>Fan</b>										
Fan type						Axial fan				
Number		3	3	3	3	3	8	8	10	10
Nominal power/fan	kW	0.66	0.66	0.66	0.98	0.98	0.86	0.86	0.86	0.86
Air quantity	m <sup>3</sup> /h	8,600	11,000	13,200	16,500	21,600	23,300	28,000	33,200	43,000
<b>Weight</b>										
Shipping weight	kg	780	780	785	825	865	1.588	1.627	2.006	2.046
<b>Elektrical data</b>										
Voltage supply	V/Ph/Hz					380-415/3-/50,N				
Power consumption, max.	kVA	22.7	26.3	29.8	35.8	41.9	53.5	62.7	75.2	87.5
Operating current, max.	A	32.7	38.0	43.0	51.6	60.5	77.8	91.1	109.2	126.9
Starting current	A	100	116	132	154	183	150	173	200	240

<sup>1)</sup> Cold water: 7 °C/12 °C/Outside temperature: 35 °C; Glykol: 30 %  
<sup>2)</sup> Sound level in dBA at 5 m clear distance      Technical data subject to change without notice.



# STULZ air conditioning technology

## Creating value – implementing visions



### Competency

- » Trend-setting in air conditioning technology
- » International specialist know-how
- » Innovations as client benefit



### Reliability

- » Quality which keeps its promise
- » Promises which are reliable
- » Customer proximity, providing safety



## Globality

- » Global cooperation
- » International production location
- » Global distribution and service network



## Responsibility

- » Forward-looking thought and action
- » Responsibility for people – safety for technology
- » Environmentally aware development – preserving resources

- STULZ Headquarters
- STULZ Subsidiaries
- STULZ Partners
- ▲ STULZ Production sites



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## Globally in your vicinity.

... with competent contact partners in ten German branches and subsidiaries and exclusive sales and service partners globally. Our three production locations are in Europe and North America.

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