

AWN ECO+ - VENTILATION SYSTEM

EXHAUST AIR SYSTEM WITH HEAT RECOVERY AND HEAT GENERATION



AWN ECO+

CENTRAL VENTILATION UNIT WITH INTEGRATED EXHAUST AIR HEAT PUMP

Compact Exhaust air heat pump for heat recovery and production.

Smart, Heat pump control source oriented – ReSource Control

The source-oriented heat pump control – ReSource Control balances the heat pump performance to the available exhaust volume air flow. Thus, the operation is almost continuous and high durations and efficiencies can be achieved.

Special solution designed for evaporator

AWN Eco+ compact design enables efficient heat recovery. The heat exchanger is designed as a direct evaporator and placed around the exhaust fan. The heat from the exhaust air goes directly into the refrigerant and avoids additional transmission losses. The evaporator is protected from contamination by means of an air filter. It will have to be changed annually, in order to avoid a more complex heat exchanger cleaning. A pressure loss monitor issues a warning to the building management system if the filter is heavily soiled.

Highly efficient heat water feed pump

AWN Eco+ has already integrated a power control and a high efficient heat water feed pump. To ensure a constant temperature spread between the flow and return of the heat pump and to reach the best performance indicators, the feed pump always adapts itself to requirements thanks to integrated measuring technology.

Recovery components heat losses

Due to the components implementation, the feed pump, Fan and compressor resulting waste, via the heat recovery can be recovered. Thereby, the general efficiency will be increased.

Fully integrated ventilation unit with exhaust air heat pump for outdoor installation.



Low Energy consumption: With EC engine, EnEV requirements are be complied.



Constant pressure control: Ideal for demand control ventilation.



ReSource Control – Smart, Heat pump control Source-oriented.



Continuously high-performance figures for the highest efficiency.



Easy to maintain: motor easily accessible by a trapdoor.

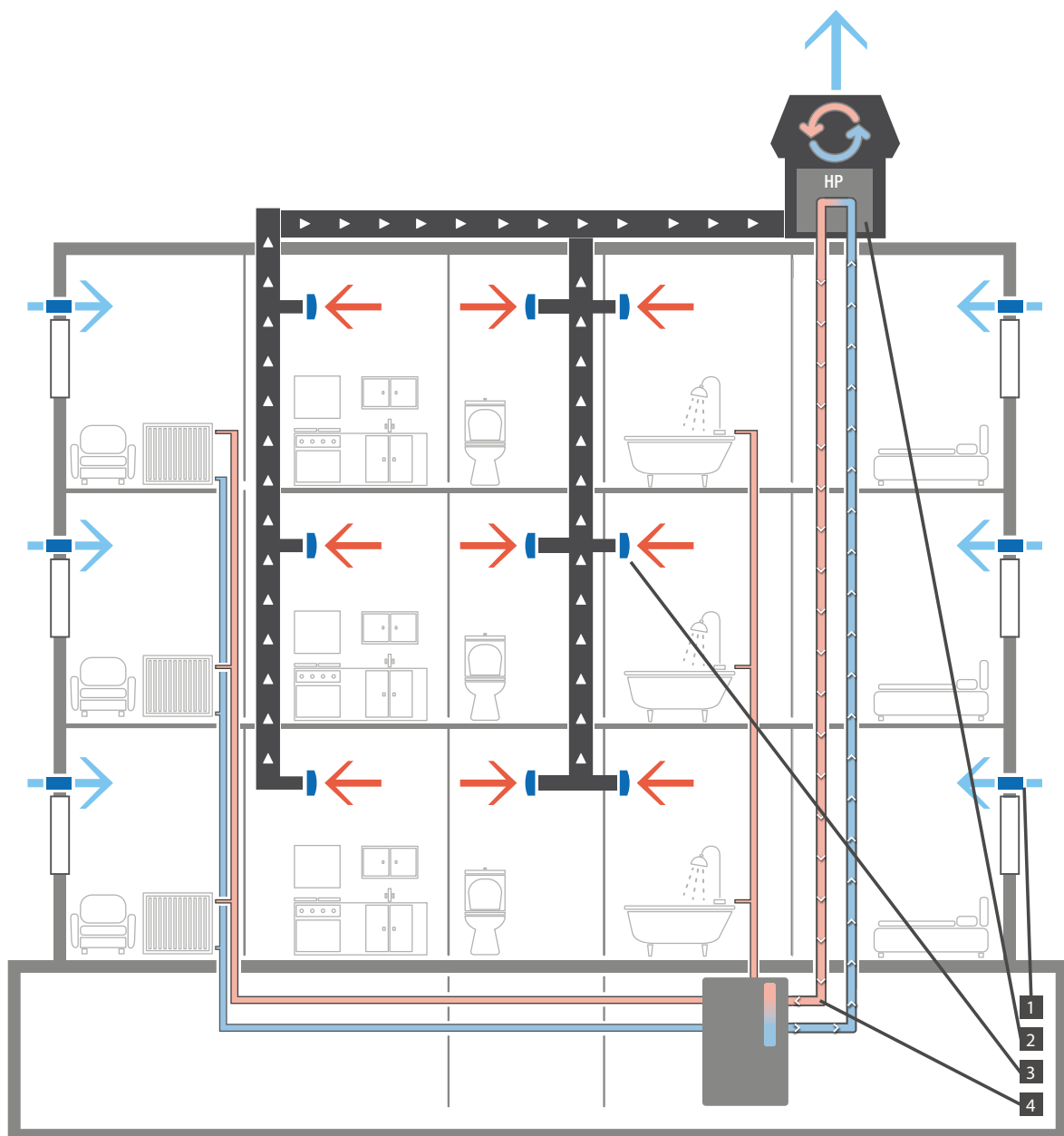


Easy to install: several adaptation parts available, possibility of custom configuration.



Innovative concept: Ventilation unit with heat exchanger and heat pump combined.

HOW IT WORKS ?



1. Humidity-controlled external air ducts
2. Heat Exchanger + EC fan + Heat Pump
3. Exhaust unit
4. Heating water pipe leads to heating system

Preventive fire protection elements must be installed and not shown in this schematic diagram !

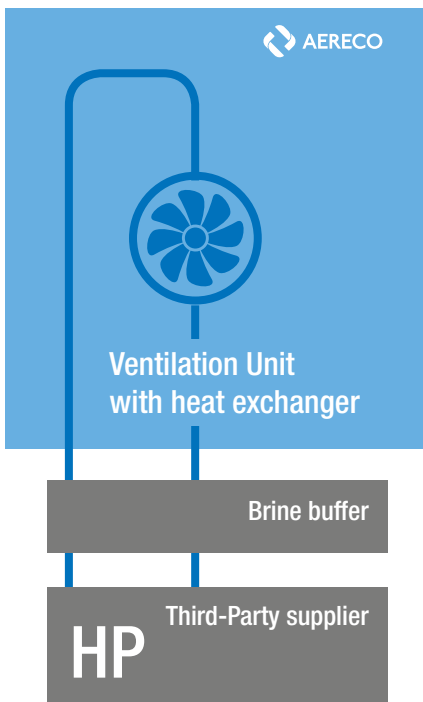
PRODUCT PORTFOLIO: FAN WITH HEAT RECOVERY

Aereco has extended its range of products in the category of „air extraction system with heat recovery“. There are three possible models for the AWN range:

AWN Basic

An air extraction module with heat exchanger without heat pump

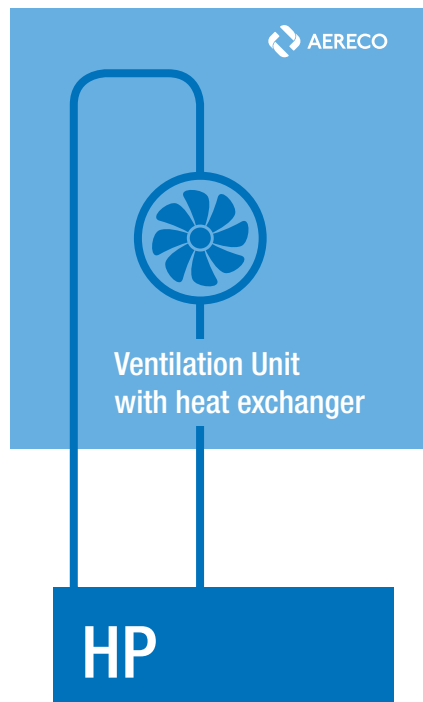
For this model (formerly called AWN-RV and AWN-DV), the AWN can be connected to an external heat pump by means of brine buffer.



AWN Connect

An air extraction module with heat exchanger and a heat pump.

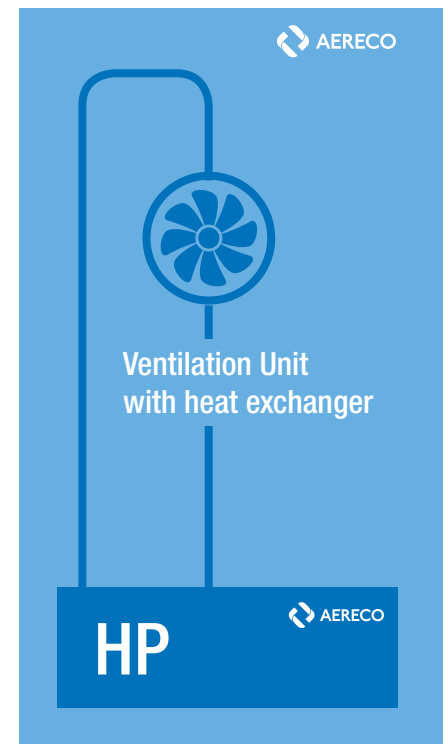
This model includes a heat pump specially designed to be used with an exhaust fan. The system is more flexible and adapts to constraints encountered in a building project: the air extraction module and the heat pump can be installed separately.



AWN Eco+

An air extraction module with heat exchanger and an integrated heat pump

This model guarantees the highest energy efficiency: Integral monobloc design allows better optimization.



FEATURES

AWN Basic

- Designed for indoor and outdoor use: The air extraction module and its heat exchanger are available in RV or DV versions
- Flexible combination: several AWN Basic can be combined with a Connect heat pump
- Can be combined with existing brine / water heat pumps via brine buffer

AWN Connect

- Flexible installation: ventilation unit with heat exchanger and heat pump can be installed separately
- Designed for indoor and outdoor use: The air extraction unit and its heat exchanger are available in RV or DV versions
- **ReSource Control: intelligent control adapts the operation of the heat pump to the fluctuations of the heat source**
- Easy installation: direct connection of the devices via a brine pipe (pressure equalization tank integrated into the brine circuit)

AWN Eco+

- Compact design: ventilation unit, heat exchanger and heat pump
- Maximum energy efficiency thanks to heat losses reduction: the heat of the extracted air is transferred directly to the refrigerant (direct evaporator)
- **ReSource Control: intelligent control adapts the operation of the heat pump to the heat source variations**
- Easy installation: Direct connection to the water heating system



AWN ECO+ 111

Ventilation unit, heat exchanger and source-controlled heat pump

Informations

Installation

Recommended setting pressure	Pa	130
Max. airflow for maximum system layout (75%) at 130 Pa	m ³ /h	1.650
Modulation range heat output (A20W35)	kW	2,5 - 8,4
Modulation range - exhaust air	m ³ /h	480 - 1.800
Minimum exhaust airflow required	m ³ /h	480
Max heating flow temperature	°C	55
Sound pressure level at 3m distance (75%) – L _{p,A}	dB(A)	54
Sound power level of the device suction side (75%) – L _{w,A}	dB(A)	66

Connection to the main station

Exhaust air – pipe connection (DN)	mm	355
Exhaust air – connection options		1 x horizontal
Integrated elastic connector for pipe		included
Brine – Pipe connection		1" IG
Brine – Max. volume	m ³ /h	1.382
Brine – Permitted antifreeze		Ethylene glycol
Brine – Available external pressure delivered by HP	kPa	48
Condensate – Pipe		Stratified pipe (16mm)

Energetic data

Max recoverable exhaust heat – Heating period	MWh	27
Nominal heat output / COP (A20W35)		5,6 / 6,0
Nominal heat output / COP (A20W28)		5,6 / 8,2
COP (A20W40)		4,9
Refrigerant		R410A
Refrigerant charge		1,9

Ventilation and acoustic features

Max Airflow (100%) at 130Pa	m ³ /h	2.200
Sound pressure level – 3 meters distance at 100/50% - L _{p,A}	db(A)	61/46
Sound power level on suction side at 100/50% - L _{w,A}	dB(A)	67/59

Integrated pressure air

Digital pressure display		included
Max. increase of pressure	Pa	300

Electrical data

Fan – Drive technology		EC-Motor
Compressor – Drive technology		Source-oriented drive technology with controlled performance
Repair switch		included
Supply voltage	V / Hz	230 / 50
Max current consumption	A	12,3
Power consumption fan device (75%) at 130 Pa	W	224
SFP fan (75%) at 130Pa	W/m ³ /h	0,136
Max. fan power consumption	W	450
Max power consumption (complete device)	kW	2,42
Index fan protection	IP	54
Fan's motor protection		included
Contact for external enable signal		included
Fault signal		Collective fault signal, digital display on the device
Max acceptable exhaust air temperature	°C	40

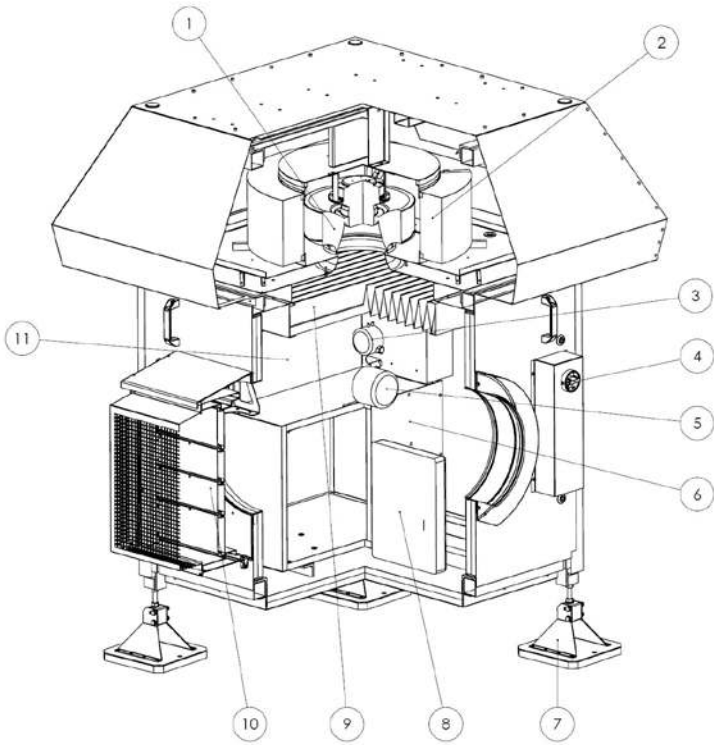
Housing properties

Weight (unfilled unit)	kg	325
Material		Steel (galvanised)

Other components

Filter class (including filter monitoring)		G4
Condensate tray with siphon		included
Smoke detector and bypass for free outflow in case of fire		included
Speed-controlled brine feed pump		included

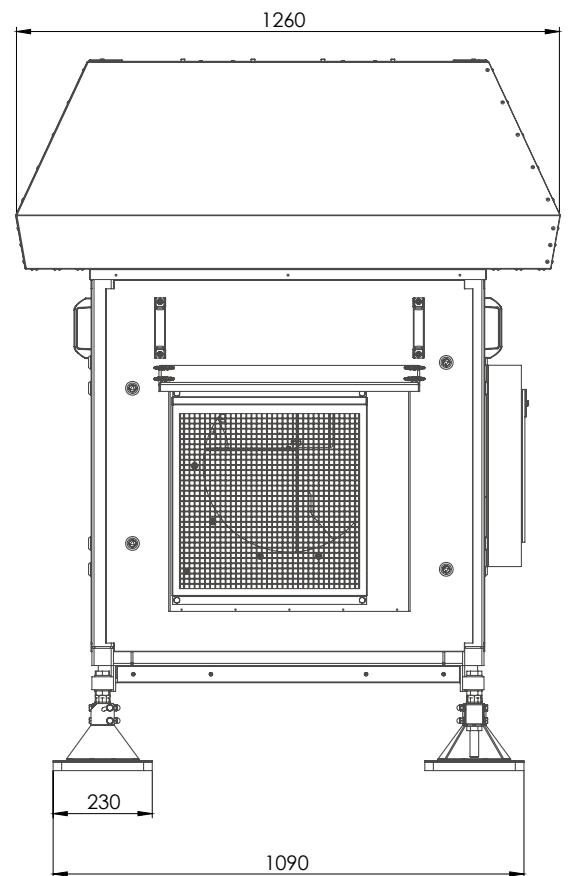
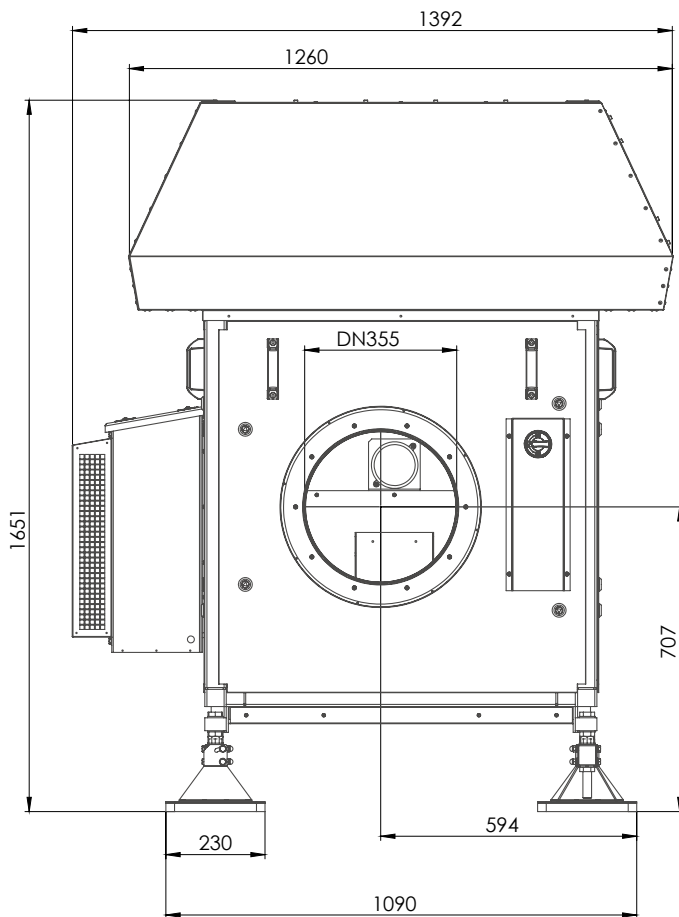
All data for exhaust air of 20° C and 50% rel. humidity. Data according to EN 14511 :2013



Nr.	Component
1	Fan
2	Vaporizer
3	Differential pressure switch, filter monitoring
4	Main switch
5	Smoke detector
6	Compressor housing
7	Support
8	Plate-type heat exchanger
9	Air filter
10	Bypass
11	Controller

Terminals

Exhaust air heat pump - return	1" IG
Exhaust air heat pump - supply	1" IG
Condensate drain	3/4" AG





AWN ECO+ 121 Technical data

Informations

Installation
Recommended setting pressure
Max. airflow for maximum system layout (75%) at 130 Pa
Modulation range heat output (A20W35)
Modulation range - exhaust air
Minimum exhaust airflow required
Max heating flow temperature
Sound pressure level at 3m distance (75%) – $L_{p,A}$
Sound power level of the device suction side (75%) – $L_{w,A}$

Connection to the main station

Exhaust air – pipe connection (DN)
Exhaust air – connection options
Integrated elastic connector for pipe
Brine – Pipe connection
Brine – Max. volume
Brine – Permitted antifreeze
Brine – Available external pressure delivered by HP
Condensate – Pipe

Energetic data

Max recoverable exhaust heat – Heating period
Nominal heat output / COP (A20W35)
Nominal heat output / COP (A20W28)
COP (A20W40)
Refrigerant
Refrigerant charge

Ventilation and acoustic features

Max Airflow (100%) at 130Pa
Sound pressure level – 3 meters distance at 100/50% - $L_{p,A}$
Sound power level on suction side at 100/50% - $L_{w,A}$

Integrated pressure air

Digital pressure display
Max. increase of pressure

Electrical data

Fan – Drive technology
Compressor – Drive technology
Repair switch
Supply voltage
Max current consumption
Power consumption fan device (75%) at 130 Pa
SFP fan (75%) at 130Pa
Max. fan power consumption
Max power consumption (complete device)
Index fan protection
Fan's motor protection
Contact for external enable signal
Fault signal
Max acceptable exhaust air temperature

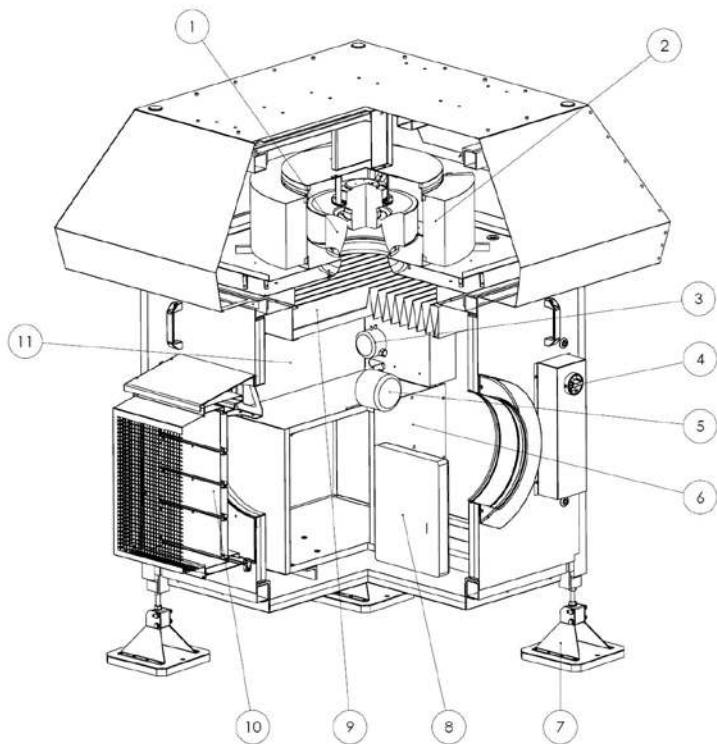
Housing properties

Weight (unfilled unit)
Material

Other components

Filter class (including filter monitoring)
Condensate tray with siphon
Smoke detector and bypass for free outflow in case of fire
Speed-controlled brine feed pump

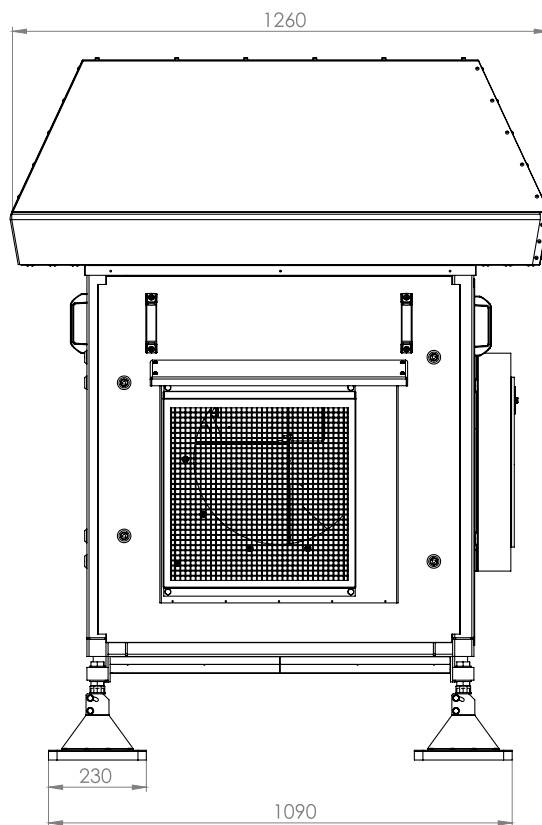
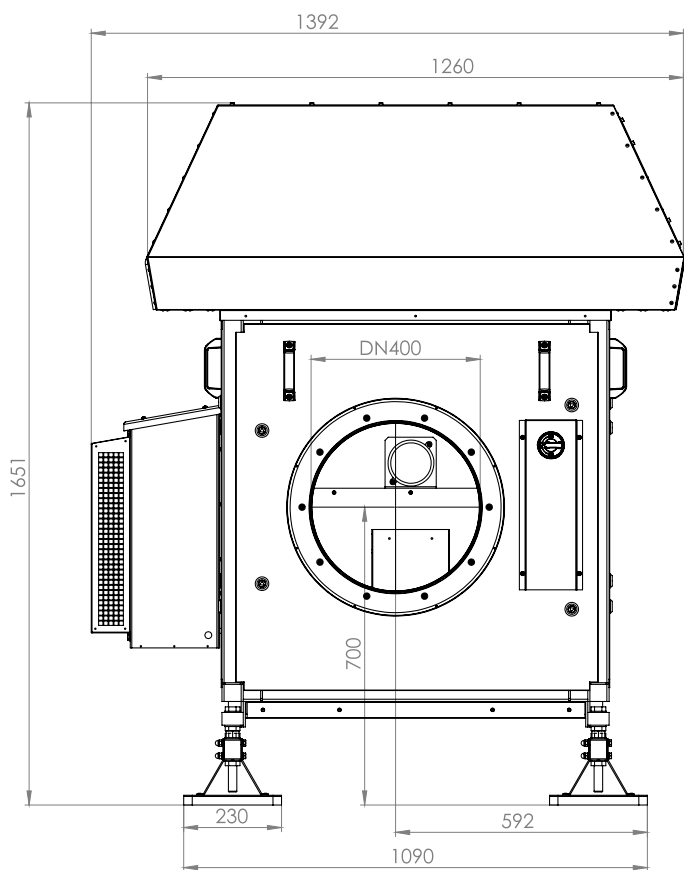
	Outdoor
Pa	130
m ³ /h	2.400
kW	3,2 - 10,4
m ³ /h	630 - 2.500
m ³ /h	630
°C	55
dB(A)	50
dB(A)	62
mm	400
	1 x horizontal
	included
	1 " IG
m ³ /h	1.780
	Ethylene glycol
kPa	53
	Stratified pipe (16mm)
MWh	34
	8,7 / 6,0
	8,7 / 8,2
	4,9
	R410A
	1,9
m ³ /h	3.200
db(A)	57 / 44
dB(A)	68 / 54
	included
Pa	300
	EC-Motor
	Source-oriented drive technology with controlled performance
	included
V / Hz	230 / 50
A	14,2
W	313
W/m ³ /h	0,130
W	500
kW	2,9
IP	54
	included
	included
	Collective fault signal, digital display on the device
°C	40
kg	335
	Steel (galvanised)
	G4
	included
	included
	included



Nr.	Component
1	Fan
2	Vaporizer
3	Differential pressure switch, filter monitoring
4	Main switch
5	Smoke detector
6	Compressor housing
7	Support
8	Plate-type heat exchanger
9	Air filter
10	Bypass
11	Controller

Terminals

Exhaust air heat pump - return	1" IG
Exhaust air heat pump - supply	1" IG
Condensate drain	16 mm Mepla pipe





AWN ECO+ 131 Technical data

Informations

Installation
Recommended setting pressure
Max. airflow for maximum system layout (75%) at 130 Pa
Modulation range heat output (A20W35)
Modulation range - exhaust air
Minimum exhaust airflow required
Max heating flow temperature
Sound pressure level at 3m distance (75%) – $L_{p,A}$
Sound power level of the device suction side (75%) – $L_{w,A}$

Connection to the main station

Exhaust air – pipe connection (DN)
Exhaust air – connection options
Integrated elastic connector for pipe
Brine – Pipe connection
Brine – Max. volume
Brine – Permitted antifreeze
Brine – Available external pressure delivered by HP
Condensate – Pipe

Energetic data

Max recoverable exhaust heat – Heating period
Nominal heat output / COP (A20W35)
Nominal heat output / COP (A20W28)
COP (A20W40)
Refrigerant
Refrigerant charge

Ventilation and acoustic features

Max Airflow (100%) at 130Pa
Sound pressure level – 3 meters distance at 100/50% - $L_{p,A}$
Sound power level on suction side at 100/50% - $L_{w,A}$

Integrated pressure air

Digital pressure display
Max. increase of pressure

Electrical data

Fan – Drive technology
Compressor – Drive technology
Repair switch
Supply voltage
Max current consumption
Power consumption fan device (75%) at 130 Pa
SFP fan (75%) at 130Pa
Max. fan power consumption
Max power consumption (complete device)
Index fan protection
Fan's motor protection
Contact for external enable signal
Fault signal
Max acceptable exhaust air temperature

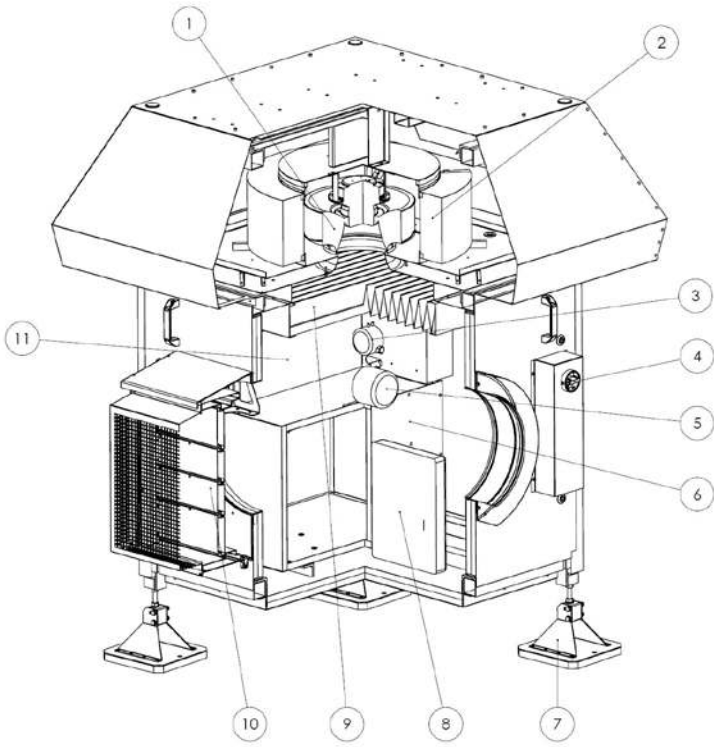
Housing properties

Weight (unfilled unit)
Material

Other components

Filter class (including filter monitoring)
Condensate tray with siphon
Smoke detector and bypass for free outflow in case of fire
Speed-controlled brine feed pump

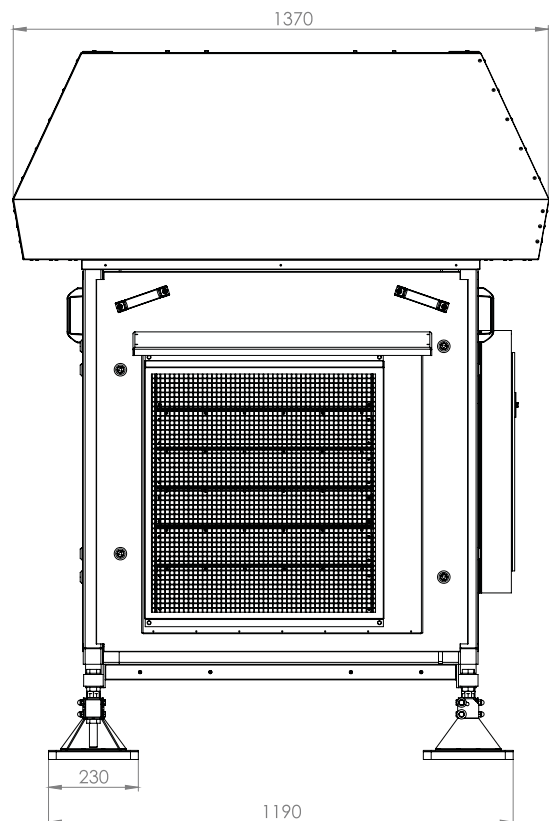
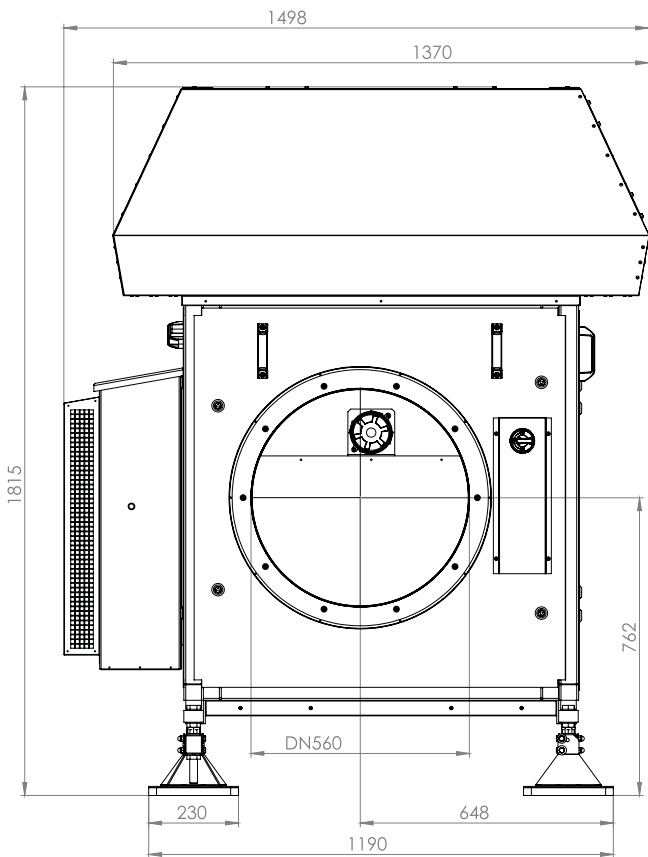
	Outdoor
Pa	130
m ³ /h	3.375
kW	6,6 - 22,2
m ³ /h	1.250 - 4.500
m ³ /h	1.250
°C	55
dB(A)	49
dB(A)	67
mm	560
	1 x horizontal
	included
	1 1/4 " IG
m ³ /h	3.155
	Ethylene glycol
kPa	52
	Stratified pipe (16mm)
MWh	59
	13,4 / 5,7
	13,7 / 8,0
	4,7
	R410A
	2,6
m ³ /h	4.500
db(A)	55 / 44
dB(A)	74 / 57
	included
Pa	300
	EC-Motor
	Source-oriented drive technology with controlled performance
	included
V / Hz	400 / 50
A	14
W	440
W/m ³ /h	0,130
W	690
kW	6,9
IP	54
	included
	included
	Collective fault signal, digital display on the device
°C	40
kg	430
	Steel (galvanised)
	G4
	included
	included
	included



Nr.	Component
1	Fan
2	Vaporizer
3	Differential pressure switch, filter monitoring
4	Main switch
5	Smoke detector
6	Compressor housing
7	Support
8	Plate-type heat exchanger
9	Air filter
10	Bypass
11	Controller

Terminals

Exhaust air heat pump - return	1 1/4" IG
Exhaust air heat pump - supply	1 1/4" IG
Condensate drain	16 mm Mepla pipe





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