HiLTO EC

High efficiency heat recovery unit

KOJA

HiLTO EC

Energy-saving high efficiency heat recovery unit for offices, commercial buildings, public buildings and residential buildings

ENERGY FROM EXHAUST AIR RECOVERED

More than half of the thermal energy in exhaust air can be recovered by including HiLTO EC as part of the heat recovery system. A building's heating costs can be lowered by utilising thermal energy.

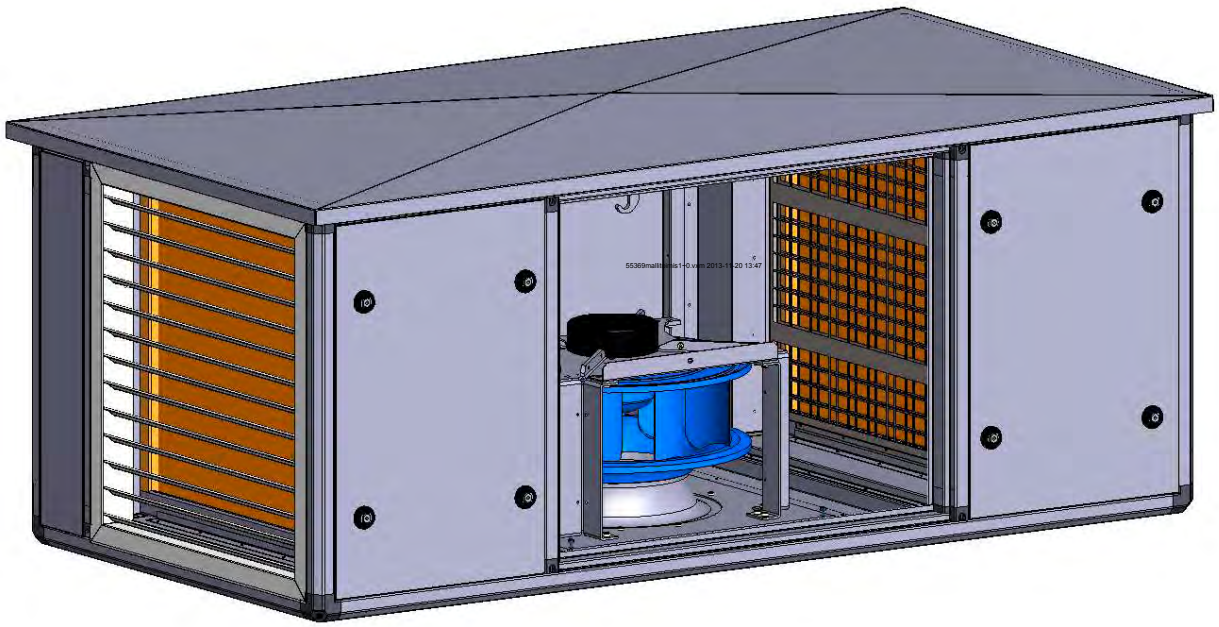
Excellent for both new and renovated buildings, the energysaving HiLTO EC heat recovery unit transfers heat from exhaust air to be used to heat supply air, warm water or heating system water.

The core components of the heat recovery unit are finned coils operating with heat transfer fluid combined with the HiFEK EC technology. The unit's motor utilises the permanent magnet technology combined with an integrated frequency converter. EC motors have a very high coefficient of performance, and controlling the rpm is easy. The motors are reliable and user-friendly.

Their enclosure rating is IP54 and they have a very extensive operating temperature range, from -35 to 60˚C. The basic model is delivered completely wired and connected. The control wire includes a junction box where the motor connectors are easy to reach. The rpm can be controlled via a bus connection (Modbus) or using the voltage signals of a building automation system (0–10 V).

Maintenance hatches on both sides of HiLTO make the unit easy to install and maintain. Filters and the finned coils equipped with condensation water basins have been installed in vertical position. The pivoted fan can be easily turned into the maintenance position.

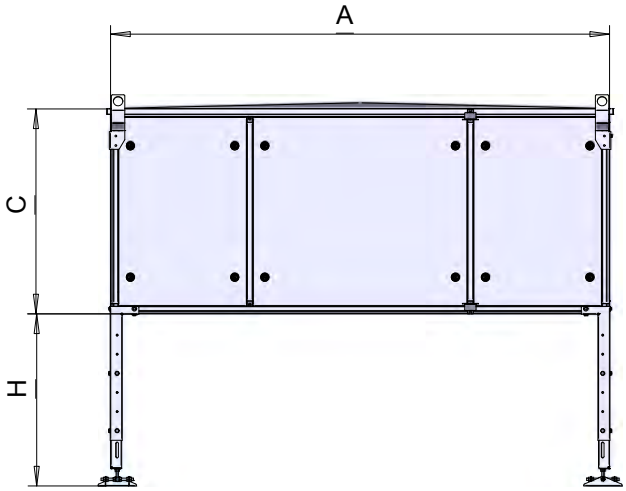
The HiLTO heat recovery unit can be used in the air flow range of 0.2–4.0 m^3/sec.

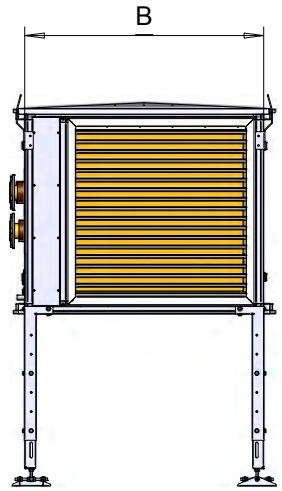


OUTPUT

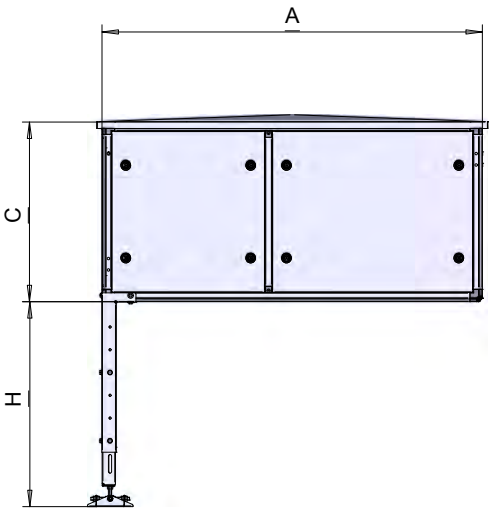
Model	Volume flow rate	Ductwork pressure loss	Power range	Fan	Output	Current	Voltage
HiLTO EC-09	100–1400 dm³/s	200 Pa	3–35 Kw	HiFEK EC-09	1.35 kW	6.8–4.9,80 A (50/60 Hz, 45 °C)	1~ 200–277 V
HiLTO EC-18	200–2100 dm³/s	300 Pa	5–50 kW	HiFEK EC-18	1.8 kW	2.90–2.30 A (50/60 Hz, 40 °C)	3~ 380–480 V
HiLTO EC-36	500–4000 dm³/s	300 Pa	15–100 Kw	HiFEK EC-36	2.9 kW	4.80–3.80 A (50/60 Hz, 40 °C)	3~ 380–480 V

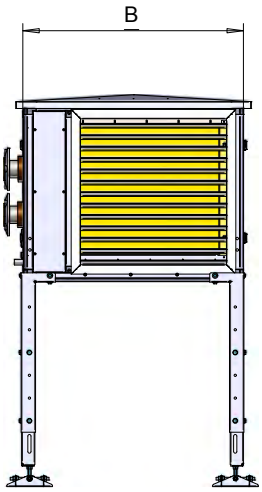
DIMENSIONS AND WEIGHT



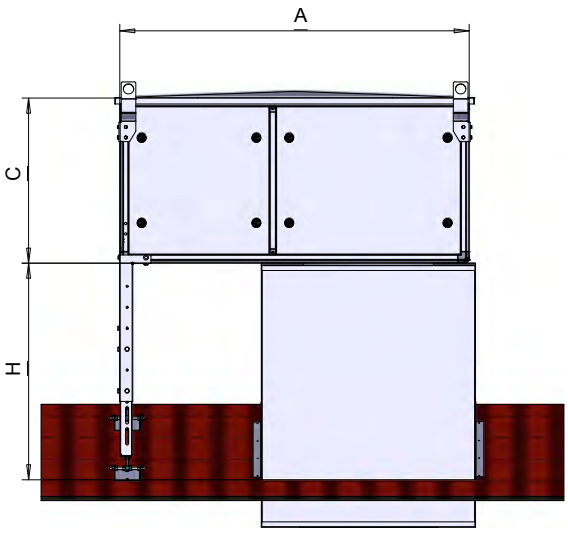


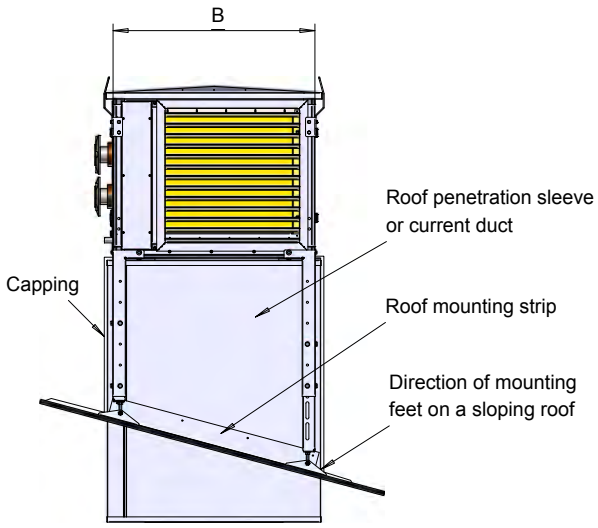
Model	A max	B	C	H	Max. weight, kg	k
HiLTO EC-09	1720	965	821	900	350	33.6
HiLTO EC-18	2375	965	821	900	490	54.7
HiLTO EC-36	2610	1250	1101	900	790	105.8



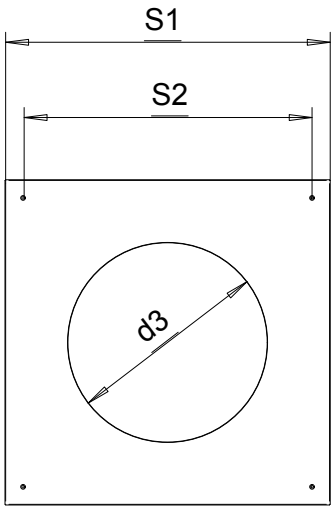


INSTALLATION DIRECTION ON THE ROOF





MOUNTING DIMENSIONS

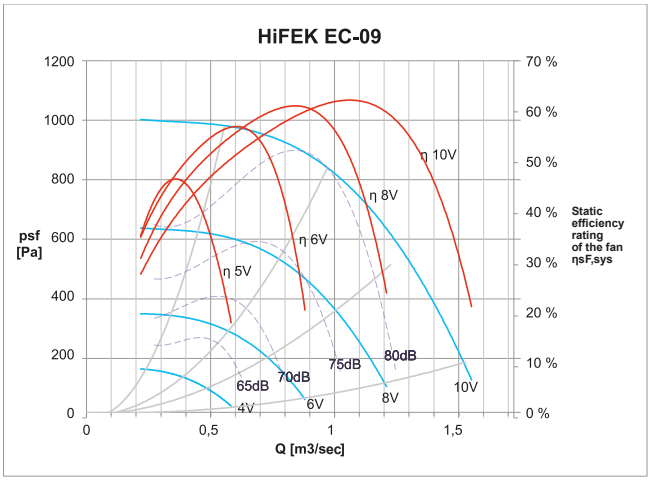


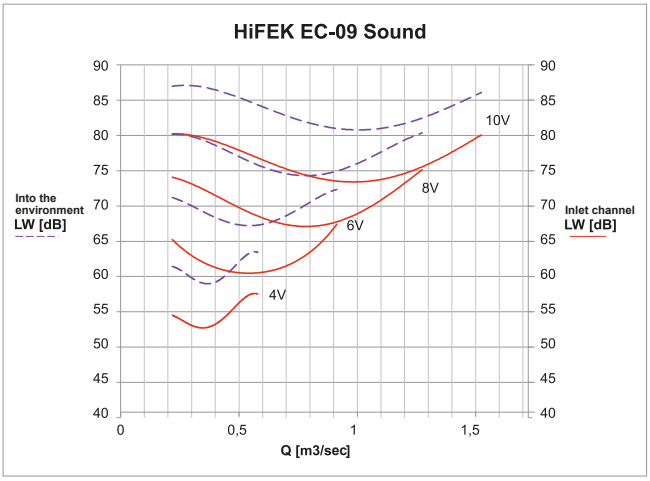
HiLTO	HiFEP	S1	S2	d3
HiLTO EC-09	18	1024	710	630
HiLTO EC-18	18	1024	710	630
HiLTO EC-36	36	1024	910	630

The unit has been designed in compliance with instructions and guidelines included in section D2 of the National Building Code of Finland on devices installed outdoors and exhaust air devices. Chapter 3.4.2 of said Building Code section states the following: "Exhaust air shall be discharged outdoors in such a way that no health hazard or any other harmful effects are caused to the building, its users or to the environment." The structure of HiLTO EC meets the requirements laid down in chapter 3.4.2.1 of section D2 of the Building Code: "Exhaust air shall usually be discharged above the roof of the highest section of the building, directing the air outlet upwards so as to prevent the exhaust air from entering the outdoor air devices, the windows and/or the occupied areas." HiLTO EC exhaust air heat recovery unit discharges the cooled exhaust air, including any impurities contained in it, through a grate that directs the air upwards. This prevents any problems caused by the exhaust air being warmer than the outdoor air or by impurities in the exhaust air that could be present if the air were discharged parallel to the building roof.

HiLTO EC-09

Please contact your local retailer for dimensioning and an offer!
For dimensioning purposes, please give the air and/or fluid flow rate, temperature of the exhaust air and/or fluid, and humidity or enthalpy of the exhaust air in your system. Pressure loss from the coils and ductwork must be taken into account when dimensioning the fan.





Fan's general coefficient of performance η_e	65.9 %
Energy efficiency target value η_{target}	52.8 %
Efficiency grade N	62

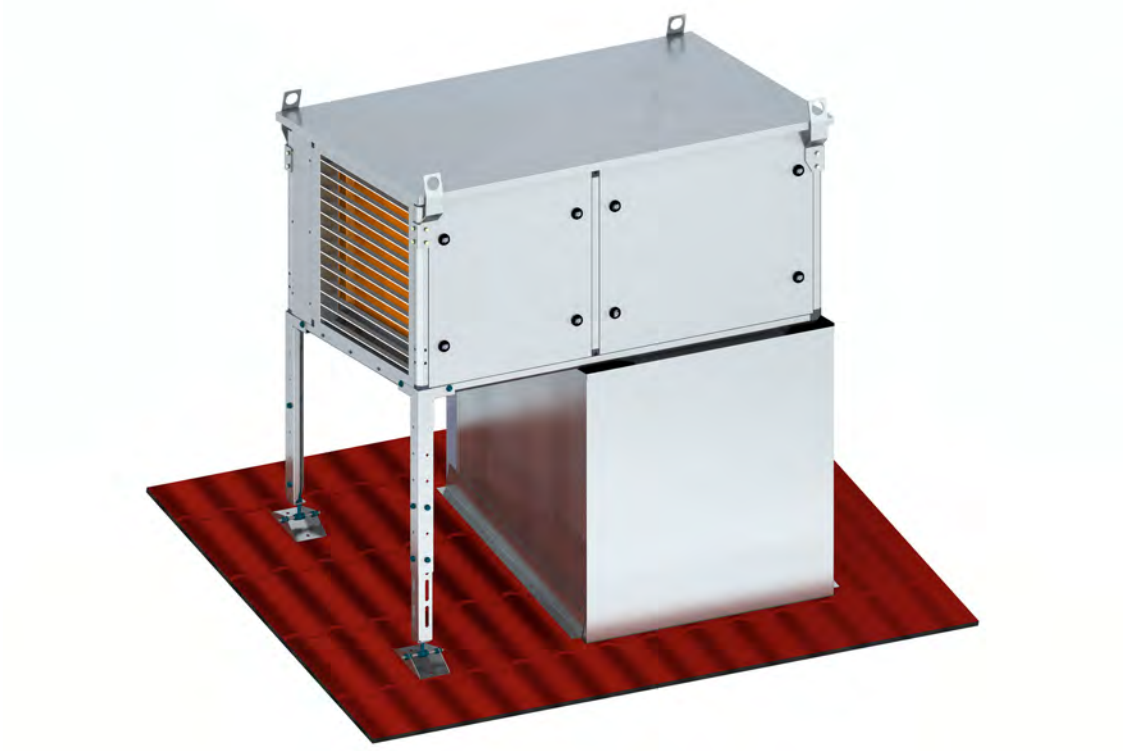
The assumption used when calculating the coefficient of performance is an integrated frequency converter. Measurement category A. Static efficiency category.

Rated values:

Speed	2400 rpm
Output	1.35 kW
Current	6.80–4.90 A (50/60 Hz, 45 °C)
Voltage	1~ 200–277 V

SOUND INTO THE ENVIRONMENT									
Noise power level, LW	90	85	80	75	70	65	60	55	dB(A)
Pressure level, Lp	62	57	52	47	42	37	32	27	dB(A)

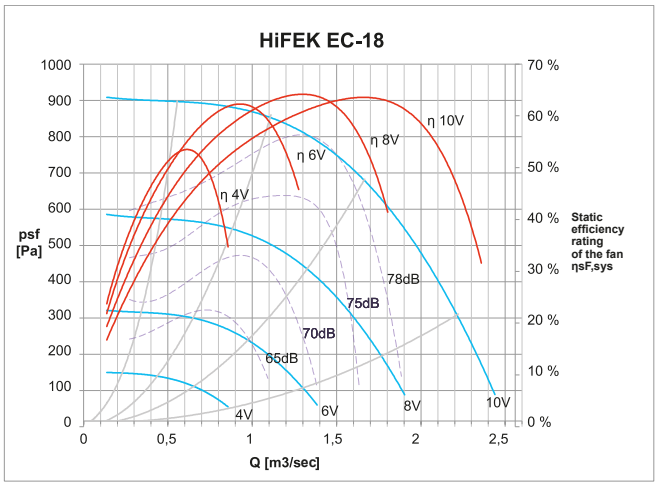
Pressure level Lp in an unobstructed space, directivity at 10 metres Q = 2 (roof installation)

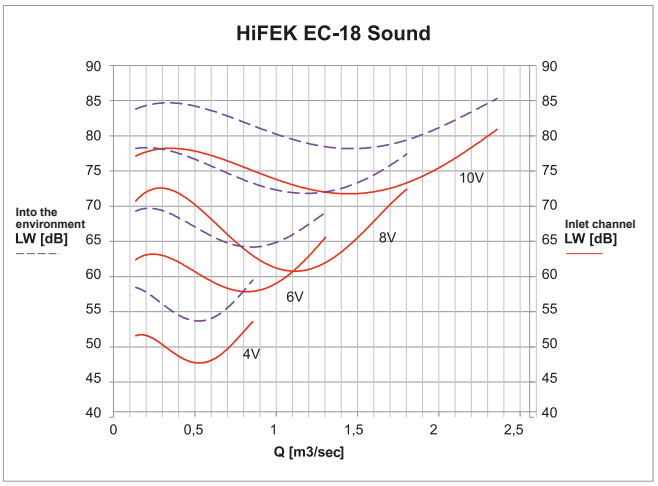


HiLTO EC-18

HiLTO EC-18

Please contact your local retailer for dimensioning and an offer!
For dimensioning purposes, please give the air and/or fluid flow rate, temperature of the exhaust air and/or fluid, and humidity or enthalpy of the exhaust air in your system. Pressure loss from the coils and ductwork must be taken into account when dimensioning the fan.





Fan's general coefficient of performance η_e	67.6 %
Energy efficiency target value η_{target}	54.1 %
Efficiency grade N	62

The assumption used when calculating the coefficient of performance is an integrated frequency converter. Measurement category A. Static efficiency category.

Rated values:

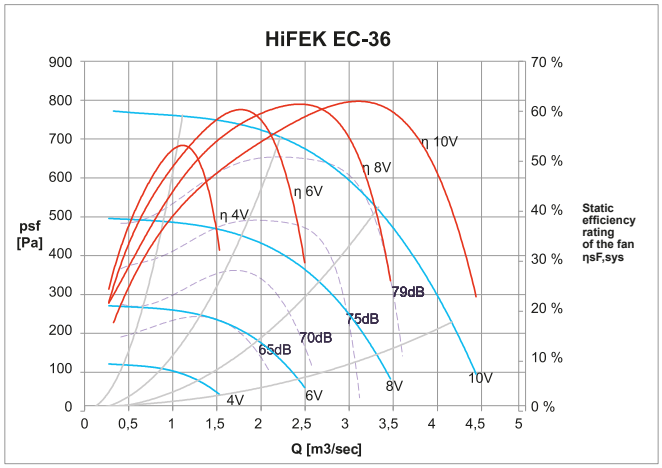
Speed	1800 rpm
Output	1.8 kW
Current	2.90–2.30 A (50/60 Hz, 40 °C)
Voltage	3~ 380–480 V

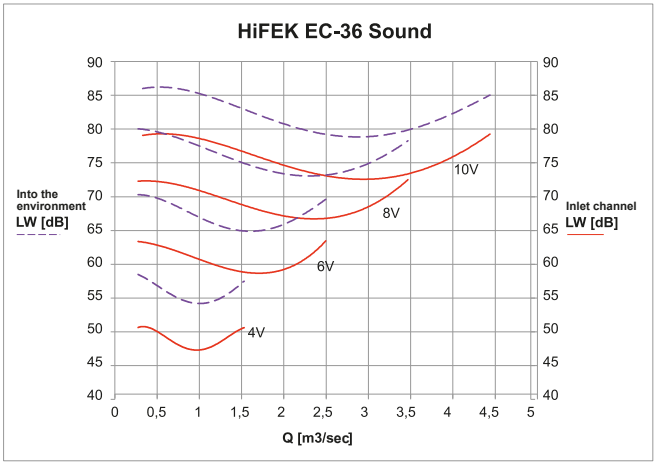
SOUND INTO THE ENVIRONMENT									
Noise power level, LW	90	85	80	75	70	65	60	55	dB(A)
Pressure level, Lp	62	57	52	47	42	37	32	27	dB(A)

Pressure level Lp in an unobstructed space, directivity at 10 metres Q = 2 (roof installation)

HiLTO EC-36

HiLTO EC-36





Fan's general coefficient of performance η_e	63.7 %
Energy efficiency target value η_{target}	56.3 %
Efficiency grade N	62

The assumption used when calculating the coefficient of performance is an integrated frequency converter. Measurement category A. Static efficiency category.

Rated values:

Speed	1200 rpm
Output	2.9 kW
Current	4.80–3.80 A (50/60 Hz, 40 °C)
Voltage	3~ 380–480 V

SOUND INTO THE ENVIRONMENT									
Noise power level, LW	90	85	80	75	70	65	60	55	dB(A)
Pressure level, Lp	62	57	52	47	42	37	32	27	dB(A)

Pressure level Lp in an unobstructed space, directivity at 10 metres Q = 2 (roof installation)

A Modbus connection is available for the motors. The connectors of the Modbus card are conveniently available in the junction box.

An old double-speed roof extractor can be replaced with an accessory that offers two adjustable speeds for the fan. The accessory is excellent for renovated buildings. The accessory will replace the old safety switch and other connectors will be available in the basic model junction box.

Adjustment of the constant pressure of ventilation ducts is possible with an optional control card and sensor. Two external setpoints can be programmed into the control card. It can be used in, for example, new buildings where adjustment of the air flow based on operating conditions must be possible.

You can order the Modbus card and control card parameterised from the Koja factory or you can set the parameters yourself with an optional terminal. The parameters can also be set from a building automation system via the Modbus.

Order example

HiLTO-18-a-c

18 = Size

a: 1 = Hot galvanised sheet steel

2 = Epoxy painted, exterior surface 60 µm*

c: 1 = No maintenance switch

2 = Maintenance switch not installed

3 = Maintenance switch installed

* According to RAL Classic basic colour chart

Accessories

HiLTO-18 mounting feet (adjustment range 700–1.100 mm)

HiLTO-18 spare filter set (G4)

HiLTO-18 connecting pipes

G4 grade filters are included in the standard delivery

KOJA

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