Comfort Cooling Kit
for DV145 Adroit

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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 DV145 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 120 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.

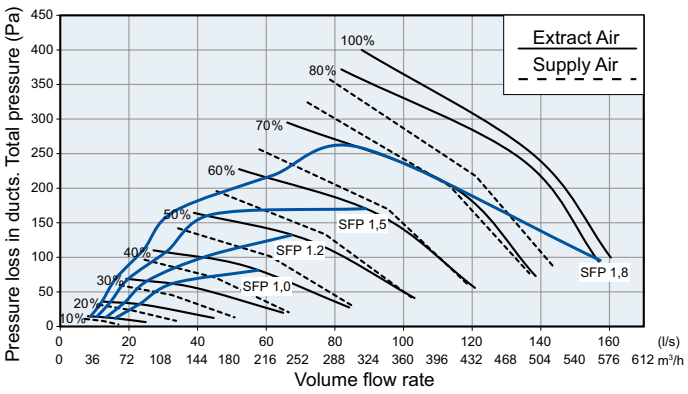
Comfort Cooling Kit
for DV145 Adroit

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 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	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

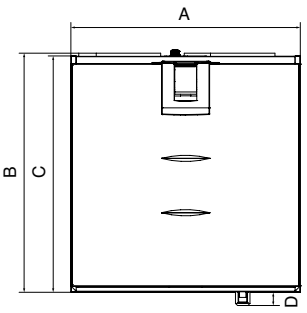
	Sound pressure level coming through the envelope of the unit in the room in which it is installed (10m² sound absorption)									
	Adjustment position									
Adjustment position (%)	10	20	30	40	50	60	70	80	90	100
L_{pA}, dB (A)	28	27	32	35	39	43	46	48	49	49

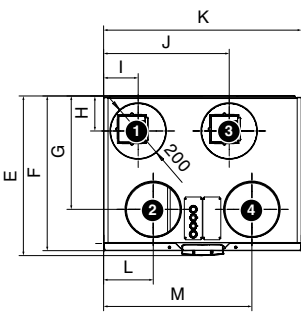
TECHNICAL SPECIFICATION

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

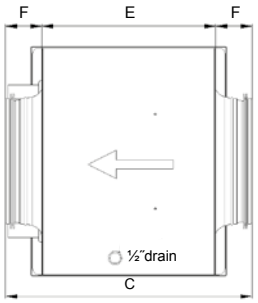
Duct outlets, model L

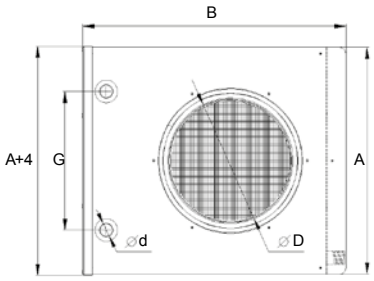
Inner diameter of female outlet collar ø200 mm

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

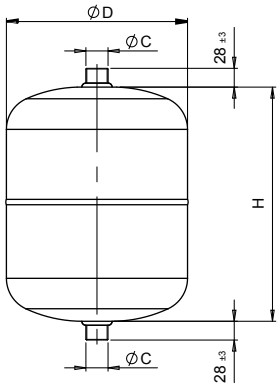
+ excludes motors. Motor warranty one year from date of purchase

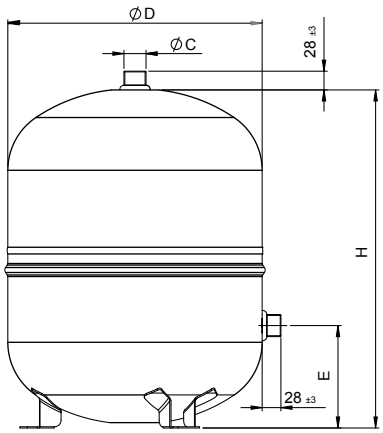
Model	A	B	C	D	E	F	G	H	I	J	K	L	M
DV145	717	748	739	43	578	560	411	127	125	455	717	180	537





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

CAPACITY TABLES- Standard heat exchanger

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

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

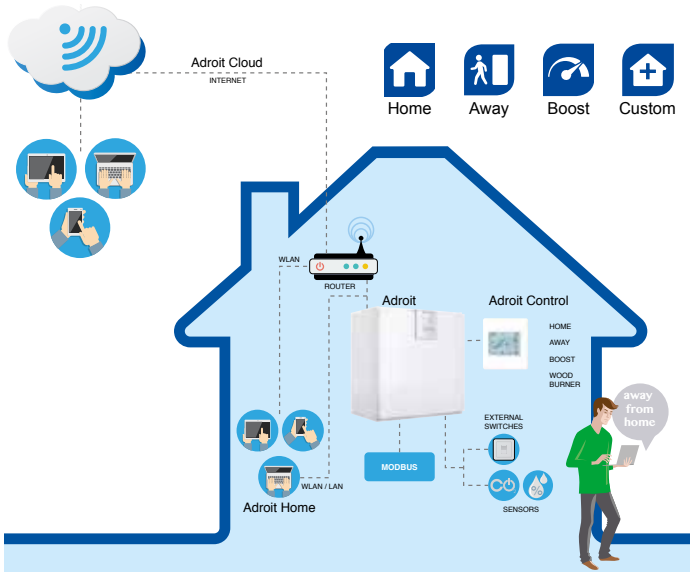
The combined total kW cooling accounted for coolth recovery, sensible and latent cooling. These results therefore reflect expected cooling power and supply air temperatures when in operation.
For cooling output data based on other assumed external design conditions, please contact Airflow.
The calculation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

CONTROLS

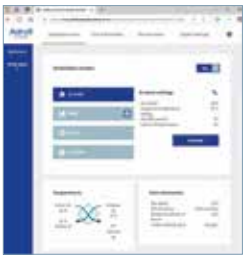
Ideal indoor air quality is achieved by automatically **adjusted ventilation**

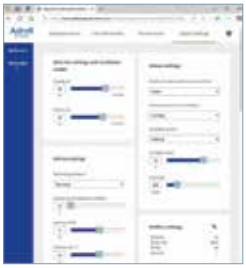
Adroit is controlled via 4 ventilation profiles controls providing the following features:

- **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 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



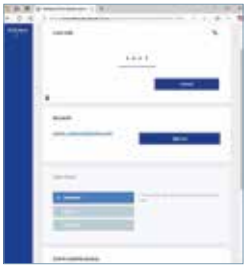


Adroit™

- 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





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).



DV145 Adroit Filter Set
No: 90000376
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**

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