

Comfort Cooling Kit

for DV110 Adroit

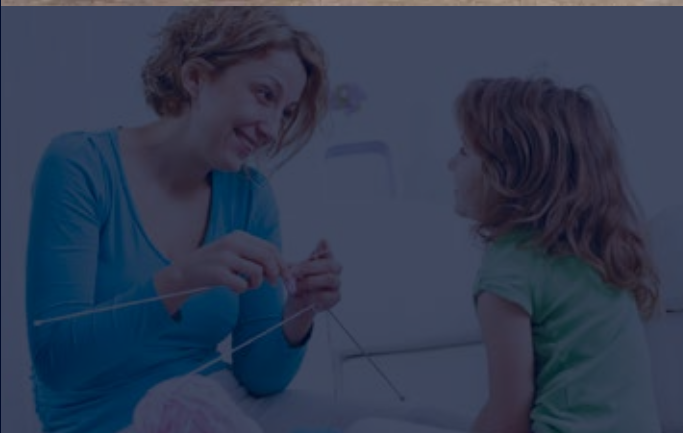


KEY FEATURES

- | Maintains a healthy indoor environment through high-performance filtration and fresh cool air supply
- | Enhanced summer comfort via an eco-friendly water coil solution
- | Compatible with air-source heat pumps (ASHP)
- | Features automatic 100% summer bypass and cool recovery for optimal seasonal performance
- | Triple filter design including high-efficiency ePM1 50% supply filter
- | Smart built-in controls, accessible via smartphone, tablet, or PC
- | Helps to meet Approved Document O compliance by reducing overheating risk

The Comfort Cooling kits are available with our premium Adroit DV110 MVHR units, providing an effective solution for projects that require additional cooling support. MVHR unit not included in the kit. These units are ideal for domestic and residential applications with a maximum floor area of up to 75 m² (based on 1 ACH at ~50% fan speed).

Adroit controls feature an automatic 100% modulating summer bypass and a dedicated Cool Recovery mode to maintain comfortable indoor conditions during warmer periods. When outdoor air is hotter than both the extract air and the desired supply temperature, the system uses the cooler extract air to reduce the temperature of the incoming supply air. In this mode, the unit actively recovers coolness from the home, improving comfort and overall energy efficiency.



Comfort Cooling Kit for DV110 Adroit

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

SAP RESULTS

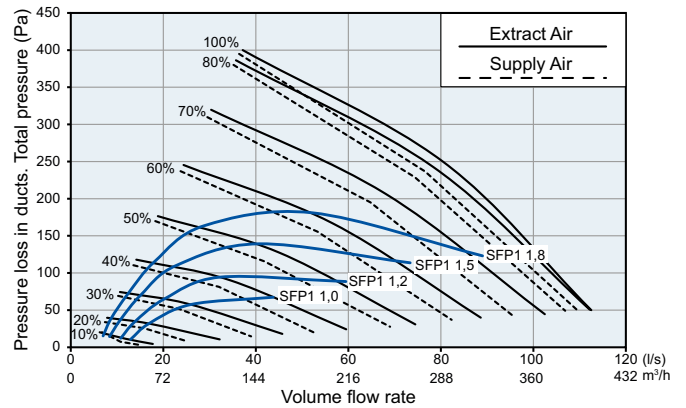
Systems with rigid ductwork only SAP 2009 results

Exhaust terminal configuration	Specific Fan Power (W/l/s)	Thermal efficiency (%)
Kitchen+1 additional wet room	1.01	91%
Kitchen+2 additional wet rooms	0.8	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%

SOUND MATERIALS

		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 (10m ² sound absorption)																			
		Adjustment position																	
Adjustment position (%)		10	20	30	40	50	60	70	80	100	10	20	30	40	50	60	70	80	100
L_{pA} , dB (A)		21	24	30	32	35	39	42	45	47									

PERFORMANCE



* Guidance only. Dependant upon system pressure.

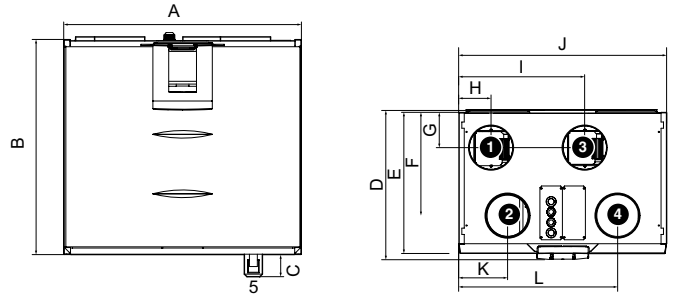
Systems with rigid ductwork only SAP 2012 results

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	1.4	88%

TECHNICAL SPECIFICATION

90002287 Max air flow (m³/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 (m³/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 428
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

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

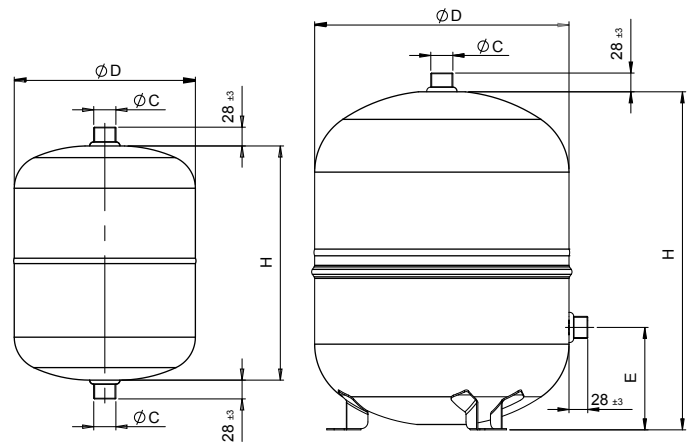
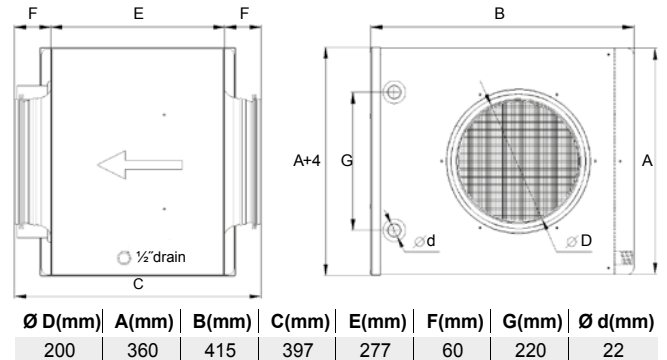
Duct outlets, model L

Inner diameter of female outlet collar ø 160 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



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

*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.

CAPACITY TABLES- Standard heat exchanger

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

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

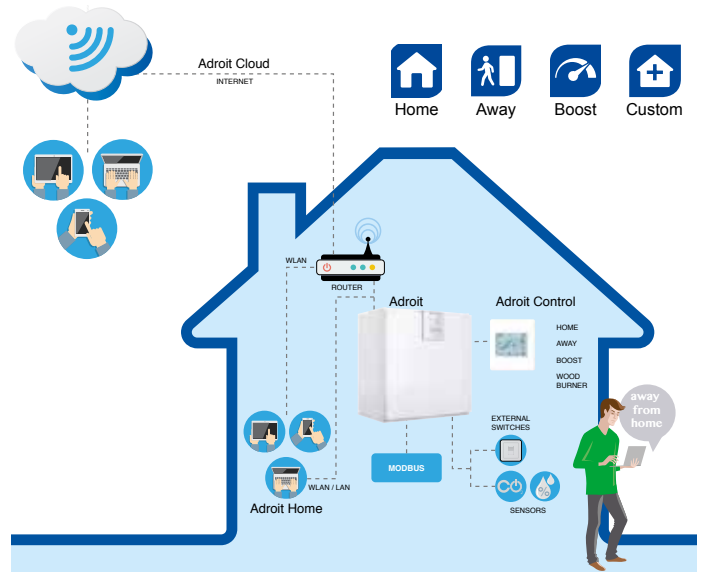
The combined total kW cooling accounted for coil recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation. For cooling output data based on other assumed external design conditions, please contact Airflow. The calculation 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.

CONTROLS

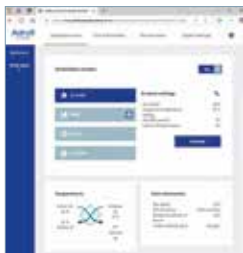
Ideal indoor air quality is achieved by automatically **adjusted ventilation**

Adroit is controlled via 4 ventilation profiles controls providing 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 CO₂ 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

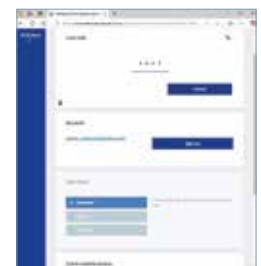
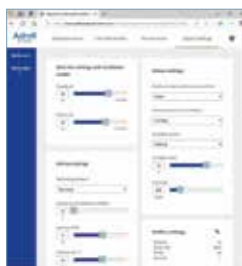
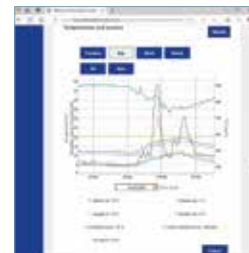


Customised Control, Anywhere



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



CONTROLS & ACCESSORIES



AirflexPro Round Pipe - Red
No: 9041130
 Ø75 mm x 50 M.
 A quick and easy to fit system of semi-rigid ducting (max. air volume 30 m³/h).



Boost Switch
No: 90000542
 Single gang momentary boost modular switch in a smooth polar white finish.



AirflexPro Round Pipe - Blue
No: 90001971
 Ø90 mm x 50 M.
 A quick and easy to fit system of semi-rigid ducting (max. air volume 50 m³/h).



DV110 Adroit Filter Set
No: 90000378
 Replace filters 2x a year. (2 x G4/ISO Coarse 75%, 1 x F7/ISO ePM1 50%).

Others products available from airflow.com

Call: 01494 525252

Visit: airflow.com

AIRFLOW

Airflow Developments Limited
 Aidelle House, Lancaster Road,
 Cressex Business Park,
 High Wycombe, Buckinghamshire,
 United Kingdom, HP12 3QP

E-mail: info@airflow.com
 Telephone: +44 (0) 1494 525252

airflow.com

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