SPARROW

ALL IN ONE HOME AIR COMFORT UNIT

1 – 13 kW

1 – 13 kW

300 - 700 m³/h



SPARROW | HOME AIR COMFORT UNITS

ECO 100%

ADVANTAGES OF SPARROW ALL IN ONE HOME AIR COMFORT UNIT

- The Sparrow All In One Home Air Comfort Unit are able to provide variable capacity requirements efficiently through the variable speed compressor.

- Sparrow All In One Home Air Comfort Unit has special design and software that provides Continuous Heating Function

- Sparrow All In One Home Air Comfort Unit is able to continue heating indoor despite defrost cycle is active with
- this feature.

- Sparrow All In One Home Air Comfort Unit has a low defrost cycle frequency due to its design and does not need defrosting when the outside temperature is above 3 °C. So, unit can save more energy via this feature.

- Sparrow All In One Home Air Comfort Unit has special software to optimize the capacity and reduce energy Consumption according to indoor needs and outdoor conditions in every season.



Adequacy in Needs and Improved Design: The Sparrow All In One Home Air Comfort Unit represents the pinnacle of residential climate control, specifically engineered to meet variable capacity requirements with exceptional efficiency. Thanks to its advanced inverter scroll compressor technology, the system operates at flexible airflow rates and capacities tailored to the real-time needs of modern homes. Optimized in terms of both size and performance, these compact units offer a low carbon footprint and lightweight construction, ensuring ease of installation in residential settings without compromising on power. The design prioritizes environmental respect, maintaining operation levels lower than 35 dB(A) to provide ultimate acoustic comfort.

Continuous Comfort and Intelligent Defrost Logic: One of the standout features of the Sparrow series is its Continuous Heating Function, driven by specialized software and thermodynamic design. Unlike conventional systems, Sparrow is able to continue heating the indoor environment even while the defrost cycle is active, preventing temperature fluctuations. Furthermore, the unit boasts a significantly low defrost frequency; it is engineered to eliminate the need for defrosting entirely when the outside temperature is above 3 °C. This intelligence allows the system to optimize capacity and minimize energy consumption according to indoor requirements and seasonal outdoor conditions throughout the year.

Advanced Thermodynamic Engineering: At the heart of the Sparrow unit lies a sophisticated thermodynamic system featuring a high-efficiency inverter scroll compressor and a counter-flow heat exchanger with temperature efficiency exceeding 75%. To ensure system longevity and precision, an electronic expansion valve (EEV) controlled by an advanced superheat control algorithm is integrated into the circuit. The unit utilizes variable-speed EC plug fans that provide sensitive control of the airflow rate against variable external static pressures. With a cooling and heating range of 1 to 13 kW and an airflow capacity of up to 700 m^3/h, the Sparrow unit delivers a complete "All-In-One" solution, including high-standard filtration (ISO16890 Coarse 55% / ePM10 75%) and optional smart home integration.



Dirty Filter Alarm Automatically warns the user when the device's air filter is clogged or dirty. This prevents a decrease in indoor air quality and stops the unit from straining and consuming extra energy.

Easy Maintenance Indicates that access to the internal components and parts requiring service is designed to be highly practical. This feature ensures that periodic maintenance or potential repair operations are fast and cost-effective.

Low Carbon Footprint Shows that the system minimizes the amount of greenhouse gas emissions released into the environment during operation, thanks to its high energy efficiency and eco-friendly technologies.

Variable Speed / Direct-Coupled EC Plug Fans This feature indicates that the device is equipped with direct-drive, brushless (EC) fans without a belt-pulley mechanism, which can automatically adjust their rotation speed according to the current demand. These fans prevent energy loss, consume significantly less electricity, and operate quietly.

Advanced Home Control Interface States that the device has a user-friendly, modern, and intuitive screen or software that is fully compatible with smart home systems.

Electronic Expansion Valve (EEV) This is the component that electronically injects the refrigerant gas into the system with extreme precision. It reacts very quickly to instantaneous temperature changes, ensuring the device operates at maximum energy efficiency under all conditions.

Smart Defrost & Continuous Heating A technology that only melts the ice that may form on the outdoor unit in winter when absolutely necessary (smart defrost) and, most importantly, does not interrupt the indoor heating process while melting this ice. This ensures there is no loss of comfort.



Counter Flow Heat Recovery (>75%) The system that transfers the heat energy from the outgoing exhaust air to the fresh air being drawn in from the outside. An efficiency of over 75% means that a vast majority of the energy that would otherwise be wasted is recovered, providing significant savings on heating and cooling bills.

Low Sound Levels (< 45 dB(A) @1m) Indicates that the device produces less than 45 decibels of sound when measured from a distance of 1 meter while operating. This noise level is equivalent to a whisper or a quiet library environment, meaning the unit will not cause any disturbance while running.

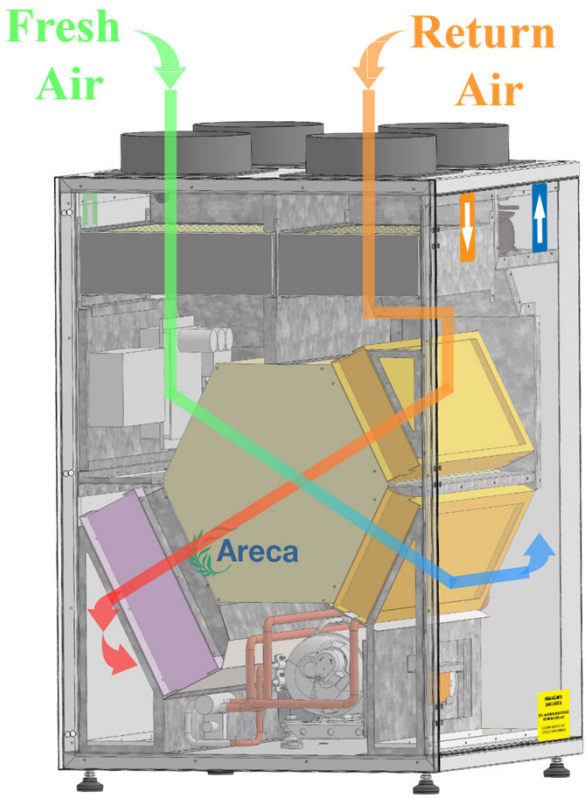
High Efficiency Inverter Scroll Compressor Shows that the compressor—the heart of the climate control system—adjusts its operating speed according to the environment's needs (inverter) instead of constantly stopping and starting. It also features a smoothly running, highly durable mechanism (scroll).

Compact Dimensions & Lightweight Design Expresses that the physical footprint of the device has been minimized and its weight reduced. This facilitates easier transportation and allows the unit to be comfortably installed in narrow or restricted spaces.

Remote Control and Control Panel (Temperature Set Values Can Be Monitored and Adjusted) The interface that provides the user with the ability to manage the device locally or remotely, allowing temperature set values to be easily monitored and modified.

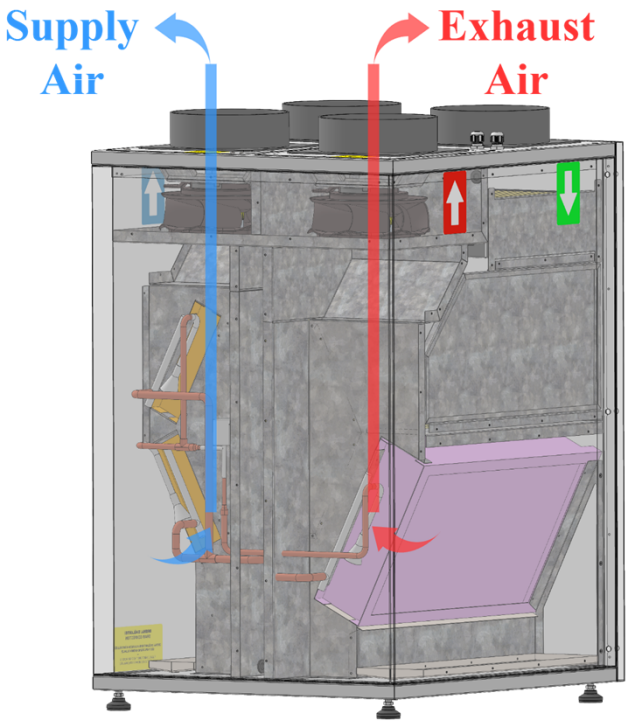


Modbus RTU, Modbus TCP/IP, Internal TCP/IP Web Interface. BACnet MSTP and BACnet TCP/IP Indicates that the device supports industry-standard communication protocols to seamlessly connect with Building Management Systems (BMS). This feature allows the unit to be centrally monitored and managed via a computer screen in a factory, hospital, or smart building. Thanks to the internal web interface, it is also possible to connect directly to the device using a standard internet browser.



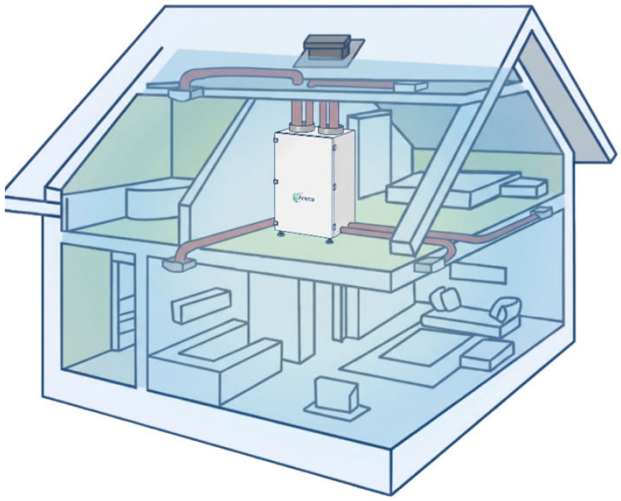
Fresh air drawn from the outside is taken into the unit via the fresh air duct and directed straight to the counter-flow heat recovery exchanger. Simultaneously, return air from the indoor space is drawn into the unit. Before entering the counter-flow exchanger, this return air passes through the primary heat exchanger for pre-conditioning.

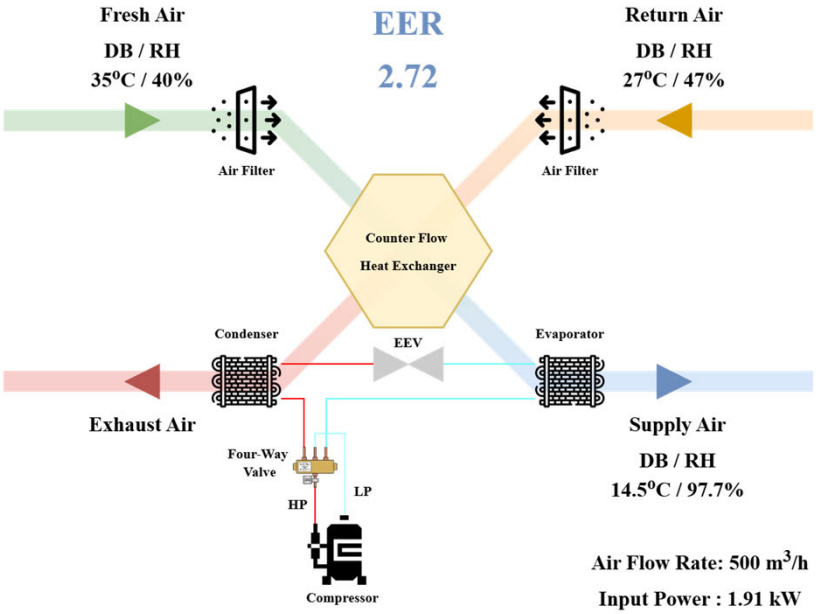
Following the heat transfer process, the fresh air exiting the counter-flow exchanger is transferred to the supply line heat exchanger, where it is conditioned to the ideal room requirements and supplied to the space. Meanwhile, the return air leaving the counter-flow exchanger is directed to the secondary heat exchanger and subsequently discharged to the outdoor environment via the exhaust duct.



Cooling Mode Operating Principle

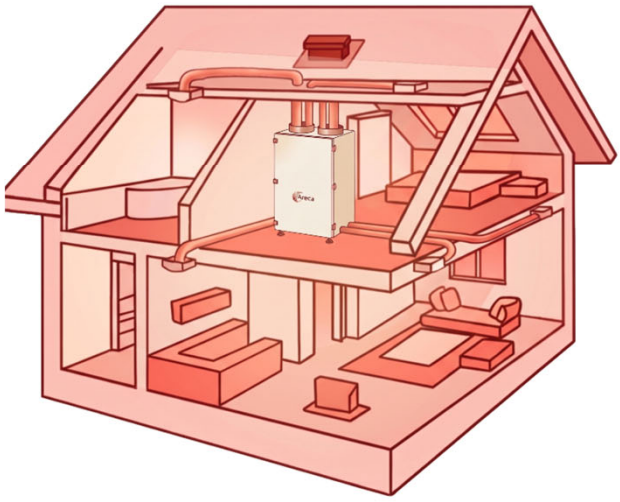
SUMMER (COOLING MODE)

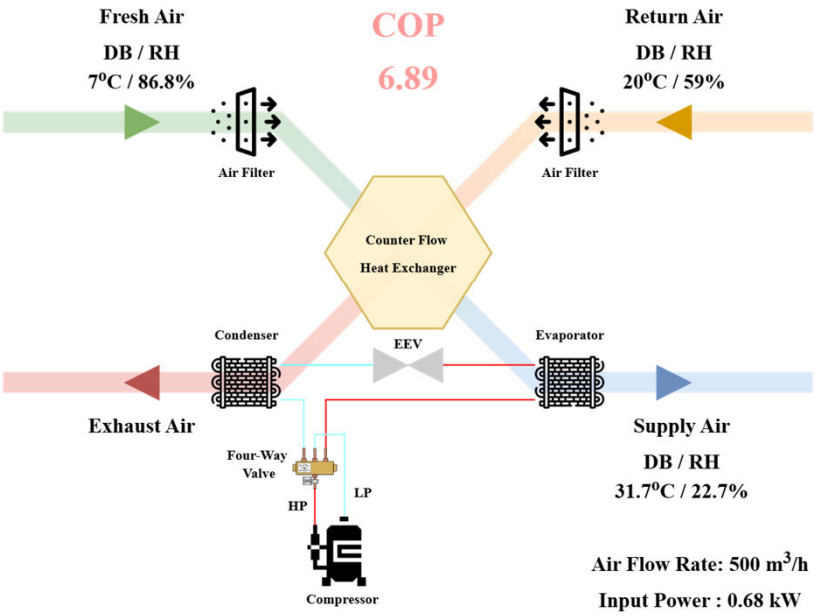




Heating Mode Operating Principle

WINTER (HEATING MODE)





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SPARROW 300

ALL IN ONE

HOME AIR COMFORT UNITS

3.11 kW **3.46 kW** **300 m³/h**



S-300 (a) C (b) 3 (c) 3 (d)

(a) S-300 = Sparrow 300

(b) C = With cooling circuit - R = Heat recovery

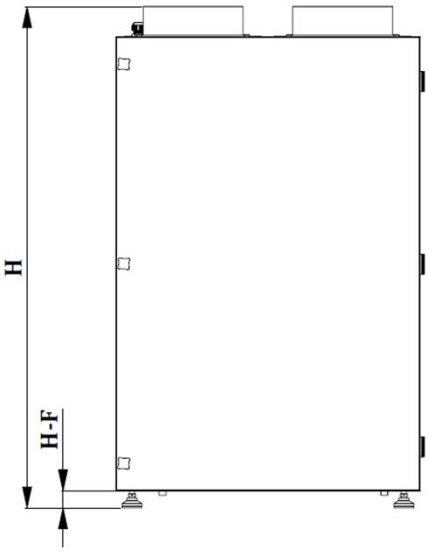
(c) 3 = Nominal cooling capacity in kW

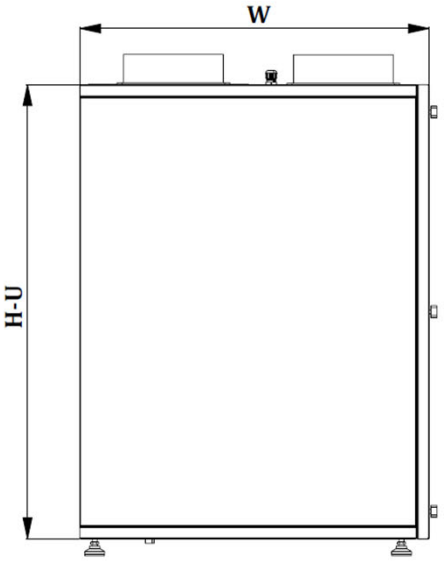
(d) 3 = Nominal air flow (x100m^3/h)

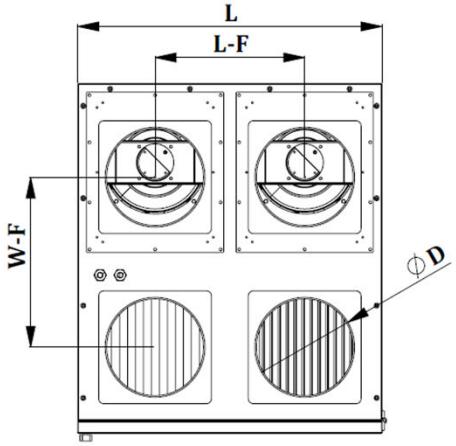
TECHNICAL DATA

Cooling			**Heating**		
Nominal Cooling Capacity	kW	3.11	**Nominal Heating Capacity**	kW	3.46
Min. Cooling Capacity	kW	2.07	**Min. Heating Capacity**	kW	2.31
Max. Cooling Capacity	kW	4.15	**Max. Heating Capacity**	kW	4.61
Cooling Input Power	kW	1.06	**Heating Input Power**	kW	0.46
EER	-	2.94	**COP**	-	7.52
H. E. Temperature Efficiency	%	77.1	**H. E. Temperature Efficiency**	%	77.2
H. E. Humidity Efficiency	%	36.8	**H. E. Humidity Efficiency**	%	37.7
Max. Operating Temperature	°C	45	**Min. Operating Temperature**	°C	-10
Nominal Supply Air Temp.	°C	14.5	**Nominal Supply Air Temp.**	°C	35.5
Min. Supply Air Temp.	°C	13	**Max. Supply Air Temp.**	°C	38
Compressor	**Type / Number**		Inverter Scroll		1
	Current		10.45		A
Air Flow Rate			**Fan(s) - EC Plug**		
Number of Fans	-	2	**Fan Control**	-	% 20 - 100
Air flow rate - Minimum	m^3/h	200	**Fresh Air Ratio**	%	100
Air flow rate - Nominal	m^3/h	300	**Sound Levels**		
Air flow rate - Maximum	m^3/h	400	**Sound Power (LWA)**	dB(A)	41.9
Air Filter(s)			**Cooling Cycle**		
Filter Type (ISO16890)	Coarse 55% ePM10 75%		**Refrigerant / GWP**	R410A	2088
Suitable for Homes	m^2	60	**Max External Static Pressure**	Pa	100

1) Cooling mode: According to EN14511 nominal conditions - Outdoor temperature **35°C DB** - Indoor temperature **27°C DB / 19°C WB**
2) Heating mode: According to EN14511 nominal conditions - Outdoor temperature **7°C DB / 6°C WB** - Indoor temperature **20°C DB**
3) Space cooling energy efficiency following Eco design regulation EU2016/2281
4) Space heating energy efficiency following Eco design regulation EU2016/2281.
5) H.E. = Heat Exchanger
6) Temp. = Temperature







SIDE	UNIT	Sparrow 300
H	mm	1000
H - U		940
H - F		30
W		600
W - F		240
L		610
L - F		300
ØD		200
Weight	kg	100

SPARROW 500

ALL IN ONE

HOME AIR COMFORT UNITS

5.19 kW **4.69 kW** **500 m³/h**



S-500 (a) C (b) 5 (c) 5 (d)

(a) S-500 = Sparrow 500

(b) C = With cooling circuit - R = Heat recovery

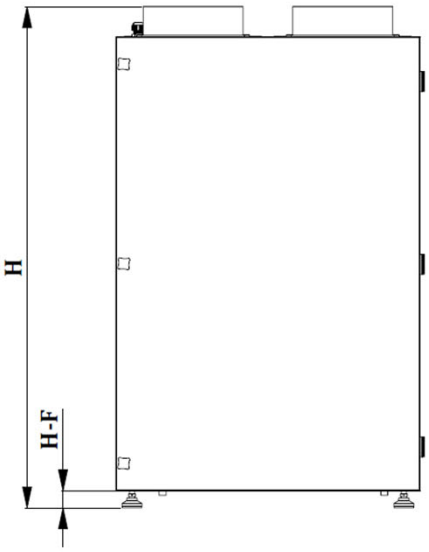
(c) 5 = Nominal cooling capacity in kW

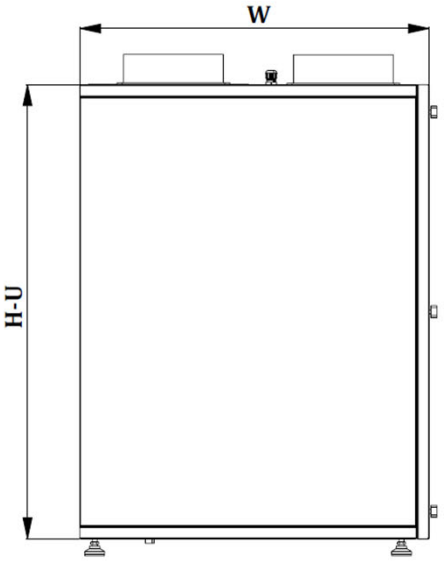
(d) 5 = Nominal air flow (x100m^3/h)

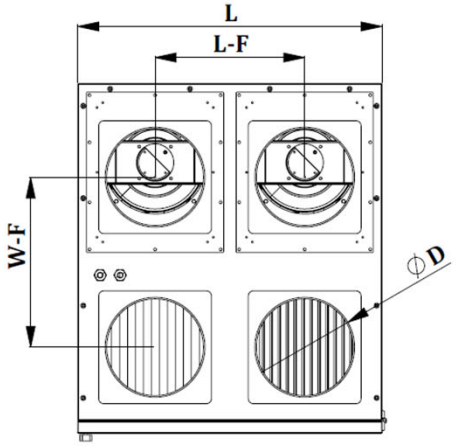
TECHNICAL DATA

Cooling			**Heating**		
Nominal Cooling Capacity	kW	5.19	**Nominal Heating Capacity**	kW	4.69
Min. Cooling Capacity	kW	4.15	**Min. Heating Capacity**	kW	3.76
Max. Cooling Capacity	kW	6.22	**Max. Heating Capacity**	kW	5,63
Cooling Input Power	kW	1.91	**Heating Input Power**	kW	0.68
EER	-	2.72	**COP**	-	6.89
H. E. Temperature Efficiency	%	77.1	**H. E. Temperature Efficiency**	%	77.2
H. E. Humidity Efficiency	%	36.8	**H. E. Humidity Efficiency**	%	37.7
Max. Operating Temperature	°C	45	**Min. Operating Temperature**	°C	-10
Nominal Supply Air Temp.	°C	14.5	**Nominal Supply Air Temp.**	°C	31.7
Min. Supply Air Temp.	°C	13	**Max. Supply Air Temp.**	°C	38
Compressor	**Type / Number**		Inverter Scroll		1
	Current		10.85		A
Air Flow Rate			**Fan(s) - EC Plug**		
Number of Fans	-	2	**Fan Control**	-	% 20 - 100
Air flow rate - Minimum	m^3/h	400	**Fresh Air Ratio**	%	100
Air flow rate - Nominal	m^3/h	500	**Sound Levels**		
Air flow rate - Maximum	m^3/h	600	**Sound Power (LWA)**	dB(A)	43.5
Air Filter(s)			**Cooling Cycle**		
Filter Type (ISO16890)	Coarse 55% ePM10 75%		**Refrigerant / GWP**	R410A	2088
Suitable for Homes	m^2	80	**Max External Static Pressure**	Pa	100

1) Cooling mode: According to EN14511 nominal conditions - Outdoor temperature **35°C DB** - Indoor temperature **27°C DB / 19°C WB**
2) Heating mode: According to EN14511 nominal conditions - Outdoor temperature **7°C DB / 6°C WB** - Indoor temperature **20°C DB**
3) Space cooling energy efficiency following Eco design regulation EU2016/2281
4) Space heating energy efficiency following Eco design regulation EU2016/2281.
5) H.E. = Heat Exchanger
6) Temp. = Temperature







SIDE	UNIT	Sparrow 500
H	mm	1000
H - U		940
H - F		30
W		700
W - F		340
L		610
L - F		300
ØD		200
Weight	kg	120

SPARROW 700

ALL IN ONE

HOME AIR COMFORT UNITS

7.4 kW **6.57 kW** **700 m³/h**



S-700 (a) C (b) 8 (c) 7 (d)

(a) S-700 = Sparrow 700

(b) C = With cooling circuit - R = Heat recovery

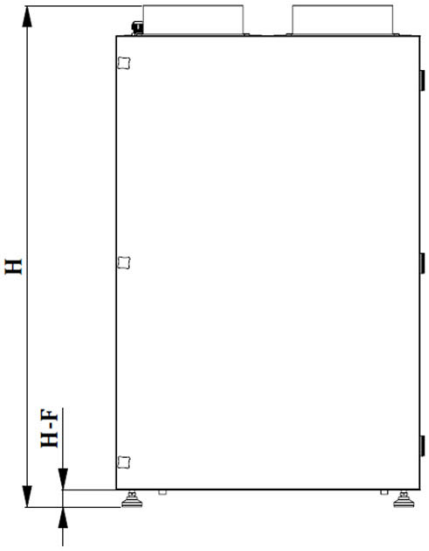
(c) 8 = Nominal cooling capacity in kW

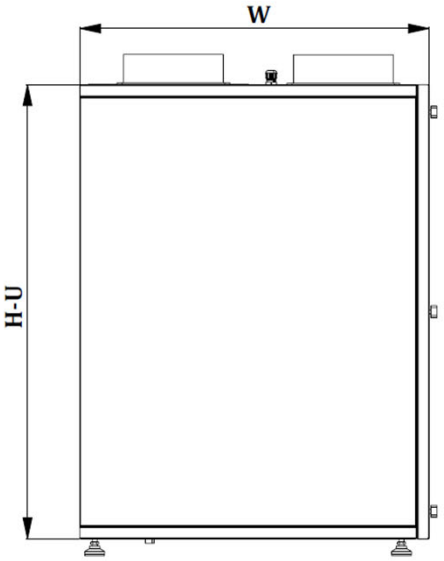
(d) 7 = Nominal air flow (x100m^3/h)

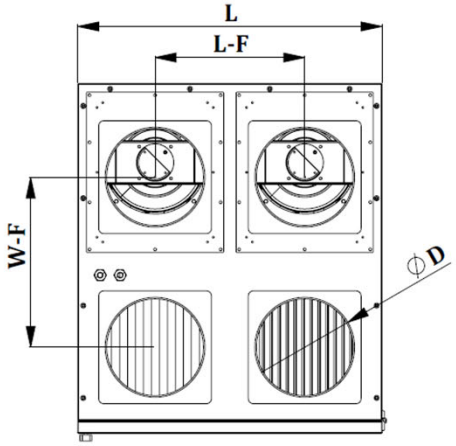
TECHNICAL DATA

Cooling			**Heating**		
Nominal Cooling Capacity	kW	7.4	**Nominal Heating Capacity**	kW	6.57
Min. Cooling Capacity	kW	6.35	**Min. Heating Capacity**	kW	5.63
Max. Cooling Capacity	kW	8.46	**Max. Heating Capacity**	kW	7.51
Cooling Input Power	kW	2.7	**Heating Input Power**	kW	0.82
EER	-	2.74	**COP**	-	8.12
H. E. Temperature Efficiency	%	76.9	**H. E. Temperature Efficiency**	%	77
H. E. Humidity Efficiency	%	36.5	**H. E. Humidity Efficiency**	%	37.2
Max. Operating Temperature	°C	45	**Min. Operating Temperature**	°C	-10
Nominal Supply Air Temp.	°C	14.5	**Nominal Supply Air Temp.**	°C	31.7
Min. Supply Air Temp.	°C	13	**Max. Supply Air Temp.**	°C	38
Compressor	**Type / Number**		Inverter Scroll		1
	Current		11.25		A
Air Flow Rate			**Fan(s) - EC Plug**		
Number of Fans	-	2	**Fan Control**	-	% 20 - 100
Air flow rate - Minimum	m^3/h	600	**Fresh Air Ratio**	%	100
Air flow rate - Nominal	m^3/h	700	**Sound Levels**		
Air flow rate - Maximum	m^3/h	800	**Sound Power (LWA)**	dB(A)	44.7
Air Filter(s)			**Cooling Cycle**		
Filter Type (ISO16890)	Coarse 55% ePM10 75%		**Refrigerant / GWP**	R410A	2088
Suitable for Homes	m^2	100	**Max External Static Pressure**	Pa	100

1) Cooling mode: According to EN14511 nominal conditions - Outdoor temperature **35°C DB** - Indoor temperature **27°C DB / 19°C WB**
2) Heating mode: According to EN14511 nominal conditions - Outdoor temperature **7°C DB / 6°C WB** - Indoor temperature **20°C DB**
3) Space cooling energy efficiency following Eco design regulation EU2016/2281
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SIDE	UNIT	Sparrow 700
H	mm	1000
H - U		940
H - F		30
W		900
W - F		540
L		610
L - F		300
ØD		200
Weight	kg	135

SPARROW

ALL IN ONE HOME AIR COMFORT UNIT



Areca

SPARROW

HOME AIR
COMFORT UNITS

Adatepe Mahallesi Doğuş Caddesi
Dokuz Eylül Üniversitesi Merkez Yerleşkesi
DEPARK Alfa Binası 207/Z Ofis No: Z07
Buca / İzmir

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