

aeroSchwank - C Series

Industry | Commerce | Logistics

As a multinational family business, Schwank offers customised complete solutions for commercial and industrial HVAC systems.

For 90 years we have been a renowned leader of energy efficient solutions.



Air Handling Units for industrial and commercial buildings

The benefits of fresh air in your building

Fresh air is a crucial aspect of any building, especially in industrial and commercial spaces. The quality of air inside a building can significantly impact the health and well-being of the occupants, as well as the productivity and efficiency of the building's operations. For owners of industrial and commercial buildings, providing fresh air in their spaces is a wise investment that can yield significant benefits.

Poor indoor air quality can lead to a range of health problems, including respiratory issues, headaches, fatigue, and allergies. By ensuring that the air inside the building is fresh and free of pollutants, owners can significantly reduce the risk of these health problems and create a safer and healthier environment for their employees. This, in turn, can lead to reduced absenteeism and improved productivity.



Fresh air can also improve the efficiency of industrial and commercial operations. Many industrial and commercial processes generate pollutants, such as dust, fumes, and chemicals. Without proper ventilation, these pollutants can accumulate and compromise the efficiency of the equipment and machinery. By providing fresh air and proper ventilation, owners can ensure that their equipment and machinery operate at maximum efficiency, reducing downtime and maintenance costs.

Providing fresh air in industrial and commercial buildings is essential for owners who want to create a safe, healthy, and productive environment for their employees. By investing in proper ventilation systems and air quality monitoring, owners can reap the benefits of improved health, increased efficiency, and a more comfortable and pleasant workplace.

aeroSchwank C-Series - modulable for every application



Choosing the unit

- C8 – compact heating and ventilation rooftop
- C4 – compact cooling, heating -ventilating rooftop

Choosing the heater in the unit

- N – version without a heater in the device
- W – water heater with secondary circulation and circulation pump
- E – electric heater
- G – gas heater with a modulated burner or two-stage
- HP – heat pump (reversible compressor unit)



Roof base – enabling direct placement

Acoustic silencers – reducing noise level EX S / L

Extension module EX S/L (option)



Choosing the heater in the air supply module NW

- N – version without a heat exchanger in the supply air module
- W2 – version with a 2-row heat exchanger
- W3 – version with 3-row heat exchanger

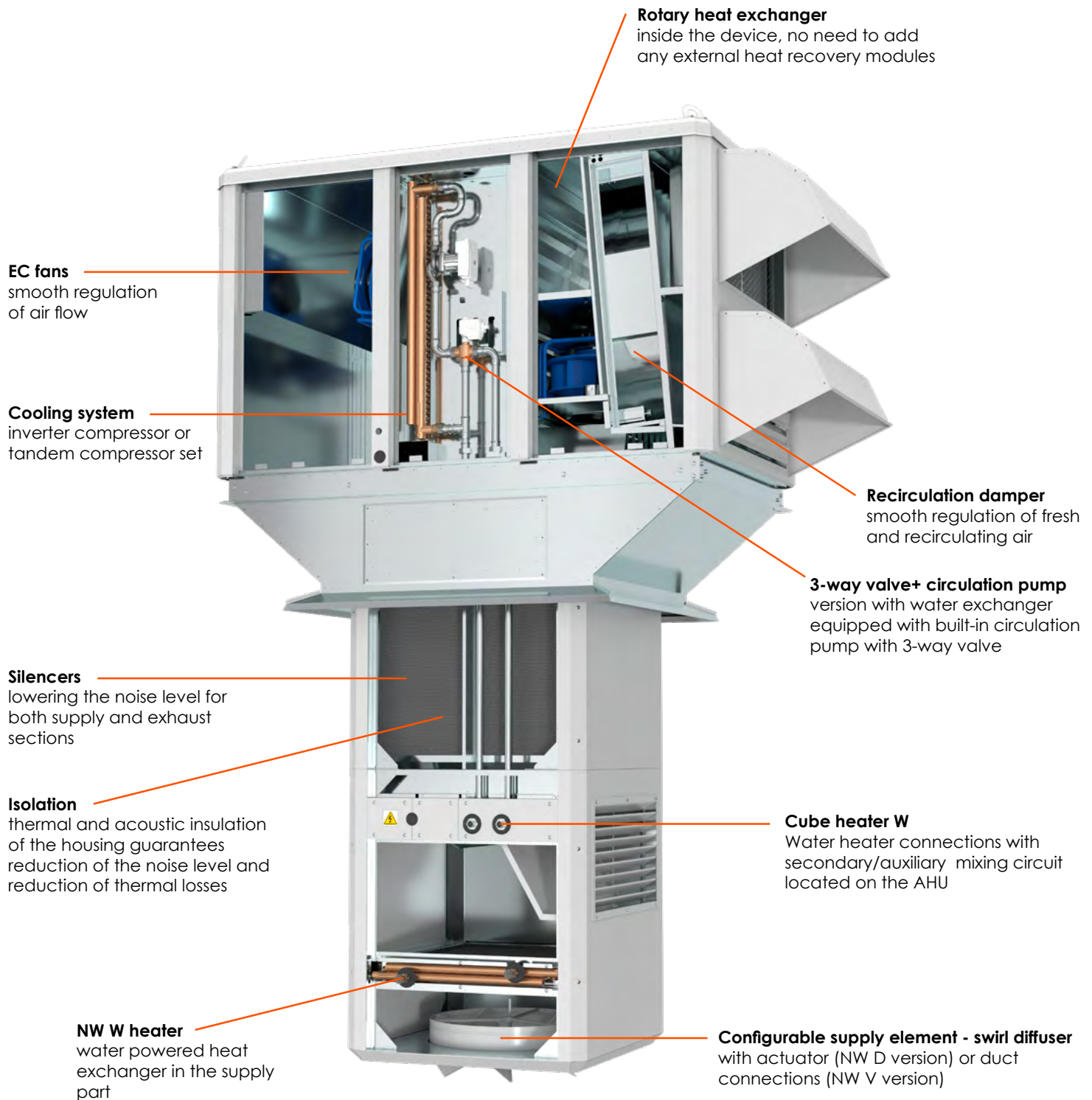


Air supply module

- D – swirl diffuser with actuator for regulation of air supply
- V – duct connection module

aeroSchwank C-Series

technical Details



Installation

aeroSchwank C-Series

C-Series units are characterized by a compact design that contains all necessary components for effective cooling, heating and ventilation with heat recovery. It means that with one device it is possible to meet the building's clean air requirements without the need for any complicated installations, external modules or additional devices.

C-Series units with NW supply bases are delivered in two parts. Installation, on a previously prepared substructure, boils down to lifting and foundation of the NW base and C-Series unit. Connections in the ceiling part allow quick connection of power supply and heating medium and simplification of installation.



Automation

aeroSchwank devices are equipped with a complete power supply and control automation system. The built-in Climatix controller enables wide possibilities of communication with the device. Schwank's proprietary work algorithms are adapted to the design of the devices and guarantee energy-saving operation, regardless of the conditions. The integration of the air handling unit into the Schwank system allows for connection and cooperation of up to 31 different types of devices that are connected to the Tbox intelligent touch screen controller.

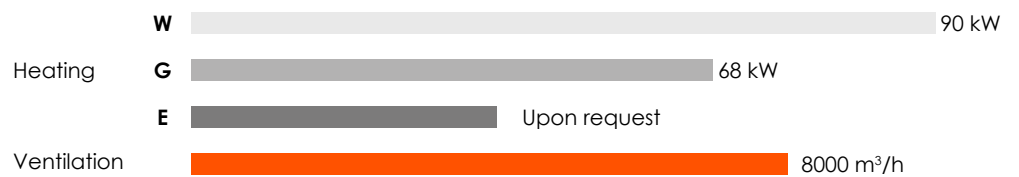


aeroSchwank C-Series Overview



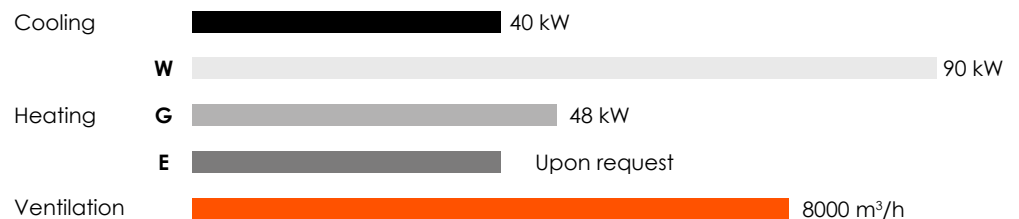
aeroSchwank C8

Heating and ventilation unit



aeroSchwank C4


cooling, heating-ventilating unit



W - water heater (heater power for the heating medium temperature 70 / 50°C, air temperature before the exchanger 8°C)
G - gas heater
E - electric heater

aeroSchwank C8




 Total / fresh air flow


up to 8000 m³/h

 Fan supply / exhaust

EC/EC

 Recovery efficiency⁽¹⁾
over 73,2%

 Recirculation
stepless adjustment

 Type of exchanger
rotary, built-in

Construction data

Type of filters	G4, bag filter
Thermal insulation class	M0
Color of Casing / middle panel	RAL 7035 / RAL 7024
Casing	sandwich type, panels insulated with mineral wool 50 mm
Frame	steel, integrated
Weight (kg)	900 - 1050 (depending on configuration)

Electrical data⁽²⁾

Rated electrical power consumption (kW)	7
Rated current consumption	11

Heaters

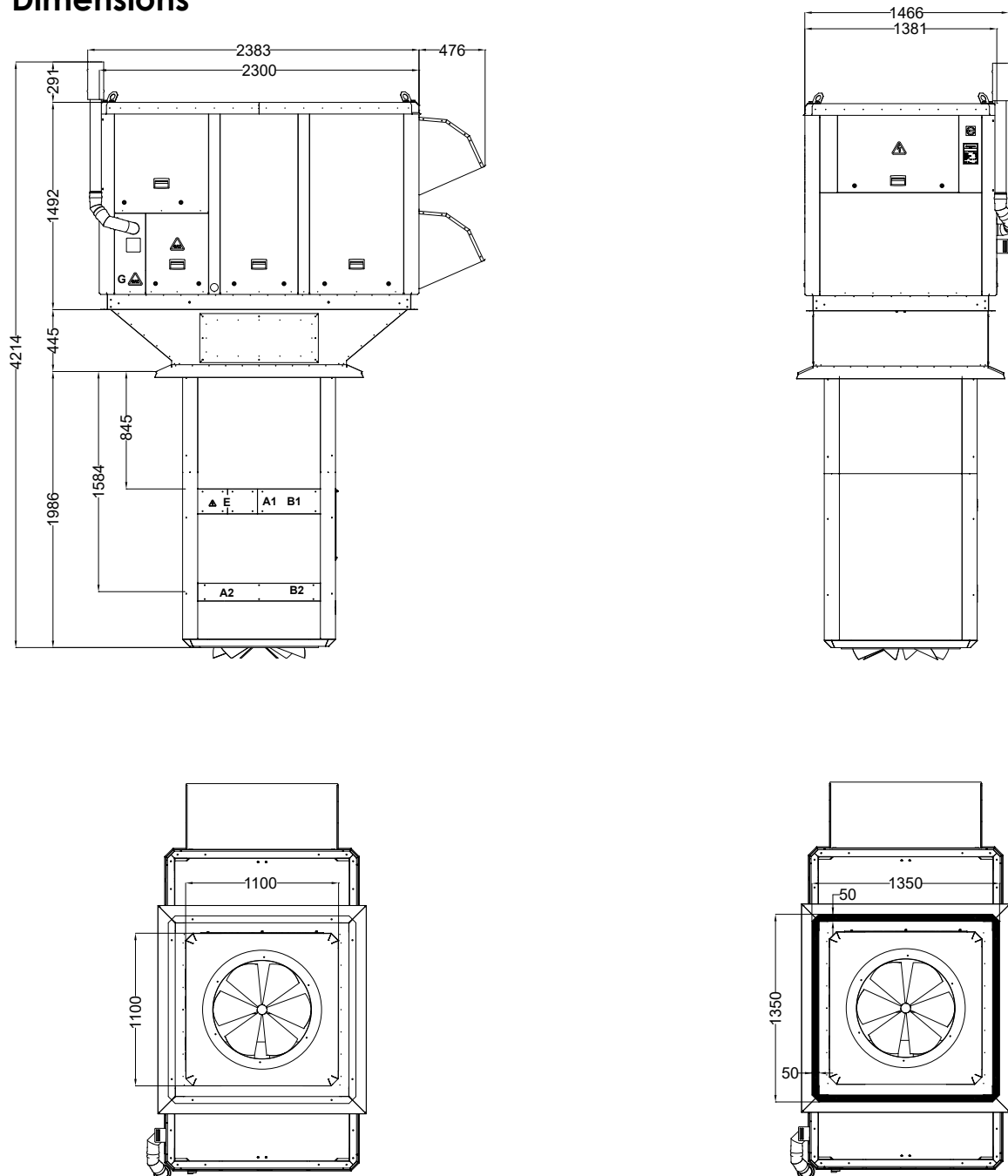
Roof-mounted water heat exchanger (C W)	Type of exchanger	2-row				
	Heating power ⁽³⁾ (kW)	69,9				
	Pressure drop (kPa)	0 - Built-in circulation pump				
	Connection	GZ 1 1/4"				
Water heat exchanger in the supply part (NW W)		W2		W3		
	Type of exchanger	2-rows		3-rows		
	Heating power ⁽³⁾ (kW)	64,1		88,7		
	Pressure drop (kPa)	14		14		
2-stage gas heater (C G)	Connection	GZ 1 1/4"		GZ 1 1/4"		
		G24	G34	G42	G52	G72
	Nominal heating power (kW)	24,6	31,9	40,2	47,9	67,5
	Gas consumption (m ³ /h)	2,86	3,68	4,66	5,52	7,78
	Connection	GZ 3/4"	GZ 3/4"	GZ 3/4"	GZ 3/4"	GZ 3/4"
Modulated gas heater (C Gm)	Minimum flow (m ³ /h)	3000	3000	3000	3000	4200
		Gm20	Gm34	Gm45	Gm65	
	Nominal heating power (kW)	18,2	33,6	40,5	62,9	
	Gas consumption (m ³ /h)	2,01	3,69	4,44	6,88	
Electric heater (C E)	Connection	GZ 3/4"	GZ 3/4"	GZ 3/4"	GZ 3/4"	
	Minimum flow (m ³ /h)	3000	3500	4200	6500	
		E				
	Heating power (kW)	upon request				

⁽¹⁾ UE 1253/2014

⁽²⁾ does not apply to devices with an electric heater

⁽³⁾ power of fan heaters determined for heating medium temperatures 70 / 50°C, air temperature before the exchanger 8°C

Dimensions



- E – electrical supply
- A1/B1 – supply / return of water heater in the device
- A2/B2 – supply / return of the water heater in the supply air module
- G – gas connection
- – supporting base

Sound pressure level

Sound pressure level measured outside, dB_A according to ISO 3744

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa	Lp
55	61	63	61	66	65	57	52	71	49

Sound pressure level measured in the supply air duct dB

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa
51	56	70	65	65	65	69	72	75


Sound pressure level measured in the exhaust duct dB_A

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa
49	54	64	59	53	59	63	77	76

Lwa – minimum sound power level Lp – minimum sound pressure emission at a distance of 10m

aeroSchwank C4



 Total / fresh air flow

up to 8000 m³/h



Fan supply / exhaust

EC/EC



Recovery efficiency⁽¹⁾
over 73,1%



Recirculation
stepless adjustment



Type of exchanger
rotary, built-in

Construction data

Type of filters	G4, bag filter
Thermal insulation class	M0
Color of casing / middle panel	RAL 7035 / RAL 7024
Casing	sandwich type, panels insulated with mineral wool 50 mm
Frame	steel, integrated
Weight (kg)	1120 - 1250 depending on configuration

Electrical data⁽²⁾

Rated electrical power consumption (kW)	20
Rated current consumption (A)	36
Max. operating current MCC (A)	43
Inrush current LRA (A)	101

Compressor unit

	Cube HP		
	cooling	cooling	heating
Thermodynamic power ⁽³⁾ (kW)	38,2	38,2	40,9
EER net / COP net ⁽³⁾	3,03	2,96	3,63
SEER(on) / SCOP(on) ⁽⁴⁾⁽⁵⁾	4,09	4,08	3,55
Seasonal energy efficiency ⁽⁵⁾	152,8%	152,4%	133,6%
Minimum flow (m ³ /h)	6000		
Type of compressor	scroll compressors, tandem		
Number of compressors / refrigeration circuits	2 / 1		
Nr. of fans in the unit	1		
Refrigerant	R410a		

Heaters

Roof-mounted water heat exchanger (C W)	Type of exchanger	water heat exchanger, 2 row			
	Heating power ⁽⁶⁾ (kW)	69,9			
	Pressure drop (kPa)	0 - Built-in circulation pump			
	Connection	GZ 1 1/4"			
Water heat exchanger in the supply part (NW W)	Type of exchanger	W2		W3	
		2 row		3 row	
	Heating power ⁽⁶⁾ (kW)	64,1		88,7	
	Pressure drop (kPa)	14		14	
2-step gas heater (C G)	Connection	GZ 1 1/4"		GZ 1 1/4"	
		G24	G34	G42	G52
	Nominal heating power (kW)	24,6	31,9	40,2	47,9
	Gas consumption G20 (m ³ /h)	2,86	3,68	4,66	5,52
	Minimum flow (m ³ /h)	3000	3000	3000	3000
Modulated gas heater (Cube Gm)	Connection	Gm20		Gm34	
		2 row		3 row	
	Nominal heating power (kW)	18,2		33,6	
	Gas consumption G20 (m ³ /h)	2,01		3,69	
Electric heater (C E)	Minimum flow (m ³ /h)	GZ 3/4"		GZ 3/4"	
		3000		3500	
Electric heater (C E)	Heating power (kW)	E			
		upon request			

⁽¹⁾ UE 1253/2014

⁽²⁾ does not apply to devices with an electric heater

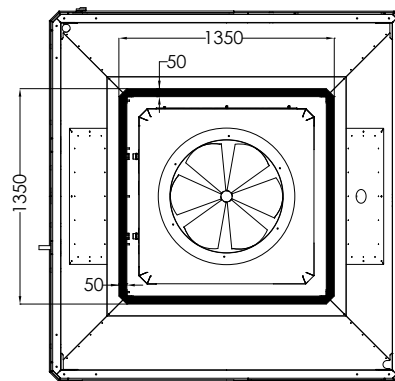
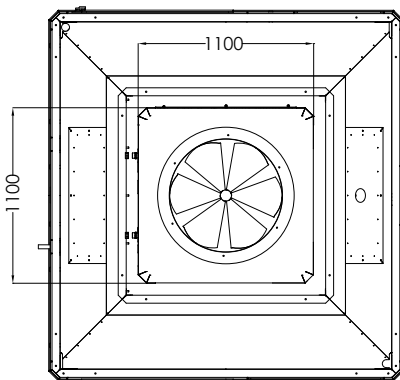
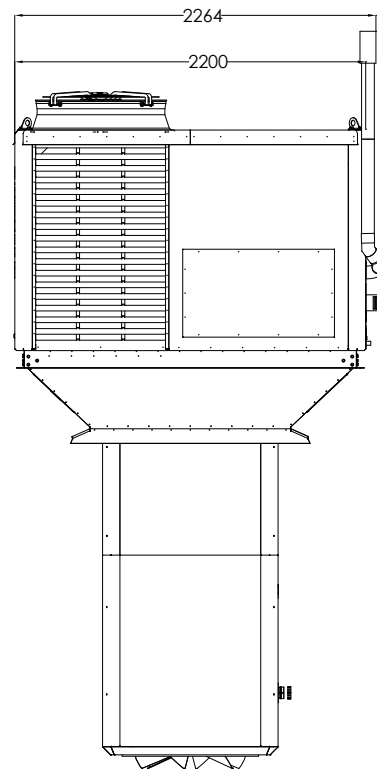
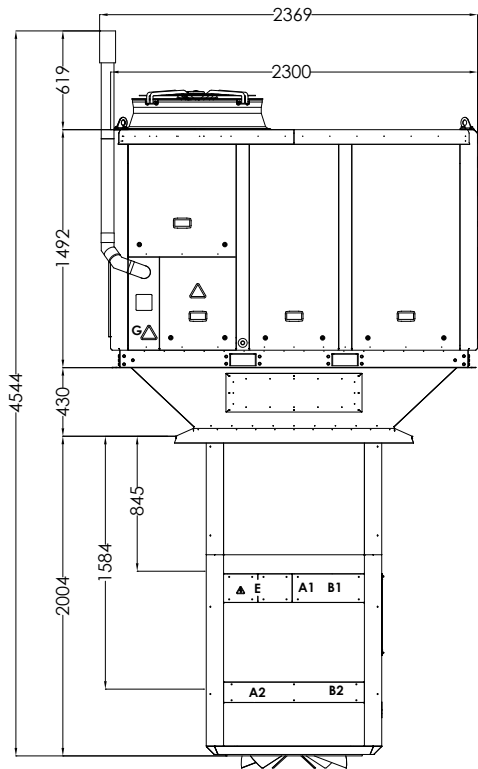
⁽³⁾ EN 14511

⁽⁴⁾ EN 14825

⁽⁵⁾ EU 2016/2281

⁽⁶⁾ water heat exchangers capacity determined for temperatures heating medium temperatures 70/50°C, inlet air temperature 8°C

Dimensions



- E – electrical supply
- A1/B1 – supply / return of water heater in the device
- A2/B2 – supply / return of the water heater in the supply air module
- G – gas connection
- – supporting base

Sound pressure level

Sound pressure level measured outside. dB_A according to ISO 3744

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa	Lp
38	55	64	65	67	67	62	55	73	51

Sound pressure level measured in the supply air duct dB

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa
49	52	68	62	60	58	64	66	70

Sound pressure level measured in the exhaust duct dB_A

63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	Lwa
46	51	62	56	48	52	58	71	71

Lwa – minimum sound power level Lp – minimum sound pressure emission at a distance of 10m

References

Concentrated air distribution for pharmaceuticals



Project overview:

- Project: Pharmaceutical logistics centre
- Units: 5 AHU units, aeroSchwank C8 (NW)
- Functional requirements: Non-isothermal air distribution at a height of 17 metre, to support equal allocation of fresh air and constant temperature

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References

Fresh air for sensitive automotive part production



Project overview:

- Project: Automotive production building
- Units: 24 AHU units, aeroSchwanck C8 (NW)
- Functional requirements: Full HVAC solution for workplaces with sensitive components with a 4-row high-power water heat exchanger

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