



STULZ the natural choice

CyberAir 2 – The New Generation

Energy efficient air conditioning for data centres





Stable conditions for sensitive technology

For decades, data centre operators worldwide have been relying on STULZ when it comes to ensuring maximum availability through precision cooling. Nevertheless, cooling needs energy, and that is something that is becoming more and more expensive.

Innovation based on experience

Installing air conditioning technology in data centres can often be a complex construction project. STULZ's refrigeration and air conditioning engineers can call on technical expertise and 35 years of experience in planning, installation and maintenance.

CyberAir 2 Support & Service

- » Planning support: Efficiency calculations, system configuration, tender texts
- » Installation: Standard door format, pre-configured, rapid commissioning, extensive technical documentation
- » Maintenance: STULZ service, fine tuning and maintenance intervals on display, easy front access for all components

STULZ CyberAir 2: Innovative energy efficiency

The new DFC automatic climate control system and the flow-optimised housing improve the energy efficiency of the CyberAir 2 system by up to 60%.

Perfect control provides maximum security

In case of faults, the CyberAir 2 automatically engages the standby units and issues an alarm by SMS or e-mail. The system indicates when the filter needs replacing and the pressure management feature prevents superfluous maintenance work.

Total networking thanks to cooling processor

At the heart of the CyberAir 2 system is the intelligent STULZ C7000 electronic controller. This networks all air conditioning components and can be linked to building services systems and to the Internet.

STULZ CyberAir 2: Flexible and compact

- » 7 cooling systems
- » 5 sizes
- » up to 31 air conditioning units per system

60% more economical thanks to STULZ DFC automatic climate control system

The exceptionally economical hybrid version of the CyberAir 2 is fitted with STULZ's innovative DFC automatic climate control system. Compared to pure compressor cooling systems, DFC reduces energy consumption by up to 60%.



Fully electronic savings with DFC

The DFC automatic climate control system sensitively selects the mode offering optimum consumption, controls the speed of the EC fans, reduces the power consumption of the pumps and provides precision climate control.

Fully hybrid with indirect free cooling

At low outside temperatures, DFC uses economical indirect free cooling, in which the entire cooling capacity is obtained from the outside air. Energy-intensive compressor cooling (DX) is only activated when it is really necessary.

Thermal load controls free cooling

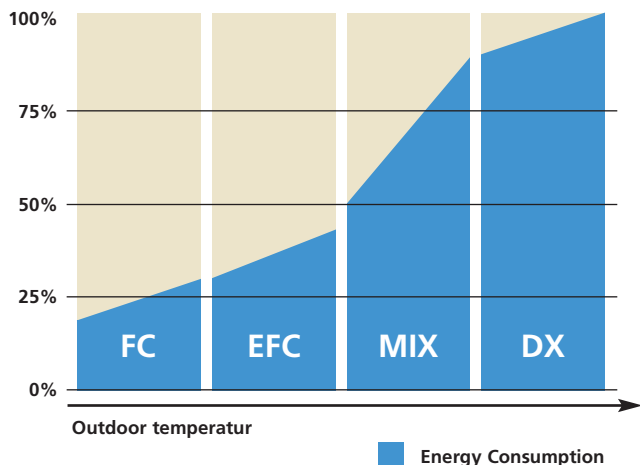
CyberAir 2 is the world's first precision air conditioning system in which free cooling is adjusted according to the thermal load in the data centre.

Energy efficient partial load mode

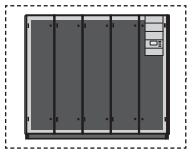
The DFC automatic climate control system balances all active components, standby reserves, pumps and heat exchangers in an energy saving partial load mode.

STULZ DFC air conditioning system

- » DFC = Dynamic Free Cooling
- » Electronically controlled hybrid refrigeration system combines compressor cooling and free cooling in four stages:
 - » FC – Free cooling economy mode
 - » EFC – Enhanced free cooling
 - » MIX – Compressor and free cooling
 - » DX – Compressor cooling
- » Electronic load distribution for economical operation
- » Electronic expansion valve for significantly improved compressor efficiency in MIX mode

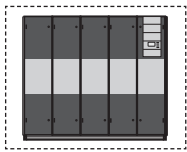


Options to suit every application



Mechanical and general options

- » Raised floor stand
- » Dampers
- » Flexible duct connection
- » Fresh air connection
- » High efficiency filter EU5
- » Exhaust chamber
- » Intake plenums for upflow units
- » Top-mounted, Bag Filter Housing F6, F7, F9
- » Sound attenuators
- » Double skin panels and doors
- » Condensate pump
- » Special paint finishes



Heating options

- » Electric heating, 1 to 3 stages or proportional
- » Hot gas reheat
- » Hot water reheat

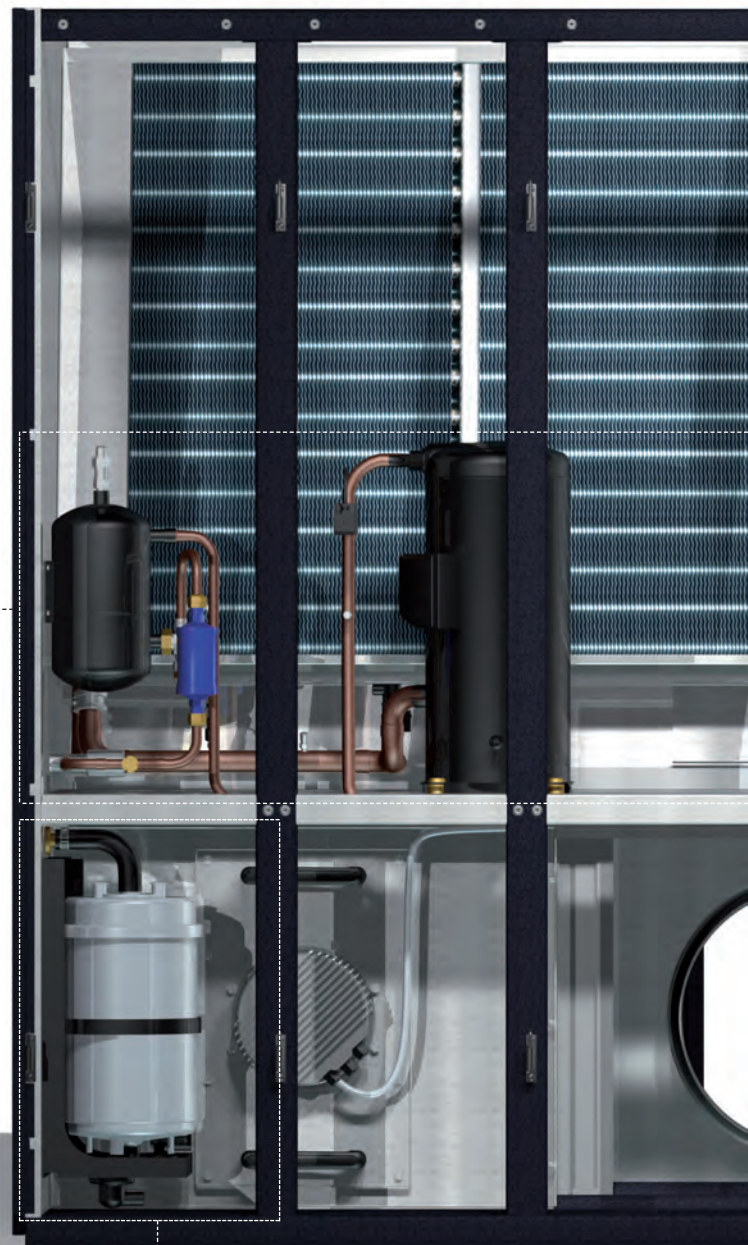
Options for air cooled condensers

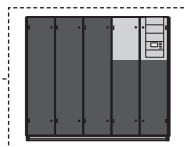
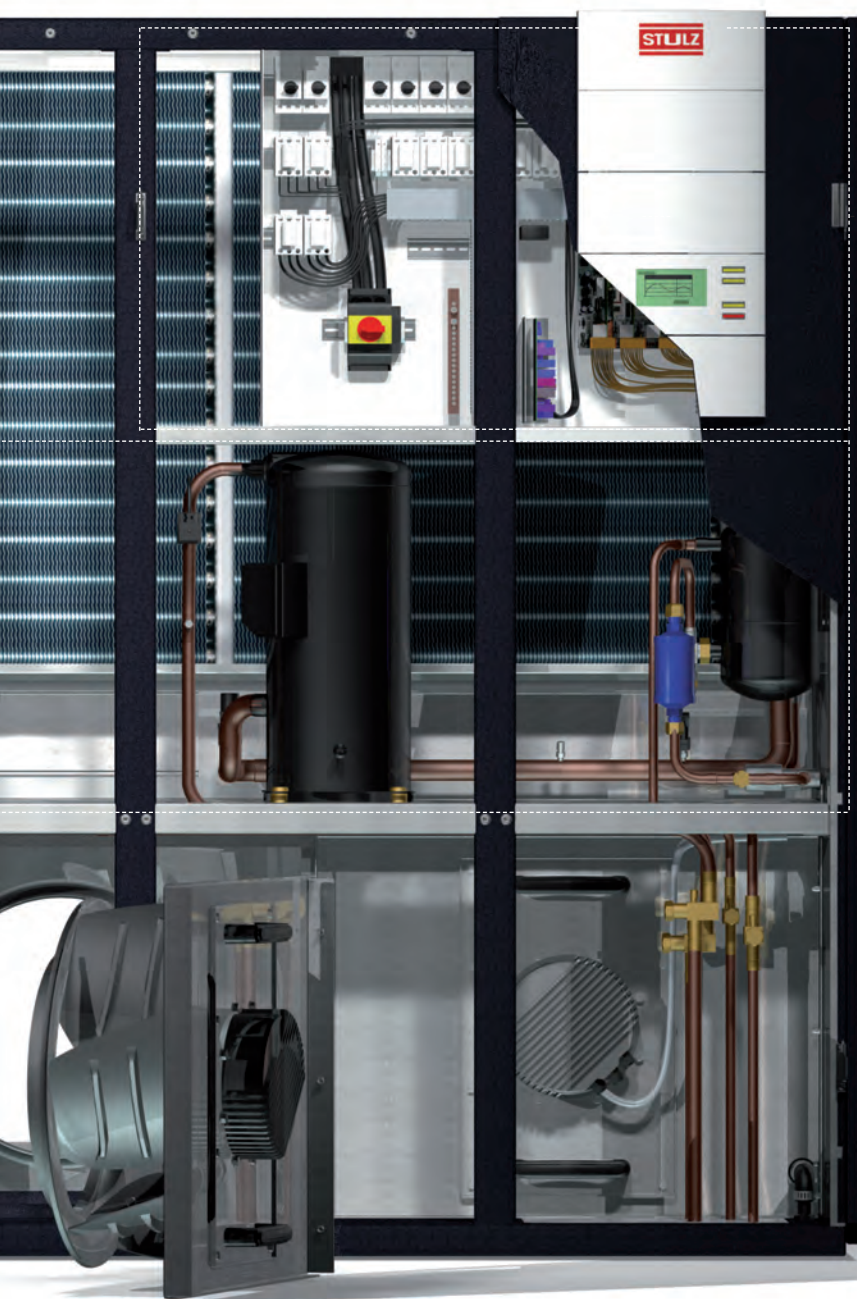
- » Fan speed control
- » Winter operation down to minus 45 °C
- » Anti-corrosion coating for heat exchanger



Humidifier options

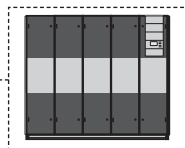
- » Electrode Boiler Humidifier
- » Control of remote STULZ BNB humidifier





Control options

- » Fire detector
- » Smoke detector
- » Emergency fire shut-down
- » Water detector
- » Manual override
- » Automatic control of Dampers
- » Phase monitoring
- » Remote on/off control
- » Special voltages



Cooling options

- » Capacity control with electronic suction valve or hot gas bypass
- » 2-way-CW valve
- » Microprocessor controlled 2- or 3-way valve head pressure control

Optional refrigerants

- » R407C (Standard)
- » R410A
- » R134a

Easy maintenance

- » Easy front access for all components and the EC fan

Technical specifications

CyberAir 2

DX and Dualfluid-Units, single circuit (1 compressor)												
ASD xxx A/G/ACW/GCW		181	211	261	291	311	361	401	411	451	531	
Airflow	m ³ /h	5,500	6,500	7,200	7,500	9,000	10,000	10,000	11,000	13,400	14,000	
DX-Cooling capacity (total) ¹⁾	R407C kW	18.2	21.0	27.2	29.7	30.9	36.2	40.1	40.8	45.1	53.5	
DX-Cooling capacity (sensible) ¹⁾	R407C kW	18.2	21.0	24.7	26.2	30.9	33.7	35.2	37.8	45.1	47.8	
Compressor absorbed power	R407C kW	3.7	4.2	5.6	6.3	6.3	7.5	8.4	8.4	9.6	11.6	
DX-Cooling capacity (total) ¹⁾	R410A kW	18.7	24.7	27.0	30.4	32.0	36.5	40.3	41.2	46.6	53.2	
DX-Cooling capacity (sensible) ¹⁾	R410A kW	18.7	22.3	24.3	26.5	30.3	33.8	35.3	38.0	44.1	47.7	
Compressor absorbed power	R410A kW	3.9	5.2	5.6	6.4	6.4	7.4	8.5	8.5	9.3	11.0	
DX-Cooling capacity (total) ¹⁾	R134a kW	17.5	19.9	25.3	26.2	27.5	32.5	37.3	37.9	—	—	
DX-Cooling capacity (sensible) ¹⁾	R134a kW	17.5	19.9	24.0	24.9	27.5	32.5	34.1	37.9	—	—	
Compressor absorbed power	R134a kW	3.3	3.9	5.0	5.3	5.3	6.7	7.7	7.7	—	—	
CW-Cooling capacity (total) ²⁾	kW	20.3	23.9	26.4	27.5	34.0	37.8	37.8	42.4	51.4	53.7	
CW-Cooling capacity (sensible) ²⁾	kW	18.6	21.7	23.9	24.8	30.8	34.0	34.0	38.0	45.5	47.3	
A-G-System	Max. available ESP	Pa	450	450	440	390	450	310	310	450	440	
	Noise Level ³⁾	dBA	48.3	51.8	54.0	54.9	56.5	58.7	58.7	51.3	55.4	56.4
	Fan absorbed power	kW	0.7	1.1	1.4	1.6	1.4	1.9	1.9	1.4	2.5	2.8
ACW-GCW	Max. available ESP	Pa	450	450	360	300	420	250	250	450	420	360
	Noise Level ³⁾	dBA	49.5	53.1	55.2	56.1	56.8	59.1	59.1	52.5	56.7	57.6
	Fan absorbed power	kW	0.8	1.3	1.7	1.9	1.6	2.2	2.2	1.7	3.0	3.4
Size		1	1	1	1	2	2	2	3	3	3	

DX and Dualfluid-Units, double circuit (2 compressors)											
ASD xxx A/G/ACW/GCW		402	452	512	552	612	702	802	862	1062	
Airflow	m ³ /h	11,000	13,000	14,000	16,000	18,500	19,500	21,000	22,500	24,000	
DX-Cooling capacity (total) ¹⁾	R407C kW	40.8	46.4	53.3	54.4	61.3	70.9	81.3	89.5	104.5	
DX-Cooling capacity (sensible) ¹⁾	R407C kW	37.8	43.4	47.7	54.4	61.3	64.8	74.4	80.3	88.9	
Compressor absorbed power	R407C kW	8.4	9.6	11.2	11.2	12.6	15.0	16.8	19.2	23.0	
DX-Cooling capacity (total) ¹⁾	R410A kW	43.0	49.3	52.9	53.8	61.3	62.9	81.4	89.8	104.2	
DX-Cooling capacity (sensible) ¹⁾	R410A kW	38.6	44.5	47.6	53.8	61.3	62.9	74.5	77.8	88.7	
Compressor absorbed power	R410A kW	9.0	10.4	11.2	11.2	12.8	14.8	17.0	18.6	22.0	
DX-Cooling capacity (total) ¹⁾	R134a kW	37.9	43.5	49.4	51.1	54.7	63.6	76.2	—	—	
DX-Cooling capacity (sensible) ¹⁾	R134a kW	37.9	43.5	46.2	51.1	54.7	63.6	72.5	—	—	
Compressor absorbed power	R134a kW	7.8	8.6	10.2	10.0	10.6	13.2	15.4	—	—	
CW-Cooling capacity (total) ²⁾	kW	40.4	47.8	51.4	57.2	66.4	69.9	77.9	83.3	88.7	
CW-Cooling capacity (sensible) ²⁾	kW	36.8	43.0	46.1	52.0	59.7	62.7	69.7	74.2	78.6	
A-G-System	Max. available ESP	Pa	450	450	440	440	220	120	450	390	300
	Noise Level ³⁾	dBA	51.3	54.8	56.4	57.3	60.4	61.5	57.3	58.8	60.2
	Fan absorbed power	kW	1.4	2.3	2.8	3.0	4.5	5.3	4.0	4.9	5.9
ACW-GCW	Max. available ESP	Pa	450	450	360	370	130	20	400	310	210
	Noise Level ³⁾	dBA	52.5	56.1	57.6	58.3	61.4	62.6	58.6	60.1	61.5
	Fan absorbed power	kW	1.7	2.7	3.4	3.5	5.3	6.2	4.7	5.8	7.0
Size		3	3	3	4	4	4	5	5	5	

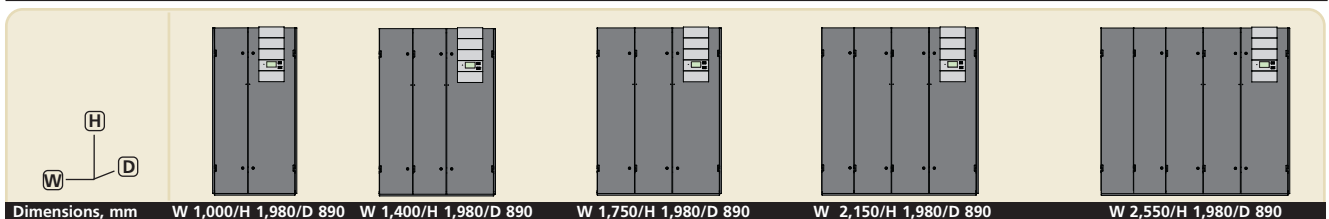
Note: All data valid for 400 V/3 ph/50 Hz with 20 Pa ESP (external static pressure) at downflow units

¹⁾ DX-Cooling capacity for A, G, GE, ACW, GCW-Units at Return Air: 24 °C, 50% r. H.; Condensing temperature: 45 °C

²⁾ CW-Cooling capacity for ACW, GCW-Units; Return air: 24 °C, 50% r. H.; Water temperature: 7 °C/12 °C

³⁾ Sound Pressure level at 2 m distance, free field

Dimensions / Weight / No. of fans						
Size		1	2	3	4	5
Width	mm	1,000	1,400	1,750	2,150	2,550
Height	mm	1,980	1,980	1,980	1,980	1,980
Depth	mm	890	890	890	890	890
Weight A/ACW (max. per size)	kg	406/451	484/534	710/765	786/846	923/988
Weight G/GCW, GE (max. per size)	kg	435/465	545/580	780/820	885/958	1,035/1,094
No. of fans		1	1	2	2	3



Technical specifications

CyberAir 2

LowNoise DX and GE Units, single circuit (1 compressor)												
ALD xxx A/G/GE		181	211	261	291	311	361	401	411	451	531	
Airflow	m³/h	5,500	6,500	7,200	7,500	9,000	10,000	10,000	11,000	13,400	14,000	
DX-Cooling capacity (total) ¹⁾	R407C kW	18.6	21.6	27.6	30.2	31.3	36.6	40.6	41.7	46.4	54.4	
DX-Cooling capacity (sensible) ¹⁾	R407C kW	18.6	21.6	25.5	27.0	31.3	34.4	36.0	38.8	46.4	49.2	
Compressor absorbed power	R407C kW	3.7	4.2	5.6	6.3	6.3	7.5	8.4	8.4	9.7	11.6	
DX-Cooling capacity (total) ¹⁾	R410A kW	18.9 ⁴⁾	25.1	27.2	30.8	31.5 ⁴⁾	36.8	40.5	41.6	46.2	53.9	
DX-Cooling capacity (sensible) ¹⁾	R410A kW	17.3 ⁴⁾	23.2	25.3	27.2	29.5 ⁴⁾	34.5	35.9	38.8	46.2	48.9	
Compressor absorbed power	R410A kW	3.9 ⁴⁾	5.2	5.6	6.4	6.4 ⁴⁾	7.4	8.5	8.5	9.3	11.0	
DX-Cooling capacity (total) ¹⁾	R134a kW	17.1	20.4	25.3	26.2	27.8	33.1	37.8	38.7	—	—	
DX-Cooling capacity (sensible) ¹⁾	R134a kW	17.0	20.4	25.3	26.2	27.8	33.1	34.9	38.7	—	—	
Compressor absorbed power	R134a kW	3.3	3.8	5.0	5.3	5.3	6.7	7.7	7.7	—	—	
CW-Cooling capacity (total) ²⁾	kW	19.6	22.5	26.9	28.9	32.2	36.6	38.9	39.0	46.0	51.2	
CW-Cooling capacity (sensible) ²⁾	kW	18.5	21.4	24.8	26.3	29.9	33.5	35.0	36.4	42.9	46.7	
A/G-System	Max. available ESP	Pa	450	450	450	450	450	450	450	450	450	
	Noise Level ³⁾	dBA	45.9	49.4	51.6	52.5	47.1	49.3	49.3	49.4	53.5	54.5
	Fan absorbed power	kW	0.3	0.6	0.7	0.8	0.8	1.1	1.1	1.0	1.8	2.0
GE	Max. available ESP	Pa	450	450	450	450	450	450	450	450	450	
	Noise Level ³⁾	dBA	46.3	49.9	52.0	52.9	48.4	50.5	50.5	50.4	54.5	55.5
	Fan absorbed power	kW	0.4	0.6	0.8	0.9	1.0	1.3	1.3	1.2	2.1	2.3
Size		2	2	2	2	3	3	3	4	4	4	

LowNoise DX and GE Units, double circuit (2 compressors)											
ALD xxx A/G/GE		402	452	512	552	612	702				
Airflow	m³/h	11,000	13,000	14,000	16,000	18,500	19,500				
DX-Cooling capacity (total) ¹⁾	R407C kW	41.7	47.3	54.4	56.1	63.6	72.6				
DX-Cooling capacity (sensible) ¹⁾	R407C kW	38.8	44.6	49.2	56.1	63.3	68.3				
Compressor absorbed power	R407C kW	8.4	9.6	11.2	11.2	12.6	15.0				
DX-Cooling capacity (total) ¹⁾	R410A kW	43.1	49.9	53.9	54.7 ⁴⁾	63.0 ⁴⁾	73.1				
DX-Cooling capacity (sensible) ¹⁾	R410A kW	39.4	45.7	48.9	50.9 ⁴⁾	59.0 ⁴⁾	68.5				
Compressor absorbed power	R410A kW	9.0	10.4	11.2	11.2 ⁴⁾	12.8 ⁴⁾	14.8				
DX-Cooling capacity (total) ¹⁾	R134a kW	38.7	44.3	50.1	50.8	54.5	66.0				
DX-Cooling capacity (sensible) ¹⁾	R134a kW	38.7	44.3	47.5	50.6	54.5	66.0				
Compressor absorbed power	R134a kW	7.8	8.6	10.0	10.0	10.6	13.4				
CW-Cooling capacity (total) ²⁾	kW	41.7	45.4	51.2	56.5	64.3	71.3				
CW-Cooling capacity (sensible) ²⁾	kW	38.8	42.1	46.7	52.2	59.2	64.3				
A/G-System	Max. available ESP	Pa	450	450	450	450	450				
	Noise Level ³⁾	dBA	49.4	52.9	54.5	51.6	54.7	55.8			
	Fan absorbed power	kW	1.0	1.6	2.0	1.8	2.8	3.2			
GE	Max. available ESP	Pa	450	450	450	450	450				
	Noise Level ³⁾	dBA	50.4	53.9	55.5	52.9	55.9	57.0			
	Fan absorbed power	kW	1.2	1.9	2.3	2.2	3.3	3.8			
Size		4	4	4	5	5	5				

Note: All data valid for 400 V/3 ph/50 Hz with 20 Pa ESP (external static pressure) at downflow units
¹⁾ DX-Cooling capacity for A, G, GE, ACW, GCW-Units at Return Air: 24 °C, 50% r. H.; Condensing temperature: 45 °C
²⁾ CW-Cooling capacity for GE Units; Return air: 24 °C, 50% r. H.; Water temperature: 7 °C
³⁾ Sound Pressure level at 2 m distance, free field ⁴⁾ Data at reduced airflow, see StulzSelect

Humidifier capacity and electric heating capacity						
Size		1	2	3	4	5
Humidifier capacity	kg/h	8	8	15	15	15
Max. no. of heating steps		2	2	2	3	3
Heating capacity Step 1	kW	6/9	6/9	6/9	6/9	6/9
Heating capacity Step 2	kW	6/9	6/9	6/9	6/9	6/9
Heating capacity Step 3	kW	—	—	—	6/9	6/9
Max. total heating capacity	kW	18	18	18	27	27

Technical data subject to change without notice.

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STULZ the natural choice

Close to you worldwide.

... with expert contacts in our STULZ subsidiaries, and our exclusive global network of sales and service partners. Our five production plants are in Europe, North America and Asia.