

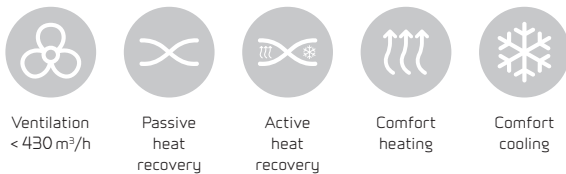
Combi 302 Polar Top

Combi 302 Polar Top is a ventilation unit that combines two heat recovery technologies.

Passive heat recovery takes place via a counterflow heat exchanger that utilises between 85% and 95% of the energy in the extracted air. Active heat recovery takes place via a heat pump that utilises the residual energy. The heat pump has a COP > 4, which eliminates the need to install a heating coil with an attached mixing circuit. Combi 302 Polar Top can increase the temperature of the supply air to over 30°C.

The heat pump also makes it possible to cool the supply air in the summer by up to 10°C. Cooling the air intake reduces its humidity, giving a more pleasant and comfortable climate inside the home, even when the indoor temperature is high.

Control: CTS602 with HMI panel



Ventilation
< 430 m³/h

Passive
heat
recovery

Active
heat
recovery

Comfort
heating

Comfort
cooling



MADE IN DENMARK

Dimensions (W x D x H)	900 x 604 x 808 mm
Weight	85 kg
Plate type casing	Aluzinc steel plate, white powder coating RAL9016
Heat loss casing (*1)	32 W / -32 W
Heat exchanger type	Polyethylenerephthalat counterflow heat exchanger
Compressor type	Piston compressor
Fan type	EC, constant rotation
Filter class	Greencycle ISO Coarse >75% (G4)
Duct connections	Ø 160 mm
Condensate drain	PVC, Ø 20x1,5 mm
Refrigerant	R134a
Refrigerant filling	0.7 kg

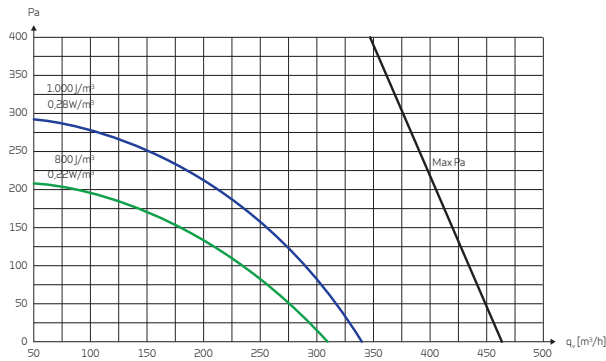
External leakage (*2)	< 0.54 %
Internal leakage (*3)	< 1.71 %
Supply voltage	230 V (±10 %), 50/60 HZ
Max. input/power	1.8 kW / 7.8 A
Tightness class	IP31
Standby power	3.2W
Power consumption build-in preheating element	1.2 kW
Ambient temperature	-20 / +40 °C

* 1 32 W: Outdoor air temperature -12 °C. Fitting location -12 °C.
 Extract air temperature 20 °C (room).
 -32 W: Outdoor air temperature -12 °C. Fitting location 20 °C.
 Extract air temperature 20 °C (room).

* 2 At ± 250 Pa and 300 m³/h according to EN 13141-7.

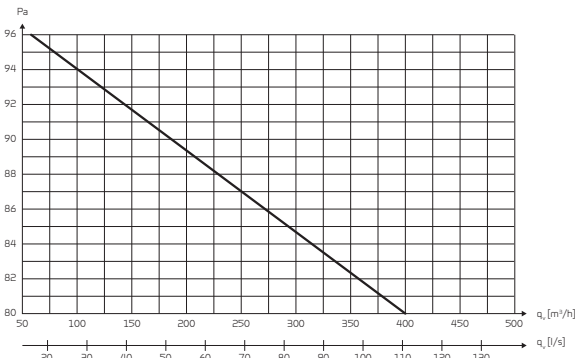
* 3 At ± 100 Pa and 300 m³/h according to EN 13141-7.

Capacity



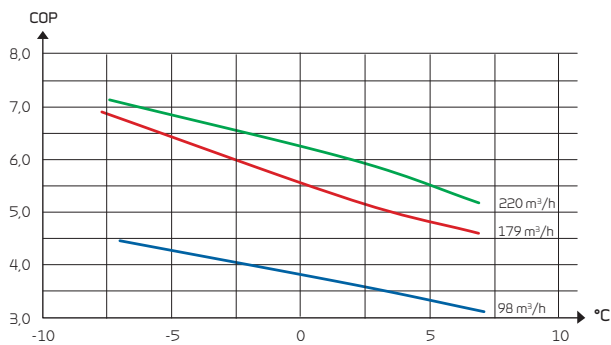
Capacity of standard unit as a function of q_v and P_t , ext. Acc. EN 13141-7 for standard units with ISO Coarse >75% (G4) filters and without heating element. SEL values comprise the unit's total power consumption.

Temperature efficiency



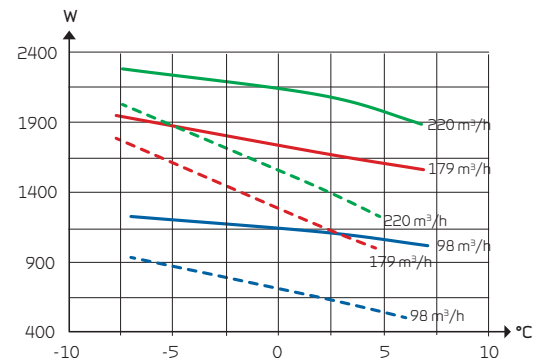
Temperature efficiency as a function of volume flow q_v [m^3/h] for unit with counter-flow heat exchanger. Temperature efficiency acc. EN13141-7 ($2^\circ C / 20^\circ C$). NB! The temperature efficiency, is for the heat exchanger only (without heat pump operation).

COP (air-air)



Heat output factor COP [-] supply air as a function of outdoor temperature t_{21} [$^\circ C$] and volume flow q_v [m^3/h] in acc. with EN14511 at a room temperature $t_{11} = 21^\circ C$. COP acc. EN14511 for the heat pump and counter flow heat exchanger combined.

Heat output supply air



Heat output Q_c [W] as a function of q_v [m^3/h] and outdoor air temperature t_{21} [$^\circ C$]. In accordance with EN 14511, $t_{11} = 21^\circ C$ (extract air). Ventilation loss: Dotted curves. Heat effect: Fixed curves.

Sound data

Octave band Hz	Surface dB	Supply air dB	Extract air dB
63	-	51	38
125	-	59	46
250	-	66	51
500	-	61	41
1.000	-	56	31
2.000	-	54	28
4.000	-	47	20
8.000	-	40	13
Total ± 2 dB(A)	46	69	53

Sound data for $q_v = 210 m^3/h$ and P_t , ext = 100 Pa according to EN3744 for surfaces and EN 5136 for ducts.

Accessories

- Electrical heating element
- EM-box
- Heating cable
- CO₂-sensor
- Water trap
- Vibration absorbers
- Pollen filter ISO ePM1.50-65% (F7)
- Flexible silencing
- Gateway with App solution
- Extension cable HMI control panel

At www.en.nilan.dk you can find more information e.g. design data, dimensional drawings, installation instructions and ecodesign data.