



Air for life

Technical Sheet

Flair 325 Enthalpy
Heat recovery appliance



General information

The Flair 325 Enthalpy and the Flair 325 Enthalpy Plus is a ventilation unit for the balanced ventilation of dwellings with heat recovery.

Features:

- Maximum capacity 325 m³/h
- High return plastic heat exchanger
- Filters ISO Coarse 60%
- Modular electric preheater
- Automatic bypass valve
- Touchscreen
- Adjustable air quantity
- Filter indication on the appliance and the possibility of a filter indication on the multiple switch
- An intelligent frost protection including modular preheater
- Low sound level
- Constant flow control

The Flair 325 Enthalpy is available in two types:

- **the "Flair 325 Enthalpy"**
- **The "Flair 325 Enthalpy Plus"**

The Flair 325 Enthalpy Plus has, compared with standard Flair 325 Enthalpy, an extra pcb giving this more functions/ connection possibilities (→).

These installation instructions describe both the standard Flair 325 Enthalpy and the Flair 325 Enthalpy Plus.

The Flair 325 Enthalpy and the Flair 325 Enthalpy Plus are available in **Left-hand** and **Right-hand** versions; it is not possible to convert the left and right-hand models into one another.

For the correct connection ducts and dimensions (→).

It is possible, however, to later equip the appliance with a Plus pcb.

The appliance comes ready to plug in with a 230 V mains plug.

Technical info

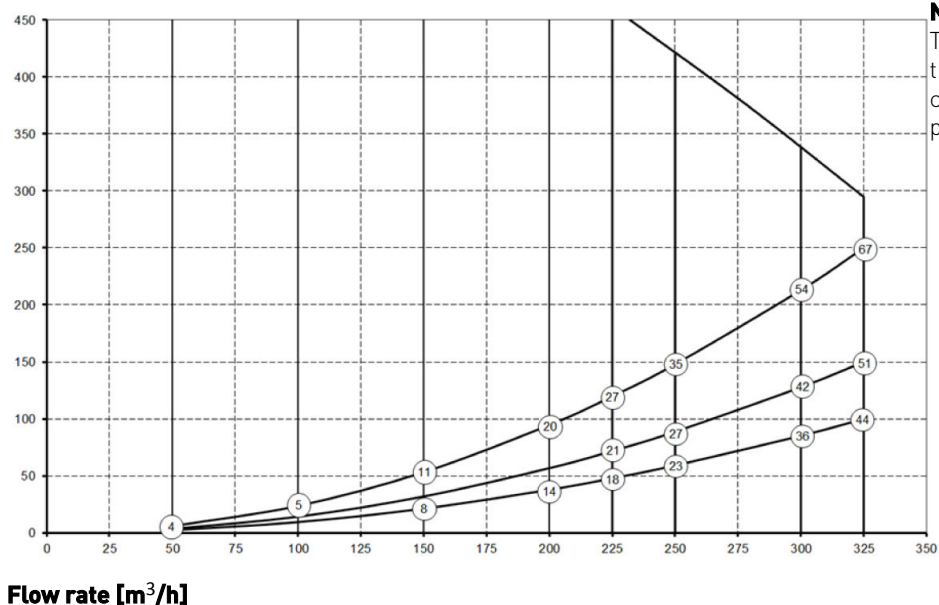
Technical information

Flair 325 Enthalpy (Plus)										
Supply voltage [V/Hz]	230V/50Hz									
Dimensions (w x h x d) [mm]	750 x 650 x 560									
Duct diameter [mm]ø	ø 160									
Weight [kg]	37									
Filter class	ISO Coarse 60% (ISO ePM1.0 for the air supply optional)									
Fan setting (factory setting)	0	1		2		3		max		
Factory setting [m³/h]	50	100		150		250		325		
Permissible resistance of duct system [Pa]	2	6	9	24	21	53	59	148	100	250
Rated power (excl. preheater) [W]	6.1	6.6	7.9	10.3	15.1	21.0	46.6	69.1	87.5	144.5
Rated current (excl. preheater) [A]	0.08	0.08	0.09	0.11	0.15	0.21	0.41	0.59	0.73	1.07
Max. rated current (incl. preheater switched on) [A]	6									
Cos φ	0.341	0.343	0.389	0.394	0.430	0.439	0.492	0.507	0.521	0.542
Sound power										
Ventilation capacity [m³/h]			100	150	150	200	200	250	325	
Sound power level Lw(A)	Static pressure [Pa]		25	25	50	50	100	150	150	
	Casing radiation [dB(A)]		27	34	35	40	41	46	51	
	Duct "From dwelling" [dB(A)]		32	40	38	46	44	49	55	
	Duct "To dwelling" [dB(A)]		44	49	51	55	57	62	69	

*) Duct noise including end correction

In practice the value may differ by 1dB(A) through measurement tolerances.

Resistance of duct system [Pa]



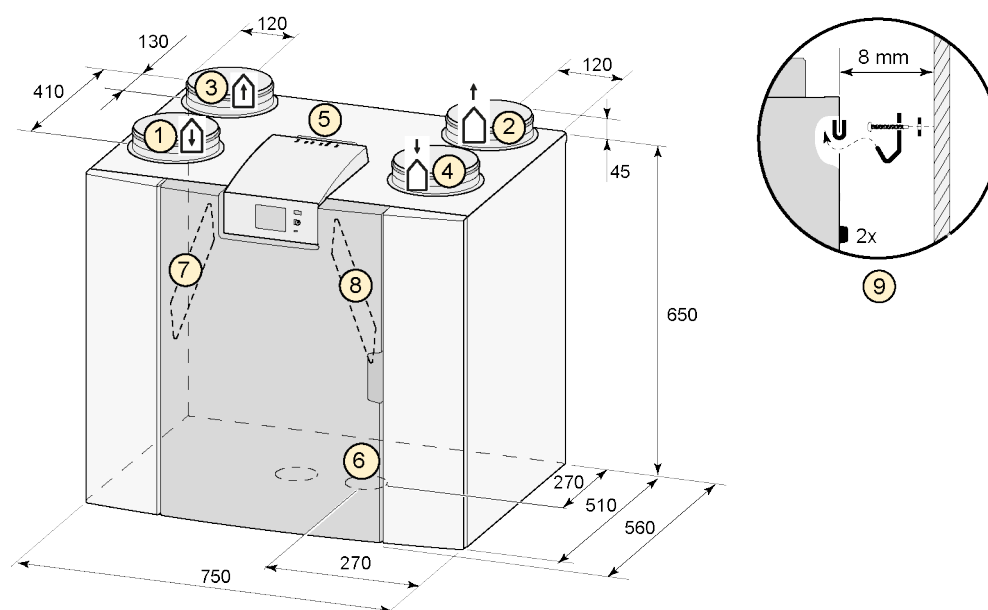
Note:

The stated value in the circle is the capacity (in Watt) per fan

Connections and dimensions

The Flair appliance is available in a left-hand and right-hand version. With a left-hand version the “warm” connections (from dwelling 3 and to dwelling 1) are on the left-hand side of the appliance; the condensate discharge is then mounted at the right-hand opening below the appliance. With a right-hand version the “warm” connections (1 & 3) are on the right-hand side of the appliance.

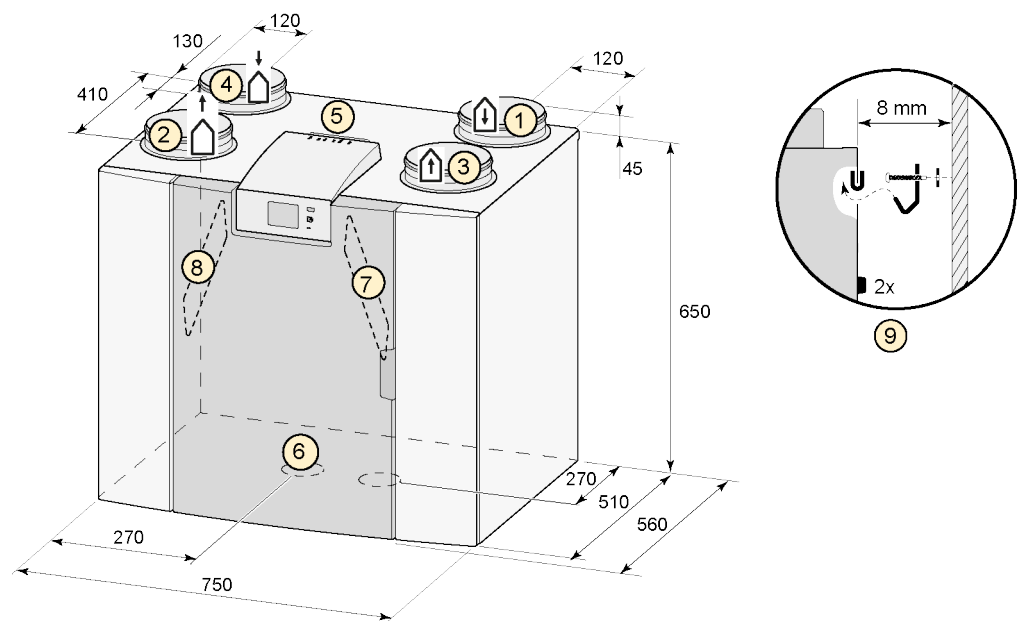
Left-hand version







All dimensions in millimeters. Diameter of all collars is 160 mm

1	To dwelling	
2	To outside	
3	From dwelling	
4	From outside	
5	Electrical connections	
6	Siphon connection	
7	Exhaust air filter	
8	Supply air filter	
9	Mounting	

Right-hand version

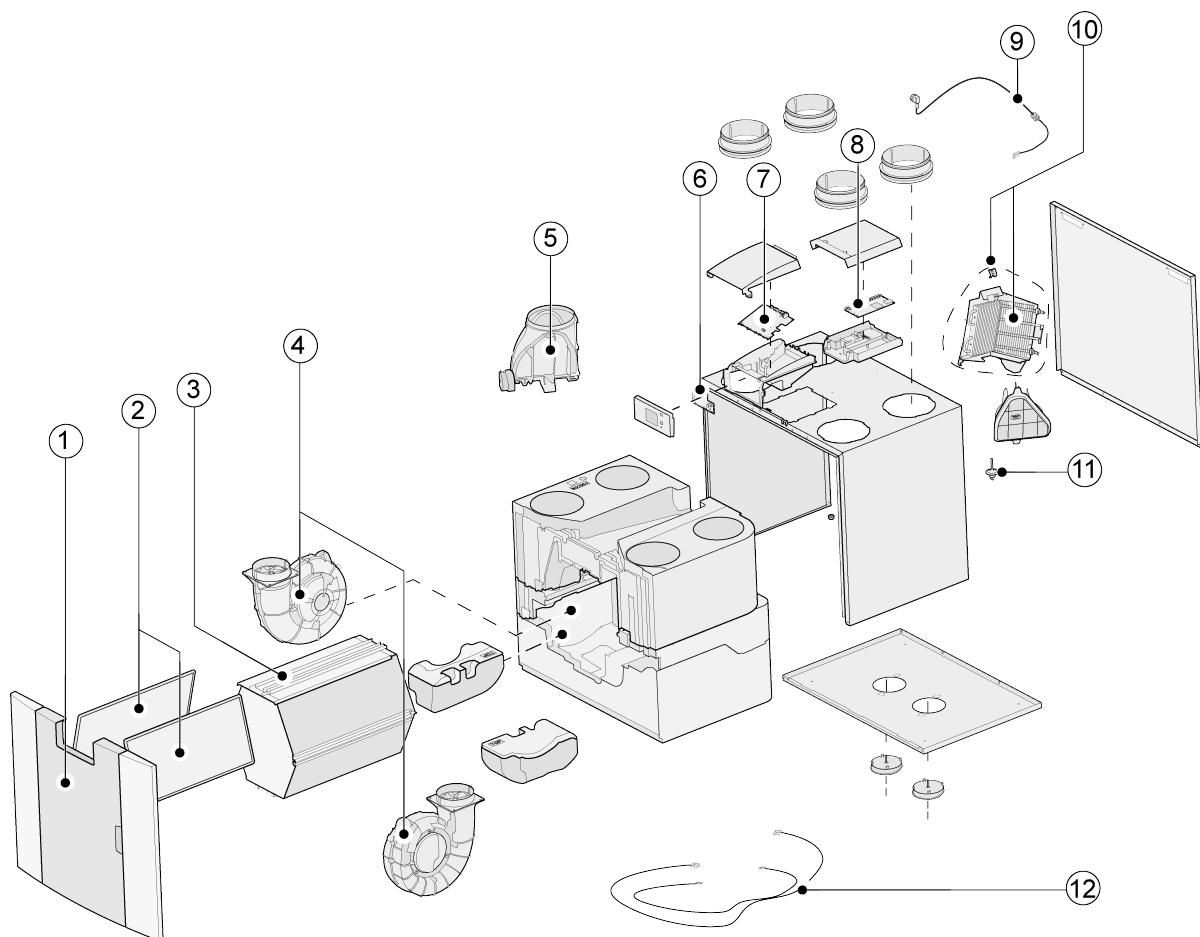


All dimensions in millimeters. Diameter of all collars is 160 mm

1	To dwelling	
2	To outside	
3	From dwelling	
4	From outside	
5	Electrical connections	
6	Siphon connection	
7	Exhaust air filter	
8	Supply air filter	
9	Mounting	

Service parts

Service articles



No.	Article description	Article code
1	Front panel complete	532763
2	Filters (2 items) ISO Coarse 60%	532716
3	Enthalpy heat exchanger	532710
4	Fan (1 item)	532759
5	Bypass valve with motor complete	532760
6	Display pcb	532752
7	Basic pcb	532750
8	Plus pcb U(only applicable with Plus version)	532751
9	Mains plug and cable 230 V **	532756
10	Internal preheater incl. maximum security	532761
11	Temperature sensor NTC 10K	531775
12	Cable set	532767

* The power cable is fitted with a circuit board connector. When replacing it, always order a replacement mains cable from Brink.

To prevent dangerous situations, a damaged mains connection can only be replaced by a qualified expert.

Certificates

Conformity declaration

Conformity declaration

Manufacturer: Brink Climate Systems B.V.

Address: Postbus 11
NL-7950 AA, Staphorst, The Netherlands

Product: Heat recovery appliance type:
Flair 325 Enthalpy
Flair 325 Enthalpy Plus

The product described above complies with the following directives:

- ◆ 2014/35/EU (low voltage directive)
- ◆ 2014/30/EU (EMC directive)
- ◆ RoHS 2011/65/EU (substances directive)
- ◆ 2009/125/EG (1253/1254 EU (EU ErP directive))

The product bears the CE label:



Staphorst, 24-11-2017

A blue ink signature, likely of M. Schouten, written in a cursive style. The signature is written over a horizontal line.

M. Schouten
Technical Director

1 ERP values

Technical information sheet Flair 325 Enthalpy Plus in accordance with Ecodesign (ErP), no. 1254/2014 (Annex IV)					
Manufacturer:		Brink Climate Systems B.V.			
Model:		Flair 325 Enthalpy (Plus)			
Climate zone	Type of control	SEC Value in kWh/m ² /a	SEC Class	Annual electricity consumption (AEC) in kWh	Annual heating saved (AHS) in kWh
Average	Manual	-38.75	A	220	4359
	clock control	-39.45	A	203	4386
	1x sensor (RV/CO ₂ /VOC)	-40.78	A	172	4440
	2 or more sensors (RV/CO ₂ /VOC)	-43.18	A+	119	4548
Cold	manual	-75.07	A+	757	8527
	clock control	-76.02	A+	740	8580
	1x sensor (RV/CO ₂ /VOC)	-77.87	A+	709	8686
	2 or more sensors (RV/CO ₂ /VOC)	-81.31	A+	656	8898
Hot	manual	-15.33	E	175	1971
	clock control	-15.88	E	158	1983
	1x sensor (RV/CO ₂ /VOC)	-16.91	E	127	2008
	2 or more sensors (RV/CO ₂ /VOC)	-18.72	E	74	2057
Type of ventilation unit:		Balanced residential ventilation appliance with heat recovery			
Fan:		EC - fan with infinitely variable control			
Type of heat exchanger:		Recuperative plastic cross-counterflow heat exchanger			
Thermal efficiency		83%			
Maximum flow rate:		325 m ³ /h			
Maximum rated power:		144.5 W			
Sound power level L _{wa} :		41 dB(A)			
Reference flow rate:		228m ³ /h			
Reference pressure:		50Pa			
Specific Power Input (SEL):		0.14 Wh/m ³			
Control factor:		1.0 in combination with multiple switch			
		0.95 in combination with clock control			
		0.85 in combination with 1 sensor			
		0.65 in combination with 2 or more sensors			
Leakage*	Internal	2.85%			
	External	2.85%			
Position dirty filter indication:		On the display of the appliance / on the multiple switch (LED) / on the Brink Air Control. Attention! For optimal energy efficiency and a proper operation, a regular filter inspection, cleaning or replacement is necessary.			
Internet address for Assembly instructions:		https://www.brinkclimatesystems.nl/international/home/docsearch			
Bypass:		Yes, 100% Bypass			

* Measurements executed by TZWL according to the EN 13141-7 standard

Classification from 1 January 2016	
SEC class ("Average climate zone")	SEC in kWh/m ² /a
A+ (Most efficient)	SEC < -42
A	-42 ≤ SEC < -34
B	-34 ≤ SEC < -26
C	-26 ≤ SEC < -23
D	-23 ≤ SEC < -20
G (Least efficient)	-20 ≤ SEC < -10

EN 13141-7:2010 Certificate

KF.82.01.257.BD.02
29.11.18



Declaration of conformity regarding the determination of energetic efficiency according to EN 13141-7:2010

On behalf of Brink Climate Systems B.V. the determination of energetic efficiency was conducted by Europäisches Testzentrum für Wohnungslüftungsgeräte (TZWL) e. V. in Dortmund, Germany.

Tests were carried out according to:

- EN 13141-7:2010; Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 7: Performance testing of a mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings

Technical data of the tested unit:

Manufacturer:	Brink Climate Systems B.V.
Type:	Flair 325 4/0 R EU ENTHALPIE
Serial Number:	430013181502
Year of construction:	2018
Power supply:	230 V ~ 50 Hz
CE-Label:	Yes
Maximum volume flow:	325 m³/h

Results, energetic efficiency 7°C:

Air flow [m³/h]	Temperature ratio, supply air $\eta_{0,su}$ [%]	Humidity ratio supply air $\eta_{X,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
51	96,0	79,1	11,6	0,23
226	83,2	57,1	32,2	0,14
328	76,3	38,2	79,3	0,24

Results, energetic efficiency 2°C:

Air flow [m³/h]	Temperature ratio, supply air $\eta_{0,su}$ [%]	Humidity ratio supply air $\eta_{X,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
50	93,2	80,3	11,7	0,23
225	80,4	62,3	35,0	0,15
326	76,8	57,5	79,9	0,24

Results of performance tests of aerodynamic characteristics, of heat recovery characteristics and of the effective power consumption are taken from tests with number M.82.01.257.BD.rev01

Passive House Certificate

CERTIFICATE

Certified Passive House Component
Component-ID: 1287vs03 valid until 31st December 2020

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category: Air handling unit with heat recovery
Manufacturer: Brink Climate Systems B.V., Netherlands
Product name: Brink Flair 325 Enthalpie

Specification: Airflow rate < 600 m³/h
Heat exchanger: Recuperative

This certificate was awarded based on the product meeting the following main criteria

Heat recovery rate $\eta_{HR} \geq 75\%$
Specific electric power $P_{E,spec} \leq 0.45 \text{ Wh/m}^3$
Leakage < 3%
Comfort Supply air temperature $\geq 16.5^\circ\text{C}$ at outdoor air temperature of -10°C

Airflow range
70–249 m³/h
Heat recovery rate
$\eta_{HR} = 86\%^{1)}$
Specific electric power
$P_{E,spec} = 0.21 \text{ Wh/m}^3$
Humidity recovery
$\eta_{Hr} = 77\%$

¹⁾ At an airflow of 85 m³/h, a heat recovery of $\eta_{HR} = 94\%$ is reached.



www.passivehouse.com

With
 η_{HR} Heat recovery rate in %
 θ_{ETA} Extract air temperature in °C
 θ_{EHA} Exhaust air temperature in °C
 θ_{ODA} Outdoor air temperature in °C
 P_E Electric power in W
 \dot{m} Mass flow in kg/h
 c_p Specific heat capacity in Wh/(kg K)
 η_{Hr} Humidity recovery in %
for $\eta_{Hr} \geq 60\%$, the heat recovery increase $(0.08 \cdot \eta_{Hr})$ is limited to a maximum of 4.80 %

Heat recovery rate
$\eta_{HR} = 86\%$

Efficiency criterion (electric power)

The overall electrical power consumption of the device is measured at the test facility at an external pressure of 100 Pa (50 Pa, respectively, for the intake and outlet). This includes the general electrical power consumption for operation and control but not for frost protection.

Specific electric power
$P_{E,spec} = 0.21 \text{ Wh/m}^3$

Efficiency ratio

The efficiency ratio provides information about the overall energy performance of the respective ventilation unit. It specifies the achieved reduction in ventilation heat losses by using a ventilation unit with heat recovery rather than without.

Efficiency ratio
$\epsilon_L = 0.76$

Leakage

The leakage airflow must not exceed 3 % of the average airflow of the unit's operating range.

Internal leakage	External leakage
2.49 %	1.51 %

Settings and airflow balance

It must be possible to adjust the balance of airflows at the unit itself (either between the exhaust and the outdoor airflows or between the supply and the extract airflows, if the unit is respectively placed inside or outside of the insulated thermal envelope of the building).

- This unit is certified for airflow rates of 70–249 m³/h.
- Balancing the airflow rates of the unit is possible.
- The user should have at least all the following setting options:

Component-ID: 1287vs03

3/5

www.passivehouse.com

Brink Climate Systems B.V.

Welthouder Wasselbaaistraat 8, 7951 SN Staphorst, Netherlands

☎ +31 (0)522 46 96 13 | ✉ info@brinkclimatesystems.nl | 🌐 http://www.brinkclimatesystems.nl

Humidity recovery

Indoor air humidity can be increased by using a system with moisture recovery in a cool, temperate climate, especially during the winter. These higher humidity levels will reduce evaporation from building elements and furniture during the heating period and thus have a positive effect on the building's heating demand. In order to account for this effect, the heat recovery efficiency is increased by a certain percentage, depending on the achieved level of moisture recovery.

Humidity recovery
$\eta_{Hr} = 77\%$

In case the unit's moisture recovery rate is larger than 60 % its airflow rate must be controlled based on the indoor air humidity, in order to prevent temporarily elevated humidity levels.

- As default, this unit provides a function of airflow volume control according to the extract air humidity. Installation of an additional extract air humidity sensor is required in order to ensure this function. This sensor is available as an optional accessory.

Application of humidity recovery:

- In cool temperate climates, heat exchangers with moisture recovery should generally only be used if the moisture load inside the building is comparatively low (e.g. in a residential building with an occupancy rate significantly below the average).
- If moisture recovery > 60 % is to be used in a building with an average occupancy rate and typical use, the energy balance of the building is to be calculated with an increased airflow rate.

Passive House comfort criterion

At an outdoor air temperature of -10°C a supply air temperature higher than 16.5°C is achieved by use of an internal and additional external electric preheater. The criterion is therefore met.

Efficiency criterion (heat recovery rate)

The effective heat recovery rate is measured at a test facility using balanced mass flows of the outdoor and exhaust air. The boundary conditions for the measurement are documented in the testing procedure.

$$\eta_{HR} = \frac{(\theta_{ETA} - \theta_{EHA}) + \frac{P_E}{\dot{m} \cdot c_p}}{(\theta_{ETA} - \theta_{ODA})} + 0.08 \cdot \eta_{Hr}$$

2/5

Brink Flair 325 Enthalpie

www.passivehouse.com

- ✓ Switching the system on and off.

- ✓ Synchronized adjustment of the supply and extract airflows to basic ventilation (70–80 %), standard ventilation (100 %) and increased ventilation (130 %) with a clear indication of the current setting.

- The device has a standby power consumption of 3.90 W. The target value of 1 W was exceeded. The device should be equipped with an additional external switch so that it can be disconnected from the mains, if required.
- After a power failure, the device will automatically resume operation.

Acoustical testing

The required limit for the sound power level of the device is 35 dB(A) in order to limit the sound pressure level in the installation room. The sound level target value of less than 25 dB(A) in living spaces and less than 30 dB(A) in functional spaces must be ensured by installing commercial silencers. The following sound power levels are met at an airflow rate of 238 m³/h:

Device	Outdoor	Supply air	Extract air	Exhaust air
44.5 dB(A)	48.5 dB(A)	60.5 dB(A)	49.0 dB(A)	59.0 dB(A)

- The unit does not fulfil the requirements for the sound power level. The unit must therefore be installed acoustically separated from living areas.
- One example of suitable silencers for supply and extract air ducts is mentioned in the detailed test report or can be obtained from the manufacturer. It is recommended to identify suitable silencers for each individual project.

Indoor air quality

This unit is to be equipped with the following filter qualities:

Outdoor air filter	Extract air filter
ISO ePM1 50%	ISO Coarse 60%

On the outdoor air side, the filter efficiency of ISO ePM1 50% (F7 according to EN 779) or better is recommended. For the extract air side, a filter efficiency of at least ISO Coarse 60% (G4 according to EN 779) is recommended. If not in standard configuration, the recommended filter is available as an accessory part.

Frost protection

Appropriate measures should be taken to prevent the heat exchanger and optional downstream hydraulic heater coil from getting damaged by frost during extreme winter temperatures (-15°C). It must be ensured that the unit's ventilation performance is not affected during frost protection cycles.

- Frost protection of the heat exchanger:

- ✓ In order to protect the heat exchanger from freezing, the unit is equipped with an internal electric preheater with a power of 1000 W. In order to ensure the frost protection even at low outdoor air temperature, the unit can be optionally equipped with an additional external electric preheater with a power of 1000 W. The operation of this frost protection is controlled depending on the outdoor air temperature. The laboratory measurement has proved, that this frost protection at an upper airflow rate and an outdoor air temperature of -15°C is

4/5

Brink Flair 325 Enthalpie

www.passivehouse.com

See also: [Complete Passive House Certificate](#)

Flair 325 Enthalpie 616743-A