



Tehnični list

Flair 325

Naprava za rekuperacijo toplote

Slovenščina



Air for Life

Splošno

Flair 325 in Flair 325 Plus sta prezračevalni enoti za uravnoteženo prezračevanje bivališč na podlagi izkoriščanja toplote.

Funkcije:

- Največja zmogljivost 325 m³/h
- Plastični toplotni izmenjevalnik z visokim izkoristkom
- Filtri ISO Coarse 60 %
- Modularni električni predgrelnik
- Loputa za obvod rekuperacije
- Zaslon na dotik
- Prilagodljiva količina zraka
- Podatki o filtru na napravi in možnost navedbe podatkov o filtru na večstopenjskem stikalu
- Inteligentna zaščita pred zmrzaljo, vključno z modularnim predgrelnikom
- Nizka raven hrupa
- Konstantni volumenski pretok

Na voljo sta dve vrsti modela Flair 325:

- »**Flair 325**«
- »**Flair 325 Plus**«

Flair 325 Plus ima v primerjavi s standardnim modelom Flair 325 dodatno opsijsko ploščo, ki omogoča več funkcij/možnosti povezovanja (→).

Ta navodila za namestitev opisujejo tako standardni model Flair 325 kot tudi model Flair 325 Plus.

Flair 325 in Flair 325 Plus sta na voljo v **levi** in **desni** različici; levih in desnih modelov ni mogoče pretvarjati iz ene različice v drugo.

Za pravilne priključne kanale in mere (→).

Pozneje je mogoče napravo opremiti z opsijsko ploščo Plus.

Ta naprava je dostavljena z električnim vtičem za napetost 230 V.

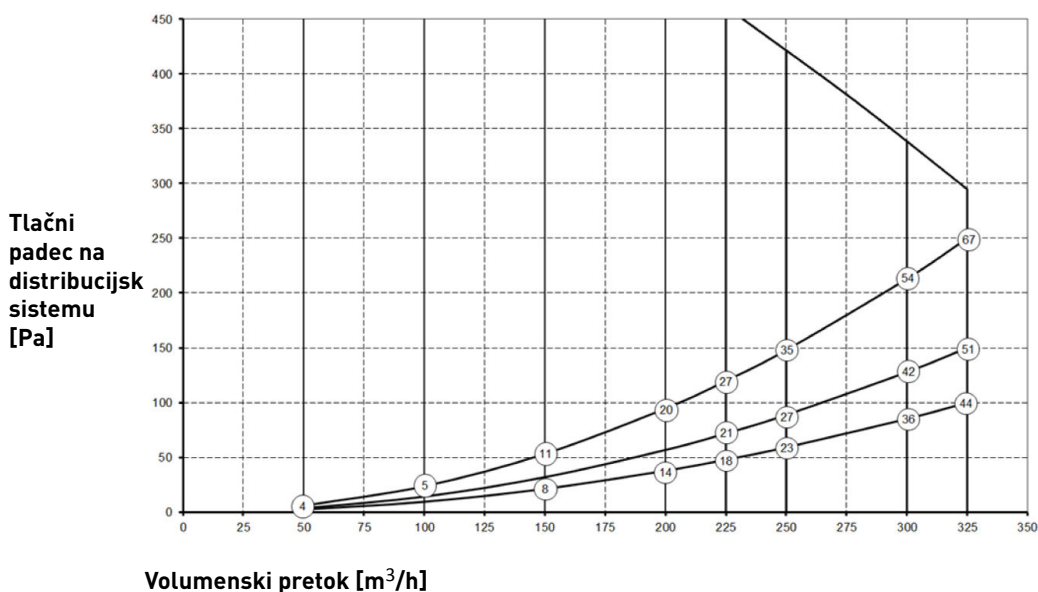
Tehnični podatki

Tehnični podatki

Flair 325 (Plus)										
Napajalna napetost [V/Hz]	230 V/50 Hz									
Mere (š x v x g) [mm]	750 x 650 x 560									
Premjer kanala [mm]	ø160									
Zunanji premer odtoka kondenzata [mm]	ø32									
Teža [kg]	37									
Razred filtra	ISO Coarse 60 % (izbirno ISO ePM1.0 50% za dovajanje zraka)									
Nastavitev ventilatorja (tovarniška nastavitve)	0	1	2	3	najv.					
Tovarniška nastavitve [m³/h]	50	100	150	250	325					
Dopustni tlačni padec distribucijskega sistema [Pa]	2	6	9	24	21	53	59	148	100	250
Nazivna moč (brez predgrelnika) [W]	6,1	6,6	7,9	10,3	15,1	21,0	46,6	69,1	87,5	144,5
Nazivni tok (brez predgrelnika) [A]	0,08	0,08	0,09	0,11	0,15	0,21	0,41	0,59	0,73	1,07
Najv. nazivni tok (vklj. z vklopljenim predgrelnikom) [A]	6									
Cos j	0,341	0,343	0,389	0,394	0,430	0,439	0,492	0,507	0,521	0,542
Zvočna moč										
Zmogljivost prezračevanja [m³/h]			100	150	150	200	200	250	325	
Raven zvočne moči Lw(A)	Statični tlak [Pa]		25	25	50	50	100	150	150	
	Sevanje ohišja [dB(A)]		27	34	35	40	41	46	51	
	Kanal »Iz bivališča« [dB(A)]		32	40	38	46	44	49	55	
	Kanal »V bivališče« [dB(A)]		44	49	51	55	57	62	69	

*) Hrup kanala, vključno s končnim popravkom

V praksi se lahko vrednost razlikuje za 1 dB(A) v tolerancah merjenja.

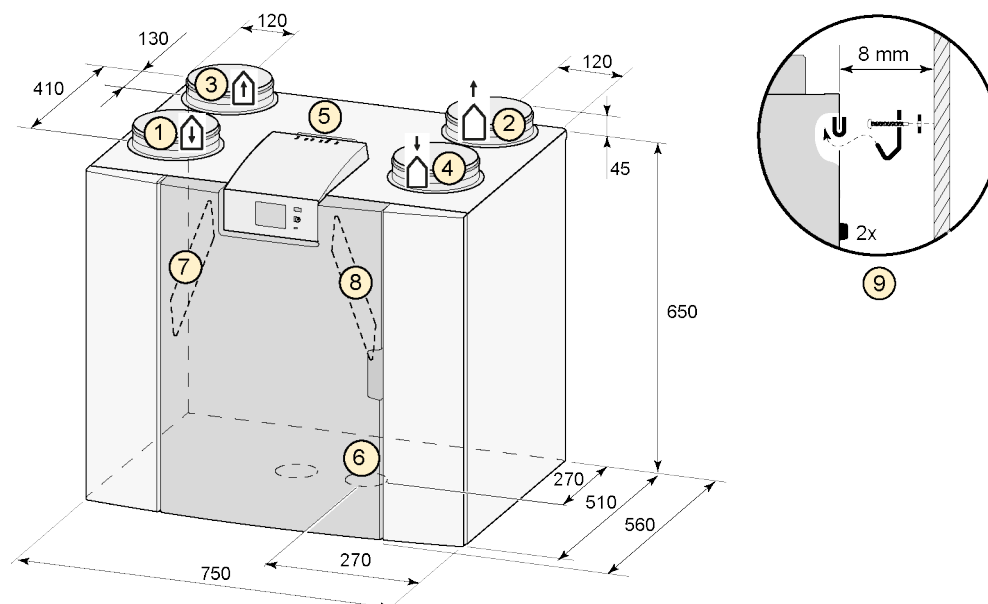


Opomba:
Vrednost, navedena v krogu, je zmogljivost (v vatih) na ventilator.

Priključki in mere

Naprava Flair je na voljo v levi in desni različici. Pri levi različici so »tople« povezave (iz bivališča 3 in v bivališče 1) na levi strani naprave; odtok kondenzata je nato nameščen na desno odprtino pod napravo. Pri desni različici za so »tople« povezave (1 in 3) na desni strani naprave.

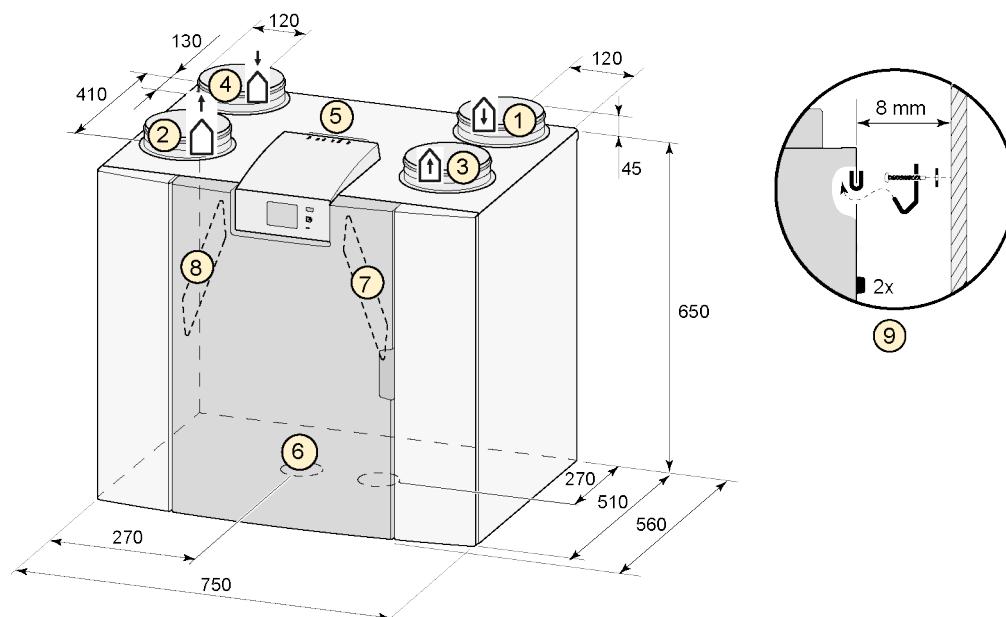
Leva različica



Vse mere so v milimetrih. Premer vseh objemk je 160 mm

1	V bivališče	
2	Proti zunanji strani	
3	Iz bivališča	
4	Z zunanje strani	
5	Električni priključki	
6	Siphon connection	
7	Izpušni zračni filter	
8	Filter za dovodni zrak	
9	Namestitev	

Desna različica



Vse mere so v milimetrih. Premer vseh objemk je 160 mm.

1	V bivališče	
2	Proti zunanji strani	
3	Iz bivališča	
4	Z zunanje strani	
5	Električni priključki	
6	Siphon connection	
7	Izpušni zračni filter	
8	Filter za dovodni zrak	
9	Namestitev	

Servisni artikli

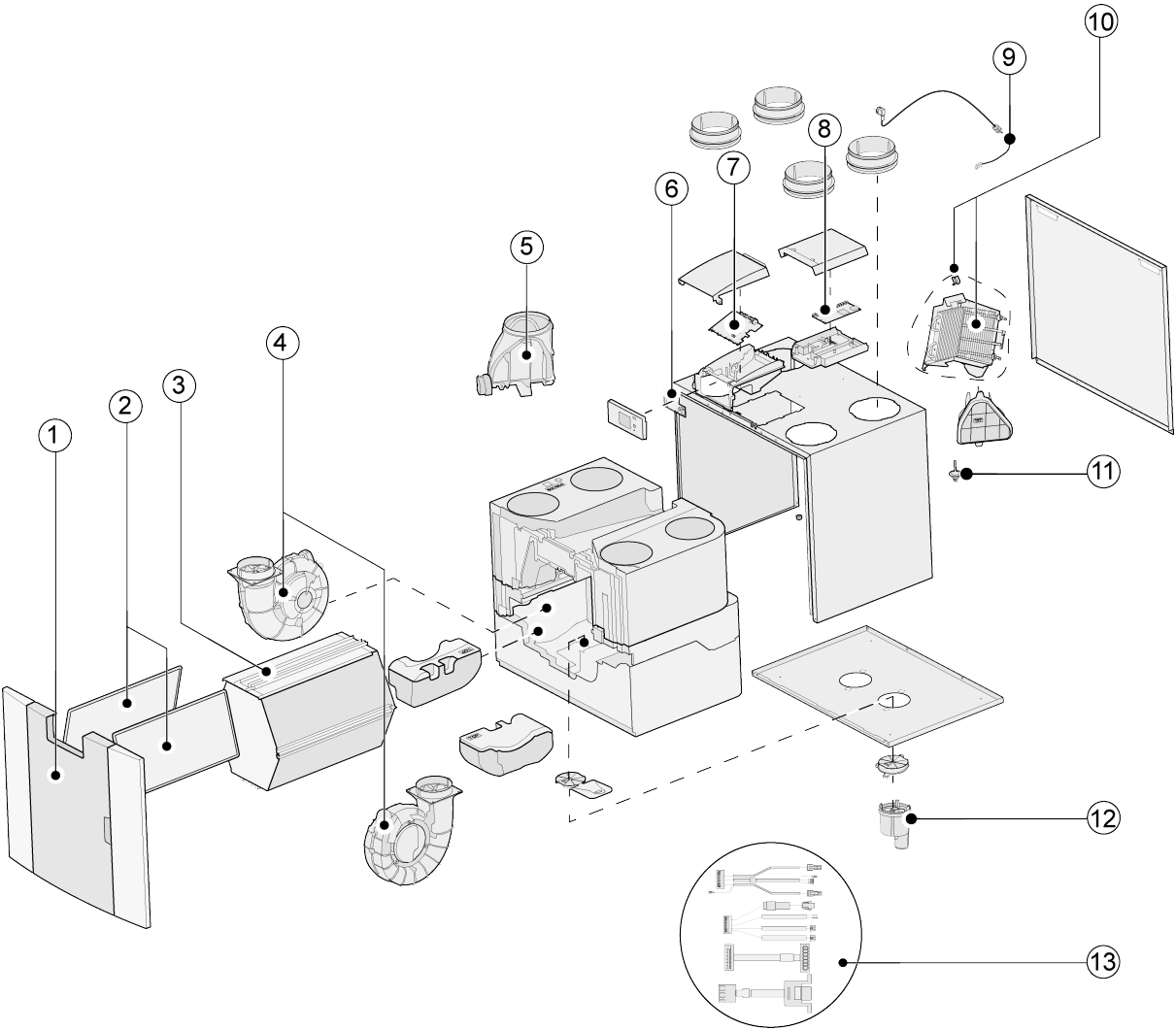
Eksplodizijski pogled

Pri naročanju delov poleg kode artikla (glejte eksplozijski pogled) navedite tudi tip naprave za rekuperacijo toplote, serijsko številko, leto izdelave in ime dela:

N.B.: tip naprave, serijska številka in leto izdelave so navedeni na identifikacijski ploščici za plastično sprednjo ploščo na napravi.

Primer	
Tip naprave	Flair 325
Serijska številka	430000184701
Leto izdelave	2019
Del	Ventilator
Koda artikla	532759
Količina	1

Servisni artikli



Št.	Opis artikla	Koda artikla
1	Sprednja plošča je dokončana	532763
2	Filtri (2 kosa) ISO Coarse 60 %	532716
3	Toplotni izmenjevalnik	532754
4	Ventilator (1 kos)	532759
5	Obvodna loputa skupaj z motorjem	532760
6	Prikazovalnik s PCB UBP-2	532752
7	PCB Basic UWA2-B	532750
8	PCB Plus UWA2-E (uporabno le z različico Plus)	532751
9	Električni vtič in kabel 230 V*	532756
10	Notranji predgrelnik vklj. z največjo zaščito	532761
11	Temperaturni senzor NTC 10K	531775
12	Odtok kondenzata	532762
13	Komplet kablov	532767

* Napajalni kabel je opremljen s priključkom tiskane plošče. Pri zamenjavi vedno naročite nadomestni električni kabel pri družbi Brink.
Zaradi preprečitve nevarnih situacij sme poškodovano električno napeljavo zamenjati le usposobljen strokovnjak.

Potrdila

Conformity declaration

Izjava o skladnosti

Proizvajalec: Brink Climate Systems B.V.

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

Izdelek: Tip naprave za rekuperacijo toplote:
Flair 325
Flair 325 Plus

Zgoraj opisani izdelek je skladen z naslednjimi direktivami:

- ◆ 2014/35/EU (Direktiva o nizki napetosti)
- ◆ 2014/30/EU (Direktiva EMC)
- ◆ RoHS 2011/65/EU (Direktiva o snoveh)
- ◆ 2009/125/EG (1253/1254 EU (Direktiva EU o izdelkih, povezanih z energijo))

Izdelek ima oznako CE:



Staphorst, 24-11-2017

A handwritten signature in blue ink, appearing to read 'M. Schouten', written over a horizontal line.

M. Schouten
Managing Director

1 Vrednosti ERP

List s tehničnimi podatki Flair 325 (Plus) v skladu z Direktivo o okoljsko primerni zasnovi (ErP) št. 1254/2014 (Priloga IV)					
Proizvajalec:		Brink Climate Systems B.V.			
Model:		Flair 325 (Plus)			
Podnebno območje	Vrsta nadzora	Vrednost SEC v kWh/m²/a	Razred SEC	Letna poraba elektrike (AEC) v kWh	Letni prihranek pri ogrevanju (AHS) v kWh
Povprečno	ročni	-40,99	A	233	4614
	krmiljenje z uro	-41,59	A	215	4628
	1 × senzor (RV/CO ₂ /VOC)	-42,72	A+	181	4657
	2 senzorja ali več (RV/CO ₂ /VOC)	-44,71	A+	124	4714
Mrzlo	ročni	-85,11	A+	770	9026
	krmiljenje z uro	-85,85	A+	752	9054
	1 × senzor (RV/CO ₂ /VOC)	-87,25	A+	718	9110
	2 senzorja ali več (RV/CO ₂ /VOC)	-89,79	A+	661	9222
Vroče	ročni	-15,72	E	188	2086
	krmiljenje z uro	-16,24	E	170	2093
	1 × senzor (RV/CO ₂ /VOC)	-17,21	E	136	2106
	2 senzorja ali več (RV/CO ₂ /VOC)	-18,88	E	79	2132
Tip prezračevalne enote:		naprava za uravnoteženo prezračevanje bivališč z rekuperacijo toplote			
Ventilator:		EC – ventilator z neskončno spremenljivim krmiljenjem			
Vrsta toplotnega izmenjevalnika:		Rekuperator s plastičnim izmenjevalnikom toplote z navzkrižnim protitokom			
Toplotna učinkovitost		91 %			
Največja volumska hitrost:		325 m³/h			
Največja nazivna moč:		144,5 W			
Raven zvočne moči Lwa:		41 dB(A)			
Referenčna volumska hitrost:		228 m³/h			
Referenčni tlak:		50 Pa			
Specifični dovod energije (SEL):		0,15 W/m³/h			
Krmilni dejavnik:		1,0 v kombinaciji z večstopenjskim stikalom			
		0,95 v kombinaciji s krmiljenjem z uro			
		0,85 v kombinaciji z 1 senzorjem			
		0,65 v kombinaciji z 2 senzorjema ali več			
Uhajanje*	Notranje	2,85 %			
	Zunanje	2,85 %			
Položaj podatkov o umazanem filtru:		Na prikazovalniku naprave/na večstopenjskem stikalu (LED)/na napravi Brink Air Control. Pozor! Za optimalno energetske učinkovitost in pravilno delovanje je potrebno izvajanje rednih pregledov, čiščenj ali zamenjav filtra.			
Internetni naslov za navodila za sestavljanje:		http://www.brinkclimatesystems.nl/nl/professionals			
Obvod:		Da, 100-% obvod			

* Merjenja so izvedena s strani TZWL v skladu s standardom EN 13141-7

Klasifikacija z dne 1. januarja 2016	
Razred SEC («povprečno podnebno območje»)	SEC v kWh/m²/a
A+ (največja učinkovitost)	$SEC < -42$
A	$-42 \leq SEC < -34$
B	$-34 \leq SEC < -26$
C	$-26 \leq SEC < -23$
D	$-23 \leq SEC < -20$
E (najmanjša učinkovitost)	$-20 \leq SEC < -10$

EN 13141-7:2010 Potrdila

KF.82.01.257.AD.01
18.05.18



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 L EU
Serial Number:	430000180301
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 $\eta_{h,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
51	98,4	11,7	0,23
224	90,8	34,7	0,15
325	90,5	79,2	0,24

Results, energetic efficiency 2°C:

Air flow [m³/h]	Temperature ratio, supply air $\eta_{h,su}$ [%]	Total electric power consumption P_E [W]	Specific electric power consumption [W/m³/h]
50	97,7	11,5	0,23
225	94,0	37,0	0,16
327	93,2	86,8	0,27

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.AD.

Potrdilo o pasivni hiši

CERTIFICATE

Certified Passive House Component
Component-ID 1288vs03 valid until 31st December 2019

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

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

Specification: **Airflow rate < 600 m³/h**
Heat exchanger: **Re recuperative**

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

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

At an airflow of 202 m³/h, the specific electric power $P_{E,spec} = 0.19 \text{ Wh/m}^3$.

www.passivehouse.com

Leakage

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

Internal leakage	External leakage
2.49%	0.88%

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 69-251 m³/h.
- Balancing the airflow rates of the unit is possible.
- The user should have at least all the following setting options:
 - 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 248 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 equipped with following filter qualities by default:

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

On the outdoor air/ supply air side the filter quality class F7 is recommended. If not standard configuration, the F7 filter is available as accessory part.

Component-ID: 1288vs03

3/4

www.passivehouse.com

Brink Climate Systems B.V.
Wethouder Wassenaarstraat 8, 7951 SN Staphorst, Netherlands
☎ +31 (0)522 46 96 13 | ✉ info@brinkclimatesystems.nl | 🌐 http://www.brinkclimatesystems.nl

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.

$$\eta_{HEI} = \frac{(\dot{V}_{ETA} - \dot{V}_{EHA}) + \frac{P_d}{\dot{m} \cdot c_p}}{(\dot{V}_{ETA} - \dot{V}_{ODA})}$$

With

- η_{HEI} Heat recovery rate in %
- $\dot{V}_{ETA}$ Extract air temperature in $^\circ\text{C}$
- $\dot{V}_{EHA}$ Exhaust air temperature in $^\circ\text{C}$
- $\dot{V}_{ODA}$ Outdoor air temperature in $^\circ\text{C}$
- P_d Electric power in W
- $\dot{m}$ Mass flow in kg/h
- c_p Specific heat capacity in Wh/(kgK)

Heat recovery rate
$\eta_{HEI} = 91\%$

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
$\epsilon_L = 0.76$

2/4

www.passivehouse.com

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 sufficient. By the laboratory testing, the preheaters were first activated by an outdoor air temperature of -5.6°C .
- Frost protection of downstream hydraulic heater coils:
 - In order to protect a downstream hydraulic heater coil, both fans are switched off in case the supply air temperature drops down to 5°C .

4/4

www.passivehouse.com

Poglej tudi: [Dokončano Potrdilo o pasivni hiši](#)