COMFORT COOLING SOLUTIONS

EXPERTS IN IMPROVING INDOOR AIR SINCE 1955













AIRFLOW®



MORE THAN 60 YEARS OF EXPERIENCE

Founded in 1955, Airflow has grown from one man's expertise in fan design and air flow measurement into a thriving international group. Renowned for its innovative approach to new product development and air movement techniques, Airflow can offer you a variety of ventilation solutions to meet new and increasing customer demands and regulatory needs.

With our headquarters in High Wycombe, Airflow has subsidiaries in Germany and the Czech Republic and has global distributors from Norway to New Zealand.

Listening to the requirements of our customer enables Airflow's knowledgeable and committed staff to continually develop new and innovative products that raise standards and provide long term, reliable ventilation solutions.



UNITED KINGDOM
High Wycombe (Head Office)

Our founder started the business in 1955, just one mile from the current site, which has been Airflow's headquarters since 1960, co-ordinating our global activities.





GERMANY

Airflow has been serving ventilation products and air measurement devices to the German and European markets for over 50 years. Operating near Cologne, Airflow Germany has their own customer service, sales and technical sales teams.





CZECH REPUBLIC

Founded in Prague over 20 years ago, the Airflow Czech Republic team offer sales and servicing of ventilation products for the Eastern European market.



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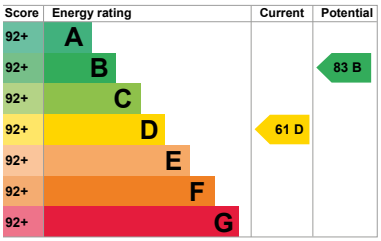
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FUTURE-READY COOLING SOLUTIONS FOR A WARMING WORLD

COMFORT COOLING DESIGNED FOR LOW-ENERGY LIVING

Homes are evolving, and so are expectations for comfort. As temperatures rise and building standards become more ambitious, residents increasingly expect spaces that remain fresh, healthy, and comfortably cool - without sacrificing efficiency or sustainability.



Energy modelling in the UK treats space cooling as part of a home's total regulated energy use. When a dwelling includes fixed air-conditioning, the Standard Assessment Procedure (SAP) (soon to be replaced by the Home Energy Model (HEM)) must account for the cooling demand, the system's efficiency, and the associated electricity consumption. This additional energy use increases the calculated total energy demand and carbon emissions, which can reduce both SAP scores and EPC ratings.

SAP 10.3 is the approved methodology for demonstrating compliance with Part L and for producing Energy Performance Certificates (EPCs), and it explicitly includes cooling systems in the calculation of total energy use and carbon emissions.

FIND THE RIGHT OVERHEATING SOLUTION FOR YOUR PROJECT

As climate projections shift and regulations become more demanding, integrated systems that combine ventilation, filtration, and low-energy cooling are rapidly becoming essential design elements rather than optional upgrades.

For large-scale developers and housing providers, building long-term resilience means specifying low-energy, ventilation-led cooling strategies early in the design process, commissioning them thoroughly, and providing clear guidance to occupants. This approach protects resident comfort, supports compliance, and safeguards asset value over time.

GOOD DESIGN TO REDUCE COOLING DEMAND

- Limit west-facing glazing or incorporate dynamic shading for western exposures.
- Maximise night-time ventilation where feasible, ensuring external noise and air-quality constraints are addressed.
- Use thermal mass where appropriate - for example, exposed concrete slabs in apartment buildings.
- Select glazing with low solar-gain properties for facades with high sun exposure.

Our overheating solutions include:

✓ **Comfort cooling via MVHR**

✓ **High-capacity purge extract fans**

✓ **Single-room units with cross-ventilation capability**

WHY RESIDENTS AND DEVELOPERS SHOULD CHOOSE MVHR WITH COMFORT COOLING



- Low-energy comfort cooling that works in harmony with high-performance building fabric, heat-pump technology and BMS (Building Management Systems).
- Even background comfort throughout the home.
- Cleaner indoor air thanks to continuous filtration and controlled ventilation.
- A single integrated system, reducing plant complexity and supporting streamlined maintenance strategies.
- Cost-effective solution, providing whole house comfort cooling without the high running costs typically associated with traditional AC systems.
- Future-proof performance that aligns with net-zero goals and emerging regulations.

COMPLIANCE WITH APPROVED DOCUMENT O: OVERHEATING



Part O Building Regulations

COMPLIANCE WITH **PART O** CAN BE DEMONSTRATED BY:

The Simplified Method

Limiting solar gains:

- Limit the maximum glazing area of the building
- Limit the maximum glazing area of the most glazed room
- Shading (extra options for high risk locations: external shutters with means of ventilation, limiting G value & light transmittance; and overhangs on south facing facades)

Removing excess heat

- Limit the minimum free areas for buildings or parts of buildings with/without cross ventilation
- Purge ventilation in compliance with Part F

This section details a dynamic thermal modelling method for demonstrating compliance with requirement O1. It provides a standardised approach to predicting overheating risk for residential buildings using dynamic thermal modelling as an alternative to the simplified method in Section 1.

The Dynamic Thermal Modelling, this method offers the designer additional flexibility:

- Residential buildings with very high levels of insulation and airtightness
- Residential buildings with specific site conditions
- Residential buildings that are highly shaded by neighbouring properties, structures or landscape.

Under TM59, one of the core criteria states that indoor temperatures as should not exceed 26°C for no more than 3% of annual occupied hours when an MVHR system is installed. This benchmark helps ensure that homes remain comfortable during hot weather while supporting low-energy design strategies.

Dynamic Thermal Modelling compliance:

- CIBSE's TM59 methodology for predicting overheating risk
- BCB – compliance checklist (CIBSE's TM59, section 2.3) – Appendix B

Cooling by means of ventilation

An MVHR system typically provides standard air flow rates of 0.5 air changes per hour to maintain a good level of indoor air quality. To provide effective cooling to a space, typically at least 1-2 air changes per hour are required which is significantly higher compared to the standard MVHR air flow rates.

"In some instances, noise, pollution and security issues prevent occupants from opening their windows. In these cases, if a redesign is not on the cards, the only solution may be to install mechanical ventilation, or in extreme cases, comfort cooling."

Preventing Overheating, published by Good Homes Alliance

ADROIT COMFORT COOLING SOLUTION

Water-based cooling system which integrates with Adroit MVHR
(Mechanical Ventilation with Heat Recovery)

This system combines air distribution and energy recovery (via the Adroit MVHR) with active cooling using a water coil. This hybrid approach is great for maintaining indoor comfort while optimising energy use.

Adroit Comfort Cooling Kits

Adroit DV110



Adroit DV145



Adroit DV245



The Comfort Cooling kits are available with our premium Adroit DV110, DV145 and DV245 MVHR units, making it an ideal choice for projects that require additional cooling support.

These units are particularly well-suited for domestic and residential applications with a maximum floor area of up to 300 m^2, (based on 1 ACH).

Designed for flexibility and ease of installation, the units are suitable for vertical mounting, with all four connection spigots conveniently located at the top of the unit. They incorporate duct-mounted water cooling coils, which not only provide effective cooling but can also be used to support comfort heating requirements.

Furthermore, this solution assists dwellings in meeting the compliance standards set out in Approved Document F, Volume 1, and Approved Document O, which addresses the issue of overheating in residential buildings.

The kits do not include the external heating/cooling source required for the duct water circuit. This source could be an air source heat pump, mini-chiller, condenser, district heating and cooling plant (DHCP) or reversible heat pump for example.

COMFORT COOLING SOLUTIONS TO MEET YOUR COOLING NEEDS

This product range is suitable for new home developments and the RMI (Repair, Maintenance and Improvement) environment, enhancing sustainability by reducing the power consumption of primary heating and cooling systems through energy recovery, supporting the transition to net-zero.

The Adroit Comfort Cooling Solution offers a highly efficient space-saving alternative to traditional integrated solutions. Unlike bulky floor-to-ceiling units with built-in compressors which often dominate interior spaces and generate significant noise, this modular setup decentralises the components.

The compact MVHR unit can be discreetly installed on the wall or floor in utility spaces, water coil is fitted in the supply air duct, while the heating and cooling source is usually fitted outdoors. This configuration not only reduces acoustic impact but also preserves architectural flexibility, making it ideal for modern homes and apartments where space and comfort are at a premium.



Circular Duct Water Coils

The duct water coils with circular duct connections are engineered to heat or cool the supply air from the Adroit MVHR unit. Designed for horizontal duct installation, the coil should be positioned between the MVHR unit and the supply air distribution box. This ensures that air delivered to all habitable rooms is maintained at a comfortable temperature.

The hydrophilic aluminium fins enhance heat exchange by absorbing surface moisture and spreading it evenly, preventing droplet formation. This improves cooling efficiency and airflow consistency.

The system is designed to operate across a wide range of conditions. For water, the temperature range is 0 to +110°C, while for ethylene glycol it is -40 to +100°C. The maximum operating pressure is 1.6 MPa (16 bar). For reliability, all coils are pressure-tested to ensure consistent performance and durability.



Coil Key Features

- Chilled water coil with 3 tube rows made from hydrophilic aluminium
- Copper tubes and connections for efficient thermal conductivity
- Stainless steel drip tray for effective condensate collection
- Aluzinc-coated sheet steel casing (AZ 150) for durability and corrosion resistance
- Openable inspection cover for easy cleaning and maintenance
- Circular duct connections with integrated rubber seals
- Air tightness class D (EN 15727) to prevent leakage and ensure performanc

NTC Sensor

An NTC sensor must be installed in the supply air duct to measure the temperature of the supply air downstream of the water cooling coil, ensuring precise control and helping to avoid both overcooling and undercooling.

Volumiser Vessel

A volumiser vessel is used within a water circuit to stabilise flow rates, providing hydraulic stability and improving overall system efficiency. It helps prevent short-cycling of heat pumps and smooths flow variations during defrost cycles or changes in load conditions.

Key features include enhanced system stability and more consistent hydraulic performance.

ADROIT COMFORT COOLING SOLUTION

Adroit



The Adroit MVHR* unit, used to distribute the air at a comfortable temperature throughout the dwelling in habitable rooms. Extracts humid air from wet rooms and recovers the energy via its heat exchanger.

Please note: the MVHR unit is not included in the kit.

*MVHR (Mechanical Ventilation with Heat Recovery)

Heat Pump



An external source for heating/cooling suitable for the duct water circuit is required. This source can be an ASHP, mini-chiller, condenser, district heating and cooling plant (DHCP), reversible heat pump for example.

Please note, the external source is not included in the kit.

INCLUDED IN THE KIT

Duct Cooler



This duct cooler uses a water coil to transfer energy from water to air, enhancing thermal efficiency. The fins improve heat exchange by evenly spreading water across their surface, preventing droplet formation. Designed to meet air tightness class D under EN 15727, the unit ensures that chilled air is delivered effectively without leakage, promoting energy savings and reliable performance.

Adroit Controller



An optional controller, Adroit Cloud, comes as standard with the Adroit unit. It is easy to use, featuring touch buttons on the control panel for adjusting ventilation. Profile-based control helps reduce energy consumption.

Once registered with the Adroit Cloud service, the ventilation unit can be remotely controlled via a smartphone, tablet, or computer.

Volumiser Vessel



A volumiser vessel (also called a buffer tank or hydraulic volumiser) increases the water volume in a heat-pump circuit to stabilise flow, prevent short cycling, improve heat pump efficiency, and ensure steady cooling/heating delivery when paired with an MVHR-based air distribution system.

A typical sizing consideration is 10-20 L of system volume per kW of heat pump capacity.

NTC Temperature Sensor



Additional NTC (Negative Temperature Coefficient) sensor fitted in the supply air duct, required for reading the supply air temperature downstream the water cooling coil.

Lockshield Gate Valve



The lock shield valve or flow setter is dependent on multiple factors including system size. This allows the water to flow through the coil at the correct rate so that the correct amount of heat is transferred. Each system will require a different flow setting to meet its needs.

Automatic Air Vent



It is advised to install air vents on all sealed systems involving a heat pump and heat transfer fluid. This is to remove air from the system which helps with efficiency and longevity of the system.

COMFORT HEATING SOLUTION ADD-ONS

Heating Expansion Vessel



Accommodates the natural expansion of heated water within a closed-loop system, helping to maintain stable system pressure and protect pipework and components. This supports reliable operation and extends the lifespan of the heating system.

Flow Balancing Valve



Ensures the correct flow of heating water is delivered throughout the system, helping terminal units operate at their designed performance. The integrated flow indicator allows quick and accurate adjustment, simplifying commissioning and maintenance.

Strainer



Removes debris and particulate matter from the water circuit, helping to protect pumps, valves, and heat exchangers from blockage and wear. Its compact design and accessible filter element make installation and routine servicing straightforward.

Insulated Buffer Vessel



Provides additional water volume and hydraulic separation between primary and secondary circuits, helping to optimise system performance. High-quality insulation minimises heat loss, while the increased system volume improves heat pump efficiency, reduces compressor cycling, and enhances system reliability. Suitable for both heating and cooling applications.

DESIGN & INSTALL CHECKLIST

Component	Heating Mode	Cooling Mode	
Reversible Heat Pump	✓	✓	Produces hot or chilled water
Water-to-Air Duct Coil (same coil)	✓	✓	Same coil provides warm or cool air
Expansion Vessel	✓	✓	Required on the closed water circuit
Volumiser / Buffer Vessel	Optional	Optional	Depends on minimum water volume required by heat pump
Safety Relief Valve	✓	✓	Protects system pressure
Air Vent / Air Separator	✓	✓	Removes trapped air
Circulation Pump	✓	✓	May be integral to heat pump
Y Pattern Strainer	✓	✓	Protects heat pump and coil
Flow Balancing Valve	✓	✓	Sets and verifies design flow
Isolation Valves	✓	✓	Maintenance access
Room Thermostat / Controller	✓	✓	Calls for heating or cooling
Duct Temperature Sensor	✓	✓	Controls supply air temperature
Anti-freeze Protection (such as glycol %)	✓	Optional	Protects external pipework and water circuit
Condensate Drain	✓	✓	Cooling coil will condensate
Condensate Drain Pump	✗	✓	Removes condensate
Insulation	✓	✓	Heat loss reduction and condensation prevention

ACCESSORIES FOR EACH KIT

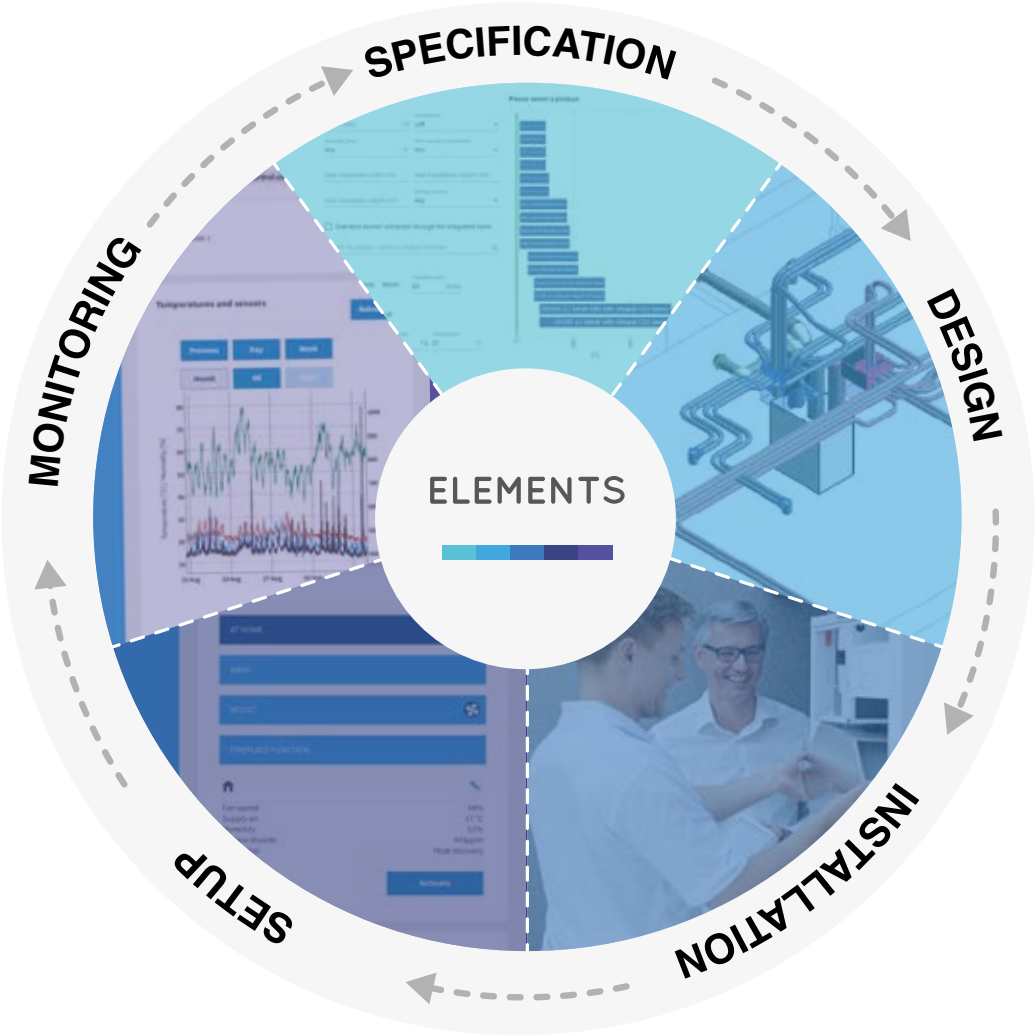
Adroit DV110 Kit - Small Application	
SKU	Description
90002357	4L Heating expansion vessel
90002359	28 mm Flow balancing valve with fill and flush
90002360	28 mm Y Pattern strainer (800 micron)
90002361	25 L Insulated buffer vessel
90002364	Buffer tank legs
90002355	CWC 200-3 Duct coil insulation panels kit

Adroit DV145 Kit - Medium Application	
SKU	Description
90002358	8L Heating expansion vessel
90002359	28 mm Flow balancing valve with fill and flush
90002360	28 mm Y Pattern strainer (800 micron)
90002362	50 L Insulated buffer vessel
90002364	Buffer tank legs
90002355	CWC 200-3 Duct coil insulation panels kit

Adroit DV245 Kit - Large Application	
SKU	Description
90002358	8L Heating expansion vessel
90002359	28 mm Flow balancing valve with fill and flush
90002360	28 mm Y Pattern strainer (800 micron)
90002363	80 L Insulated buffer vessel
90002364	Buffer tank legs
90002356	CWC 250-3 Duct coil insulation panels kit

Note: Hydraulic components, including expansion vessels, should be correctly sized to suit the heat pump system requirements.Control and balancing valves should be selected to provide the required water flow rates. All plumbing accessories should be considered during system design and installed by appropriately trained and qualified engineers.

CONSIDERATIONS



SIZING & COMMISSIONING

- The volumiser, coil, and valve settings must be matched to the heat pump/chiller capacity and flow rates.
- Appropriate commissioning is key to avoid inefficiencies.
- The dew point is the temperature to which air must be cooled to become saturated with water vapor, assuming constant air pressure and water content. When cooled below the dew point, moisture capacity is reduced, and airborne water vapor will condense to form liquid water known as dew.

CONTROL STRATEGY

- When using the Adroit Cloud or a digital controller, it is important to ensure that the settings are aligned with the external heating or cooling source to enable harmonious operation.
- Adroit controls include an automatic 100% modulating summer bypass and a cool recovery mode that helps maintain a comfortable indoor climate during warmer months. When the outdoor air is hotter than both the extract air and the desired supply air temperature, the unit uses the cooler extract air to reduce the temperature of the incoming supply air. In this mode, the system is actively recovering coolness from your home to improve comfort and efficiency.
- An optional Building Management System (BMS) using Modbus RTU offers a reliable control strategy. Adroit ventilation units are compatible with Modbus RTU-based building automation systems, allowing for centralised control. Up to 32 units can be connected on a single Modbus line, making it a scalable solution for larger installations.

MAINTENANCE ACCESS

- Make sure components like the air vent and lock shield gate valve are accessible for servicing.

OPTIONAL ENTHALPY HEAT EXCHANGER AIDS COOLING

ADROIT WITH ENTHALPY

Temperature and humidity play a vital role in creating a pleasant and healthy environment. The Adroit MVHR units, featuring advanced enthalpy heat exchangers, recover both heat and moisture to maintain a consistently comfortable indoor climate.

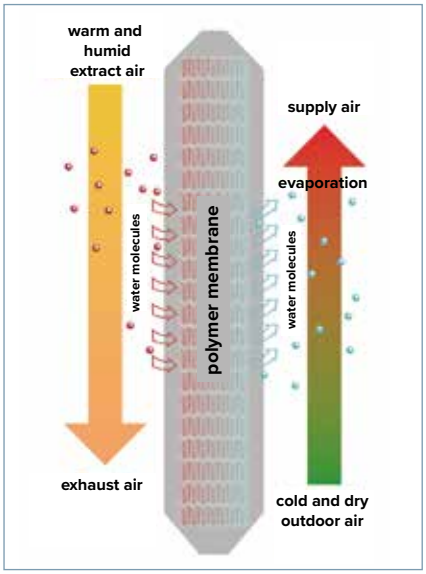
RELATIVE HUMIDITY: A KEY TO INDOOR COMFORT

Maintaining the right humidity level is essential for a healthy indoor climate. Ideally, relative humidity should range between 30% and 60%.

During summer, the enthalpy heat exchanger can reduce indoor air humidity by transferring moisture from warm extract air to cooler supply air, thereby significantly improving thermal comfort even when temperature changes are small.

ENTHALPY HEAT EXCHANGER: RECOVERING HEAT AND HUMIDITY

Combat dry indoor air with ventilation units equipped with enthalpy heat exchangers. These advanced systems recover not only heat from the exhaust air but also up to 70% of its moisture, returning both to the supply air. This process helps prevent indoor air discomfort, ensuring a consistently comfortable and healthy indoor climate. During night cooling or summer bypass modes, ERVs (energy recovery ventilation units) help retain cooler, drier indoor conditions while still ventilating, reducing the risk of reintroducing heat and moisture.



ERV BENEFITS

- ✓ Efficient and energy-saving heat recovery plus hygienic humidity recovery
- ✓ Humidity control and recovery up to 70%, depending on the relative humidity of the indoor air
- ✓ ERVs reduce the need for active cooling (like air conditioning) by passively managing heat and humidity
- ✓ Maintain consistent temperature and humidity levels
- ✓ Odours or other impurities are not transmitted

OPERATION OF ENTHALPY HEAT EXCHANGER

As the extract air passes through the enthalpy exchanger, water molecules condense on its surface and diffuse through a special membrane. On the other side, the dry incoming air absorbs this moisture. At the same time, coolth is also transferred. The result? Fresh supply air that's pleasantly precooled with an optimum rH% level - enhancing indoor comfort.

NATURAL EFFICIENCY THROUGH OSMOSIS

The enthalpy heat exchanger operates on the principle of osmosis—just like in plants—where water molecules migrate in liquid form through a membrane. As moist extract air contacts the cooler membrane surface, water vapour condenses and diffuses through the polymer membrane. On the other side, the dry supply air absorbs this moisture.

This high-performance membrane ensures both hygienic and efficient moisture transfer. The extract and supply air streams remain hermetically sealed from one another, preventing the spread of odours or organic particles. The membrane complies with the stringent hygiene standards of VDI 6022.

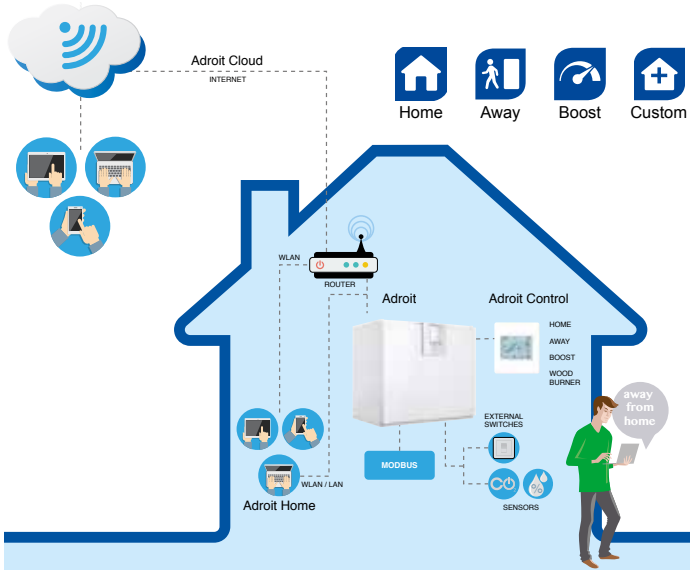
CONTROL MADE EASY

CONTROLS

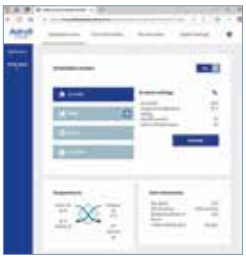
Ideal indoor air quality is achieved by automatically adjusted ventilation.

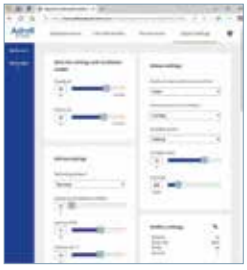
Adroit DV145 is controlled via 4 ventilation profile controls which provide the following features:

- **4 ventilation profiles,**100% adjustable
- **Internet** connection available
- **Automatic boost function** with delay timer
- **Filter maintenance reminder** via counter clock (standard)
- **Heater control** for optional post-heater
- **Connection to BMS** via LON or KNX
- **Self diagnostic** via fault signal relay
- **On-demand control** via humidity and CO_2 sensors
- **Separate fan control** for ease of commissioning
- **Weekly ventilation programming** allows users to pre-set the ventilation levels scheduled for different days
- **Indoor temperature control** based on extract air temperature or supply air temperature



Customised Control, Anywhere





Adroit™

- Tailor your ventilation around your daily life
- Four customisable ventilation profiles can be scheduled around you
- BMS connectivity enables the property's ventilation to be controlled from a central point
- Maintain a healthy indoor air environment at all times whilst using minimal energy

Profiles include:

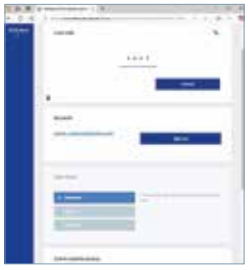
Home - control the everyday running rate

Away - reduces the flow rate when demand is low

Boost - increases the flow rate when occupancy has increased

Custom - customise the unit operating mode to suit user preferences





CONTROL MADE EASY

Monitor and control your ventilation on the go. Airflow ‘Cloud Control’ makes life easy.

Adroit™

INTERNET

‘Smart’ control via Adroit Cloud from your PC, tablet or smartphone for ‘on-demand’ connectivity.

GRAPHICAL CONTROL PANEL

Control panel guides you step by step, to get started. The coloured display is intuitive and easy to use.

ADROIT CLOUD

With the user’s permission, Airflow technical support can connect to the unit and monitor its functions remotely.

HOME NETWORK

Connect the unit to the home network and then control it with a computer or a mobile device connected wirelessly into the network.

HOUSE AUTOMATION

Connect the ventilation unit into house automation through the Modbus.

HUMIDITY SENSOR

Adroit units have an integrated humidity sensor that boosts ventilation as needed, for instance, after a bath or shower. Ventilation level is also reduced automatically when excessive humidity has been removed. If needed, you can have an additional humidity sensor for rooms where the humidity level fluctuates, such as bathroom.

CARBON DIOXIDE SENSOR (CO_2)

Automate ventilation totally by purchasing a carbon dioxide sensor. It automatically boosts ventilation when the carbon dioxide level rises. Indoor air remains fresh and oxygen rich even if the house is full of people.

HEATERS

On those rare occasions when the outside temperature drops well below zero, optional heaters are available to top up the indoor temperature and protect the unit from frost.

Digital Controller



4 user profiles. 100% adjustable ventilation, touch screen

CO_2 Transmitter



Sensor used for detecting and controlling carbon dioxide concentration

Manual Controller



Wall mounted, four speed (independently adjustable) rotary switch controller

Humidity Transmitter



Sensor used for detecting and controlling relative humidity concentrations

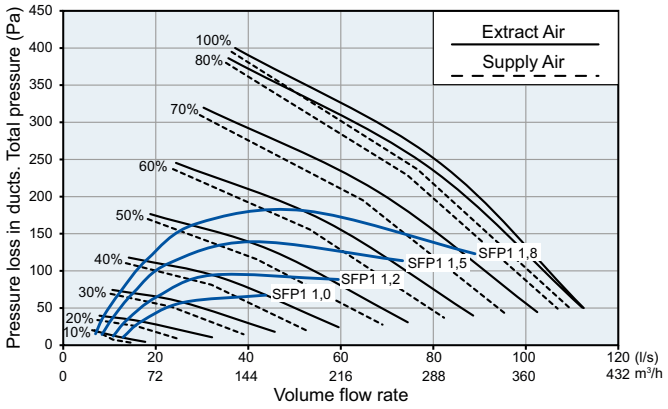
ADROIT DV110 COMFORT COOLING KIT

BILL OF MATERIALS

Adroit DV110 Comfort Cooling Kit - 90002287

Part No:	Description	Qty
90000610	Adroit digital controller	1
60000134	NTC sensor	1
90002279	Duct water cooling coil	1
90000497	200 mm to 160mm Metal connector	2
90002281	35 litre volumiser vessel	1
90002282	Automatic air vent	1
90002283	22 mm brass lockshield gate valve	1

PERFORMANCE



* Guidance only. Dependant upon system pressure.

SAP RESULTS

Systems with rigid ductwork only SAP 2009 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	1.01	91%
Kitchen+2 additional wet rooms	0.80	91%
Kitchen+3 additional wet rooms	0.79	90%
Kitchen+4 additional wet rooms	0.86	90%
Kitchen+5 additional wet rooms	0.98	89%
Kitchen+6 additional wet rooms	1.12	89%
Kitchen+7 additional wet rooms	1.28	88%

Systems with rigid ductwork only SAP 2012 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	0.83	91%
Kitchen+2 additional wet rooms	0.85	90%
Kitchen+3 additional wet rooms	0.97	89%
Kitchen+4 additional wet rooms	1.16	89%
Kitchen+5 additional wet rooms	1.40	88%

SOUND LEVELS

		Sound power level in the supply air duct (one duct) by octave band L_w, dB										Sound power level in the extract air duct (one duct) by octave band L_w, dB									
		Adjustment position										Adjustment position									
Adjustment position (%)		10	20	30	40	50	60	70	80		100	10	20	30	40	50	60	70	80		100
Medium frequency of the octave band Hz	63	53	60	67	71	74	78	81	83		84	54	56	62	65	69	72	75	77		79
	125	48	56	61	66	70	74	76	78		80	42	44	50	53	58	61	64	66		68
	250	46	53	58	62	65	69	71	77		76	34	41	46	50	53	56	60	62		64
	500	40	48	56	57	60	62	65	70		69	26	35	40	43	46	49	52	55		56
	1000	31	42	50	55	58	61	64	67		67	18	27	34	38	41	44	47	50		51
	2000	18	32	40	46	52	56	60	64		64	13	17	24	29	33	36	39	42		44
	4000	17	20	30	38	44	49	53	62		58	17	17	17	18	20	23	27	31		33
	8000	21	21	25	34	42	48	53	62		59	21	21	21	21	21	22	24	26		29
L_W, dB		55	62	69	73	76	80	83	88		86	55	57	62	66	70	72	75	78		79
L_{WA}, dB(A)		41	49	56	60	63	67	69	75		73	32	38	43	46	50	53	56	59		60

	Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m² sound absorption)									
	Adjustment position									
Adjustment position (%)	10	20	30	40	50	60	70	80		100
L_{pA}, dB (A)	21	24	30	32	35	39	42	45		47

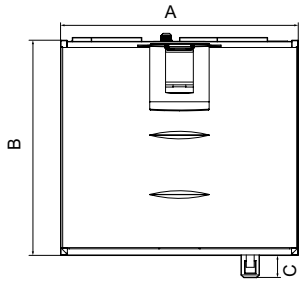
ADROIT DV110 COMFORT COOLING KIT

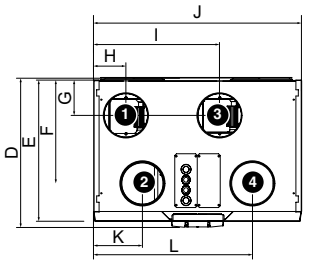
TECHNICAL SPECIFICATION

90002287 Max air flow (m^3/h) / (l/s) at 100Pa Max cooling capacity (kW) * EAN	Adroit DV110 Comfort Cooling Kit 389 / 108 3.2 5019009338699
Specification	**Adroit DV110 MVHR Unit**
Suitable for dwellings up to m^2	170
Max air flow (m^3/h) / (l/s) at 100Pa	389 / 108
Thermal efficiency (%)	Over 90
Heat exchanger	Cross-Counter-Flow (Plastic)
Fans	EC
Summer by-pass damper	100% automatic
Integral humidity sensor (RH %)	0 - 100
Integral CO_2 sensor (ppm)	500 - 2000
Frost protection (optional heater)	Smart Frost Protection Strategy
Controls (optional)	Digital - 4 Profiles, 100% adjustable Manual - 4 Speed controller, adjustable
Connection to BMS	Modbus / KNX optional
Mounting	Wall / Ceiling
Sound pressure level @3m (dB(A))	23
Duct diameter (mm)	160 (4 ports)
Condensate discharge	3/4 BSP
Electrical supply	230V / 1ph / 50Hz
Electrical power input at max flow (W)	226
Filter Class**	2x ISO Coarse > 75% (G4) and 1x ISO ePM1 50% (F7)
Built-in electric post-heater (optional) (W)	900
Protection class	IP34
Casing insulation (mm)	20
Weight (kg)	58
Dimensions (L x D x H) (mm)	638 x 472 x 678
Duct entry	Top Entry
Versions available:	
Right Hand:	90001267
With optional electric post-heater:	90001267EPH
Left Hand:	90001268
With optional electric post-heater:	90001268EPH
Specification	**Duct water cooling coil**
Category	Water cooler/heater circular
Type	3 rows
Connection (mm)	22
Air tightness class	D
Diameter (mm)	200
Exchanger length (mm)	280
Exchanger height (mm)	325
Exchanger weight (kg)	5
Coil Casing Width (mm)	415
Coil Casing Height (mm)	360
Coil Casing Depth (mm)	397
Weight (kg)	8
Specification	**Hydraulic kit**
Volumiser vessel capacity (L)	35
Max. water pressure (bar) ***	3
Volumiser operating temperature	-10°C to 110°C
Automatic air vent type	15 mm 6 Bar
Lockshield gate valve type	22 mm brass

*Cooling capacity may vary depending on outdoor and indoor temperature and relative humidity conditions.**Complies with ISO 16890. *** Max. pressure 3 bar / 0,3 MPa. Correctly sized pipes should be used for installation. The relevant standards and regulations must be followed.

DIMENSIONS





Duct outlets, model R

Inner diameter of female outlet collar ø 160 mm

1. Supply air to dwelling
2. Extract air from dwelling to unit
3. Exhaust air out
4. Outdoor air to unit
5. Condensate drain

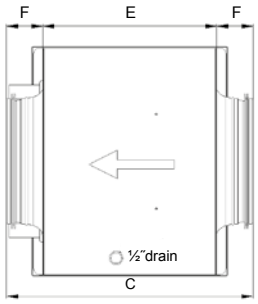
Duct outlets, model L

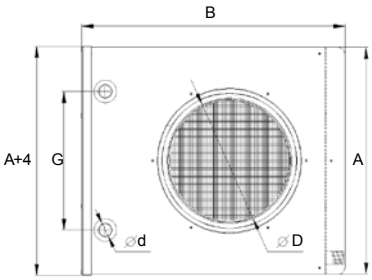
Inner diameter of female outlet collar ø160 mm

1. Exhaust air out
2. Outdoor air to unit
3. Supply air to dwelling
4. Extract air from dwelling to unit
5. Condensate drain

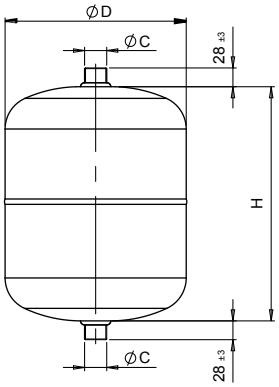
+ excludes motors. Motor warranty one year from date of purchase

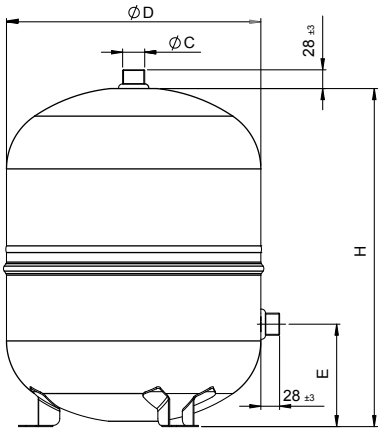
Model	A	B	C	D	E	F	G	H	I	J	K	L
DV110	638	678	42	472	455	325	111	112	390	638	160	478





Ø D(mm)	A(mm)	B(mm)	C(mm)	E(mm)	F(mm)	G(mm)	Ø d(mm)
200	360	415	397	277	60	220	22





Height	Diameter	Connection Height	Connection Size
H	Ø	E	C
367	380	125	1"G

ADROIT DV110 COMFORT COOLING KIT

CAPACITY TABLES - STANDARD HEAT EXCHANGER MODELS

Adroit DV110 Comfort Cooling Kit			Standard Plastic Heat Exchanger Models				
External Conditions: 34°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**2.46**	Combined kW	1.62	1.85	2.07	2.27	2.46
		Supply air °C	15.20	15.90	16.50	17.00	17.40
24°C, 50% rH	**2.44**	Combined kW	1.61	1.83	2.04	2.24	2.44
		Supply air °C	15.30	16.00	16.60	17.10	17.60
25°C, 50% rH	**2.46**	Combined kW	1.60	1.82	2.03	2.23	2.46
		Supply air °C	15.40	16.10	16.80	17.40	17.60
26°C, 50% rH	**2.51**	Combined kW	1.59	1.81	2.02	2.21	2.51
		Supply air °C	15.50	16.30	17.00	17.50	17.50
External Conditions: 32°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**2.17**	Combined kW	1.43	1.63	1.82	2.01	2.17
		Supply air °C	14.60	15.30	15.80	16.40	16.80
24°C, 50% rH	**2.14**	Combined kW	1.42	1.63	1.81	1.97	2.14
		Supply air °C	14.70	15.50	16.00	16.50	17.00
25°C, 50% rH	**2.11**	Combined kW	1.41	1.61	1.78	1.96	2.11
		Supply air °C	14.80	15.60	16.20	16.80	17.10
26°C, 50% rH	**2.08**	Combined kW	1.41	1.58	1.77	1.93	2.08
		Supply air °C	15.00	15.60	16.30	16.90	17.30
External Conditions: 29°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**1.74**	Combined kW	1.17	1.22	1.48	1.62	1.74
		Supply air °C	13.80	14.40	15.00	15.40	15.80
24°C, 50% rH	**1.71**	Combined kW	1.16	1.31	1.45	1.58	1.71
		Supply air °C	13.90	14.50	15.10	15.60	16.00
25°C, 50% rH	**1.68**	Combined kW	1.14	1.28	1.43	1.56	1.68
		Supply air °C	14.00	14.70	15.30	15.80	16.20
26°C, 50% rH	**1.65**	Combined kW	1.13	1.28	1.41	1.54	1.65
		Supply air °C	14.10	14.80	15.40	15.90	16.40

CAPACITY TABLES - ENTHALPY HEAT EXCHANGER MODELS

Adroit DV110 Comfort Cooling Kit			Optional Enthalpy Heat Exchanger Models				
External Conditions: 34°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**3.16**	Combined kW	2.03	2.35	2.56	2.97	3.16
		Supply air °C	14.10	14.90	14.90	16.10	16.60
24°C, 50% rH	**3.09**	Combined kW	1.97	2.30	2.61	2.80	3.09
		Supply air °C	14.30	15.10	15.70	16.20	16.70
25°C, 50% rH	**2.99**	Combined kW	1.94	2.27	2.49	2.74	2.99
		Supply air °C	14.60	15.30	16.00	16.60	17.10
26°C, 50% rH	**2.95**	Combined kW	1.89	2.13	2.46	2.67	2.95
		Supply air °C	14.80	15.60	16.30	16.90	17.10
External Conditions: 32°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**2.67**	Combined kW	1.78	1.99	2.29	2.48	2.67
		Supply air °C	13.80	14.50	15.10	15.60	16.10
24°C, 50% rH	**2.65**	Combined kW	1.73	1.95	2.16	2.36	2.65
		Supply air °C	14.10	14.80	15.40	15.90	16.40
25°C, 50% rH	**2.51**	Combined kW	1.68	1.90	2.12	2.32	2.51
		Supply air °C	14.20	14.90	15.60	16.10	16.60
26°C, 50% rH	**2.39**	Combined kW	1.63	1.86	2.08	2.18	2.39
		Supply air °C	14.40	15.20	15.90	16.40	16.90
External Conditions: 29°C; 50% rH							
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**50**	**60**	**70**	**80**	**90**
		Cooling Airflow Rates (m³/h)	**180**	**216**	**252**	**288**	**324**
		Fan speed (%)	**50**	**56**	**61**	**68**	**75**
23°C, 50% rH	**2.06**	Combined kW	1.31	1.51	1.70	1.88	2.06
		Supply air °C	13.40	14.00	14.60	15.00	15.50
24°C, 50% rH	**1.93**	Combined kW	1.26	1.47	1.75	1.75	1.93
		Supply air °C	13.60	14.30	15.30	15.30	15.80
25°C, 50% rH	**1.79**	Combined kW	1.20	1.42	1.52	1.71	1.79
		Supply air °C	13.70	14.40	15.00	15.50	16.00
26°C, 50% rH	**1.76**	Combined kW	1.16	1.38	1.48	1.68	1.76
		Supply air °C	13.90	14.60	15.20	15.80	16.30

The combined total kW cooling accounted for coolth recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation.
For cooling output data based on other assumed external design conditions, please contact Airflow.
The calculation method is assuming water used as circulating medium, inlet temperature = 6°C and outlet temperature = 12°C.
100 Pa pressure drop is assumed. Fan speed (%) = Generated via Selectair.

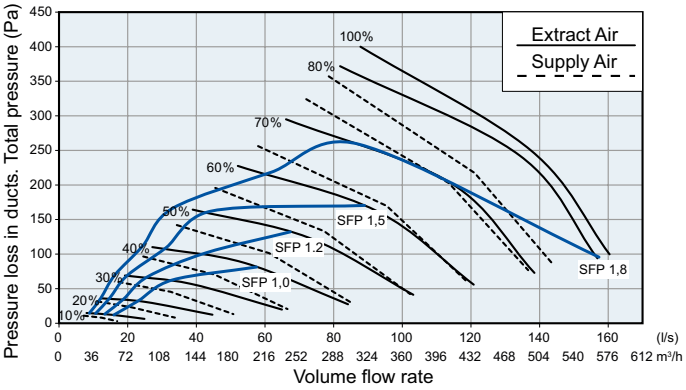
ADROIT DV145 COMFORT COOLING KIT

BILL OF MATERIALS

Adroit DV145 Comfort Cooling Kit - 90002288

Part No:	Description	Qty
90000610	Adroit digital controller	1
60000134	NTC sensor	1
90002279	Duct water cooling coil	1
90002281	35 litre volumiser vessel	1
90002282	Automatic air vent	1
90002283	22 mm brass lockshield gate valve	1

PERFORMANCE



* Guidance only. Dependant upon system pressure.

SAP RESULTS

Systems with rigid ductwork only SAP 2009 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	1.39	92%
Kitchen+2 additional wet rooms	1.09	92%
Kitchen+3 additional wet rooms	0.99	92%
Kitchen+4 additional wet rooms	0.99	91%
Kitchen+5 additional wet rooms	1.05	91%
Kitchen+6 additional wet rooms	1.13	90%
Kitchen+7 additional wet rooms	1.24	90%

Systems with rigid ductwork only SAP 2012 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	1.11	92%
Kitchen+2 additional wet rooms	1.05	92%
Kitchen+3 additional wet rooms	1.05	91%
Kitchen+4 additional wet rooms	1.19	90%
Kitchen+5 additional wet rooms	1.31	90%
Kitchen+6 additional wet rooms	1.48	90%

SOUND LEVELS

		Sound power level in the supply air duct (one duct) by octave band L_w, dB										Sound power level in the extract air duct (one duct) by octave band L_w, dB									
		Adjustment position										Adjustment position									
Adjustment position (%)		10	20	30	40	50	60	70	80	90	100	10	20	30	40	50	60	70	80	90	100
Medium frequency of the octave band Hz	63	55	66	73	76	80	83	85	86	87	87	53	58	63	67	73	78	78	79	80	79
	125	50	58	64	68	72	76	80	83	84	84	45	50	56	61	65	69	73	75	75	75
	250	52	57	63	65	68	72	74	77	78	78	40	39	44	49	54	57	60	63	64	64
	500	41	48	53	57	61	64	67	70	71	71	30	37	43	47	50	53	56	58	59	59
	1000	53	47	52	57	60	64	65	67	68	68	32	33	36	41	44	48	50	52	53	53
	2000	23	34	43	48	53	58	62	64	66	66	15	22	30	34	38	42	45	48	49	49
	4000	18	23	36	44	50	55	59	62	63	63	17	17	19	23	27	31	35	38	39	39
	8000	21	22	28	39	47	54	58	62	63	63	21	21	21	22	24	28	32	35	36	36
L_W, dB		59	68	74	77	81	84	86	88	90	89	54	59	64	68	74	79	79	80	81	81
L_{WA}, dB(A)		53	52	58	62	66	69	72	75	76	76	37	40	45	50	54	58	60	63	63	63

	Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m² sound absorption)									
	Adjustment position									
Adjustment position (%)	10	20	30	40	50	60	70	80	90	100
L_{pA}, dB (A)	28	27	32	35	39	43	46	48	49	49

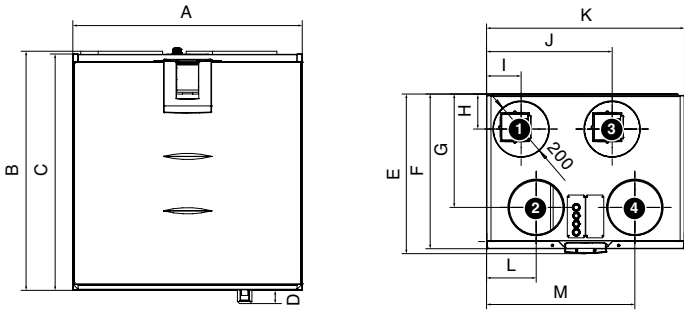
ADROIT DV145 COMFORT COOLING KIT

TECHNICAL SPECIFICATION

90002288 Max air flow (m^3/h) / (l/s) at 100Pa Max cooling capacity (kW) * EAN	Adroit DV145 Comfort Cooling Kit 576 / 160 5.1 5019009338644
Specification	**Adroit DV145 MVHR Unit**
Suitable for dwellings up to m^2	250
Max air flow (m^3/h) / (l/s) at 100Pa	576 / 160
Thermal efficiency (%)	Over 90
Heat exchanger	Cross-Counter-Flow (Plastic)
Fans	EC
Summer by-pass damper	100% automatic
Integral humidity sensor (RH %)	0 - 100
Integral CO_2 sensor (ppm)	500 - 2000
Frost protection (optional heater)	Smart Frost Protection Strategy
Controls (optional)	Digital - 4 Profiles, 100% adjustable Manual - 4 Speed controller, adjustable
Connection to BMS	Modbus / KNX optional
Mounting	Wall / Floor
Sound pressure level @3m (dB(A))	26
Duct diameter (mm)	200 (4 ports)
Condensate discharge	3/4 BSP
Electrical supply	230V / 1ph / 50Hz
Electrical power input at max flow (W)	302
Filter Class**	2x ISO Coarse > 75% (G4) and 1x ISO ePM1 50% (F7)
Built-in electric post-heater (optional) (W)	2400 (900 + 1500)
Protection class	IP34
Casing insulation (mm)	20
Weight (kg)	76
Dimensions (L x D x H) (mm)	717 x 578 x 748
Duct entry	Top Entry
Versions available:	
Right Hand:	90001269
With optional electric post-heater:	90001269EPH
Left Hand:	90001270
With optional electric post-heater:	90001270EPH
Specification	**Duct water cooling coil**
Category	Water cooler/heater circular
Type	3 rows
Connection (mm)	22
Air tightness class	D
Diameter (mm)	200
Exchanger length (mm)	280
Exchanger height (mm)	325
Exchanger weight (kg)	5
Coil Casing Width (mm)	415
Coil Casing Height (mm)	360
Coil Casing Depth (mm)	397
Weight (kg)	8
Specification	**Hydraulic kit**
Volumiser vessel capacity (L)	35
Max. water pressure (bar) * **	3
Volumiser operating temperature	-10°C to 110°C
Automatic air vent type	15 mm 6 Bar
Lockshield gate valve type	22 mm brass

*Cooling capacity may vary depending on outdoor and indoor temperature and relative humidity conditions.**Complies with ISO 16890. *** Max. pressure 3 bar / 0,3 MPa. Correctly sized pipes should be used for installation. The relevant standards and regulations must be followed.

DIMENSIONS



Duct outlets, model R

Inner diameter of female outlet collar ø200 mm

1. Supply air to dwelling
2. Extract air from dwelling to unit
3. Exhaust air out
4. Outdoor air to unit
5. Condensate drain

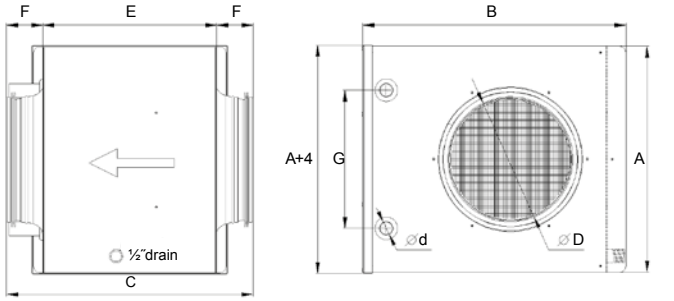
Duct outlets, model L

Inner diameter of female outlet collar ø200 mm

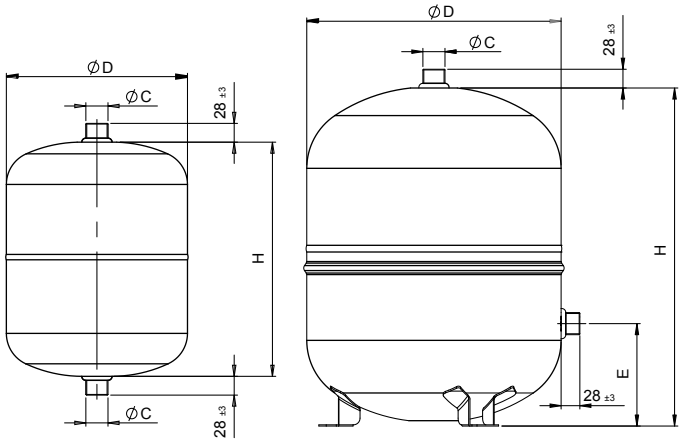
1. Exhaust air out
2. Outdoor air to unit
3. Supply air to dwelling
4. Extract air from dwelling to unit
5. Condensate drain

+ excludes motors. Motor warranty one year from date of purchase

Model	A	B	C	D	E	F	G	H	I	J	K	L	M
DV145	717	748	739	43	578	560	411	127	125	455	717	180	537



Ø D(mm)	A(mm)	B(mm)	C(mm)	E(mm)	F(mm)	G(mm)	Ø d(mm)
200	360	415	397	277	60	220	22



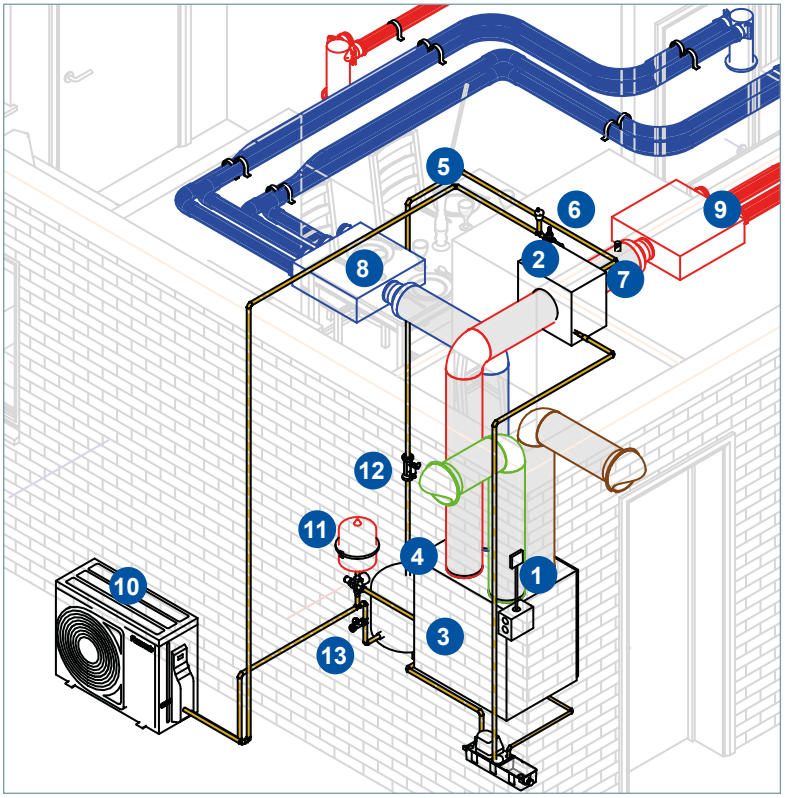
Height	Diameter	Connection Height	Connection Size
H	Ø	E	C
367	380	125	1"G

ADROIT DV145 COMFORT COOLING KIT

A SPACE SAVING SOLUTION FOR APARTMENTS AND HOUSES



Note: To prevent condensation and maintain optimum system efficiency, all pipework and components should be insulated with appropriately sized closed-cell, vapour-tight insulation. Insulation is not shown in the illustration for clarity and to aid component identification.



1. Adroit digital controller
2. Duct water cooling coil
3. Adroit DV145 MVHR unit (Different models available)
4. Volumiser vessel
5. Automatic air vent
6. Lockshield gate valve
7. NTC sensor
8. Stale extract air distribution box (Different models available)
9. Fresh supply air distribution box (Different models available)
10. Outdoor heat pump
11. Heating expansion vessel
12. Flow balancing valve
13. Strainer

AirflexPro for stale extract air

AirflexPro for fresh supply air

Extract valve in ceiling

Supply valve in ceiling

Fresh air intake

Vent to outside

ADROIT DV145 COMFORT COOLING KIT

CAPACITY TABLES - STANDARD HEAT EXCHANGER MODELS

Adroit DV145 Comfort Cooling Kit			Standard Plastic Heat Exchanger Models								
External Conditions: 34°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**3.71**	Combined kW	1.85	2.07	2.27	2.46	2.65	2.92	3.18	3.44	3.71
		Supply air °C	15.90	16.50	16.90	17.40	17.80	17.70	17.80	17.80	18.00
24°C, 50% rH	**3.69**	Combined kW	1.83	2.04	2.25	2.45	2.69	2.98	3.21	3.45	3.69
		Supply air °C	16.00	16.60	17.10	17.60	17.70	17.70	17.80	17.90	18.10
25°C, 50% rH	**3.68**	Combined kW	1.82	2.03	2.23	2.46	2.75	2.98	3.22	3.47	3.68
		Supply air °C	16.20	16.80	17.40	17.60	17.60	17.70	17.80	18.00	18.10
26°C, 50% rH	**3.66**	Combined kW	1.81	2.01	2.19	2.50	2.76	3.00	3.23	3.45	3.66
		Supply air °C	16.30	16.90	17.50	17.50	17.60	17.70	17.90	18.10	18.20
External Conditions: 32°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**3.14**	Combined kW	1.63	1.83	2.02	2.17	2.34	2.49	2.67	2.93	3.14
		Supply air °C	15.30	15.90	16.40	16.70	17.10	17.50	17.70	17.60	17.60
24°C, 50% rH	**3.16**	Combined kW	1.62	1.81	1.98	2.14	2.30	2.48	2.75	2.96	3.16
		Supply air °C	15.40	16.00	16.50	16.90	17.30	17.60	17.50	17.60	17.70
25°C, 50% rH	**3.18**	Combined kW	1.61	1.78	1.96	2.12	2.29	2.53	2.75	2.82	3.18
		Supply air °C	15.50	16.10	16.70	17.20	17.50	17.40	17.50	17.50	17.70
26°C, 50% rH	**3.17**	Combined kW	1.59	1.78	1.93	2.08	2.33	2.55	2.79	2.98	3.17
		Supply air °C	15.70	16.30	16.80	17.30	17.30	17.40	17.50	17.70	17.80
External Conditions: 29°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**2.32**	Combined kW	1.32	1.48	1.61	1.75	1.87	1.98	2.11	2.22	2.32
		Supply air °C	14.40	15.00	15.40	15.80	16.20	16.40	16.70	17.00	17.30
24°C, 50% rH	**2.33**	Combined kW	1.31	1.46	1.58	1.71	1.84	1.95	2.06	2.16	2.33
		Supply air °C	14.60	15.20	15.60	16.00	16.40	16.70	17.00	17.30	17.30
25°C, 50% rH	**2.40**	Combined kW	1.29	1.43	1.57	1.69	1.79	1.90	2.01	2.22	2.40
		Supply air °C	14.70	15.20	15.80	16.20	16.60	16.90	17.30	17.20	17.30
26°C, 50% rH	**2.40**	Combined kW	1.28	1.41	1.53	1.64	1.76	1.88	2.07	2.24	2.40
		Supply air °C	14.80	15.40	15.90	16.30	16.80	17.20	17.10	17.20	17.30

The combined total kW cooling accounted for coolth recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation.
For cooling output data based on other assumed external design conditions, please contact Airflow.
The calculation method is assuming water used as circulating medium, inlet temperature = 6°C and outlet temperature = 12°C.
100 Pa pressure drop is assumed. Fan speed (%) = Generated via Selectair.

CAPACITY TABLES - ENTHALPY HEAT EXCHANGER MODEL

Adroit DV145 Comfort Cooling Kit			Optional Enthalpy Heat Exchanger Models								
External Conditions: 34°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**5.09**	Combined kW	2.49	2.79	3.18	3.47	3.74	4.02	4.30	4.61	5.09
		Supply air °C	14.50	15.10	15.60	16.10	16.50	16.90	17.20	17.30	17.30
24°C, 50% rH	**4.87**	Combined kW	2.49	2.76	3.06	3.35	3.64	3.90	4.21	4.56	4.87
		Supply air °C	14.50	15.40	16.00	16.40	16.90	17.20	17.20	17.30	17.40
25°C, 50% rH	**4.75**	Combined kW	2.32	2.63	2.93	3.22	3.41	3.78	4.16	4.45	4.75
		Supply air °C	15.10	15.70	16.30	16.70	17.20	17.20	17.20	17.30	17.50
26°C, 50% rH	**4.63**	Combined kW	2.28	2.50	2.80	3.10	3.39	3.75	4.03	4.37	4.63
		Supply air °C	15.30	16.00	16.50	17.00	17.10	17.20	17.30	17.50	17.70
External Conditions: 32°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**4.06**	Combined kW	2.14	2.33	2.62	2.90	3.13	3.34	3.61	3.77	4.06
		Supply air °C	14.30	14.80	15.30	15.70	16.10	16.40	16.80	17.10	17.30
24°C, 50% rH	**4.00**	Combined kW	2.01	2.31	2.50	2.77	2.96	3.23	3.40	3.73	4.00
		Supply air °C	14.50	15.10	15.60	16.00	16.40	16.80	17.20	17.20	17.20
25°C, 50% rH	**3.87**	Combined kW	1.97	2.17	2.47	2.65	2.84	3.02	3.40	3.64	3.87
		Supply air °C	14.80	15.30	15.90	16.30	16.80	17.20	17.10	17.20	17.30
26°C, 50% rH	**3.75**	Combined kW	1.88	2.14	2.34	2.54	2.73	3.03	3.28	3.52	3.75
		Supply air °C	15.00	15.60	16.20	16.70	17.10	17.10	17.20	17.30	17.40
External Conditions: 29°C; 50% rH											
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**60**	**70**	**80**	**90**	**100**	**110**	**120**	**130**	**140**
		Cooling Airflow Rates (m^3/h)	**216**	**252**	**288**	**324**	**360**	**396**	**432**	**468**	**504**
		Fan speed (%)	**46**	**49**	**52**	**56**	**61**	**63**	**72**	**74**	**78**
23°C, 50% rH	**2.91**	Combined kW	1.58	1.77	1.94	2.12	2.28	2.44	2.61	2.76	2.91
		Supply air °C	13.80	14.40	14.80	15.30	15.60	15.90	16.20	16.50	16.80
24°C, 50% rH	**2.71**	Combined kW	1.53	1.73	1.82	1.99	2.16	2.33	2.49	2.65	2.71
		Supply air °C	14.10	14.60	15.10	15.60	15.90	16.30	16.60	16.90	17.20
25°C, 50% rH	**2.73**	Combined kW	1.40	1.59	1.79	1.87	2.04	2.22	2.29	2.49	2.73
		Supply air °C	14.30	14.90	15.40	15.90	16.20	16.60	17.00	17.10	17.10
26°C, 50% rH	**2.63**	Combined kW	1.36	1.57	1.66	1.84	1.93	2.11	2.25	2.45	2.63
		Supply air °C	14.60	15.20	15.70	16.20	16.60	17.00	17.00	17.10	17.10

The combined total kW cooling accounted for coolth recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation.
For cooling output data based on other assumed external design conditions, please contact Airflow.
The calculation method is assuming water used as circulating medium, inlet temperature = 6°C and outlet temperature = 12°C.
100 Pa pressure drop is assumed. Fan speed (%) = Generated via Selectair.

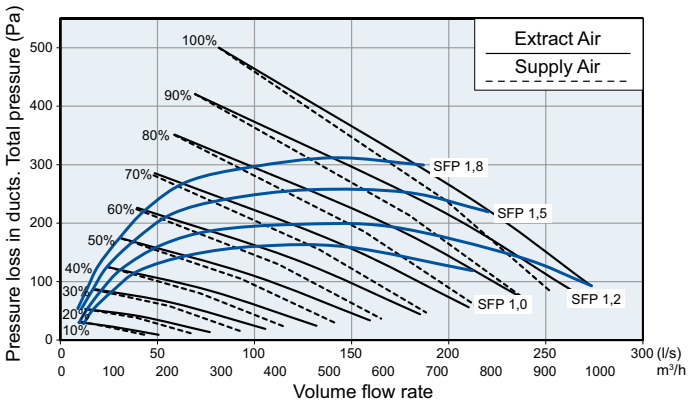
ADROIT DV245 COMFORT COOLING KIT

BILL OF MATERIALS

Adroit DV245 Comfort Cooling Kit - 90002289

Part No:	Description	Qty
90000610	Adroit digital controller	1
60000134	NTC sensor	1
90002280	Duct water cooling coil	1
90002284	50 litre volumiser vessel	1
90002282	Automatic air vent	1
90002283	22 mm brass lockshield gate valve	1

PERFORMANCE



* Guidance only. Dependant upon system pressure.

SOUND LEVELS

		Sound power level in the supply air duct (one duct) by octave band L_w, dB					Sound power level in the extract air duct (one duct) by octave band L_w, dB				
		Adjustment position					Adjustment position				
Adjustment position		30 %	40%	50%	60%	100%	30%	40%	50%	60%	100%
Air flow (l/s)		132	160	190	213	250	143	170	204	230	278
Air flow m³/h		475.2	576	684	766.8	900	514.8	612	734.4	828	1000.8
Medium frequency of the octave band Hz	63	66.1	69.3	72.1	73.8	77.0	53.6	56.7	60.0	62.7	66.3
	125	61.8	63.2	66.6	68.8	71.5	54.2	54.1	56.7	59.7	62.4
	250	56.0	62.1	63.9	66.6	69.9	50.9	58.4	60.7	64.1	65.5
	500	51.3	55.9	59.4	62.8	68.6	38.4	42.2	45.9	47.9	51.8
	1000	50.5	54.7	58.1	60.7	64.0	37.4	41.1	44.8	47.5	50.7
	2000	49.2	54.0	58.0	60.8	64.4	31.5*	36.2*	40.5	43.4	47.1
	4000	35.6*	42.4	48.0	51.8	56.7	24.7*	28*	30.3*	33.6*	38.1
	8000	28.1*	36.3	44.3	48.8	54.2	23.6*	23.8*	24.6*	25.9*	28.2*
L_W,dB		68.0	71.2	74.1	76.1	79.4	58.0	61.6	64.4	67.4	70.0
L_{WA}, dB(A)		56.0	60.4	64.0	66.9	71.1	45.5	50.2	53.4	57.0	59.3

Sound pressure level, in decibels (A) coming through the envelope from the room in which the unit is installed (10m² sound absorption)
ADJUSTMENT POSITION / AIR FLOWS (supply/extract)

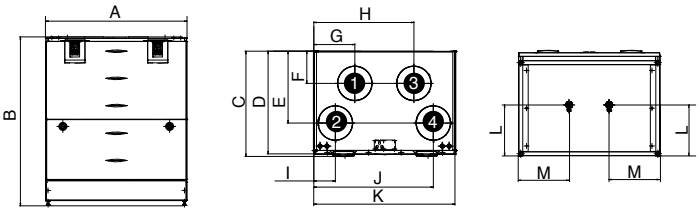
Adjustment position	30%	40%	50%	60%	100%
Air flow (l/s)	132/148	159/179	192/214	214/243	251/282
Air flow m³/h	475.2/532.8	572.4/644.4	691.2/770.4	770.4/874.8	903.6/1015.2
L_{pA}, dB (A)	37.1	39.2	42.0	44.5	48.4

ADROIT DV245 COMFORT COOLING KIT

TECHNICAL SPECIFICATION

90002289 Max air flow (m³/h) / (l/s) at 100Pa Max cooling capacity (kW) * EAN	Adroit DV245 Comfort Cooling Kit 976 / 271 6.9 5019009338651
Specification	**Adroit DV245 MVHR Unit**
Suitable for dwellings up to m²	400
Max air flow (m³/h) / (l/s) at 100Pa	976 / 271
Thermal efficiency (%)	Up to 90
Heat exchanger	Cross-Counter-Flow (Aluminium)
Fans	EC
Summer by-pass damper	100% automatic
Integral humidity sensor (RH %)	0 - 100
Integral CO_2 sensor (ppm)	500 - 2000
Frost protection (optional heater)	Smart Frost Protection Strategy
Controls (optional)	Digital - 4 Profiles, 100% adjustable Manual - 4 Speed controller, adjustable
Connection to BMS	Modbus / KNX optional
Mounting	Floor
Sound pressure level @3m (dB(A))	24.5
Duct diameter (mm)	250 (4 ports)
Condensate discharge	3/4 BSP
Electrical supply	230V / 1ph / 50Hz
Electrical power input at max flow (W)	328
Filter Class**	2x ISO Coarse > 75% (G4) and 1x ISO ePM1 50% (F7)
Built-in electric post-heater (optional) (W)	3000 (2 x 1500)
Protection class	IP34
Casing insulation (mm)	50
Weight (kg)	181
Dimensions (L x D x H) (mm)	1038 x 773 x 1226-1241
Duct entry	Top Entry
Versions available:	
Right Hand:	90001271
With optional electric post-heater:	90001271EPH
Left Hand:	90001272
With optional electric post-heater:	90001272EPH
Specification	**Duct water cooling coil**
Category	Water cooler/heater circular
Type	3 rows
Connection (mm)	22
Air tightness class	D
Diameter (mm)	250
Exchanger length (mm)	280
Exchanger height (mm)	325
Exchanger weight (kg)	5
Coil Casing Width (mm)	415
Coil Casing Height (mm)	360
Coil Casing Depth (mm)	417
Weight (kg)	8
Specification	**Hydraulic kit**
Volumiser vessel capacity (L)	50
Max. water pressure (bar) ***	3
Volumiser operating temperature	-10°C to 110°C
Automatic air vent type	15 mm 6 Bar
Lockshield gate valve type	22 mm brass

*Cooling capacity may vary depending on outdoor and indoor temperature and relative humidity conditions.**Complies with ISO 16890. *** Max. pressure 3 bar / 0,3 MPa. Correctly sized pipes should be used for installation. The relevant standards and regulations must be followed.



Duct outlets, Model R

Inner diameter of the female collar: 250 mm

1.Extract air from the apartment to the unit
2.Supply air from the unit to the apartment
3.Outdoor air to the unit
4.Exhaust air flowing outdoors from the unit

Duct outlets, Model L

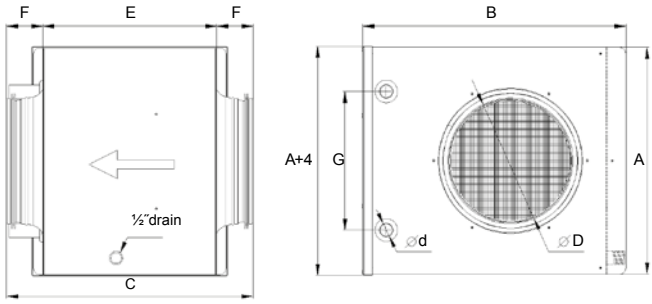
Inner diameter of the female collar: 250 mm

1.Outdoor air to the unit
2.Exhaust air flowing outdoors from the unit
3.Extract air from the apartment to the unit
4.Supply air from the unit to the apartment

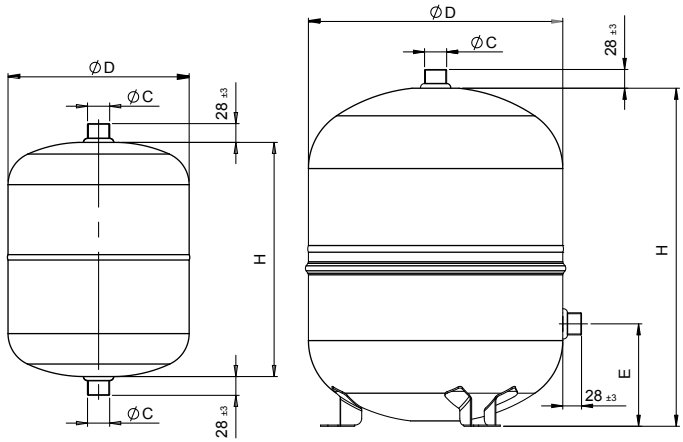
+ excludes motors. Motor warranty one year from date of purchase

Model	A	B	C	D	E	F	G
DV245	1038	1226-1421**	773	754	528	237	301
	H	I	J	K	L	M	
	735	158	878	1038	373	371	

**Adjustable feet



Ø D(mm)	A(mm)	B(mm)	C(mm)	E(mm)	F(mm)	G(mm)	Ø d(mm)
250	360	415	417	277	70	220	22



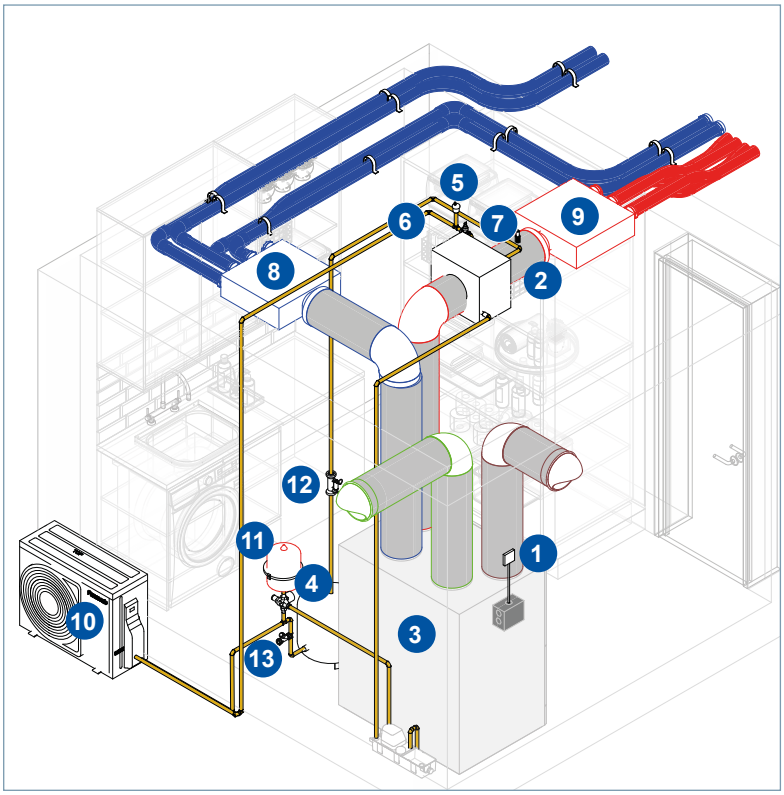
Height	Diameter	Connection Height	Connection Size
H	Ø	E	C
505	380	153	1"G

ADROIT DV245 COMFORT COOLING KIT

A SPACE SAVING SOLUTION FOR A VARIETY OF HOMES



Note: To prevent condensation and maintain optimum system efficiency, all pipework and components should be insulated with appropriately sized closed-cell, vapour-tight insulation. Insulation is not shown in the illustration for clarity and to aid component identification.



1. Adroit digital controller
2. Duct water cooling coil
3. Adroit DV245 MVHR unit (Different models available)
4. Volumiser vessel
5. Automatic air vent
6. Lockshield gate valve
7. NTC sensor
8. Stale extract air distribution box (Different models available)
9. Fresh supply air distribution box (Different models available)
10. Outdoor heat pump
11. Heating expansion vessel
12. Flow balancing valve
13. Strainer

AirflexPro for stale extract air

AirflexPro for fresh supply air

Extract valve in ceiling

Supply valve in ceiling

Fresh air intake

Vent to outside

ADROIT DV245 COMFORT COOLING KIT

SUPPLY AND EXTRACT DATA TABLE

Room Description	Floor	Floor space	Room volume	Extract air	Supply air	Extract air In-/ Outlet	Air volume per Extract air intake	Flex duct(s) per Extract air intake	Supply air In-/ Outlet	Air volume per Supply air outlet	Flex duct(s) per Supply air outlet
Bed 1 Ensuite	Ground Floor	9.0 m²	21.60 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Utility	Ground Floor	5.0 m²	12.00 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Bed 2	Ground Floor	9.0 m²	21.60 m³	-	50 m³/h	-	-	-	1	Outlet 1: 50 m³/h	Outlet 1:2
Bed 3	Ground Floor	14.0 m²	33.60 m³	-	96 m³/h	-	-	-	2	Outlet 1:48 m³/h Outlet 2:48 m³/h	Outlet 1:2 Outlet 2:2
Bed 1	Ground Floor	31.0 m²	74.40 m³	-	96 m³/h	-	-	-	2	Outlet 1:48 m³/h Outlet 2:48 m³/h	Outlet 1:2 Outlet 2:2
Plant room	Ground Floor	5.0 m²	12.00 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Bed 4	Ground Floor	14.0 m²	33.60 m³	-	94 m³/h	-	-	-	2	Outlet 1:47 m³/h Outlet 2:47 m³/h	Outlet 1:2 Outlet 2:2
Bathroom	Ground Floor	8.0 m²	19.20 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Bed 5	Ground Floor	16.0 m²	38.40 m³	-	94 m³/h	-			2	Outlet 1:47 m³/h Outlet 2:47 m³/h	Outlet 1:2 Outlet 2:2
Bed 5 Ensuite	Ground Floor	5.0 m²	12.00 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Circulation	Ground Floor	36.0 m²	86.40 m³	-	-	-	-	-	- -	-	-
Cloaks	Ground Floor	3.0 m²	7.20 m³	-	-	-	-	-	- -	-	-
Kitchen	First Floor	22.5 m²	54.00 m³	96 m³/h	-	2	Inlet 1:48 m³/h Inlet 2:48 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Dining	First Floor	22.5 m²	54.00 m³	-	96 m³/h	-	-	-	2	Outlet 1:48 m³/h Outlet 2:48 m³/h	Outlet 1:2 Outlet 2:2
Snug	First Floor	38.4 m²	92.14 m³	-	96 m³/h	-	-	-	2	Outlet 1:48 m³/h Outlet 2:48 m³/h	Outlet 1:2 Outlet 2:2
WC	First Floor	4.0 m²	9.60 m³	94 m³/h	-	2	Inlet 1:47 m³/h Inlet 2:47 m³/h	Inlet 1:2 Inlet 2:2	-	-	-
Cinema/Office	First Floor	17.0 m²	40.80 m³	-	48 m³/h	-	-	-	1	Outlet 1: 48 m³/h	Outlet 1:2
Circulation	First Floor	20.0 m²	48.00 m³	-	-	-	-	-	-	-	-
Total:		**279.4 m²**	**670.54 m³**	**670 m³/h**	**670 m³/h**	**14**	**670 m³/h**	**28**	**14**	**670 m³/h**	**28**

*** according to Building Regulations Part F**
Minimum ventilation rate*: 302 m³/h
Maximum ventilation rate*: 302 m³/h
Recommended ventilation rate: 302 m³/h @ medium fan speed
Calculated air exchange rate: 0.45

Cooling ventilation rates:
Total adjusted extract air: 670 m³/h @ medium fan speed
Total adjusted supply air: 670 m³/h @ medium fan speed

Air exchange rate: 1.00

ADROIT DV245 COMFORT COOLING KIT

CAPACITY TABLES - STANDARD HEAT EXCHANGER MODELS

Adroit DV245 Comfort Cooling Kit			Standard Aluminium Heat Exchanger Models										
External Conditions: 34°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m³/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**5.09**	Combined kW	2.70	2.93	3.21	3.47	3.68	4.03	4.24	4.47	4.66	4.86	5.09
		Supply air °C	17.70	17.80	17.80	17.90	17.90	18.00	18.10	18.30	18.40	18.50	18.60
24°C, 50% rH	**5.00**	Combined kW	2.71	3.01	3.28	3.49	3.75	3.97	4.21	4.43	4.61	4.85	5.00
		Supply air °C	17.70	17.70	17.80	17.90	18.00	18.10	18.30	18.40	18.50	18.70	18.80
25°C, 50% rH	**4.95**	Combined kW	2.77	3.05	3.30	3.50	3.68	3.93	4.15	4.37	4.61	4.80	4.95
		Supply air °C	17.60	17.50	17.80	18.00	18.10	18.30	18.40	18.60	18.80	18.80	19.00
26°C, 50% rH	**4.92**	Combined kW	2.80	3.01	3.24	3.48	3.74	3.95	4.13	4.33	4.55	4.76	4.92
		Supply air °C	17.60	17.70	17.90	18.10	18.30	18.40	18.60	18.80	18.90	19.00	19.20
External Conditions: 32°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m³/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**4.36**	Combined kW	2.39	2.56	2.67	2.97	3.15	3.40	3.59	3.79	4.02	4.22	4.36
		Supply air °C	17.10	17.40	17.70	17.60	17.60	17.70	17.80	17.80	18.00	18.10	18.20
24°C, 50% rH	**4.32**	Combined kW	2.37	2.51	2.73	2.97	3.22	3.44	3.56	3.77	3.98	4.18	4.32
		Supply air °C	17.30	17.60	17.50	17.60	17.70	17.80	17.90	18.00	18.10	18.20	18.30
25°C, 50% rH	**4.28**	Combined kW	2.33	2.53	2.78	3.02	3.15	3.38	3.62	3.73	3.94	4.14	4.28
		Supply air °C	17.50	17.40	17.50	17.60	17.70	17.80	18.00	18.10	18.30	18.40	18.50
26°C, 50% rH	**4.21**	Combined kW	2.33	2.55	2.82	2.96	3.19	3.39	3.57	3.78	3.90	4.11	4.21
		Supply air °C	17.30	17.40	17.50	17.70	17.80	18.00	18.10	18.30	18.40	18.50	18.70
External Conditions: 29°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m³/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**3.31**	Combined kW	1.89	2.00	2.17	2.22	2.36	2.42	2.66	2.88	2.99	3.22	3.31
		Supply air °C	16.10	16.40	16.80	17.00	17.20	17.50	17.40	17.40	17.40	17.50	17.60
24°C, 50% rH	**3.30**	Combined kW	1.82	1.97	2.03	2.20	2.32	2.55	2.67	2.88	3.01	3.20	3.30
		Supply air °C	16.40	16.60	16.90	17.30	17.30	17.30	17.40	17.40	17.50	17.60	17.70
25°C, 50% rH	**3.27**	Combined kW	1.77	1.95	2.02	2.21	2.40	2.52	2.76	2.87	2.97	3.17	3.27
		Supply air °C	16.50	16.90	17.30	17.20	17.20	17.30	17.40	17.50	17.60	17.70	17.80
26°C, 50% rH	**3.23**	Combined kW	1.74	1.92	2.07	2.24	2.37	2.59	2.71	2.82	3.03	3.13	3.23
		Supply air °C	16.80	17.10	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	18.00

CAPACITY TABLES - ENTHALPY HEAT EXCHANGER MODELS

Adroit DV245 Comfort Cooling Kit			Optional Enthalpy Heat Exchanger Models										
External Conditions: 34°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m^3/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**6.91**	Combined kW	3.77	4.05	4.31	4.69	5.05	5.37	5.72	5.93	6.26	6.58	6.91
		Supply air °C	16.50	16.90	17.30	17.30	17.30	17.40	17.50	17.60	17.70	17.90	18.00
24°C, 50% rH	**6.59**	Combined kW	3.65	3.75	4.22	4.59	4.92	5.17	5.49	5.83	6.03	6.39	6.59
		Supply air °C	16.90	16.90	17.20	17.30	17.40	17.50	17.60	17.80	17.90	18.10	18.30
25°C, 50% rH	**6.37**	Combined kW	3.34	3.66	4.16	4.45	4.80	5.03	5.32	5.59	5.86	6.17	6.37
		Supply air °C	16.80	17.20	17.20	17.40	17.50	17.70	17.90	18.00	18.20	18.40	18.50
26°C, 50% rH	**6.18**	Combined kW	3.41	3.53	4.05	4.32	4.60	4.91	5.13	5.40	5.67	5.94	6.18
		Supply air °C	17.10	17.10	17.30	17.50	17.70	17.90	18.00	18.30	18.50	18.60	18.80
External Conditions: 32°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m^3/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**5.62**	Combined kW	3.09	3.36	3.59	3.80	4.09	4.37	4.62	4.93	5.16	5.38	5.62
		Supply air °C	16.10	16.50	16.90	17.20	17.20	17.20	17.30	17.40	17.50	17.60	17.70
24°C, 50% rH	**5.46**	Combined kW	2.97	3.25	3.42	3.70	3.98	4.28	4.50	4.73	4.96	5.21	5.46
		Supply air °C	16.50	16.90	17.20	17.20	17.20	17.30	17.40	17.50	17.70	17.80	17.90
25°C, 50% rH	**5.27**	Combined kW	2.85	3.07	3.33	3.65	3.93	4.15	4.39	4.60	4.84	5.07	5.27
		Supply air °C	16.80	17.10	17.10	17.20	17.30	17.40	17.60	17.70	17.90	18.10	18.20
26°C, 50% rH	**5.05**	Combined kW	2.76	3.03	3.31	3.55	3.80	4.03	4.20	4.39	4.63	4.84	5.05
		Supply air °C	17.10	17.10	17.20	17.30	17.40	17.60	17.70	18.00	18.10	18.30	18.40
External Conditions: 29°C; 50% rH													
Internal Conditions	**Max kW**	**Cooling Airflow Rates (l/s)**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
		Cooling Airflow Rates (m^3/h)	**360**	**396**	**432**	**468**	**504**	**540**	**576**	**612**	**648**	**684**	**720**
		Fan speed (%)	**50**	**52**	**55**	**57**	**61**	**63**	**66**	**70**	**73**	**75**	**78**
23°C, 50% rH	**4.00**	Combined kW	2.30	2.45	2.62	2.77	2.94	3.04	3.16	3.42	3.66	3.86	4.00
		Supply air °C	15.60	15.90	16.30	16.50	16.90	17.10	17.20	17.20	17.20	17.30	17.30
24°C, 50% rH	**3.84**	Combined kW	2.17	2.34	2.51	2.57	2.72	2.97	3.12	3.35	3.55	3.65	3.84
		Supply air °C	15.90	16.30	16.60	16.90	17.20	17.10	17.10	17.20	17.30	17.40	17.50
25°C, 50% rH	**3.66**	Combined kW	2.05	2.22	2.29	2.49	2.66	2.88	3.00	3.21	3.33	3.56	3.66
		Supply air °C	16.30	16.60	17.00	17.10	17.10	17.10	17.20	17.30	17.50	17.60	17.70
26°C, 50% rH	**3.50**	Combined kW	1.92	2.06	2.25	2.40	2.63	2.75	2.89	3.10	3.20	3.31	3.50
		Supply air °C	16.50	17.00	17.00	17.00	17.10	17.20	17.40	17.50	17.60	17.70	17.80

The combined total kW cooling accounted for coolth recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation.
For cooling output data based on other assumed external design conditions, please contact Airflow.
The calculation method is assuming water used as circulating medium, inlet temperature = 6°C and outlet temperature = 12°C.
100 Pa pressure drop is assumed. Fan speed (%) = Generated via Selectair.

A Brine to Air Energy Collector

Increases the thermal efficiency of your MVHR unit, saves energy and reduces the cost of heating and cooling to a minimum.



KEY FEATURES

- Connect your MVHR unit for enhanced thermal efficiency
- Can be automatically controlled by an Adroit unit
- Brine is kept at a sub-soil temperature of 8 to 12°C
- Provides additional pre-heating to your MVHR unit during the winter
- It also provides cooler air in the summer
- Water temperature gauges monitor the supply and return temperature of the brine
- Fitted with a ISO Coarse 75% (G4) filter
- Wall mounted, 12 litre pressure expansion tank with relief valve included



The Brine to Air Exchanger enhanced the thermal efficiency of your MVHR unit by provided additional pre-heating to your unit during the winter and also helps to cool the air during the summer.

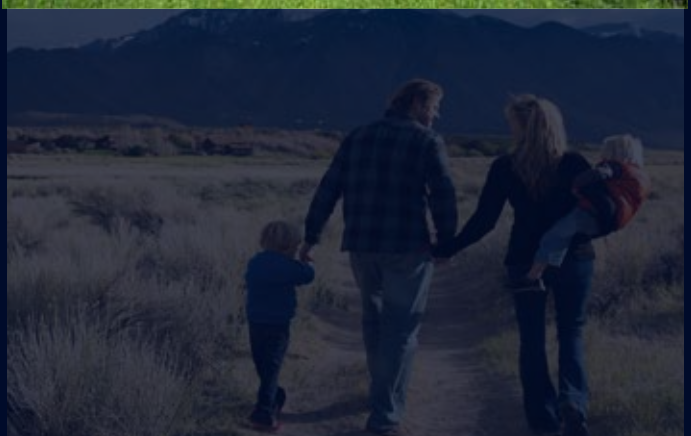
The Brine to Air Exchanger uses the warmth in the ground to maintain the brine's temperature of 8 - 12°C.

A 1.2 m deep flexible polyethylene under-soil tube pumps brine through a loop.

To increase the heat exchange the tube should be laid directly under the soil in a sand bed.

The minimum space between the parallel tubes should be 0.5 m.

Alternatively to laying the tube horizontally, a vertical bore can be used.



OPERATING MODES

Brine to Air Energy collector can work either in automatic or manual mode.

In automatic mode operation of the circulation pump is controlled by the MVHR unit. The pump circulates the brine when the outside air temperature falls below 5°C or when actual supply air temperature is higher than the set value.

System can be switched into the manual mode by using an operation switch. In this mode the circulation pump is always turned on regardless of the outdoor air temperature.

INSTALLATION SCHEME

Brine to air heat exchanger is mounted in-line before mvhr unit. It is important that the air flows through the heat exchanger in horizontal direction. To provide optimum performance it is recommended that approx. 1m of straight duct is mounted upstream and downstream of the brine to air heat exchanger.

The ducting used should be Airflex ISO rigid ducting system to avoid creation of the condensation. Alternatively insulated spiral ducting can be used.

Pipework and connection between hydraulic kit and brine to air heat exchanger shall be provided on site. The pipe connections of the hydraulic kit are ¾" IG.

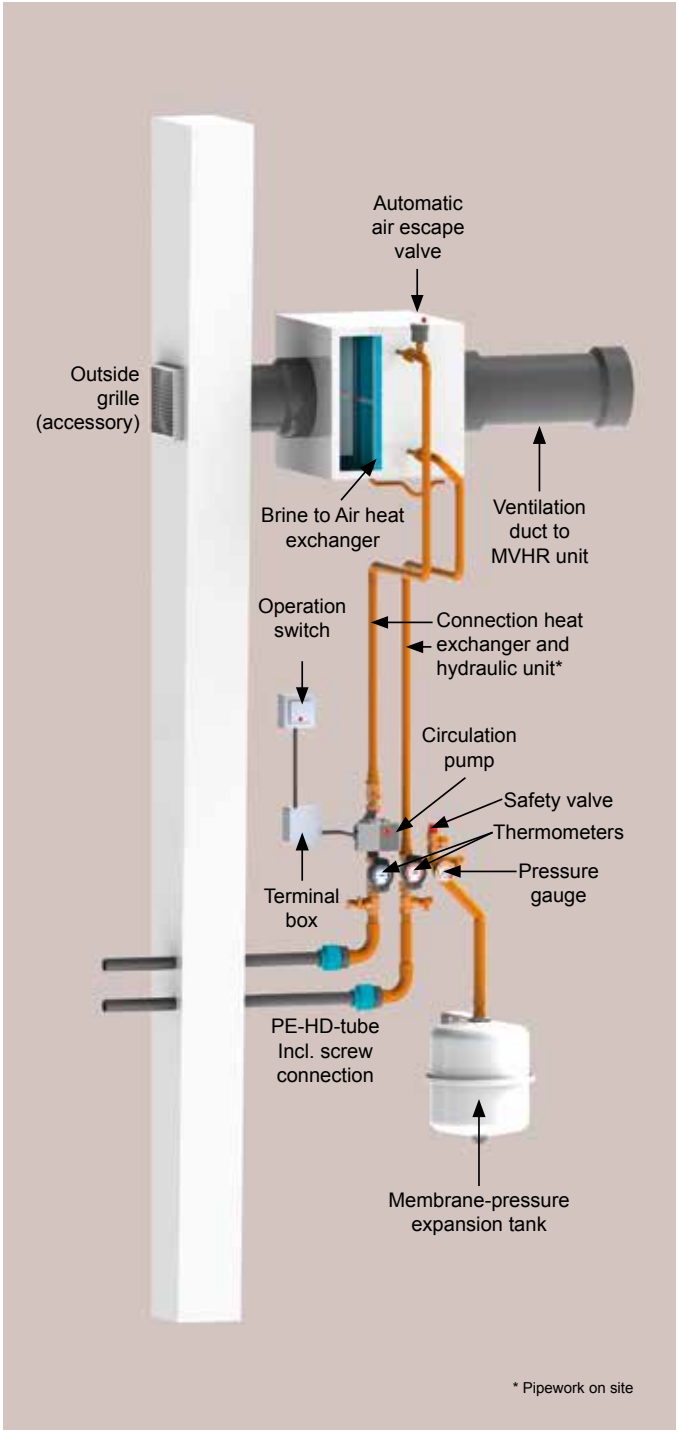
The quick vent valve must be installed at the highest point of the pipework.

It is recommended to install undersoil tube when outdoor air is above 5°C. The area where the undersoil tube is laid should not be built over so it is guaranteed that seeping rainwater can contribute to the thermal regeneration of the soil.

The filling of the system is carried out via feed and drain cock located on the hydraulic kit. During this operation take care to avoid air entering the system.

After the installation of the undersoil pipework, system should be tested at high pressure for tightness check.





SPECIFICATION

Brine to Air Energy Collector is delivered as a kit, which ensures full functionality and optimal performance.

Components included in the kit:

- Highly efficient brine to air heat exchanger delivered with ceiling / wall mounting plate. Heat exchanger fins are made of aluminium to ensure the best heat transfer to incoming outdoor air. Tubes inside the heat exchanger are made of copper.

There is a convertible ISO Coarse 75% (G4) filter integrated, which prevents the contaminating of the heat exchanger and enables variable air flow direction. The Filter must be always mounted before heat exchanger. The filter should be cleaned 2 to 4 times a year and replaced at least once a year.

Heat exchanger should be periodically checked to see if it gets dirty and should be cleaned if necessary.

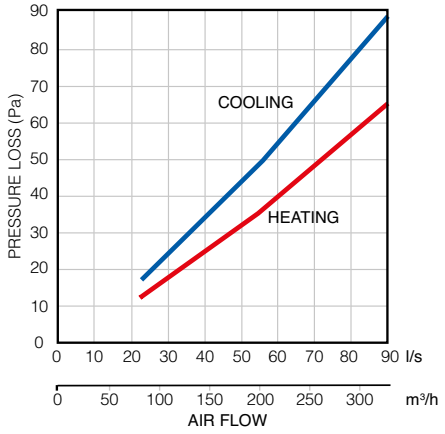
Condensate connection located at the bottom of the heat exchanger casing must be checked before the cooling season.

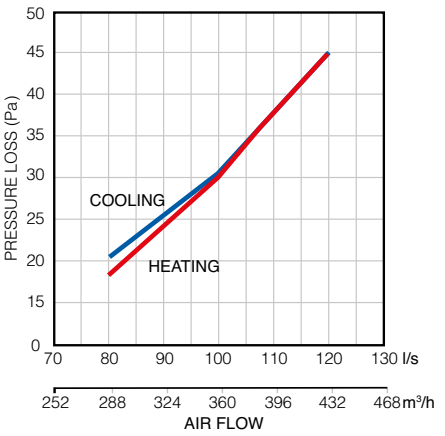
TECHNICAL DATA

Specification	Brine to air heat exchanger Ø 200 mm
Casing	Double skin steel with insulation
Heat exchanger material	Aluminium
Heat exchanger pipe connection	Copper, 2 × Ø 12 mm
Duct connection	2 × Ø 250 mm
Condensate discharge	Ø 1/2", external thread
Filter	ISO Coarse 75% (G4)
Weight	16 kg
Part number	90000732
EAN	5019000321110

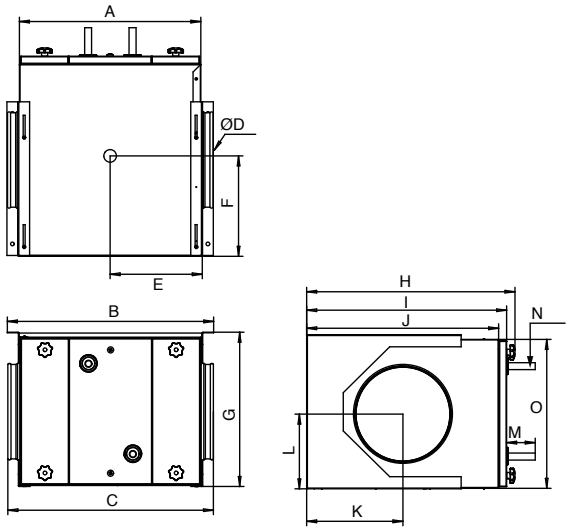
Specification	Brine to air heat exchanger Ø 250 mm
Casing	Double skin steel with insulation
Heat exchanger material	Aluminium
Heat exchanger pipe connection	Copper, 2 × Ø 12 mm
Duct connection	2 × Ø 250 mm
Condensate discharge	Ø 1/2", external thread
Filter	ISO Coarse 75% (G4)
Weight	30 kg
Part number	90001112
EAN	5019009325583

HEAT EXCHANGER PRESSURE LOSS





DIMENSIONS (mm)





Model 200 mm	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Brine to air heat exchanger	367	431	450	Ø200	187	200 (+60)	334	420 (+60)	399 (+60)	378 (+60)	190 (+60)	160	50	Ø 12	320

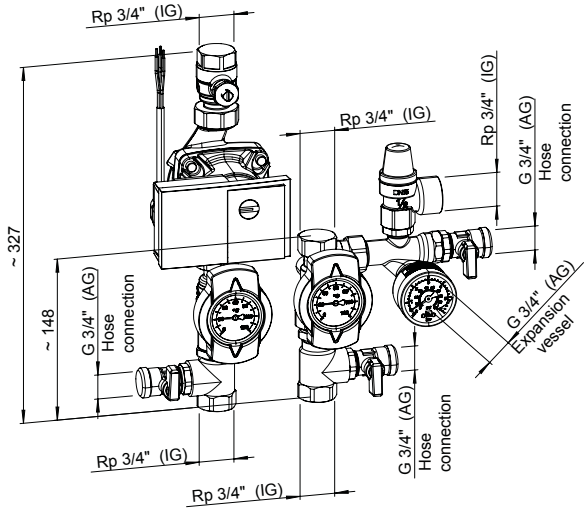
Model 250 mm	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Brine to air heat exchanger	470	534	542	Ø250	239	260 (+60)	399	540 (+60)	519 (+60)	498 (+60)	250 (+60)	193	74	Ø 18	385

HYDRAULIC KIT

- Brine pump (230 V), includes safety device
- Temperature gauges for supply and return
- Automatic protection against reverse flow
- Pressure expansion tank 12 litres, connection ¾", delivered with wall bracket and stop valve for maintenance
- Electrical terminal box with 24 V DC relay and operation switch

Technical data of the hydraulic kit	
Current max.	0.44A
Voltage	230V, 50Hz
Power consumption	3-45W
Protection class	IP 44







UNDERSOIL TUBE SET

Undersoil tube with screw connections and 20l canister with ethylene glycol

- Flexible PE-HD undersoil tube - 100 running metres, Ø32 mm, wall thickness 2.9 mm
- Screw connection set made from high class polymer (PP) to connect the undersoil tube to the hydraulic kit
- 20l canister with ethylene glycol to ensure anti-freeze protection for the system. Glycol has to be homogeneously mixed with water first before filling the pipe-work system. The following mixing ratios apply to the ethylene glycol offered by Airflow:

Glycol mixing ratio	Frost protection until °C
22%	-10°C
29%	-15°C
35%	-20°C
40%	-25°C



CONTROLS & ACCESSORIES



Adroit Digital Controller
No: 90000610
Intuitive digital controller with touch buttons. Wall mounted.



Adroit with integral CO_2 sensor DV145 (R) No: 90001269
DV245 (R) Adroit No: 90001271
MVHR unit suitable for larger houses up to 250 - 400 m². Over 90% thermal efficiency.



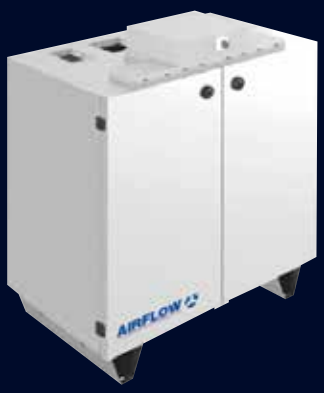
Adroit with integral CO_2 sensor DV145 (L) No: 90001270
DV245 (L) No: 90001272
MVHR unit suitable for larger houses up to 250 - 400 m². Over 90% thermal efficiency.

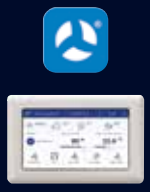


Brine Exchanger ISO Coarse 75% (G4) Filter
DV145 No: 90000825
DV245 No: 90000967
The filter should be cleaned 2 to 4 times a year and replaced at least once a year.

DUPLEX*base* PT 500











PERFORMANCE

Fans		Supply Air	Extract Air
Air volume @200Pa	m³/h / l/s	500 / 139	500 / 139
Nominal voltage	V	230	230
Power input (at operation point)	kW	0.14	0.12
Fan speed (at operation point)	RPM	3849	3649
Max power input	kW	0.17	0.17
Max current	A	1.4	1.4
SFP	W/l/s	1.002	0.861
Fan type		EC	EC

Note: The figures above have been measured at 500 m³/h and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

The unit consist of fans equipped with the EC technology. These fans have modulating speed control throughout the marked area.

Heat Recovery		Supply Air	Extract Air
Air volume @200Pa	m³/h / l/s	500 / 139	500 / 139
Temperature at inlet	°C	-5	20
Temperature at outlet	°C	16	3
Humidity at inlet	% RH	90	40
Humidity at outlet	% RH	20	100
Heat recovery efficiency winter / summer	%	82 / 78	
Performance in winter / summer	kW	3.5 / 0.8	
Condensation	l/h	0.7	
Type of heat exchanger		Counterflow, Plastic	
Part No.		90002267	
EAN No.		5019009338521	

Note: The figures above have been measured at 500 m³/h and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Sound Power Level LwA (dB)	Total	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
	dB (A)								
Outdoor air e1	50	33	35	39	48	41	35	31	<25
Supply air e2	73	42	50	58	67	67	68	63	58
Extract air i1	50	32	34	37	48	40	33	29	<25
Exhaust air i2	72	41	49	57	65	66	67	61	56
Breakout noise	50	30	35	41	48	36	36	36	27
Sound Pressure Level LpA (dB) measured at 3m	29	<25	<25	<25	28	<25	<25	<25	<25

Note: The figures above have been measured at 500 m³/h and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Sound power level is calculated for simultaneous operation of both fans and meassured in accordance with ISO 3744. Sound power level at connection ports is meassured in accordance with ISO 5136.

KEY FEATURES

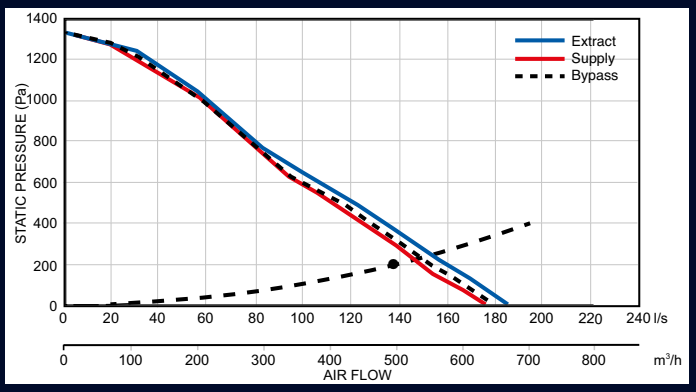
- Air volume up to 500 m³/h at 200 Pa according to ErP 2018
- Excellent thermal efficiency, up to 90%
- Unique compact casing design
- Vertical unit configuration for space saving
- Low noise, refer to NR35 and BB93 standards
- Excellent thermal insulation (class T2, TB1)
- 100% adjustable digital controller with Internet and BMS connection
- BREEAM, Part L, Volume 2 and ErP 2018 compliant
- 2 year warranty+

OPTIONAL FEATURES

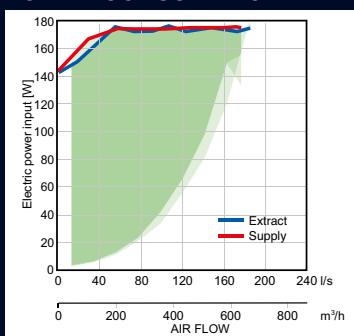
- Modulating control based on flow (constant flow function)
- Modulating control based on pressure (0-10V input)
- Pre and post-heating coils
- Cooling coils
- CO_2 monitors

More options available using our selection software.

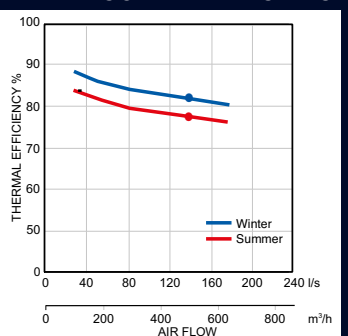
AIR FLOW CURVE



POWER CONSUMPTION



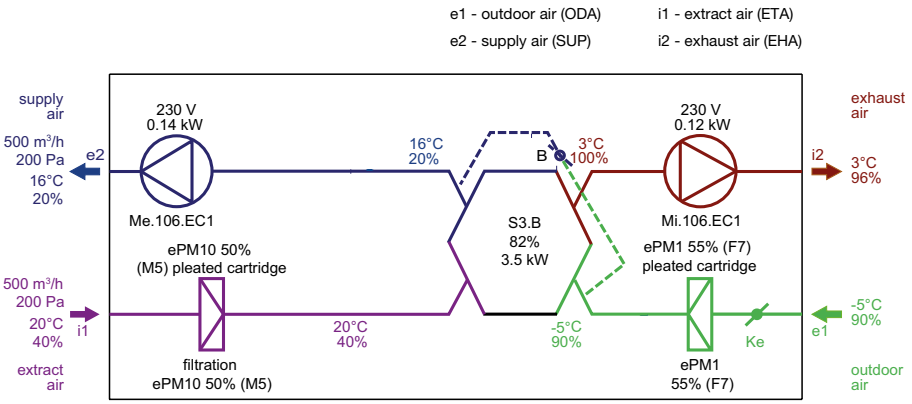
HEAT RECOVERY EFFICIENCY



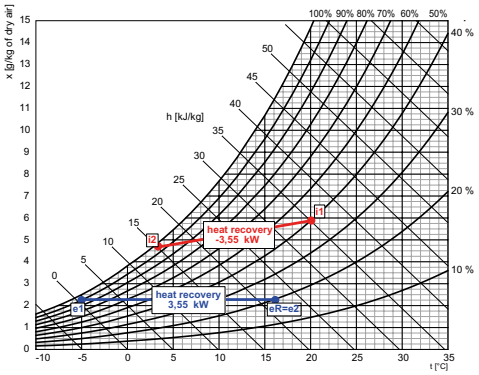
Note: Green area denotes power consumption range. Power consumption depends on system installation.
+ excudes motors. Motor warranty one year from date of purchase.

WINTER OPERATION

2018



Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.



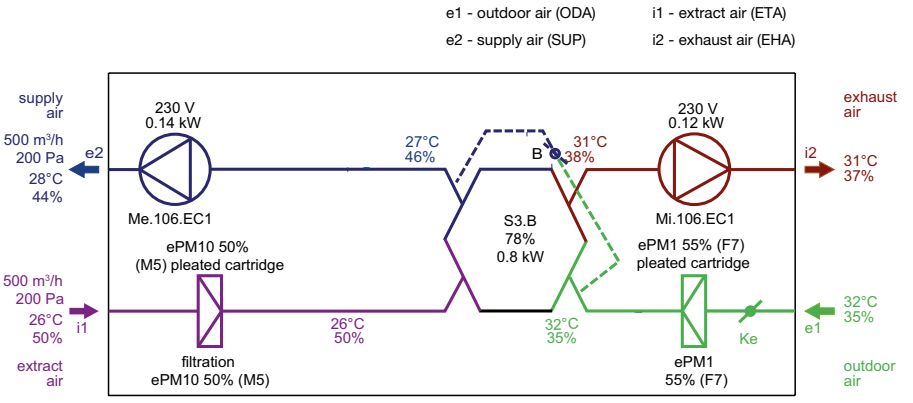
Supply

	Description	t [°C]	RH [%]
e1	Outdoor Air	-5.0	90
eR	Heat Recovery	16.1	20

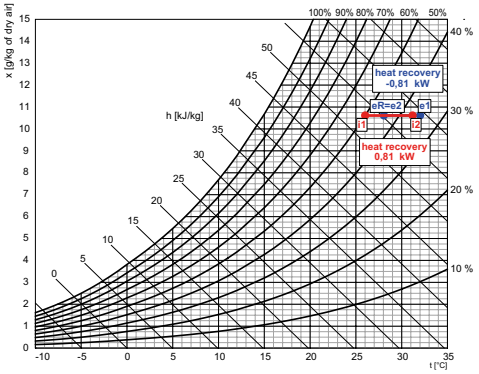
Exhaust

	Description	t [°C]	RH [%]
i1	Extract Air	20.0	40
i2	Heat Recovery	33	96

SUMMER OPERATION



Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.



Supply

	Description	t [°C]	RH [%]
e1	Outdoor Air	32.0	35
eR	Heat Recovery	28.0	44

Exhaust

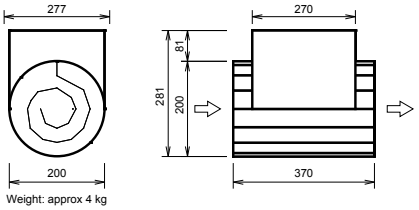
	Description	t [°C]	RH [%]
i1	Extract Air	26.0	50
i2	Heat Recovery	31.2	37

DUPLEX*base* PT 500

PRE-HEATING

Built-in electric pre-heater		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Max. heating capacity	kW	2.0
Voltage	V	230
Heating coil type		built-in

External electric pre-heater		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Max. heating capacity	kW	2
Voltage	V	230
Connection ports	mm	Ø 200
Heating coil type		external



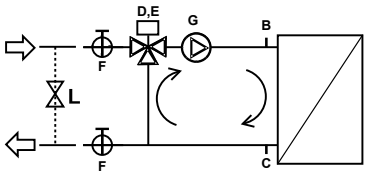
POST HEATING

Electric post-heater		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (upstream of heater)	°C	16
Temperature at outlet (downstream of heater)	°C	19
Heating capacity	kW	0.7
Max. heating capacity	kW	2.0
Voltage	V	230
Heating coil type		built-in

Water heating coil		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (after heat recovery)	°C	16
Temperature at outlet (downstream of the cooling coil)	°C	19
Heating capacity	kW	0.7
Heating medium temperature drop	°C	70 / 20
Medium flow (from source)	l/h	11
Medium-side pressure drop in heat exchanger / in valve	kPa	4.10 / 0.23
Connection dimension (hydraulic kit)		1" female
Coil capacity	l	0.6
Heating coil type		built-in

Note: The figures above have been measured at 500 m³/h and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Electric post-heater		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (upstream of heater)	°C	16
Temperature at outlet (downstream of heater)	°C	20
Heating capacity	kW	0.7
Max. heating capacity	kW	2
Voltage	V	230
Connection ports	mm	Ø 200
Heating coil type		external



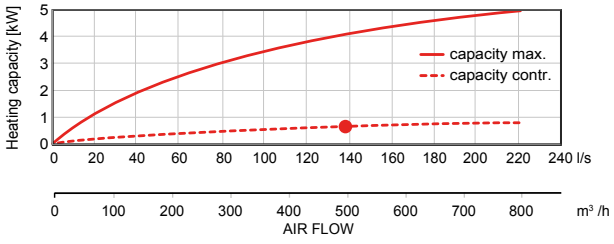
B Sludge valve plug 2)
C Sludge valve plug 2)

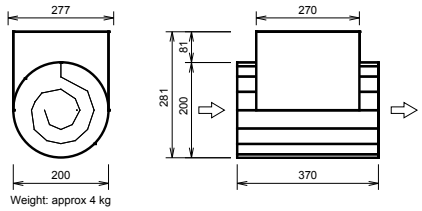
Hydraulic kit: RE-HW3.LM24A-SR

D	Mixing valve	IVAR.MIX4, Kv 12, 1"	1)
E	Actuator	LM24A-SR	1)
F	Globe valve	1" female	1)
G	Pump	WILO YONOS PARA RS 20/6- RKC	1)

Others
L Water bypass 3)

1 - Delivered separately
2 - Fitted and connected
3 - Not part of delivery, recommended





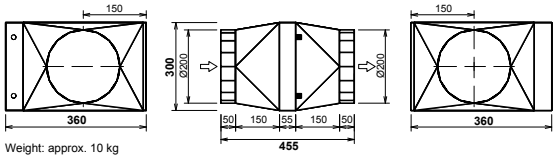
OPTIONAL ACCESSORIES

DUPLEX*base* PT 500

POST HEATING continued

Water heating coil		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (after heat recovery)	°C	16
Temperature at outlet (downstream of heater)	°C	20
Heating capacity	kW	0.7
Heating medium temperature drop	°C	70 / 24
Medium flow (from source)	l/h	12
Medium-side pressure drop in heat exchanger / in valve	kPa	2.00 / 0.38
Connection dimension (hydraulic kit)		1" female
Coil capacity	l	0.5
Heating coil type		external

Note: The figures above have been measured at 500 m³/hr and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels



Weight: approx. 10 kg

COOLING

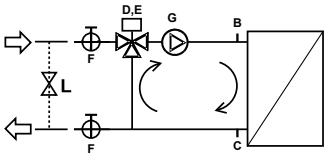
Water cooling coil		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (after heat recovery)	°C	27
Temperature at outlet (downstream of cooling coil)	°C	16
Inlet relative humidity (after heat recovery)	% RH	46
Outlet relative humidity (downstream the cooling coil)	% RH	85
Cooling capacity	kW	2.2
Condensate production	l/h	0
Water temperature drop	°C	6 / 10
Medium flow (at max. capacity)	l/h	490
Medium-side pressure drop in heat exchanger / in valve	kPa	24.10 / 0.07
Connection dimension		1" female
Coil capacity	l	0.6
Heating coil type		built-in

Note: The figures above have been measured at 500 m³/h and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

COOLING CAPACITY

DX coil		Supply Air
Air volume @200Pa	m³/h / l/s	500 / 139
Temperature at inlet (after heat recovery)	°C	27
Temperature at outlet (downstream of cooling coil)	°C	16
Inlet relative humidity (after heat recovery)	% RH	46
Outlet relative humidity (downstream the cooling coil)	% RH	75
Cooling capacity	kW	2.57
Condensate production	l/h	1
Refrigerant type		R32
Evaporating temperature	°C	4
Coil capacity	l	0.5
Heating coil type		built-in

OPTIONAL ACCESSORIES



B Sludge valve plug 2)
C Sludge valve plug 2)

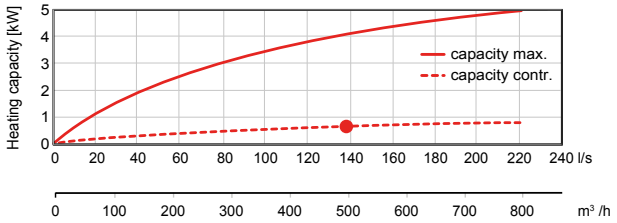
Hydraulic kit: RE-HW3.LM24A-SR

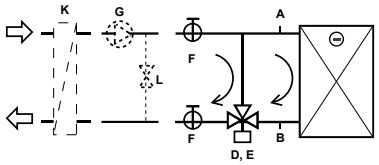
D Mixing valve	IVAR.MIX4, Kv 12, 1"	1)
E Actuator	LM24A-SR	1)
F Globe valve	1" female	1)
G Pump	WILO YONOS PARA RS 20/6- RKC	1)

Others

L Water bypass 3)

1 - Delivered separately 2 - Fitted and connected 3 - Not part of delivery, recommended





B Sludge valve plug 2)
C Sludge valve plug 2)

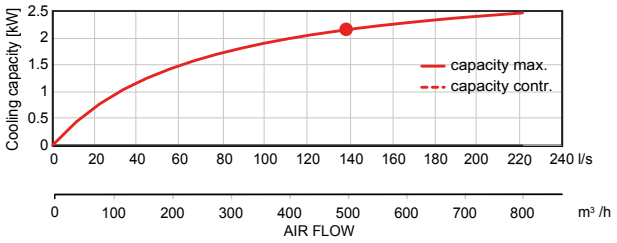
Hydraulic kit: R-CW3.TR 24-SR

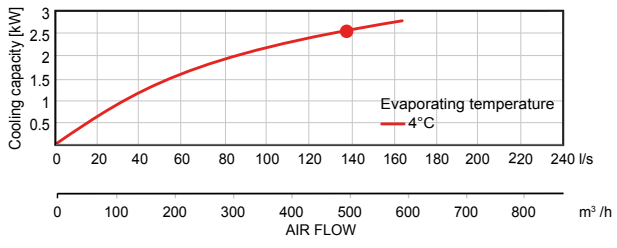
D 3-way ball valve	R320BM, Kv 21,3/4"	1)
E Actuator	TR 24-SR	1)
F Globe valve	1" female	1)

Others

G Pump	3)
L Water bypass	3)
K Coil water/ethylene glycol	3)

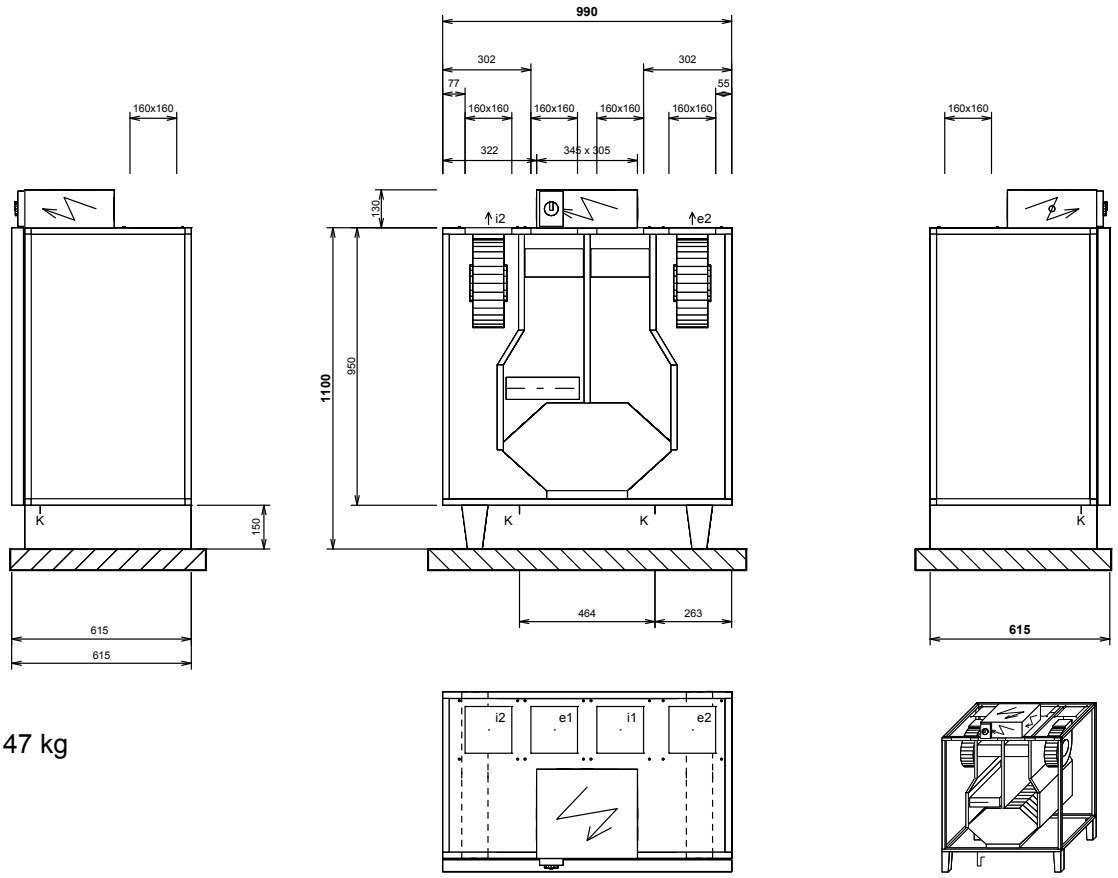
1 - Delivered separately 2 - Fitted and connected 3 - Not part of delivery, recommended





Note: The figures above have been measured at 500 m³/hr and 200 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

DIMENSIONS (mm)



Weight approx. 147 kg

Connections	Type	Dimensions	Optional accessories
e1	e1- outdoor air (ODA)	160 x 160 mm	4 x M6 thread for 20 mm flange
e2	e2- supply air (SUP)	160 x 160 mm	4 x M6 thread for 20 mm flange
i1	i1- extract air (ETA)	160 x 160 mm	4 x M6 thread for 20 mm flange
i2	i2- exhaust air (EHA)	160 x 160 mm	4 x M6 thread for 20 mm flange
K	condensate drain	2x Ø 16 mm / 22 mm	

Note:
- Door – 2 parts
- Diagram is intended only for basic information, binding dimensions receive at device delivery, or on request from the manufacturer.
- Bolt holes for duct connection (for one port): 4 x M6

CONTROLS & ACCESSORIES



ePM10 50% (M5) Filter - DUPLEXbase PT 500 (1 pc)
No: 90001663

Spare filter, designed to remove at least 50% of PM10 airborne particles such as dust, pollen, mould spores, pet dander.



ePM1 55% (F7) Filter - DUPLEXbase PT 500 (1 pc)
No: 90001662

Spare filter, designed to remove at least 55% of PM1 fine particles such as smoke, bacteria, fine dust and allergens.



Hi-Flow Max Tank Condensation Pump
No: 90000748

Plug-and-play pump removes condensate to prevent mould and protect the unit.



CO_2 Duct Sensor
No: 90000165

Precise CO_2 monitoring using optical NDIR technology which maintains optimal IAQ.

Others products available from **airflow.com**

DUPLEX*base* PS 650





PERFORMANCE

Fans		Supply Air	Extract Air
Air volume @100Pa	m³/h / l/s	650 / 180	650 / 180
Nominal voltage	V	230	230
Power input (at operation point)	kW	0.14	0.13
Max power input	kW	0.17	0.17
Max current	A	1.4	1.4
SFP	W/l/s	0.802	0.700
Fan type		EC	EC

Note: The figures above have been measured at 650 m³/h and 100 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

The unit consist of fans equipped with the EC technology. These fans have modulating speed control throughout the marked area.

Heat Recovery		Supply Air	Extract Air
Air volume @100Pa	m³/h / l/st	650 / 180	650 / 180
Temperature at inlet	°C	-5	20
Temperature at outlet	°C	15	3.0
Humidity at inlet	% RH	90	40
Humidity at outlet	% RH	21	100
Heat recovery efficiency winter / summer	%	80 / 76	
Performance in winter / summer	kW	4.5 / 1.0	
Condensation	l/h	0.9	
Type of heat exchanger		Counterflow, Plastic	
Part No.		90002272	
EAN No.		5019009338576	

Note: The figures above have been measured at 650 m³/h and 100 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Sound Power Level LwA (dB)	Total	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
	dB (A)								
Outdoor air e1	55	43	43	42	51	50	49	35	26
Supply air e2	79	53	58	66	75	72	72	69	70
Extract air i1	54	45	45	42	48	49	45	34	29
Exhaust air i2	78	53	59	64	72	70	71	68	70
Breakout noise	56	36	36	37	55	47	39	<25	<25
Sound Pressure Level LpA (dB) measured at 3m	36	<25	<25	<25	35	27	<25	<25	<25

Note: The figures above have been measured at 650 m³/h and 100 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Sound power level is calculated for simultaneous operation of both fans and meassured in accordance with ISO 3744. Sound power level at connection ports is meassured in accordance with ISO 5136.

KEY FEATURES

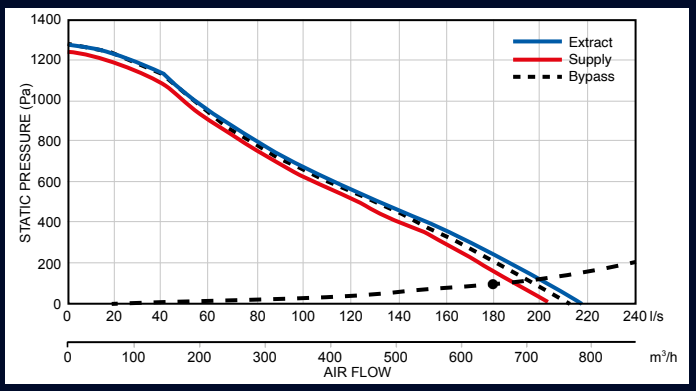
- Air volume up to 650 m³/h (0.18 m³/s) at 100 Pa according to ErP 2018
- Excellent heat recovery efficiency up to 93%
- Compact design with versatile unit orientation
- Indoor or outdoor (accessories required) installation
- Filter access doors for easy maintenance
- Excellent thermal insulation (class T2, TB1)
- 100% adjustable digital controller with Internet and BMS connection
- BREEAM, Part L, Volume 2 and ErP 2018 compliant
- Passivhaus Institute certified
- 2 year warranty*

OPTIONAL FEATURES

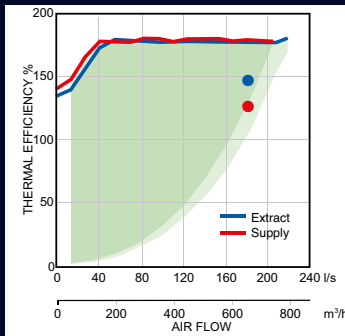
- Modulating control based on flow (constant flow function)
- Modulating control based on pressure (0-10V input)
- Pre and post-heating coils
- Cooling coils
- CO_2 monitors

More options available using our selection software.

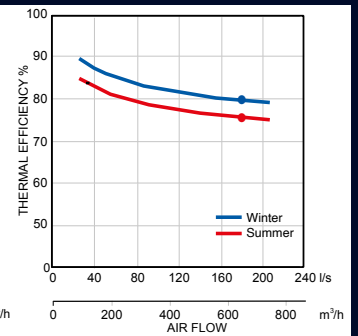
AIR FLOW CURVE



POWER CONSUMPTION



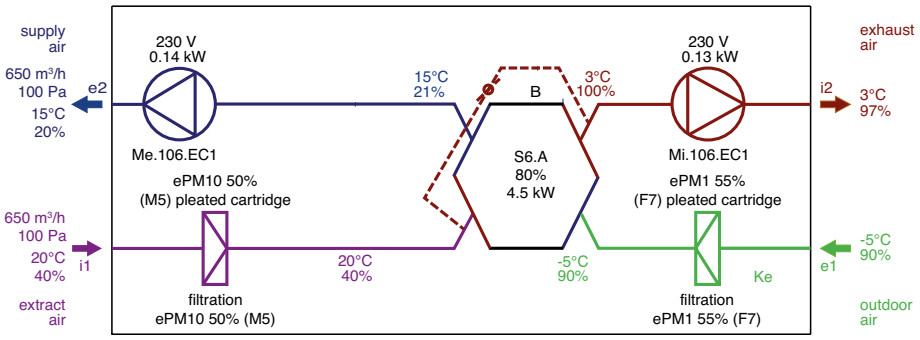
HEAT RECOVERY EFFICIENCY

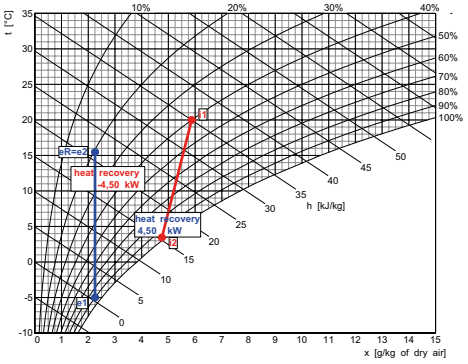


Note: Green area denotes power consumption range. Power consumption depends on system installation.
+ excudes motors. Motor warranty one year from date of purchase.

WINTER OPERATION

e1 - outdoor air (ODA) i1 - extract air (ETA)
e2 - supply air (SUP) i2 - exhaust air (EHA)





Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.

Supply

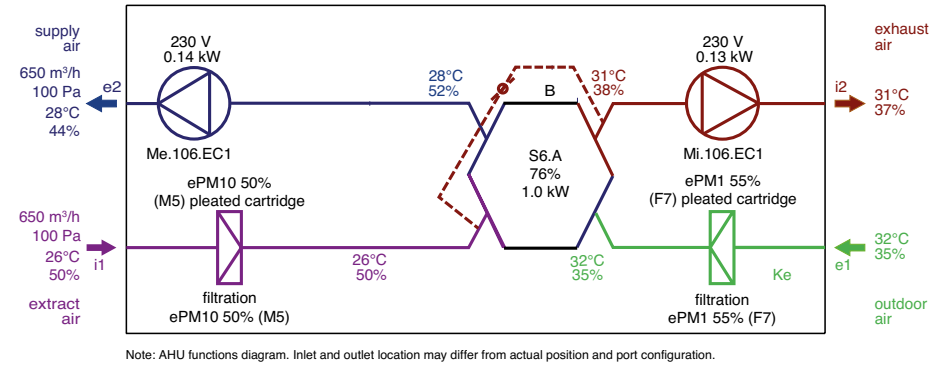
	Description	t [°C]	RH [%]
e1	Outdoor air	-5.0	90
e2	Supply air	15.5	20

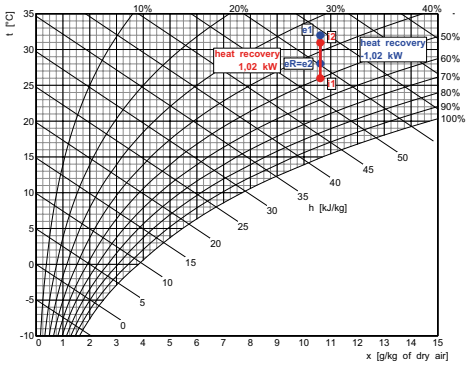
Exhaust

	Description	t [°C]	RH [%]
i1	Extract Air	20.0	40
i2	Exhaust Air	3.5	97

SUMMER OPERATION

e1 - outdoor air (ODA) i1 - extract air (ETA)
e2 - supply air (SUP) i2 - exhaust air (EHA)





Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.

Supply

	Description	t [°C]	RH [%]
e1	Outdoor Air	32.0	35
e2	Supply Air	28.0	44

Exhaust

	Description	t [°C]	RH [%]
i1	Extract Air	26.0	50
i2	Exhaust Air	31.0	37

FILTERS

Filtration	Supply	Extract	Accessories (part of delivery)
Type	Pleated Cartridge		Pfe dirty filter pressure switch for supply air Pfi dirty filter pressure switch for extract air
Filtration class	ePM1 55% (F7)	ePM10 50% (M5)	
Number of filters	1	1	
Filter cartridge size	500 x 235 x 48	500 x 235 x 48	

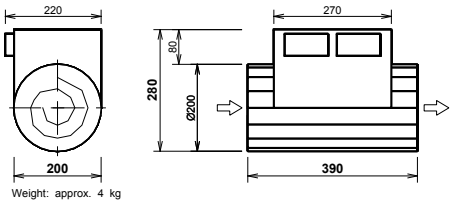
DUPLEX*base* PS 650

OPTIONAL ACCESSORIES

PRE-HEATING

Built-in electric pre-heater		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Max. heating capacity	kW	2.0
Voltage	V	230
Heating coil type		built-in

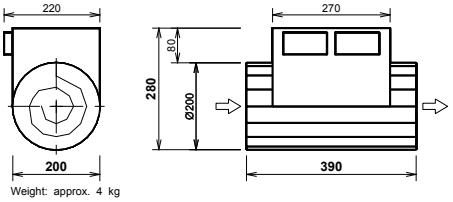
External electric pre-heater		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Max. heating capacity	kW	2.0
Voltage	V	230
Connection ports	mm	Ø 200
Heating coil type		external



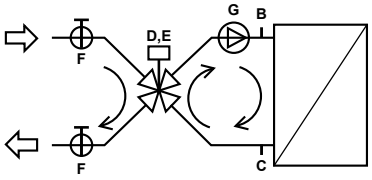
Weight: approx. 4 kg

POST HEATING

Electric post-heater		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Temperature at inlet (upstream of heater)	°C	15
Temperature at outlet (downstream of heater)	°C	20
Heating capacity	kW	1.0
Max. heating capacity	kW	2.0
Voltage	V	230
Heating coil type		external



Weight: approx. 4 kg



Water heating coil		Supply Air
Air volume	m³/h / l/s	650 / 180
Temperature at inlet (after heat recovery)	°C	16
Temperature at outlet (downstream of the cooling coil)	°C	20
Heating capacity	kW	1.0
Heating medium temperature drop	°C	70 / 50
Medium flow (from source)	l/h	43
Medium-side pressure drop in heat exchanger / in valve	kPa	2.10 / 0.43
Connection dimension (hydraulic kit)		1" female
Coil capacity	l	0.9
Heating coil type		external

Note: The figures above have been measured at 650 m³/h and 100 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

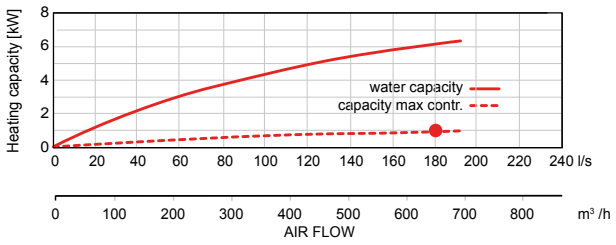
Accessories (part of delivery)

B sludge valve	plug	2)
C sludge valve	plug	2)

Hydraulic kit: RE-HW4.LM24A-SR

D mixing valve	IVAR.MIX4, Kv 12, 1"	1)
E actuator	LM24A-SR	1)
F globe valve	1" female	1)
G pump	WILO YONOS PARA RS 20/6- RKC	1)

1 – delivered separately
2 – fitted and connected



DUPLEX*base* PS 650

COOLING

Water cooling coil		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Temperature at inlet (after heat recovery)	°C	28
Temperature at outlet (downstream of cooling coil)	°C	17
Inlet relative humidity (after heat recovery)	% RH	44
Outlet relative humidity (downstream the cooling coil)	% RH	79
Cooling capacity	kW	2.9
Condensate production	l/h	1.0
Water temperature drop	°C	6 / 8
Medium flow (at max. capacity)	l/h	1150
Medium-side pressure drop in heat exchanger / in valve	kPa	21.10 / 0.18
Connection dimension		1" female
Coil capacity	l	0.9
Heating coil type		external

DX cooling coil		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Temperature at inlet (after heat recovery)	°C	28
Temperature at outlet (downstream of cooling coil)	°C	17
Inlet relative humidity (after heat recovery)	% RH	44
Outlet relative humidity (downstream the cooling coil)	% RH	74
Cooling capacity	kW	3.2
Condensate production	l/h	1.0
Refrigerant type		R32
Evaporating temperature	°C	6.0
Coil capacity	l	0.7
Heating coil type		external

Design data for condensing AHU		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Refrigerant type		R32
Evaporating temperature	°C	6.0
Outdoor temperature	°C	32
Cooling capacity	kW	3.2
Required min. outdoor temperature	°C	10

HEAT PUMP CALCULATION

DX coil in heating mode		Supply Air
Volume flow	m³/h	650 / 180
Inlet temp. (after heat recovery)	°C	16
Outlet temp. (downstr. Of heater)	°C	20
Heating capacity	kW	1.0

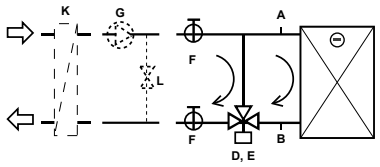
Design data for condensing AHU		Supply Air
Air volume @100Pa	m³/h / l/s	650 / 180
Refrigerant type		R32
Condensing temperature	°C	40
Outdoor temperature	°C	-5
Heating capacity	kW	1.0
Required min. outdoor temperature	°C	-5

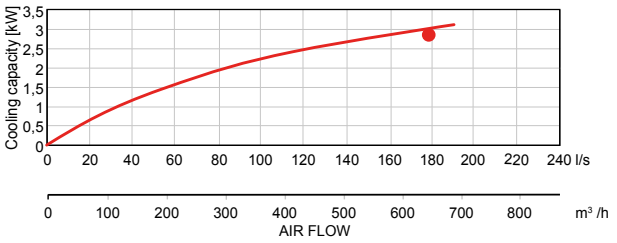
OPTIONAL ACCESSORIES

Accessories (part of delivery)

A sludge valve plug		2)
B sludge valve plug		2)
Hydraulic kit: R-CW3. TR 24-SR		
D 3-way ball	valve R30BM, Kv 21, ¾"	1)
E actuator	TR24-SR	1)
F globe valve	1" female	1)
Others:		
G pump		3)
L water bypass		3)
K coil water/ethylene glycol		3)

1 – delivered separately 2 – fitted and connected 3 – not part of delivery

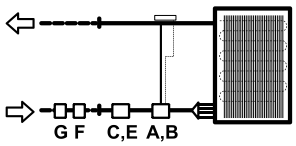


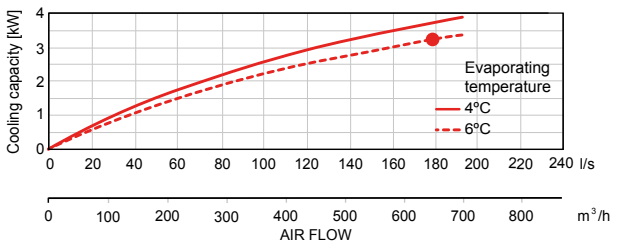


Accessories (part of delivery)

A expansion valve	3)
B nozzle	3)
C magnetic valve	3)
E coil	3)
F sight glass	3)
G drier	3)

3 – not part of delivery

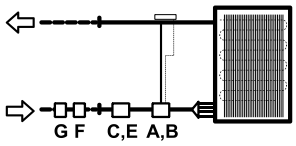


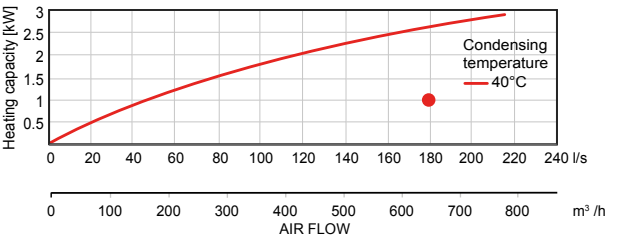


Accessories (part of delivery)

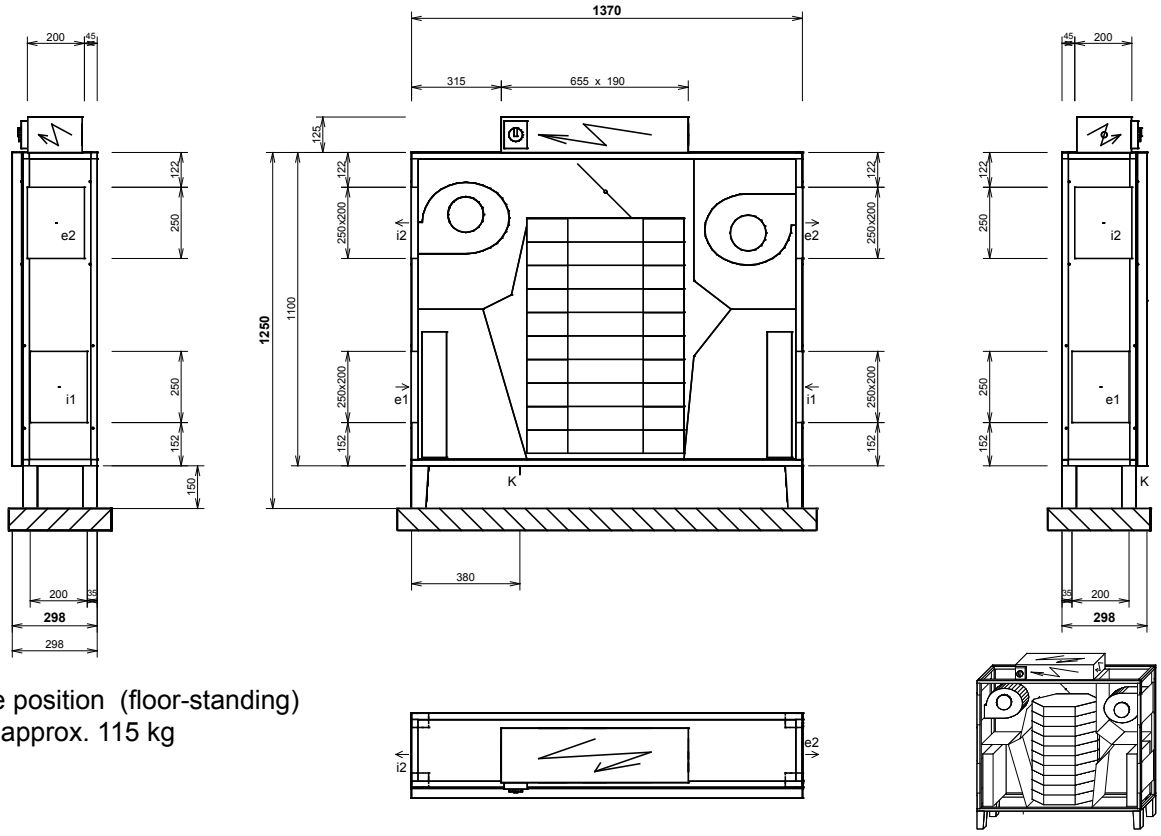
A expansion valve	3)
B nozzle	3)
C magnetic valve	3)
E coil	3)
F sight glass	3)
G drier	3)

3 – not part of delivery





DIMENSIONS (mm)



Versatile position (floor-standing)
Weight: approx. 115 kg

Connections	Type	Dimensions	Optional accessories
e1	e1- outdoor air (ODA)	250 x 200 mm	4 x M6 thread for 20 mm flange
e2	e2- supply air (SUP)	250 x 200 mm	4 x M6 thread for 20 mm flange
i1	i1- extract air (ETA)	250 x 200 mm	4 x M6 thread for 20 mm flange
i2	i2- exhaust air (EHA)	250 x 200 mm	4 x M6 thread for 20 mm flange
K	condensate drain	Ø 32 mm / 40 mm	

Note:
- Door – 2 parts
- Diagram is intended only for basic information, binding dimensions receive at device delivery, or on request from the manufacturer.
- Bolt holes for duct connection (for one port): 4 x M6

CONTROLS & ACCESSORIES



ePM10 50% (M5) Spare Filter (1 pc) No: 90001451

Spare filter, designed to remove at least 50% of PM10 airborne particles such as dust, pollen, mould spores, pet dander.



ePM1 55% (F7) Spare Filter (1 pc) No: 90001452

Spare filter, designed to remove at least 55% of PM1 fine particles such as smoke, bacteria, fine dust and allergens.



Hi-Flow Max Tank Condensation Pump No: 90000748

Plug-and-play pump removes condensate to prevent mould and protect the unit.



CO_2 Duct Sensor No: 90000165

Precise CO_2 monitoring using optical NDIR technology which maintains optimal IAQ.

Others products available from **airflow.com**

DECENTRALISED MVHR - SINGLE ROOM SOLUTION



The Uno*hab* is a decentralised single-room heat recovery unit that delivers fresh, filtered air while recovering heat to improve comfort and reduce energy use.

To help prevent overheating, the Uno*hab* units have been designed with a built-in summer mode, easily activated via the Uno*hab* controller. A yellow LED will indicate that the summer mode has been activated and cross ventilation will start cooling down the property. When commissioning the units, they can be configured so that those on the cooler side of the property (e.g. north-facing) supply fresh air, while units on the warmer side (e.g. south-facing) extract air.

- Lots of flexibility and low noise levels
- EC Motors and built in filter
- Can be connected to other units to provide total house solution
- Systems can be designed to meet Part F
- Used in retro fit or new build
- Perfect for both retrofit or new build
- Accessories that enable for the extract to be incorporated into properties with external wall insulation
- Suitable for various wall depths

Uno*hab*





Mode 2 - Yellow LED



Mode 2 – Cross ventilation mode (non-reversing mode)
The cross ventilation function enables ventilation without heat recovery. For this purpose, the first Uno*hab* unit, which is connected to the Uno*hab* controller, is switched to supply air mode. The second Uno*hab* unit, which is connected to the subsequent controller terminal, is switched to extract air mode. Cross ventilation function can also be defined as air movement from one point of the property to another, resulting in cooling the inside air through a mechanical force that draws cool air in and pushes stagnant hot air outside.

AIRFLEXPRO SEMI-RIGID DUCTING

AIRFLEXPRO - ELLIPTICAL AND ROUND



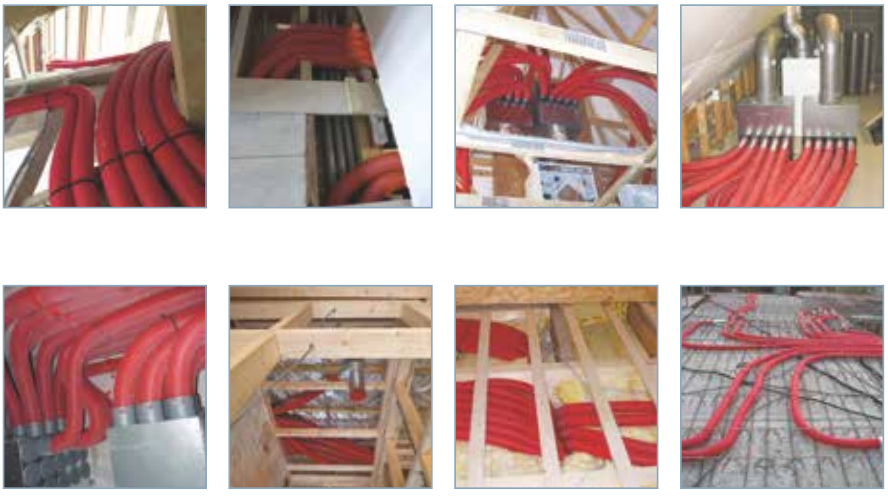
- Zero leakage ensures highest system performance
- Unique design saves 70% on installation time
- Interchangeable ducting system (75 mm round / 51 mm x 114 mm elliptical) without any hydraulic pressure loss
- Ø90 mm semi-rigid ducting option available in blue for higher air flow rate applications (achieves a remarkable 50% increase in air flow rate compared to AirflexPro 75 mm size)
- Compact design, suits narrow joists and low ceiling voids
- Ducting crushability of 8kN/m^2 which enables ducting to be encased in up to two metres thick concrete
- Smooth bore with anti-static and anti-bacterial lining
- SAP recognised ducting (non-jointed)



Also available: blue round ducting in 75 mm and 90 mm sizes



AIRFLEX INTERCHANGEABLE SYSTEM



MIX AND MATCH SEMI-RIGID DUCTING

AirflexPro 75 mm round and AirflexPro elliptical have the same hydraulic pressure and can be used in the same ducting system without any loss of performance.

AirflexPro 90 mm is particularly well-suited for larger homes, where higher air volumes must be managed without increasing the sound levels. This ducting system offers a reliable solution for modern living spaces to meet both high flow rates and sound sensitive requirements.

SELECTION SOFTWARE

Airflow's selection software, SELECTair has been developed to help you make the right choice of product for your project and provide the relevant information for planning.

SELECTair
RESIDENTIAL MVHR

Via the MagiCAD Cloud platform, SELECTair for Residential MVHR will enable you to make a rapid but accurate choice of solution for your specific project.



Find out more

USING THE LATEST TECHNOLOGY

Airflow has introduced a number of control systems that make it quicker and easier for you to get the level of ventilation that you need, when you need it.

Airflow products can be controlled with Bluetooth, VAV, BACNet, KNX, Modbus and BMS technologies. Furthermore, a number of our products can be controlled via an Internet-enabled device at home or on-the-go, including Airflow's Adroit MVHR range.



VISIT THE AIR ACADEMY

Airflow is proud to welcome customers to the state-of-the-art Air Academy training facility at the Airflow UK Head office in High Wycombe.

This 500m² facility is designed to educate, inform and inspire all visitors. More than just an experience centre, the Air Academy is an elite training facility that is able to offer CIBSE approved CPD seminars.

One of our experts will happily provide you with a tour of the academy which showcases Airflow's wide range of innovative products. You'll be guided through the history of ventilation and be able to see the first inclined manometer to go into commercial production, as well as the first Internet-controllable MVHR units in the UK.

To arrange a visit to the Air Academy, please contact your Account Manager or alternatively contact Airflow on: **+44 (0)1494 525252** or e-mail **info@airflow.com**.

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