



*Air for life*

## Technical Sheet

Flair 225

Heat recovery appliance



# General information

The Flair 225 and the Flair 225 Plus is a ventilation unit for the balanced ventilation of dwellings with heat recovery.

## *Features:*

- Maximum capacity 225 m<sup>3</sup>/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 225 is available in two types:*

- **the "Flair 225"**
- **The "Flair 225 Plus"**

The Flair 225 Plus has, compared with standard Flair 225, an extra pcb giving this more functions/ connection possibilities (→).

These installation instructions describe both the standard Flair 225 and the Flair 225 Plus.

The Flair 225 and the Flair 225 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

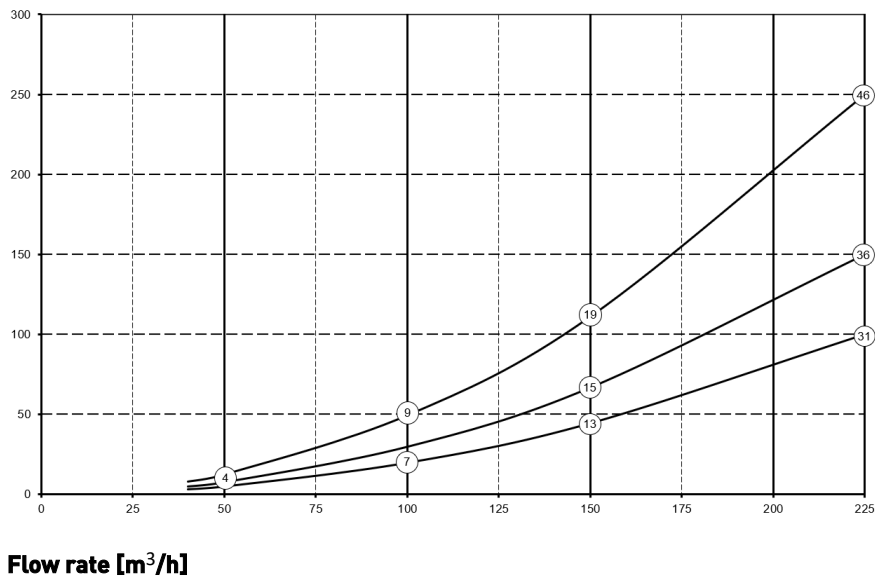
## Technical information

Flair 225 (Plus)										
Supply voltage [V/Hz]	230V/50Hz									
Dimensions (w x h x d) [mm]	600 x 650 x 455									
Duct diameter [mm]	ø125									
Ext. diameter condensate discharge [mm]	ø32									
Weight [kg]	29									
Filter class	ISO Coarse 60% (ISO ePM1.0 50% for the air supply optional)									
Fan setting (factory setting)	0		1		2		3		max	
Factory setting [m³/h]	50		100		150		250		225	
Permissible resistance of duct system [Pa]	3	8	5	12	20	49	44	111	100	250
Rated power (excl. preheater) [W]	7.9	8.3	8	8.7	13.2	17.3	26.2	37.9	61.5	92.2
Rated current (excl. preheater) [A]	0.10	0.11	0.10	0.10	0.13	0.16	0.22	0.32	0.48	0.70
Max. rated current (incl. preheater on) [A]	3.8									
Cos φ	0.336	0.34	0.357	0.363	0.447	0.460	0.507	0.521	0.522	0.572
Sound power										
Ventilation capacity [m³/h]			50	100	100	150	150	225	225	
Sound power level Lw(A)	Static pressure [Pa]		25	25	50	50	100	100	150	
	Casing radiation [dB(A)]		28	31	33.5	38.5	40.5	45.5	47	
	Duct 'From dwelling' [db(A)]		<30	<34.5	<36.5	44	43	47.5	48.5	
	Duct 'To dwelling' [db(A)]		43.5	48.5	50.5	55	57.5	62.5	64.5	

\*) Duct noise including end correction

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

### Resistance of duct system [Pa]



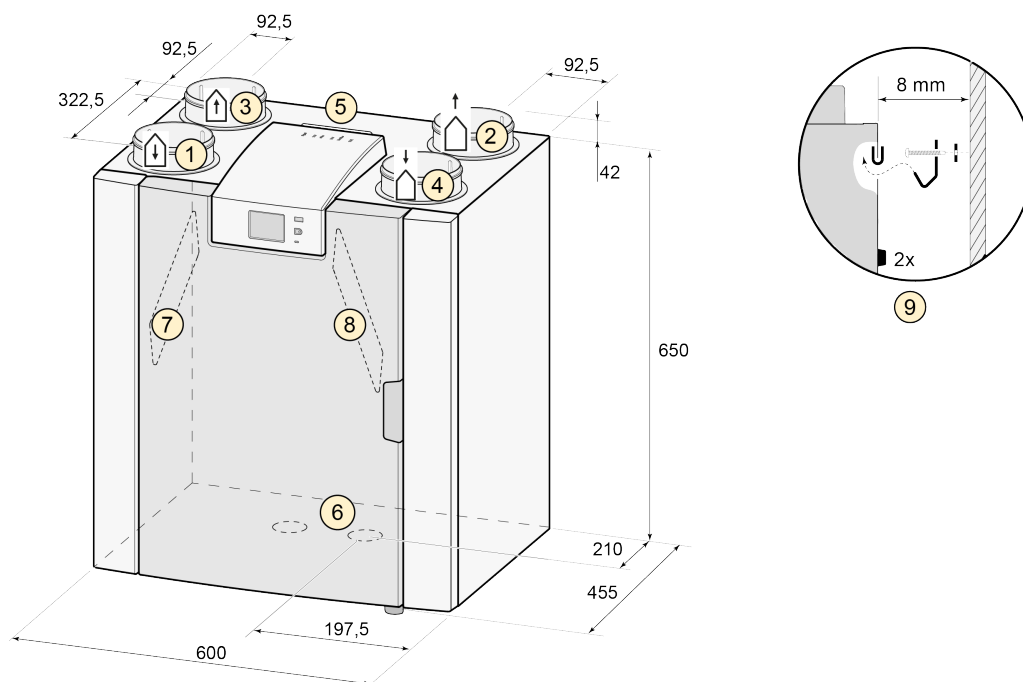
### Note:

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.

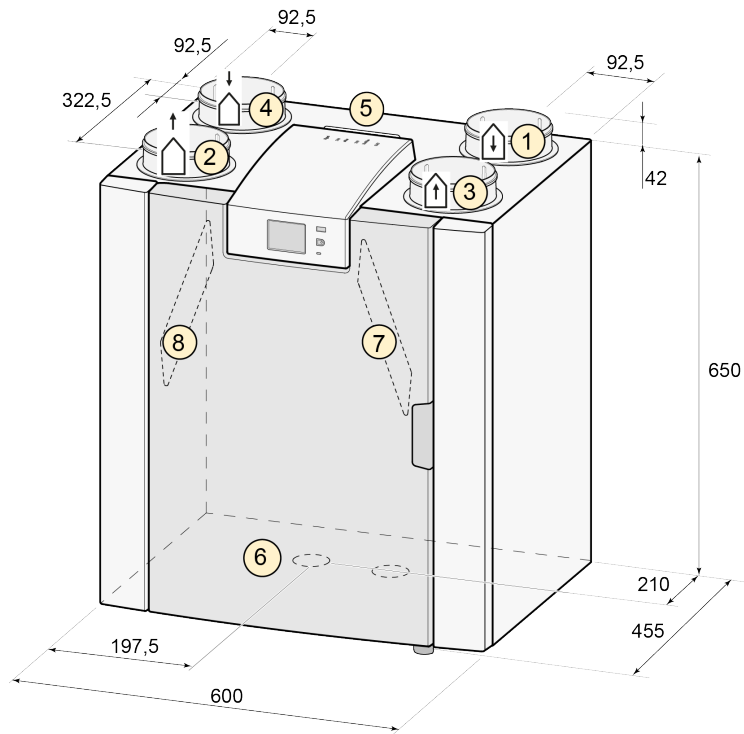
### Left-hand version







All dimensions in millimeters. Diameter of all collars is 125 mm

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

*Right-hand version*

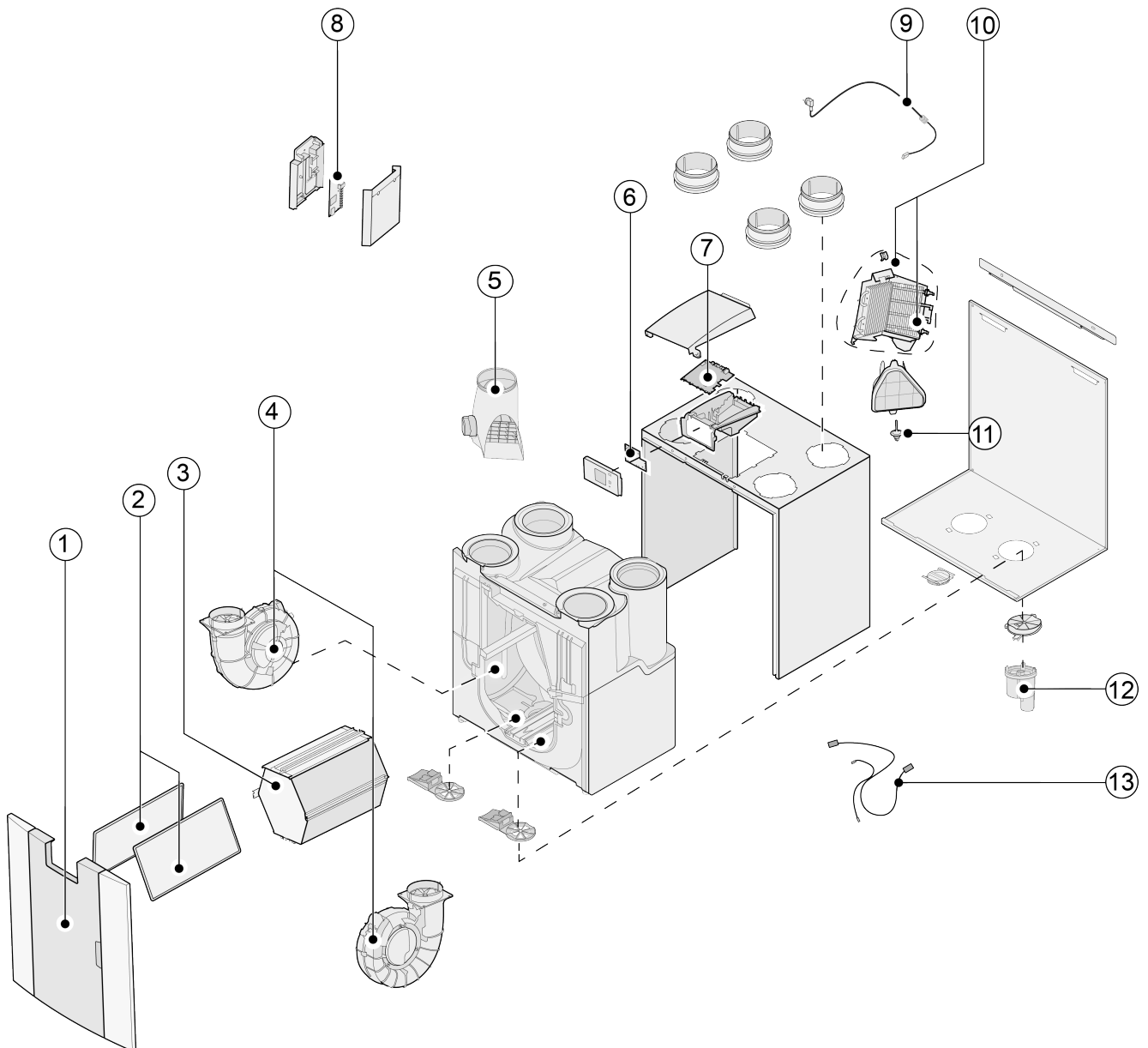


All dimensions in millimeters. Diameter of all collars is 125 mm

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

# Service parts

## Service articles



No.	Article description	Article code
1	Front panel complete	532799
2	Filters (2 items) ISO Coarse 60%	532811
3	Heat exchanger	532795
4	Fan (1 item)	532759
5	Bypass valve with motor complete	532797
6	Display pcb UBP-2	522753
7	Basic pcb UWA2-B	532750
8	Plus pcb UWA2-E (only applicable with Plus version)	532751
9	Mains plug and cable 230 V *	532756
10	Internal preheater incl. maximum security	532798
11	Temperature sensor NTC 10K	531775
12	Condensation discharge	532762
13	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

## EN 13141-7:2010 Certificate

### EN 13141-7:2010 Certificate

KF.80.05.326.AD.01  
24.08.20



#### Declaration of confirmity regarding the determination of energetic efficiency according to EN 13141-7:2011-01

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 225 4/0 L EU
Serial Number:	428000203202
Year of construction:	2020
Power supply:	230 V ~ 50 Hz
CE-Label:	Yes
Maximum volume flow:	225 m <sup>3</sup> /h

Results, energetic efficiency 7°C:

Air flow [m <sup>3</sup> /h]	Temperature ratio, supply air $\eta_{h,su}$ [%]	Total electric power consumption $P_E$ [W]	Specific electric power consumption [W/m <sup>3</sup> /h]
40	96,9	11,6	0,29
156	92,3	27,0	0,17
225	89,2	59,5	0,26

Results, energetic efficiency 2°C:

Air flow [m <sup>3</sup> /h]	Temperature ratio, supply air $\eta_{h,su}$ [%]	Total electric power consumption $P_E$ [W]	Specific electric power consumption [W/m <sup>3</sup> /h]
40	98,3	11,6	0,29
155	93,3	29,7	0,19
223	92,2	63,5	0,28

Results of performance tests of aerodynamic characteristics, of heat recovery characteristics and of the effective power consumption are taken from tests with number M.80.05.326.AD.



# Passive House Certificate

## CERTIFICATE

Certified Passive House Component  
Component-ID 1647vs03 valid until 31st December 2021

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 225 EU**

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  $P_{el,spec} \leq 0.45 \text{ Wh/m}^3$   
Leakage  $< 3\%$   
Comfort **Supply air temperature  $\geq 16.5^\circ\text{C}$  at outdoor air temperature of  $-10^\circ\text{C}$**

Airflow range	62–173 m³/h
Heat recovery rate	$\eta_{HR} = 89\%$
Specific electric power	$P_{el,spec} = 0.25 \text{ Wh/m}^3$



At an airflow of 71 m³/h, a heat recovery of  $\eta_{HR} = 92\%$  is reached.

[www.passivehouse.com](http://www.passivehouse.com)

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### Passive House comfort criterion

At an outdoor air temperature of  $-10^\circ\text{C}$  a supply air temperature higher than  $16.5^\circ\text{C}$  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.

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

With  
 $\eta_{HR}$  Heat recovery rate in %  
 $\theta_{ETA}$  Extract air temperature in  $^\circ\text{C}$   
 $\theta_{EHA}$  Exhaust air temperature in  $^\circ\text{C}$   
 $\theta_{ODA}$  Outdoor air temperature in  $^\circ\text{C}$   
 $P_{el}$  Electric power in W  
 $\dot{m}$  Mass flow in kg/h  
 $c_p$  Specific heat capacity in Wh/(kg K)

Heat recovery rate	$\eta_{HR} = 89\%$
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### 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	$P_{el,spec} = 0.25 \text{ Wh/m}^3$
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### 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	$\epsilon_L = 0.72$
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Brink Flair 225 EU

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### Leakage

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

Internal leakage	External leakage
1.19%	1.67%

### 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 62–173 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 4.20 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 173 m³/h:

Device	Duct			
	Outdoor	Supply air	Extract air	Exhaust air
42.5 dB(A)	44.0 dB(A)	59.0 dB(A)	46.0 dB(A)	58.0 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%

Component-ID: 1647vs03

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Brink Flair 225 EU

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See also: [Complete passive House Certificate Flair 225](#)



## 2 ERP values

Technical information sheet Flair 225 (Plus) in accordance with Ecodesign (ErP), no. 1254/2014 (Annex IV)					
Manufacturer:		Brink Climate Systems B.V.			
Model:		Flair 225 (Plus)			
Climate zone	Type of control	SEC Value in kWh/m <sup>2</sup> /a	SEC Class	Annual electricity consumption (AEC) in kWh	Annual heating saved (AHS) in kWh
Average	manual	-40,78	A	258	4655
	clock control	-41,42	A	237	4667
	1x sensor (RV/CO <sub>2</sub> /VOC)	-42,62	A+	199	4692
	2 or more sensors (RV/CO <sub>2</sub> /VOC)	-44,71	A+	135	4741
Cold	manual	-79,92	A+	795	9107
	clock control	-80,68	A+	774	9131
	1x sensor (RV/CO <sub>2</sub> /VOC)	-82,12	A+	736	9179
	2 or more sensors (RV/CO <sub>2</sub> /VOC)	-84,68	A+	672	9275
Hot	manual	-15,73	E	213	2105
	clock control	-16,30	E	192	2111
	1x sensor (RV/CO <sub>2</sub> /VOC)	-17,37	E	154	2122
	2 or more sensors (RV/CO <sub>2</sub> /VOC)	-19,19	E	90	2144
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		92 %			
Maximum flow rate:		225 m <sup>3</sup> /h			
Maximum rated power:		165 W			
Sound power level L <sub>wa</sub> :		39 dB(A)			
Reference flow rate:		158 m <sup>3</sup> /h			
Reference pressure:		50 Pa			
Specific Power Input (SEL):		0,17 Wh/m <sup>3</sup>			
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	0.70 %			
	External	1.80 %			
Position dirty filter indication:		On the display of the appliance / on the multiple switch (LED) / on the Brink Air Control. <b>Attention!</b> For optimal energy efficiency and a proper operation, a regular filter inspection, cleaning or replacement is necessary.			
Internet address for Assembly instructions:		<a href="https://www.brinkclimatesystems.nl/international/home/docsearch">https://www.brinkclimatesystems.nl/international/home/docsearch</a>			
Bypass:		Yes, 100% Bypass			

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

<b>Classification from 1 January 2016</b>	
SEC class ("Average climate zone" )	SEC in kWh/m <sup>2</sup> /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