STULZ

CLIMATE. CUSTOMIZED.

CyberCool 1

Chiller with Free Cooling for a minimal footprint

The complete range of air conditioning technology – from one source.

For over 40 years, the STULZ family-run company has been synonymous with precision air conditioning at the highest level.

Our solutions for the air conditioning of business-critical applications and sensitive systems have made us a leading company in our industry.

Whether for data centers, industry or communication technology, the STULZ portfolio has a tailor-made cooling solution to suit your requirements.

We guarantee adherence to our uncompromisingly high requirements and quality standards both at our factory in Hamburg and all our production sites around the globe. Moreover, we work hard not only to satisfy our customers' individual wishes, but also to make sure our air conditioning solutions offer maximum energy efficiency and a minimal CO_2 footprint.

Our portfolio extends from traditional room cooling and High Density Cooling to chillers, air handling units and container modules, all the way to micro data centers, service, and our self-developed monitoring software. An all-embracing quality assurance system monitors all the details in development, production, implementation, and service.

Today, STULZ has a presence in more than 140 countries. STULZ GmbH has 21 subsidiaries and eleven production sites in Europe, India, China, and North and South America. We also have partner agreements with numerous sales and service partners on every continent. Our network of highly qualified specialists is a reliable guarantee of the highest standards.

The combined wealth of our experience, values, performance and service is what defines us and is especially valued by our customers. Air conditioning solutions – custom tailored and from one source: **ONE STULZ. ONE SOURCE.**

ONE STULZ. **ONE** SOURCE.

Minimal footprint, maximum cooling capacity

For many years, our CyberCool 1 units have been among STULZ's most energy-saving and reliable chiller solutions. To increase energy efficiency, we have optimized our air cooled chiller and now offer the perfect solutions for applications in small and medium-sized data centers and in industrial and process engineering.

With the Free Cooling function of the CyberCool 1, now applications with a small cooling capacity can also benefit from Free Cooling.

+ Advantages at a glance

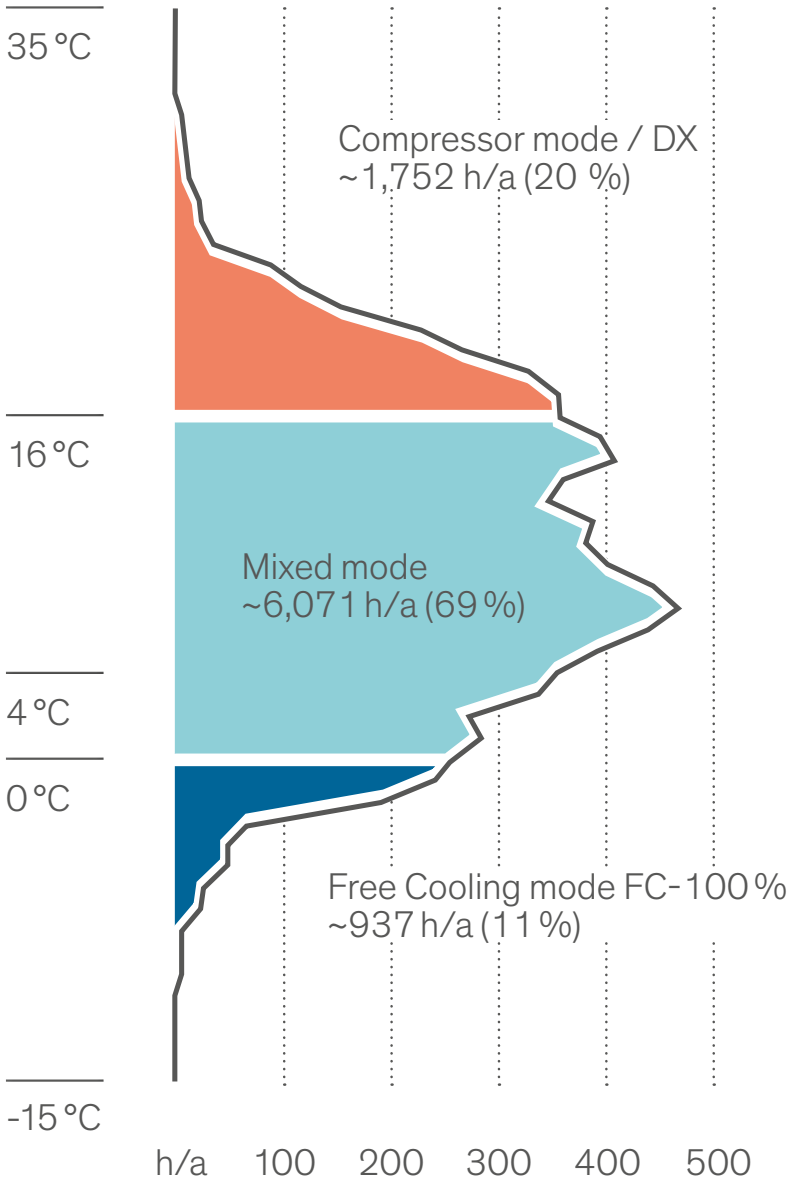
- Maximum potential savings thanks to Free Cooling
- Maximum cooling capacity with a minimal footprint
- Cools reliably and precisely
- Long service life
- Compact design for easier transport and installation
- Large variety of options
- Low-noise version available

Performance test for more transparency

At our test center, you can have CyberCool 1 units tested under your individual operating and site conditions. This creates transparency and confirms the unit's performance and energy consumption.

Free Cooling also for a small cooling capacity

Hamburg



Basis for calculation: 30 % ethylene glycol

Cold water inlet / outlet: 18 °C/12 °C
External air: 35 °C

Free Cooling is an intelligent solution for reducing energy-intensive compressor mode and dramatically cutting operating costs. Cooling with outside air is an excellent way of ensuring the required cooling capacity while simultaneously increasing energy efficiency, especially in temperate climates.

Even the smallest versions of our chiller are available with Free Cooling. This way, you can ensure your applications have the most energy-efficient operation with a small footprint.

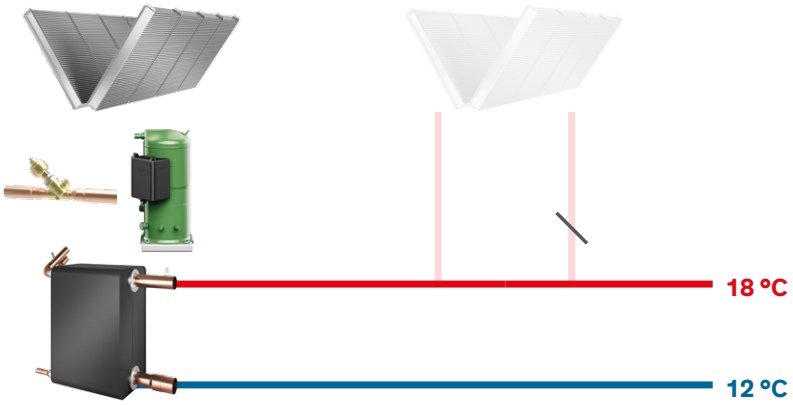
Free Cooling delivers energy savings of up to 40 %.

Operating modes

CyberCool 1 offers three operating modes and always determines the best mode in each case, depending on the outside temperature – reliably throughout the year, whatever the local temperature profile.

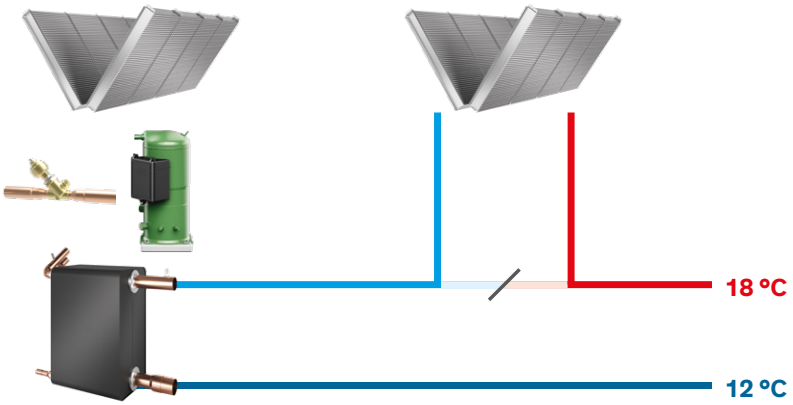
DX mode

At high outside temperatures, the entire cooling capacity is achieved using compressors. Thanks to state-of-the-art components, the CyberCool 1 also works efficiently in this mode.



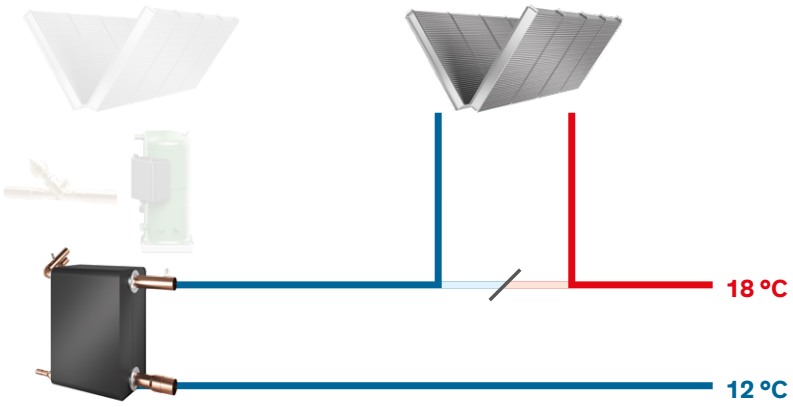
Mixed mode

Mixed mode is a combination of Free Cooling and compressor cooling. This mode uses the Free Cooling coils for pre-cooling the chilled water, and can therefore dramatically reduce the power consumption of the compressors.



Free Cooling

At low outside temperatures, the water is cooled solely by outside air. Energy consumption is reduced to a minimum.



Climate. Customized.
Project-specific adaptations

Thanks to the diverse options and equipment versions available, you can perfectly adapt CyberCool 1 chillers to your particular requirements.

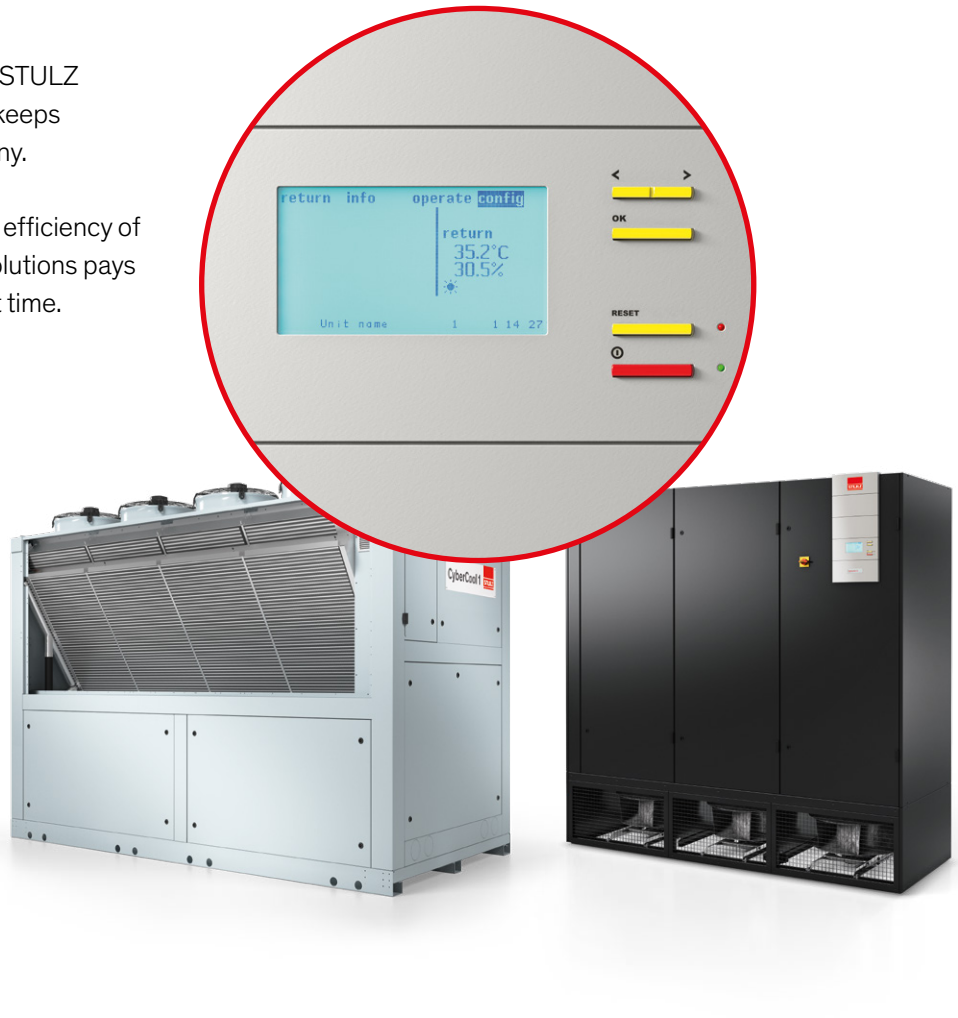
- Free Cooling for maximum potential savings
- Compressor soft start to prevent current spikes
- Winter kit (down to -40 °C)
- Corrosion protection of all heat exchangers against aggressive ambient air, e.g. for installation sites near industrial facilities, by the sea, close to airports, and much more
- Coil protective grill as protection against large dirt particles and vandalism
- Hydraulic pump kits
- Integrated/separate buffer tank
- Frost protection heating (evaporators/buffer tank)
- Other supply voltage
- Summer kit (up to +45 °C)
- Liquid receiver
- Hot-gas bypass
- Rotalock valve on intake/pressure side
- Shock and vibration absorbers for damping vibrations
- And many additional options

System solutions from a single source

CyberCool 1 chillers achieve maximum energy efficiency in combination with STULZ CyberAir 3PRO CW air conditioning units. Each individual solution and component from STULZ has been selected and developed with the aim of reducing operating costs to a minimum.

The C7000 controller developed by STULZ networks and controls all units, and keeps everything working in perfect harmony.

Investing in the quality, reliability and efficiency of STULZ air conditioning and chiller solutions pays off during operation after just a short time.



You can find more information on the CyberAir 3PRO CW on our product page www.stulz.com/cyberair-3pro-cw

Controller

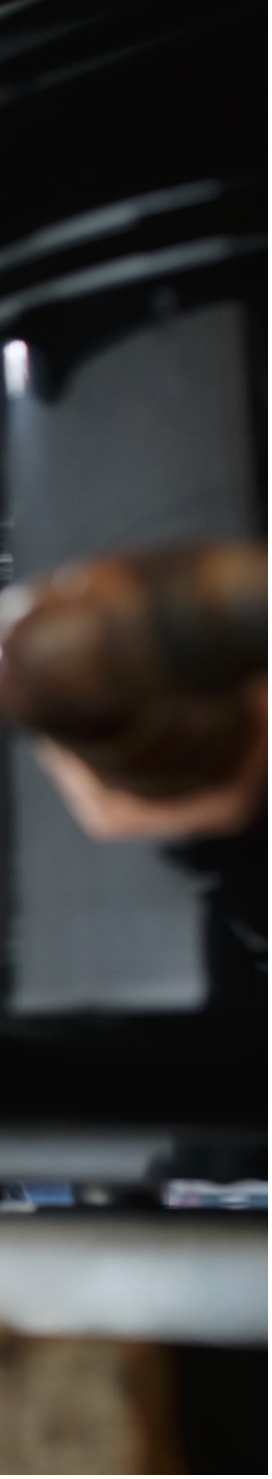
To ensure the highest possible standards when it comes to reliability and efficiency, the controller and chiller must work in perfect harmony. That is why here at STULZ we research and develop our controllers ourselves. The CyberCool 1 is ideal for integration in existing systems and can be controlled to perfection by the STULZ controller.

- Hardware and software developed in-house
- Project-specific software adaptations
- Connection to building automation systems: Compatible with all common BMS protocols
- Several chillers are operated in parallel
- Sequencing for runtime compensation/alarm switching
- Programming of customized emergency routines
- Sophisticated warning and alarm system

Reliability – Made in Germany

High-quality components from a leading brand manufacturer coupled with craftsmanship and engineering skill Made in Germany are a guarantee of high quality and reliable units over their entire lifecycle.

In order to satisfy STULZ quality requirements, CyberCool 1 chillers are subjected to post-production tests for performance, leakage and pressure resistance. This equipment function test is part of each production process, and is performed on our in-house test rig.



Technical data

CyberCool 1

CSO **1922** **A**

CyberCool chiller

Installation
O = outdoor

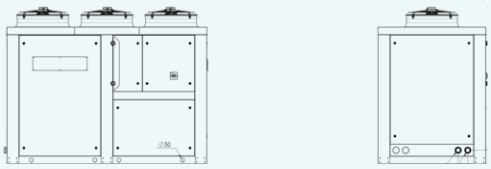
Noise class
S = standard
L = quiet (leise)

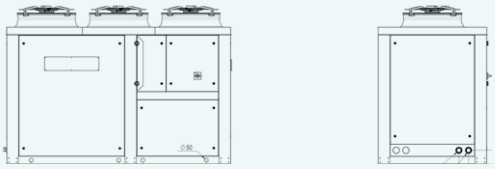
Nominal cooling capacity (kW)

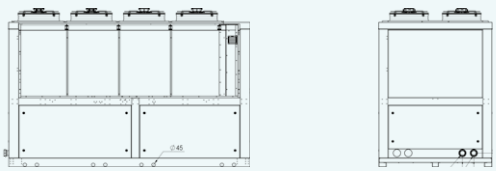
No. of refrigerant circuits
1 = 1 circuit
2 = 2 circuits

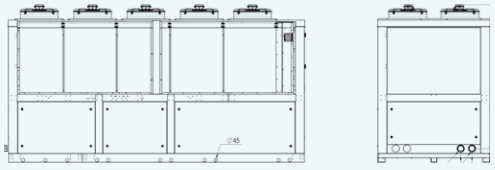
Refrigerant system
A = air cooled

Overview of sizes and nomenclature

BG 1	L × B × H (mm)
	2,500 × 1,350 × 1,945

BG 2	L × B × H (mm)
	2,800 × 1,350 × 1,945

BG 3	L × B × H (mm)
	3,000 × 1,500 × 2,125

BG 4	L × B × H (mm)
	4,000 × 1,500 × 2,125

Technical data

Standard version without Free Cooling

Model		CSO 391 A	CSO 541 A	CSO 601 A	CSO 681 A	CSO 771 A	CSO 1072 A	CSO 1192 A	CSO 1352 A	CSO 1582 A	CSO 2022 A	CSO 2342 A
Operating point 12 °C/7 °C [1]												
Cooling capacity	kW	38.7	52.4	58.6	66	75.5	104	116.2	131.5	154.4	197.9	229.6
Total power consumption	kW	13.9	18.1	20.1	22.3	26.6	37.7	41.8	47.8	54.6	69.7	81
EER		2.78	2.89	2.91	2.96	2.84	2.76	2.78	2.75	2.83	2.84	2.83
Noise												
Noise level at a distance of 1 m [2]	dB(A)	66	67	68	69	70	71	71	71	73	71	73
Dimensions												
Length	mm	2,500	2,500	2,500	2,500	2,500	3,000	3,000	3,000	3,000	4,000	4,000
Width	mm	1,350	1,350	1,350	1,350	1,350	1,500	1,500	1,500	1,500	1,500	1,500
Height	mm	1,945	1,945	1,945	1,945	1,945	2,125	2,125	2,125	2,125	2,125	2,125
Empty weight	kg	720	777	787	806	818	1,466	1,471	1,519	1,546	2,010	2,033
Operating weight	kg	734	792	804	823	839	1,490	1,498	1,550	1,582	2,054	2,080

Noise-reduced version without Free Cooling

Model		CLO 391 A	CLO 541 A	CLO 601 A	CLO 681 A	CLO 771 A	CLO 1192 A	CLO 1352 A	CLO 1582 A
Operating point 12 °C/7 °C [1]									
Cooling capacity	kW	37.9	52.4	58.6	66.1	77.4	116.2	131.8	154.6
Total power consumption	kW	14.3	18.1	20.1	23.2	26.7	43.5	49.3	56.2
EER		2.66	2.89	2.91	2.84	2.9	2.67	2.67	2.75
Noise									
Noise level at a distance of 1 m [2]	dB(A)	59	60	61	61	62	63	62	64
Dimensions									
Length	mm	2,500	2,500	2,500	2,800	2,800	3,000	4,000	4,000
Width	mm	1,350	1,350	1,350	1,350	1,350	1,500	1,500	1,500
Height	mm	1,945	1,945	1,945	1,945	1,945	2,125	2,125	2,125
Empty weight	kg	720	777	787	871	881	1,494	1,759	1,789
Operating weight	kg	734	792	804	890	901	1,520	1,794	1,828

Comments:

Unless otherwise specified, all data are based on standard versions of the units.

[1] Chilled water inlet/outlet: 12 °C/7 °C, outside air: 35 °C, ethylene glycol: 30 %

[2] Noise level at a distance of 1 m in free-field conditions (to ISO 3744)

Standard version with Free Cooling

Model		CSO 391 A	CSO 541 A	CSO 601 A	CSO 681 A	CSO 771 A	CSO 1072 A	CSO 1192 A	CSO 1352 A	CSO 1582 A	CSO 2022 A	CSO 2342 A
Operating point 12 °C/7 °C [1]												
Cooling capacity	kW	38.7	52.4	58.6	66	75.5	104	116.2	131.5	154.4	197.9	229.6
Total power consumption	kW	13.9	18.1	20.1	22.3	26.6	37.7	41.8	47.8	54.6	69.7	81
EER		2.58	2.73	2.76	2.82	2.73	2.69	2.71	2.68	2.76	2.77	2.78
Noise												
Noise level at a distance of 1 m [2]	dB(A)	66	67	68	69	70	71	71	71	73	71	73
Dimensions												
Length	mm	2,500	2,500	2,500	2,500	2,500	3,000	3,000	3,000	3,000	4,000	4,000
Width	mm	1,350	1,350	1,350	1,350	1,350	1,500	1,500	1,500	1,500	1,500	1,500
Height	mm	1,945	1,945	1,945	1,945	1,945	2,125	2,125	2,125	2,125	2,125	2,125
Empty weight	kg	720	777	787	806	818	1,466	1,471	1,519	1,546	2,010	2,033
Operating weight	kg	734	792	804	823	839	1,490	1,498	1,550	1,582	2,054	2,080

Noise-reduced version with Free Cooling

Model		CLO 391 A	CLO 541 A	CLO 601 A	CLO 681 A	CLO 771 A	CLO 1192 A	CLO 1352 A	CLO 1582 A
Operating point 12 °C/7 °C [1]									
Cooling capacity	kW	37.9	52.4	58.6	66.1	77.4	116.2	131.8	154.6
Total power consumption	kW	14.3	18.1	20.1	23.2	26.7	34.5	49.3	56.2
EER		2.47	2.73	2.76	2.82	2.88	2.59	2.58	2.67
Noise									
Noise level at a distance of 1 m [2]	dB(A)	59	60	61	61	62	63	62	64
Dimensions									
Length	mm	2,500	2,500	2,500	2,800	2,800	3,000	4,000	4,000
Width	mm	1,350	1,350	1,350	1,350	1,350	1,500	1,500	1,500
Height	mm	1,945	1,945	1,945	1,945	1,945	2,125	2,125	2,125
Empty weight	kg	720	777	787	871	881	1,494	1,759	1,789
Operating weight	kg	734	792	804	890	901	1,520	1,794	1,828

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Close to you around the world

With specialist, competent partners in ten German branches and in subsidiaries and exclusive sales and service agents around the world.
Our eleven production sites are situated in Europe, North America and Asia.

For further information, please visit our website at **www.stulz.com**

You can find out more on our website.