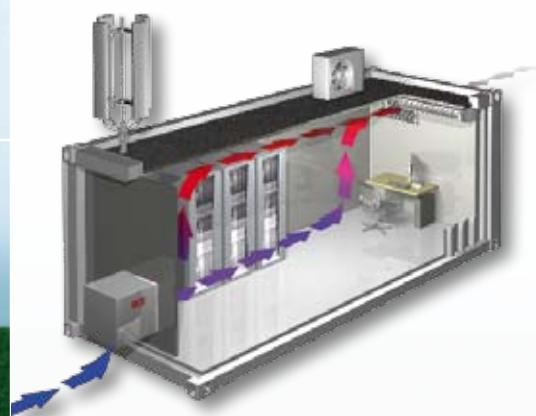


IT Cooling Solutions



# Free-Air-3 Telecom-Line

**STULZ**

# Free-Air – The proven energy-saving solution for telecommunications infrastructure

With its Telecom Line, STULZ offers a range of professional air-conditioning solutions for the telecommunications infrastructure and for switch cabinets. All units are designed for operation 24/7, 365 days a year, and promise maximum reliability and availability. Service is assured through a worldwide network of specialist partners and branches.

Even today, comfort air-conditioning units are still used for cooling in many shelters. This means that the possibilities of free cooling are not exploited, and unnecessarily large amounts of energy are used for air conditioning. Now, with our **Free-Air** free cooling unit, these telecommunication networks can be equipped with an energy-efficient system. The existing comfort air-conditioning units are monitored and controlled by the STULZ C102/C103 microprocessor. Whenever the ambient temperature allows, free cooling mode is activated and the comfort air-conditioning units are switched off.

The use of free cooling offers potential energy savings of up to 84 %. In this way, the investment cost for this solution – which is universally suitable for retrofitting – is frequently paid off within just a year.

The FCL is fitted to the outside of the container, so that the interior space can be utilised to the full. For the exhaust air, a second cut-out with exhaust air flap is required next to the fresh air supply cut-out in the container, above which the FCL is mounted.

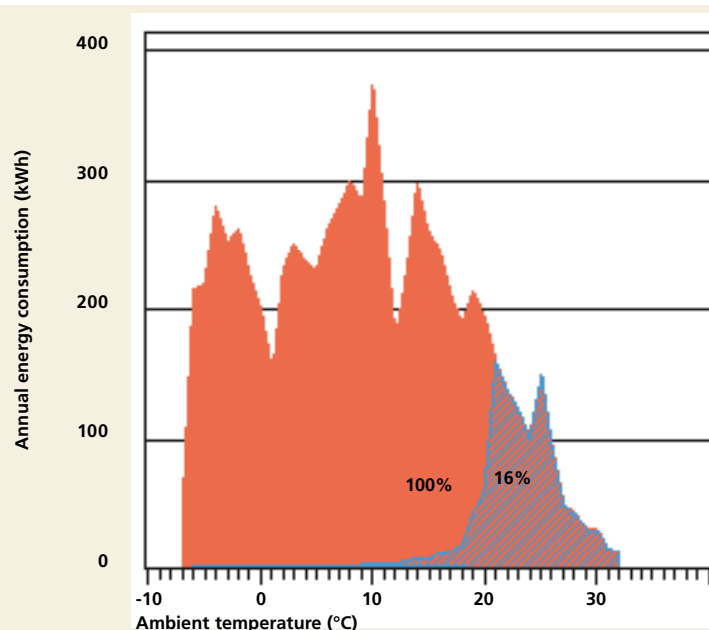
## Information on backup operation

During normal operation, Free-Air provides energy-saving cooling with a reduced airflow. If a comfort unit shuts down because of a fault, Free-Air takes over and continues to provide cooling in backup mode with the maximum airflow.



FCL without frontpanel

■ Energy consumption of a system with free cooling  
■ Energy consumption of a comfort A/C unit without free cooling  
The example shows a 3.5 kW unit, with the temperature profile of the city of Frankfurt.



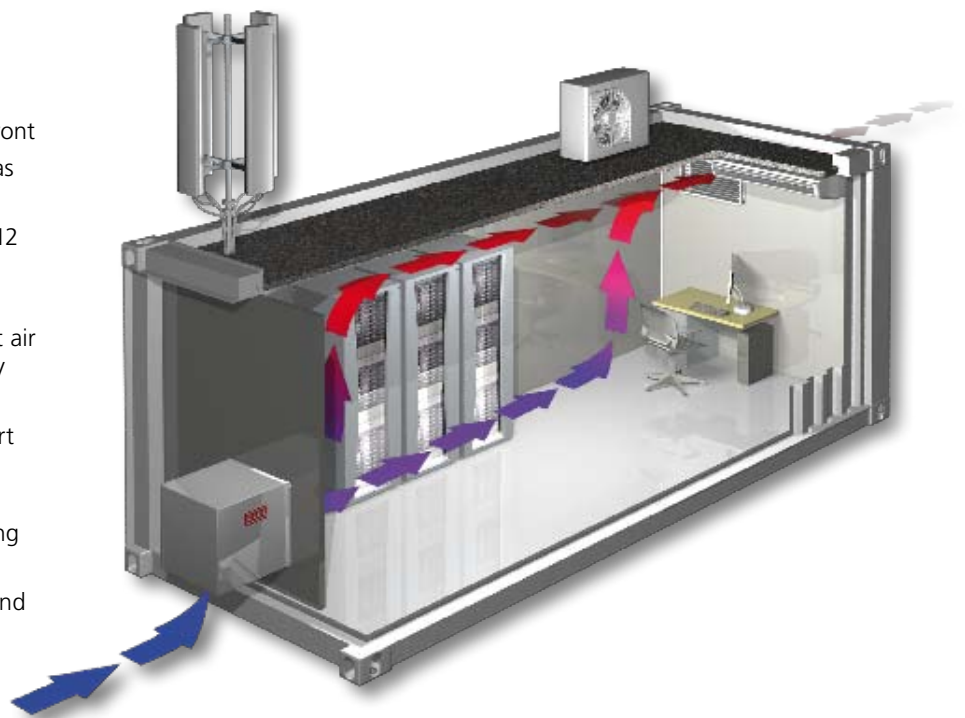
## Technical features

- Cooling capacity scalable up to 12 kW by combining several Free-Air units
- Ready for operation on the very first day – easy mechanical and electrical installation
- Existing comfort A/C units can be integrated with ease, with remote On/Off thanks to the Free-Air control system
- Management of up to two comfort A/C units
- Ambient temperature value can be varied for free cooling mode
- EC fan with stepless control from 10 to 100 %
- G4 air filters
- Insulated, powder-coated housing of galvanised sheet steel
- Full service accessibility from the front
- 48 VDC power supply allows use as an emergency backup system
- Cooling capacity scalable to up to 12 kW by combining two FCL60s for maximum airflow
- Easy integration of existing comfort air conditioners. To this aim, the C102/ C103 FreeAir controller is equipped with relays, which allow the comfort air conditioners to be activated or deactivated via the power supply, depending on the amount of cooling power required
- Measurement of DC power input and optional forwarding via BMS

- Monitoring of DC voltage with fan stop if the voltage drops below a minimum level
- On AC mains power failure, the FCL fan speed can be automatically reduced to extend the battery runtime
- The filter alarm can be triggered by differential pressure or via a manually adjustable fan operating time
- Semi-automatic start-up test for checking the FCL components

## Options

- Aluminium or stainless steel housing
- Humidity switch
- Connection to building services management systems (BMS)
- Weather-proofed excess pressure louver
- Simple comfort units are controlled by the power supply by means of an external contactor
- Paper and leaf guard for fitting to the air intake



Free-Air		FCL35	FCL60
Cooling capacity <sup>1)</sup>	kW	3.5	6.0
Airflow	m <sup>3</sup> /h	1,050	1,724
Power input	kW	0.036	0.12
EER cooling <sup>1)</sup>		97.2	50.0
Noise level, outside <sup>2)</sup>	dB(A)	44	46
Backup operation <sup>1)</sup> Airflow	m <sup>3</sup> /h	2,300	3,400
Power consumption	kW	0.236	0.420
No. of fans/Type		1/EC fan	1/EC fan
Height	mm	604	682/604
Width	mm	720	730/720
Depth	mm	612	609/602
Weight	kg	35	70
Electrical power supply	V DC	48	48

<sup>1)</sup> Inside temperature 30 °C /rel. humidity 40 % /ambient temperature 20 °C  
<sup>2)</sup> Noise level at 1 m distance, free-field conditions  
**Technical data subject to change without notice.**

## STULZ Company Headquarters

**D** **STULZ GmbH**  
Holsteiner Chaussee 283 · 22457 Hamburg  
Tel.: +49(40)55 85-0 · Fax: +49(40)55 85-352 · [products@stulz.de](mailto:products@stulz.de)

## STULZ Subsidiaries

**AUS** **STULZ AUSTRALIA PTY. LTD.**  
34 Bearing Road · Seven Hills NSW 21 47  
Tel.: +61(2)96 74 47 00 · Fax: +61(2)96 74 67 22 · [sales@stulz.com.au](mailto:sales@stulz.com.au)

**CN** **STULZ AIR TECHNOLOGY SYSTEMS (SHANGHAI) CO., LTD.**  
No. 999 Shen Fu Road, Min Hang District · Shanghai 201108 · P.R. China  
Tel.: +86(21) 54 83 02 70 · Fax: +86(21)54 83 02 71 · [info@stulz.cn](mailto:info@stulz.cn)

**E** **STULZ ESPAÑA S.A.**  
Avenida de los Castillos 1034 · 28918 Leganés (Madrid)  
Tel.: +34(91)517 83 20 · Fax: +34(91)517 83 21 · [info@stulz.es](mailto:info@stulz.es)

**F** **STULZ FRANCE S. A. R. L.**  
107, Chemin de Ronde · 78290 Croissy-sur-Seine  
Tel.: +33(1)34 80 47 70 · Fax: +33(1)34 80 47 79 · [info@stulz.fr](mailto:info@stulz.fr)

**GB** **STULZ U. K. LTD.**  
First Quarter · Blenheim Rd. · Epsom · Surrey KT 19 9 QN  
Tel.: +44(1372)74 96 66 · Fax: +44(1372)73 94 44 · [sales@stulz.co.uk](mailto:sales@stulz.co.uk)

**I** **STULZ S.P.A.**  
Via Torricelli, 3 · 37067 Valeggio sul Mincio (VR)  
Tel.: +39(045)633 16 00 · Fax: +39(045)633 16 35 · [info@stulz.it](mailto:info@stulz.it)

**IN** **STULZ-CHSPL (INDIA) PVT. LTD.**  
006, Jagruti Industrial Estate · Mogul Lane, Mahim · Mumbai · 400 016  
Tel.: +91(22) 56 66 94 46 · Fax: +91(22) 56 66 94 48 · [info@stulz.in](mailto:info@stulz.in)

**NL** **STULZ GROEP B. V.**  
Postbus 75 · 1180 AB Amstelveen  
Tel.: +31(20)54 51 111 · Fax: +31(20)64 58 764 · [stulz@stulz.nl](mailto:stulz@stulz.nl)

**NZ** **STULZ NEW ZEALAND LTD.**  
Office 71, 300 Richmond Rd. · Grey Lynn · Auckland  
Tel.: +64(9)360 32 32 · Fax: +64(9)360 21 80 · [sales@stulz.co.nz](mailto:sales@stulz.co.nz)

**PL** **STULZ POLSKA SP. Z O.O.**  
Budynek Mistral · Al. Jerozolimskie 162 · 02 – 342 Warszawa  
Tel.: +48(22)883 30 80 · Fax: +48(22)824 26 78 · [info@stulz.pl](mailto:info@stulz.pl)

**USA** **STULZ AIR TECHNOLOGY SYSTEMS (SATS), INC.**  
1572 Tilco Drive · Frederick, MD 21704  
Tel.: +1(301)620 20 33 · Fax: +1(301)662 54 87 · [info@stulz-ats.com](mailto:info@stulz-ats.com)

**ZA** **STULZ SOUTH AFRICA PTY. LTD.**  
P.O.Box 15687 · Lambton 1414 · Gauteng  
Tel.: +27(11)873 68 06 · Fax: +27(11)873 31 36 · [aftersales@stulz.co.za](mailto:aftersales@stulz.co.za)

## IT Cooling Solutions

### Close to you all over the world.

... With specialist, competent partners in our subsidiaries and exclusive sales and service partners around the world. Our five production sites are in Europe, North America and Asia.