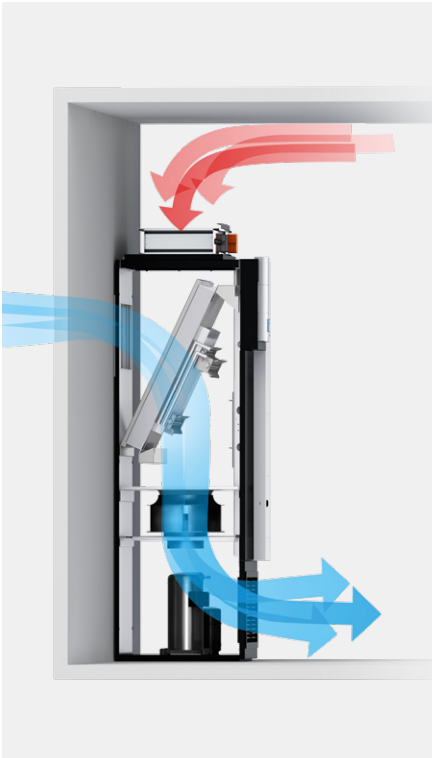


**STULZ**

CLIMATE. CUSTOMIZED.



# 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.

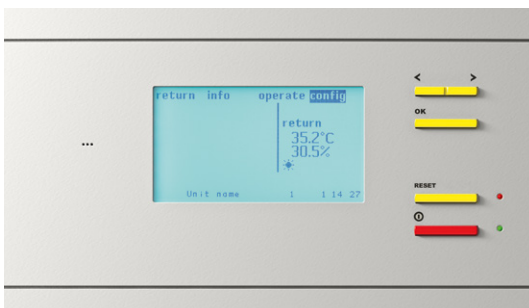
## + Advantages at a glance

- 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

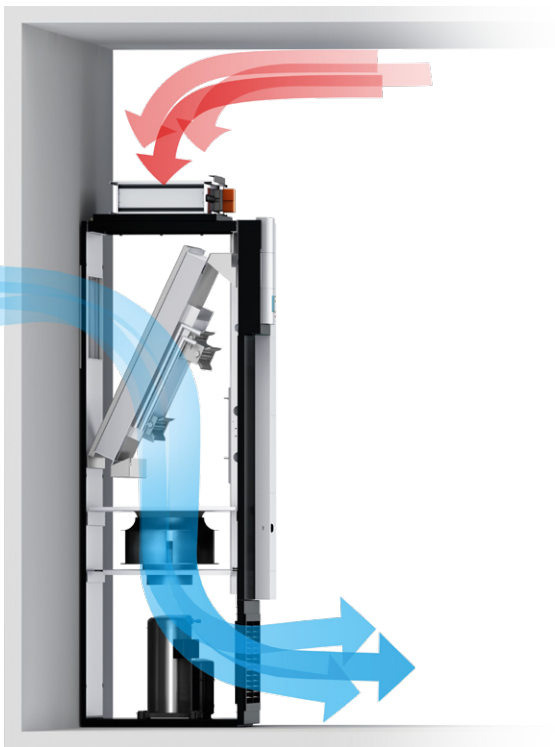
- Outside air damper open
- The use of variable-speed fans keeps the cooling capacity constant by increasing the airflow, additionally extending the Free Cooling time
- Compressor off

## 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



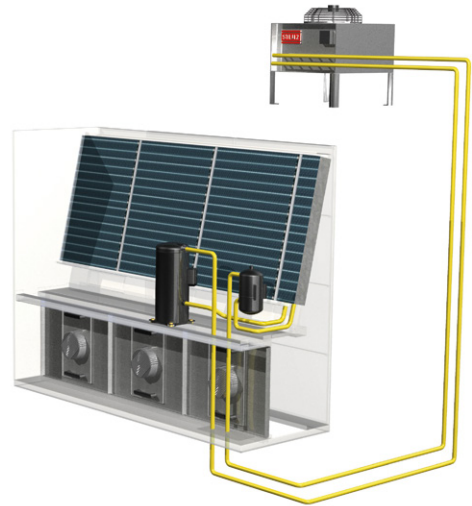
# Customized refrigeration systems

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**

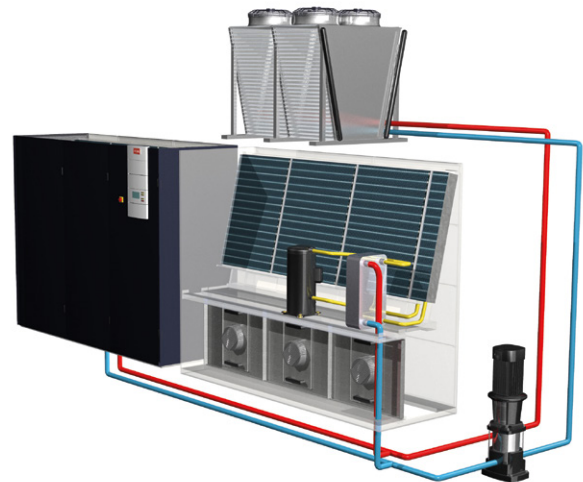
Heat is extracted from the room air as it flows through the evaporator, and is then transferred to the refrigerant. The air conditioning unit and condenser are connected to one another by a closed refrigerant circuit. The refrigerant emits the heat to the outside air via the air-cooled condenser.



## **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

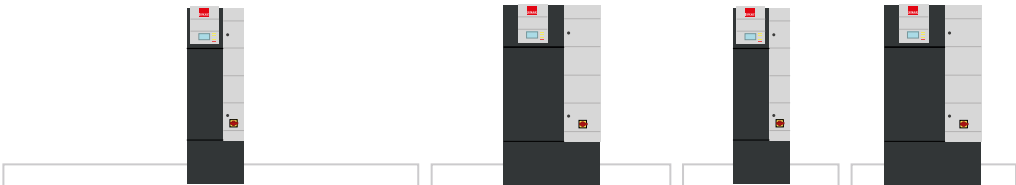
## Features

- 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	m³/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) <sup>1)</sup>	kW	6.4	7.5	9.6	12.1	13.9	18.1	21.9	26.0	-	-	-	-
CW cooling capacity (total) <sup>2)</sup>	kW	-	-	-	-	-	-	-	-	11.0	15.0	23.4	31.8
Downflow													
Noise <sup>3)</sup>	dB(A)	49	49	49	57	57	58	58	60	44	61	48	56
Upflow													
Noise <sup>3)</sup>	dB(A)	52	52	52	59	59	59	59	62	47	63	51	58
Dimensions (HxWxD)	mm	1,850x600x600					1,850x 1,000x810			1,850x600x600		1,850 x 1,000x810	
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  
<sup>1)</sup> DX cooling capacity for A/G units; return air conditions: 24 °C; 50 % r. h.; condensing temperature 45 °C  
<sup>2)</sup> CW cooling capacity for CW units; return air conditions: 24 °C; 50 % r. h.; water temperature: 7 °C/12 °C; glycol fraction: 0 %  
<sup>3)</sup> Noise level measured at a distance of 1 m in free-field conditions  
Technical data subject to change without notice.

## GERMANY

### STULZ GmbH – Company Headquarters

Holsteiner Chaussee 283  
22457 Hamburg  
Tel. +49 40 5585 0  
products@stulz.de

## STULZ Subsidiaries

### // AUSTRALIA

#### STULZ Oceania Pty Ltd

34 Bearing Rd,  
Seven Hills NSW 2147  
Tel.+61 2 96744700  
sales@stulz.com.au

### // AUSTRIA

#### STULZ Austria GmbH

IZ NÖ Süd, Str. 15, Obj. 77 Stg. 4 Top 7  
2355 Wr. Neudorf  
Tel.+43 1 6159981 0  
info@stulz.at

### // BELGIUM

#### STULZ Belgium BV

Tervurenlaan 34, 1040 Brussels  
Tel.+32 0 78054511  
info@stulz.be

### // BRAZIL

#### STULZ Brasil Ar Condicionado Ltda.

Rua Cançioneiro de Évora, 140 - Bairro  
Santo Amaro São Paulo-SP, CEP 04708-010  
Tel.+55 11 41634989  
comercial@stulzbrasil.com.br

### // CHINA

#### STULZ Air Technology and Services Shanghai Co., Ltd.

No.4569,Huaning Road, Minhang District,  
Shanghai 201108  
Tel:+ 86 21 33607101  
info@stulz.cn

### // FRANCE

#### STULZ France S. A. R. L.

7 rue Eugene et Armand PEUGEOT  
92500 Rueil Malmaison  
Tel.+33 1 34804770  
info@stulz.fr

### // INDIA

#### STULZ-CHSPL (India) Pvt. Ltd.

006, Jagruti Industrial Estate  
Mogul Lane, Mahim, Mumbai - 400 016  
Tel.+91 22 56669446  
info@stulz.in

### // INDONESIA

#### PT STULZ Air Technology Indonesia

Kebayoran Square blok KQ unit A-01  
Jl. Boulevard Bintaro Jaya, Bintaro Sektor 7  
Tangerang Selatan 15229  
Tel.+62 21 22213982  
info@stulz.id

### // IRELAND

#### STULZ IRELAND LTD.

Unit 15, Park West Road,  
Park West  
Dublin 12  
info@stulz.ie

### // ITALY

#### STULZ S.p.A.

Via Torricelli, 3  
37067 Valeggio sul Mincio (VR)  
Tel.+39 45 6331600  
info@stulz.it

### // MEXICO

#### STULZ México S.A. de C.V.

Av. Santa Fe No. 170, Of. 2-2-08 German Centre  
Col. Lomas de Santa Fe, Del. Alvaro Obregón  
01210, Cd. de México  
Tel.+52 55 52928596  
ventas@stulz.com.mx

### // NETHERLANDS

#### STULZ GROEP B. V.

Weverij 7-9,  
AMSTELVEEN 1185 ZE  
Tel.+31 20 5451111  
info@stulz.nl

### // NEW ZEALAND

#### STULZ Oceania Limited

Unit O, 20 Cain Road  
Penrose, Auckland 1061  
Tel.+64 9 3603232  
sales@stulz.co.nz

### // POLAND

#### STULZ Polska SP. Z O.O.

Al. Jerozolimskie 162  
02-342 Warszawa  
Tel.+48 22 8833080  
info@stulz.pl

### // SINGAPORE

#### STULZ Singapore Pte Ltd.

150 Kampong Ampat  
#05-04 KA Centre, Singapore 368324  
Tel.+65 67492738  
sales@stulz.sg

### // SOUTH AFRICA

#### STULZ South Africa Pty. Ltd.

Clearwater Corporate Office Park South  
Block H, Building 8 Ground Floor,  
Parkhaven, Ext 8 Boksburg, Gauteng 1459  
Tel.+27 11 3972363  
aftersales@stulz.co.za

### // SPAIN

#### STULZ España S.A.

Calle Carabaña, 25C  
28925 Alcorcón (Madrid)  
Tel.+34 91 5178320  
info@stulz.es

### // SWEDEN

#### STULZ Nordics AB

Sigfridsvägen 4  
126 50 Hågersten, Stockholm  
Tel. +46 8 12157550  
info@stulz-nordics.com

### // UNITED KINGDOM

#### STULZ UK Ltd

64 Barwell Business Park, Leatherhead Road  
Chessington, Surrey KT9 2NY  
Tel.+44 1372749666  
sales@stulz.co.uk

### // USA

#### STULZ AIR TECHNOLOGY SYSTEMS (STULZ USA), INC.

1572 Tilco Drive  
Frederick, MD 21704  
Tel.+1 301 6202033  
info@stulz-ats.com

## Close to you around the world

With specialist, competent partners in 140 countries, 21 subsidiaries,  
11 production sites and exclusive sales and service agents around the world.

For further information, please visit our website at [www.stulz.com](http://www.stulz.com)  
or download our **STULZ Products and Services** app.