BLAUBERG Ventilatoren

HYBRID

Air handling unit with heat recovery

HYBRID MAX

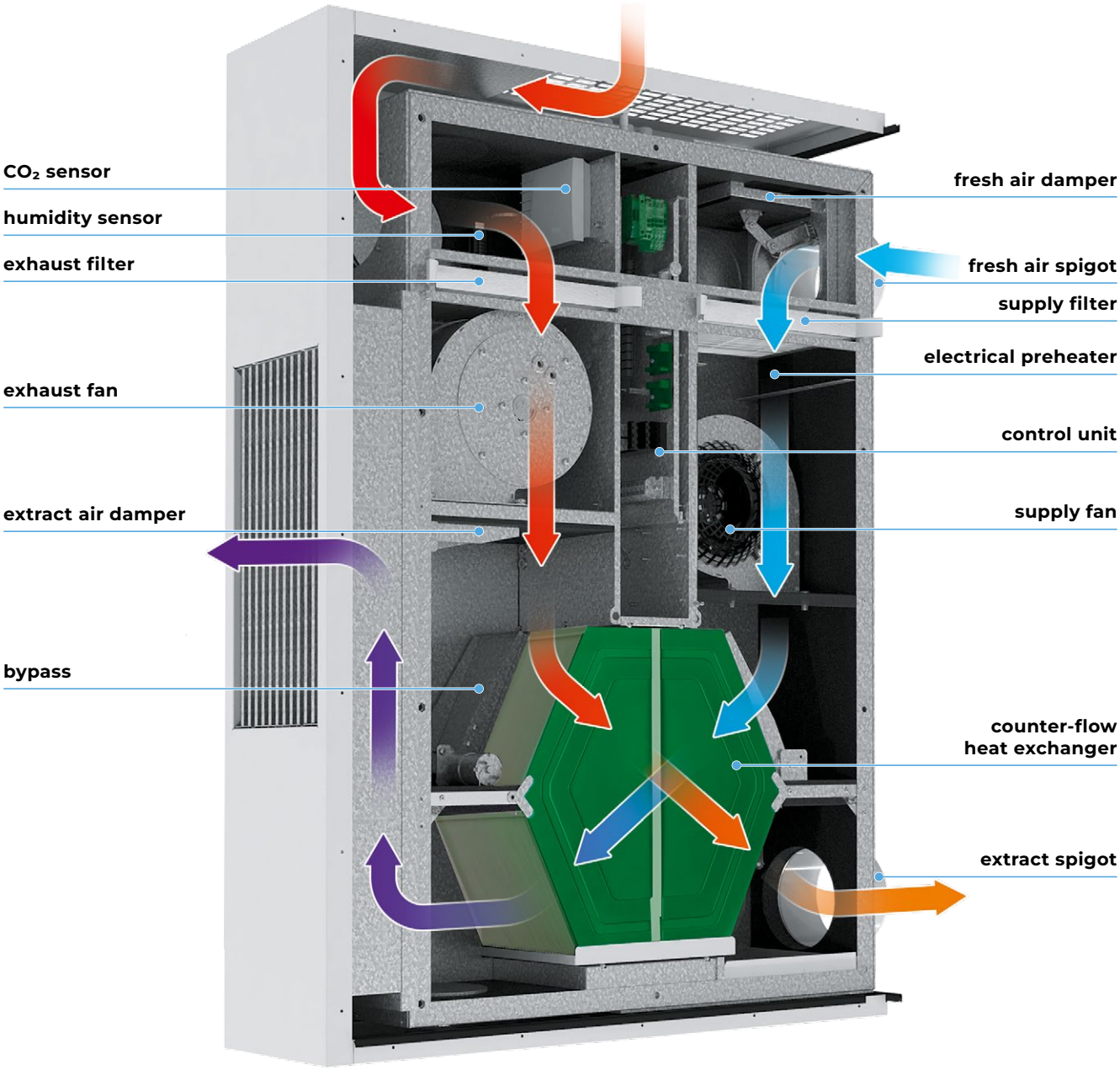
DECENTRALIZED UNIT FOR THE SMALL OFFICES, FACILITIES, CLASSROOMS AND LIVING SPACES

160 m³/h **95** % **32** dB(A)

FEATURES

- Efficient decentralized ventilation unit for small offices or conference rooms.
- Visible ceiling suspended installation.
- A version with electrical preheater is available for cold climate.
- Clean air due to the use of an ePM1 70% / F7 filter for supply air filtration.
- Possibility to connect fresh air inlet and exhaust air ducts at top or back side of the unit.
- Low noise operation from 16 dB(A) at 3m.
- High level of comfort due to built-in bypass and air dampers.

Design



Air distribution

Casing

The casing is made of galvanized sheet metal with white painted decorative cover. The contemporary design of the Hybrid Max unit will seamlessly blend into any interior. The unit is heat- and sound-insulated with a 20 mm layer of foam. The service panel is easy to open for filter maintenance. The unit is equipped with two Ø125 mm spigots for fresh air intake and stale air exhaust. The position of the spigots can be changed from horizontal to vertical.

Air dampers

The **Hybrid Max** unit is equipped with two automatic air dampers, which close automatically when the unit is off to prevent drafts.

Fans

The units feature high-performance, electronically commutated (EC), external rotor motors with forward curved blades. These state-of-the-art units offer excellent energy efficiency. In addition to that, EC motors combine high performance and optimum control over the entire speed range. EC motors have an excellent power efficiency (up to 90 %).

Control and automation

The **Hybrid Max S21** units are equipped with an integrated automation system. The remote control panel is not included in the delivery set (sold separately).

The S21 controller allows integrating the unit into the Smart Home system or **BMS (Building Management System)**.

Unit control via Wi-Fi using the mobile application Blauberg AHU.

Download the Blauberg Home app for Android	Download the Blauberg Home app for iOS	Modbus

The **Hybrid Max S14** units are equipped with an integrated automation system and the S14 wall mounted sensor control panel with LED-indication.

Bypass

The **Hybrid Max** units are equipped with a bypass for ventilation (air cooling by the cool air from outside).

Preheating

The **Hybrid Max E S21** units are equipped with an electrical preheater to prevent heat exchanger freezing in the cold climate.

Heat recovery

The **Hybrid Max** unit is equipped with a plate counter-flow polystyrene heat exchanger for heat recovery. The unit condensate is collected and drained to the drain pan under the heat exchanger.

The **Hybrid Max E** unit is equipped with an enthalpy plate counter-flow heat exchanger for energy (heat and humidity) recovery. Due to humidity recovery condensate is not generated in the enthalpy heat exchanger.

The air flows are completely separated in the heat exchanger. Thus smells and contaminants are not transferred from the extract air to the supply air.

Heat recovery is based on heat and/or humidity transfer through the heat exchanger plates. In the cold season supply air is heated in the heat exchanger by transferring the heat energy of warm and humid extract air to the cold fresh air. Heat recovery minimizes ventilation heat losses and heating costs respectively.

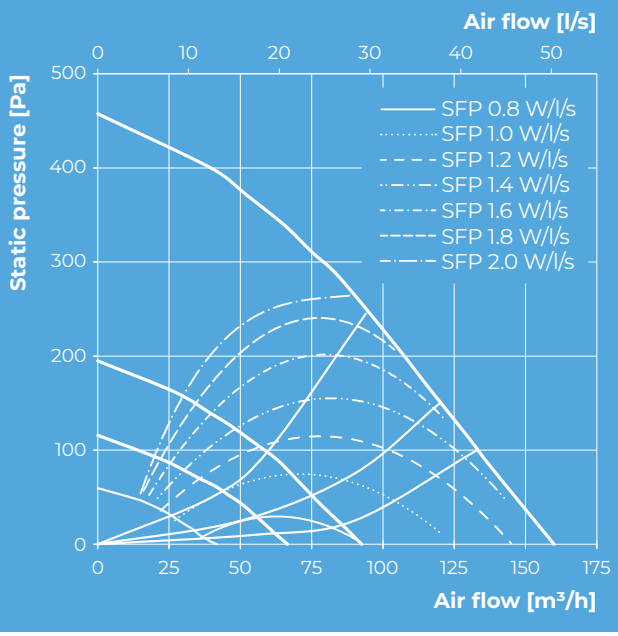
In the warm season the heat exchanger performs reverse and intake air is cooled in the heat exchanger by the cool extract air. That reduces operation load on air conditioners and saves electricity.

Automation functions

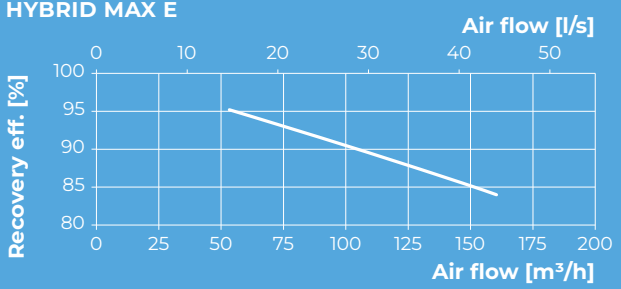
Functions	Hybrid Max S21	Hybrid Max S14
Unit control via Wi-Fi using a mobile application	+	–
Unit control via a wired remote control panel	S22 control panel (option)	S14 control panel
Unit control via a wireless remote control panel	S22 Wi-Fi control panel (option)	–
Unit control via a remote wired LCD control panel	S25 control panel (option)	–
BMS (Building Management System)	RS-485	–
	Wi-Fi	–
	Ethernet	–
	MODBUS (RTU, TCP)	–
Speed selection	+	+
Filter replacement indication	by filter timer	by filter timer
Alarm indication	full alarm description in the mobile application	–
Week-scheduled operation	+	–
Bypass	automatic	manual
	manual	–
Timer	+	–
Boost mode	+	–
Fireplace mode	+	–
Freeze protection	through cyclic stops of the supply fan	through cyclic stops of the supply fan
	through preheating (option)	–
Reheater connection	option	–
Cooler connection	option	–
Minimum supply air temperature control	option	–
Humidity control	option	option
CO_2 control	option	option
VOC control	option	option
PM2.5 control	option	option
Fire alarm sensor connection	option	–

Technical data

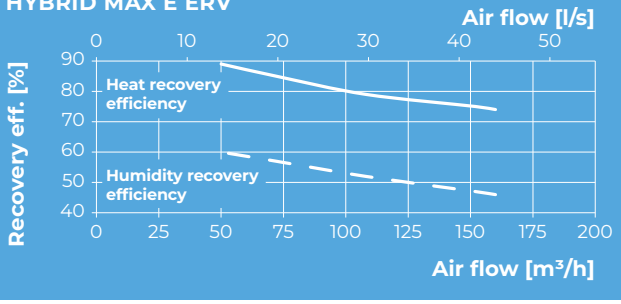
Model	Hybrid Max			Hybrid Max E			Hybrid Max ERV			Hybrid Max E ERV		
Voltage [V / 50/60 Hz]	1~ 230						1~ 230					
Max. unit power without electric heater [W]	58						58					
Integrated electric preheater power [W]	–			800			–			800		
Max. unit current without electric heater [A]	0.5						0.5					
Max. unit current with electric heater [A]	–			4			–			4		
Max air flow [m³/h]	160						160					
RPM [min⁻¹]	2800						2800					
Speed [m³/h]	60	90	160	60	90	160	60	90	160	60	90	160
Sound pressure level LpA to environment at 1 m [dBA]	25	35	42	25	35	42	25	35	42	25	35	42
Sound pressure level LpA to environment at 3 m [dBA]	16	26	32	16	26	32	16	26	32	16	26	32
Operating temperature [°C]	–25...+40						–25...+40					
Case material	Aluzinc						Aluzinc					
Insulation [mm]	20						20					
Extract filter	Coarse 90% / G4						Coarse 90% / G4					
Supply filter	ePM1 70% / F7 (G4 option)						ePM1 70% / F7 (G4 option)					
Connected air duct diameter [mm]	125						125					
Weight [kg]	47						47					
Heat recovery efficiency [%]	84–95						74–89					
Humidity recovery efficiency [%]	–						47–60					
Heat exchanger type	Counter-flow						Counter-flow					
Heat exchanger material	Polystyrene						Enthalpic membrane					
SEC class	A+						A					

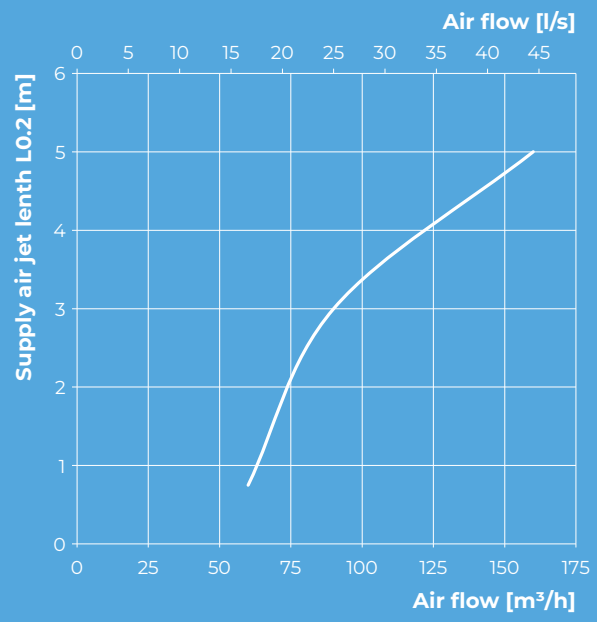


HYBRID MAX / HYBRID MAX E



HYBRID MAX ERV / HYBRID MAX E ERV





Sound power level

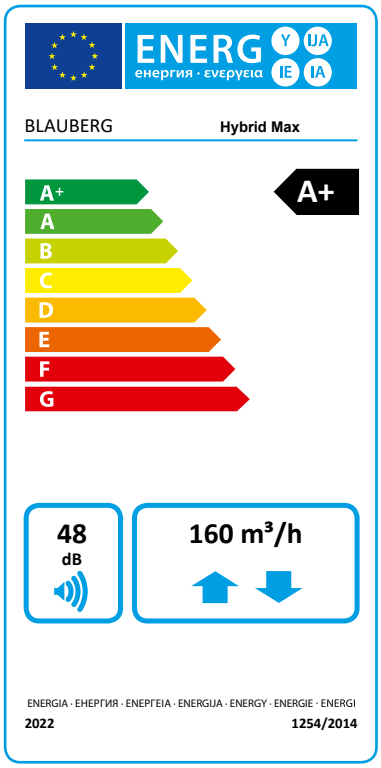
Sound power level, A-weighted	Total	Octave frequency bands [Hz]									LpA 3 m	LpA 1 m
		200	250	315	400	500	630	800	1000	1250		
L_{WA} to environment at 160 m³/h	53	37	41	41	45	49	40	42	41	38	32	42
L_{WA} to environment at 90 m³/h	46	31	37	43	36	35	33	34	33	30	26	35
L_{WA} to environment at 60 m³/h	36	32	25	24	25	24	23	23	21	19	16	25

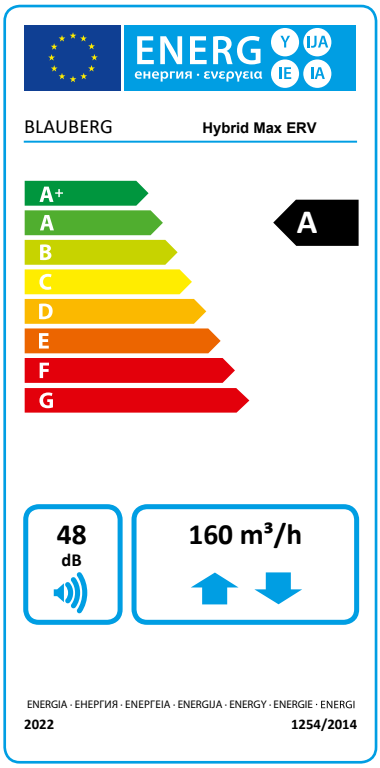
Sound power level, A-weighted	Total	Octave frequency bands [Hz]									LpA 3 m	LpA 1 m
		1600	2000	2500	3150	4000	5000	6300	8000	10000		
L_{WA} to environment at 160 m³/h	53	37	37	35	31	27	23	21	24	25	32	42
L_{WA} to environment at 90 m³/h	46	29	29	27	24	21	19	19	23	24	26	35
L_{WA} to environment at 60 m³/h	36	18	18	19	17	17	18	19	23	24	16	25

Energy labeling

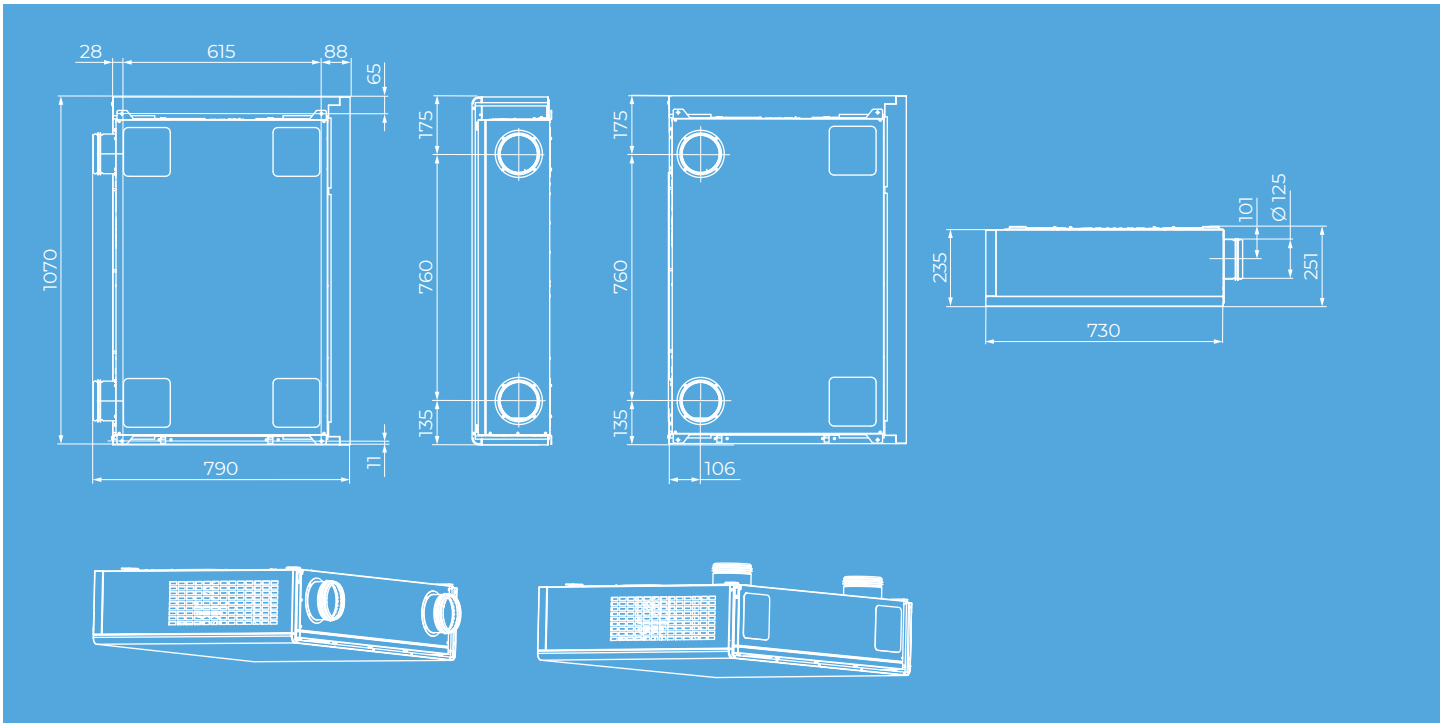
Supplier model identifier and options installed	Hybrid Max (E)	Hybrid Max (E) ERV
Reference climate	Cold/Average/Warm	Cold/Average/Warm
SEC in [kWh/(m²a)] for each type of climate	-81.3/-42.4/-17.5	-76.9/-40.2/-16.5
SEC Class	A+	A
Declared Typology	BVU	
Type of drive installed	Variable speed	
Type of heat recovery	Recuperative	
Thermal efficiency*	88	78
Maximum flow rate in [m³/h]	160	160
Maximum electric power in [W]	58	58
Sound power level (LWA) in [dB(A)]	48	48
Reference flow rate [m³/s]	0.031	0.031
Reference pressure difference in [Pa]	0	0
SPI in [W/m³/h]	0.232	0.232
Control factor and typology	Local demand control	
Internet address	http://www.ventilation-system.com/	

*Efficiency according EN13141-7:2010 at reference flow rate





Overall dimensions [mm]



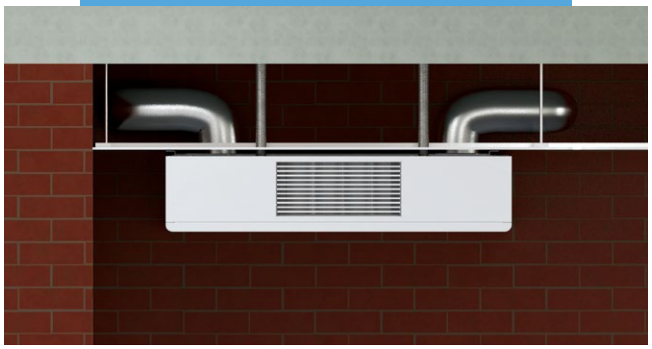
Product range

	Heat exchanger	Air dampers	Preheater	Bypass
Hybrid Max S14	HRV	•		•
Hybrid Max S21		•		•
Hybrid Max E S21		•	•	•
Hybrid Max ERV S14	ERV	•		•
Hybrid Max ERV S21		•		•
Hybrid Max E ERV S21		•	•	•

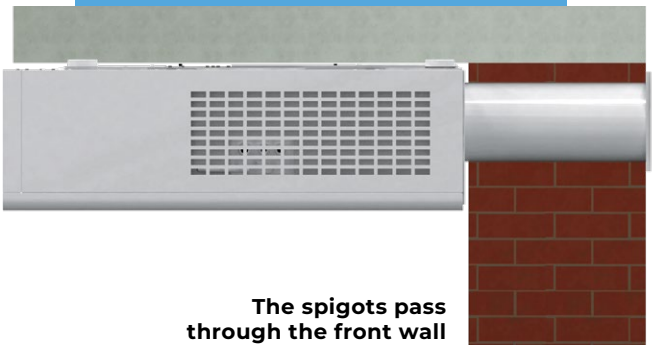
Mounting

Mounting to the supporting structure. The spigots pass through the front wall

Mounting through a suspended ceiling



Mounting to the supporting structure



The spigots pass through the front wall

Accessories

		Hybrid Max S14 Hybrid Max ERV S14	Hybrid Max S21 Hybrid Max E S21	Hybrid Max ERV S21 Hybrid Max E ERV S21
G4 panel filter		FP 233x175x22 G4	FP 233x175x22 G4	FP 233x175x22 G4
F7 panel filter		FP 233x175x22 F7	FP 233x175x22 F7	FP 233x175x22 F7
Control panel		–	S22	S22
Wireless control panel		–	S22 Wi-Fi	S22 Wi-Fi
LCD control panel		–	S25	S25
Humidity sensor		FS2	FS2	FS2
Humidity sensor		HR-S	HR-S	HR-S
Humidity sensor		–	DPWC11200	DPWC11200
CO_2 sensor with indication		CD-1	CD-1	CD-1
CO_2 sensor		CD-2	CD-2	CD-2
CO_2 sensor		CD-3	CD-3	CD-3
CO_2 sensor		–	DPWQ40200	DPWQ40200
VOC sensor		–	DPWQ30600	DPWQ30600
Electric reheater		ENH S21 V.2	ENH S21 V.2	ENH S21 V.2
Outer grille		VDA 125 CFn Al	VDA 125 CFn Al	VDA 125 CFn Al

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