

MiniSpace EC

Reliable and efficient cooling of small heat loads

Efficiency from STULZ

Rooms exposed to high thermal loads need constant climatic conditions in order to function reliably. If you need precise, reliable and cost effective air conditioning for small equipment and server rooms, the MiniSpace EC series is an energy efficient and long-lasting series that fits the bill. These units cool more efficiently, more reliably and more sustainably than conventional comfort air conditioning systems. They occupy little floor space, and their compact size means they can be integrated in existing server rooms without problem.



+ Advantages at a glance

- Maximum cooling capacity with a minimal footprint
- High operational reliability with continuous operation 24/7, 365 days a year
- EC fans for maximum energy efficiency
- Precise regulation of room temperature and air humidity

Precise control for maximum reliability

To ensure the highest possible standards in reliability and efficiency, the control system and air conditioning unit must work in perfect harmony. That is why here at STULZ we research and develop our controllers ourselves.

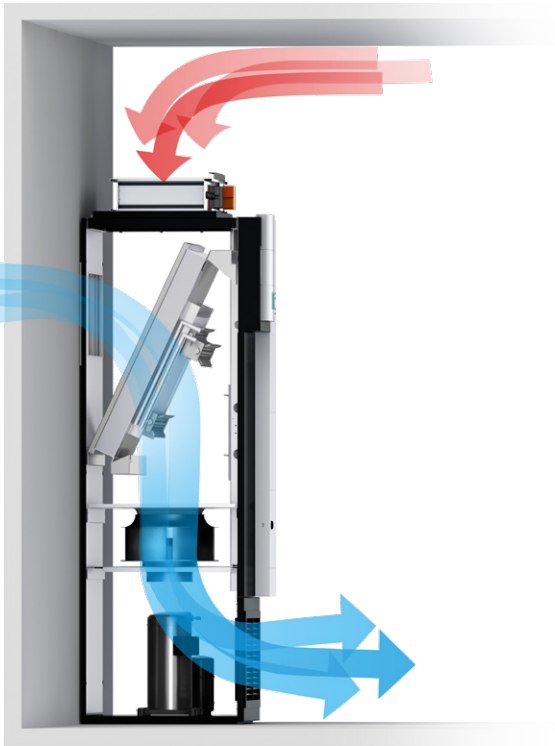


- Project-specific software development and optimization
- Compatible with all common BMS protocols
- Runtime comparison and alarm switching ensure availability
- Several air conditioning units can be operated in parallel across machines
- Sophisticated warning and alarm system

Maximum potential savings with Eco-Cool option

Thanks to Direct Free Cooling, MiniSpace EC units with Eco-Cool option provide up to 90% more efficient air conditioning than conventional compressor cooling systems. To achieve this, applications with extended temperature and humidity tolerances are required.

Direct Free Cooling exploits the potential of outside temperatures to air condition the data center directly using cool outside air. This way, the outside air is treated by filter systems and gets directly into the server room via the MiniSpace unit.



To maximize the huge potential savings offered by Direct Free Cooling, the MiniSpace EC with Free Cooling option features a pre-installed outside air and circulating air damper, and can be mounted directly on the wall. With this option, Free Cooling is automatically combined with compressor cooling in four variable stages to suit the outside temperature and cooling needs, ensuring that maximum savings are always exploited to the full:

1. Free Cooling

- Outside air damper open
- Outside air flows through the filter directly into the unit, then into the data center
- Compressor off

2. Extended Free Cooling

- Outside air damper open
- The use of variable-speed fans keeps the cooling capacity constant by increasing the airflow, additionally extending the Free Cooling time
- Compressor off

3. Mixed mode

- Outside air damper open
- Fans deliver the maximum airflow
- Compressor is switched on

4. DX mode

- Outside air damper closed
- The unit works in compressor mode



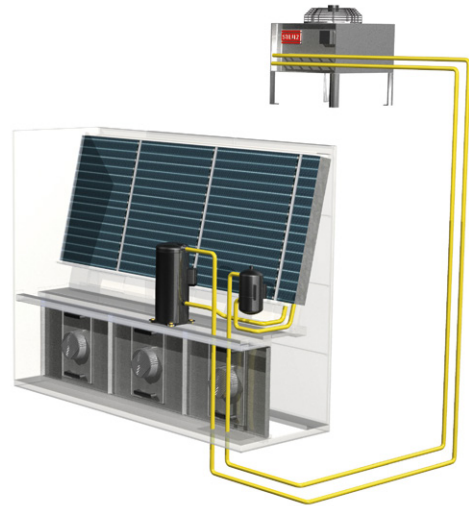
Customized refrigeration systems

STULZ is the world's only manufacturer to offer such a huge bandwidth of configuration options, with the result that every unit can be adapted to project-specific requirements. The MiniSpace EC is available in three different systems, to help you achieve the ideal balance between investment, operating costs and energy efficiency.

Air-cooled system (A):

The compact standard solution with air-cooled condenser based on the direct evaporator principle

Heat is extracted from the room air as it flows through the evaporator, and is then transferred to the refrigerant. The air conditioning unit and condenser are connected to one another by a closed refrigerant circuit. The refrigerant emits the heat to the outside air via the air-cooled condenser.



Water-cooled system (G):

Simple heat dissipation via a water/glycol mixture

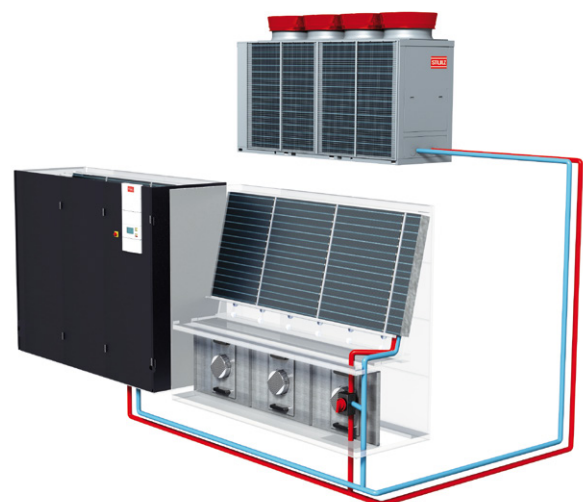
Our water-cooled system works like the air-cooled system, with one difference: the heat from the refrigerant circuit is transferred to a cooling water circuit by a brazed plate condenser integrated in the air conditioning unit, and is discharged into the outside air via an external dry cooler.



Chilled water system (CW):

Chiller for efficient cooling

Units with a chilled water system manage without a refrigerant circuit of their own, but require a separate chilled water generator. The room air conveyed by the fan flows through the direct cooling unit, which transfers heat to the water/glycol mixture. A chiller removes the heat from this water/glycol mixture. The air conditioning unit and chiller are connected to one another by a closed water/glycol circuit.



MiniSpace EC facts & figures

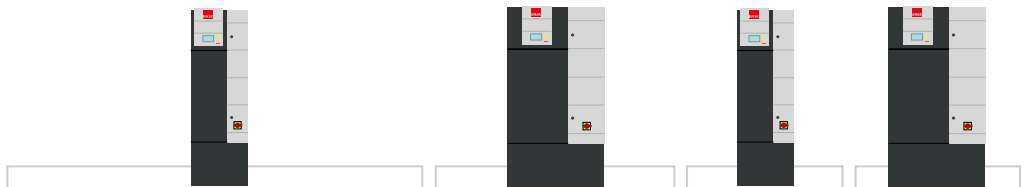
Features

- Cooling capacity range from 6 kW to 32 kW
- Available in 2 sizes
- Available in 3 refrigeration systems
- Downflow and Upflow versions of units
- Simple installation and maintenance via door on the front
- Air filtering with filter class G 4
- Filter control manager for a constant airflow
- ModBus onboard for integration in the building services management system

Options

- C7000 Advanced user interface with graphic LCD
- Communication via SNMP/HTTP IP protocols
- Humidifier/heater
- Winter Start Kit
- Smoke and fire alarms
- Eco-Cool with Direct Free Cooling
- R134a high-temperature refrigerant

Technical data



Model		CCD/U 51 A/G	CCD/U 71 A/G	CCD/U 91 A/G	CCD/U 131 A/G	CCD/U 151 A/G	CCD/U 181 A/G	CCD/U 221 A/G	CCD/U 251 A/G	CCD/U 100 CW	CCD/U 150 CW	CCD/U 190 CW	CCD/U 250 CW
Airflow	m ³ /h	2,500	2,500	2,500	3,500	3,500	7,000	7,000	8,000	2,300	3,600	5,500	7,500
DX cooling capacity (total) ¹⁾	kW	6.4	7.5	9.6	12.1	13.9	18.1	21.9	26.0	-	-	-	-
CW cooling capacity (total) ²⁾	kW	-	-	-	-	-	-	-	-	11.0	15.0	23.4	31.8
Downflow													
Noise ³⁾	dB(A)	49	49	49	57	57	58	58	60	44	61	48	56
Upflow													
Noise ³⁾	dB(A)	52	52	52	59	59	59	59	62	47	63	51	58
Dimensions (HxWxD)	mm	1,850x600x600					1,850x1,000x810			1,850x600x600		1,850x1,000x810	
Humidifier and heating capacity													
Max. humidifier capacity	kg/h	3					3			3		3	
Max. possible heating steps		2					2			2		2	
Max. overall heating capacity	kW	4					12			4		12	

Comments: All data applies at 400 V/3 ph/50 Hz

¹⁾ DX cooling capacity for A/G units; return air conditions: 24°C, 50% r. h.; condensing temperature 45°C

²⁾ CW cooling capacity for CW units; return air conditions: 24°C, 50% r. h.; water temperature: 7°C/12°C; glycol fraction: 0%

³⁾ Noise level measured at a distance of 1 m in free-field conditions

Technical data subject to change without notice.

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Our ten production sites are situated in Europe, North America and Asia.

