



HEAT RECOVERY UNIT eCO PREMIUM

PRODUCT FACTS

- 6 standard sizes
- Air flow up to 0.9 m³/s
- Static pressures up to 350Pa
- F7 supply filters
- Low noise
- Casing leakage L2 as standard
- Fully integrated EC control
- Counterflow heat exchanger with efficiencies up to 90%
- 100% bypass with free night time cooling
- ErP, Eurovent and SFPint compliant

ELECTRICAL SUPPLY

220-240V/50Hz/3ph & 380-420V/50Hz/3ph - dependent on unit size and integral heaters

TEMPERATURE RANGE

Maximum temperature from -20°C to +40°C (depending on the model)

SIZES

1, 2, 3, 4, 5, 6 - sizes 1-4 available with acoustic casing

FEATURES

eCO PREMIUM is a compact unit in six sizes that require minimal space and cover a flow range up to 0.9 m³/s. Compact dimensions and low noise data provides great flexibility in the placement of the unit. The unit is supplied with direct drive on both supply and exhaust fans, compact supply and extract air filters and a counterflow heat exchanger.

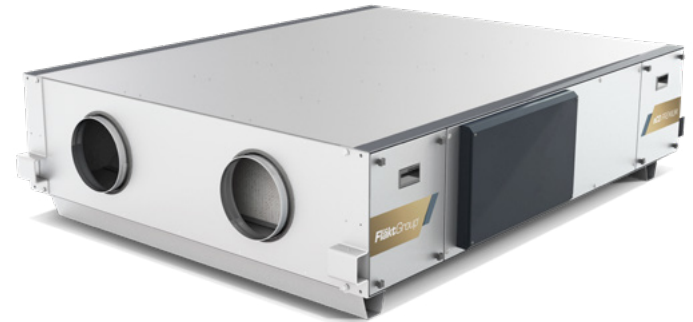
FILTERS

Filter for supply and extract air are made of compact fiberglass optimized for low pressure drop. G4 or F7 class is available on the supply air and G4 or M5 on the extract air. The filters are pressed against the runners inside the casing for tightness and easy fitting/removal.

CASING

The unit is made of self-supporting double skin galvanized sheet steel, insulated with 25 mm mineral wool (35 kg/m³). All panels have plastic handles integrated in the outer panel. The filter panel (service side) has screws with plastic head for easy access (by hand) where other panels has fasteners that requires screwdriver. The unit is supplied on a stable base which can be fitted with feet.

- Corrosivity class C3 (BSK 94/99 and ISO 12944-2)
- Leakage class L2 (EN 1886)



PRODUCT CODE

REDA-a-b-cc-d-e-ff

- a = Size Size 1,2,3,4,5,6
- b = Inspection side 1 - Right, 2 - Left, 3 - Left 'Acoustic' casing
4 - Right 'Acoustic' casing
- cc = Unit variants 00 - Essential, 01 Enhanced electrical,
02 - Enhanced hot water, 03 -Elite Electrical,
04 - Elite hot water
- d = Filter (supply/exhaust) 1 - G4 compact / G4 compact
2 - F7 compact / m5 compact
- e = Fan control speed 1 - Variably Air Volume, VAV
2 - Constant Pressure, COP
3 - Constant Air Volume, CAV
4 - VAV+co2 function (int. as standard)
- ff = Language 03 - English

ACCESSORIES (Pages 130-133)

The range of accessories as a quick reference guide is shown below.



Shut Off Damper
With Actuator



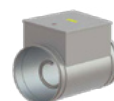
Duct Mounted
Cooling Coil



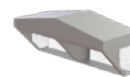
Standard
Silencer



Weather Cover
Roof



Duct Mounted
Pre Heater



Weather Cowl
Kit

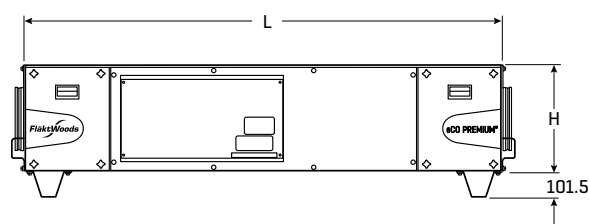
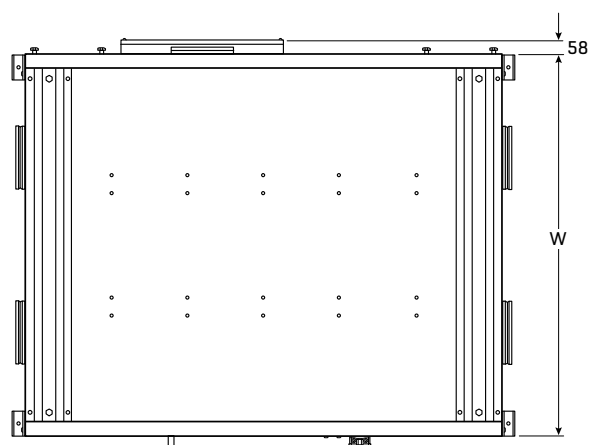


Curo
Control included
as standard

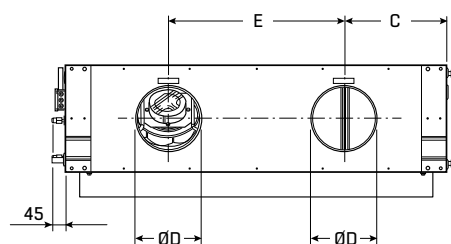
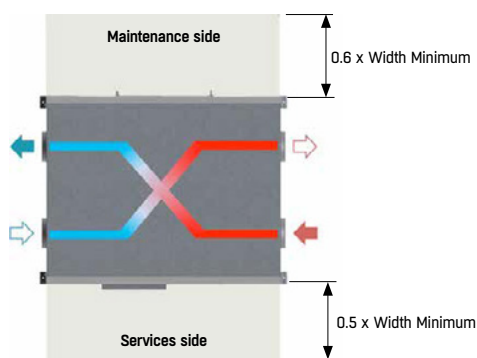


Mounting
Feet

DRAWING AND DIMENSIONS



MINIMUM MAINTENANCE SPACE



Unit Size	L	W	H	C	Ø D	E	W1	W2
1	1600	1220	380	335	250	550	188	217
2	1600	1220	380	335	250	550	200	218
3	1900	1520	425	410	250	700	263	294
4	1900	1520	425	410	250	700	269	300
5	2000	1720	470	460	315	800	290	-
6	2480	1720	685	460	500	800	495	-

All dimensions in mm. All weights in kg.

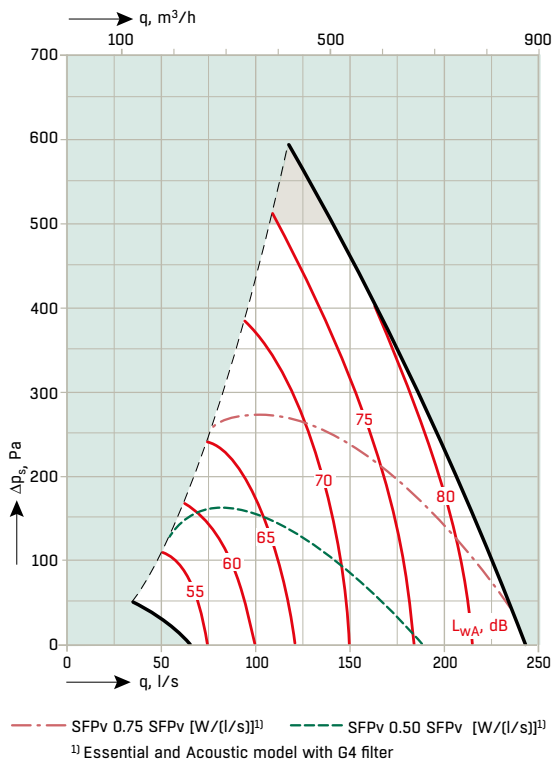
W1 - Weight for Essential model, Standard
 W2 - Weight for Essential model, Acoustic



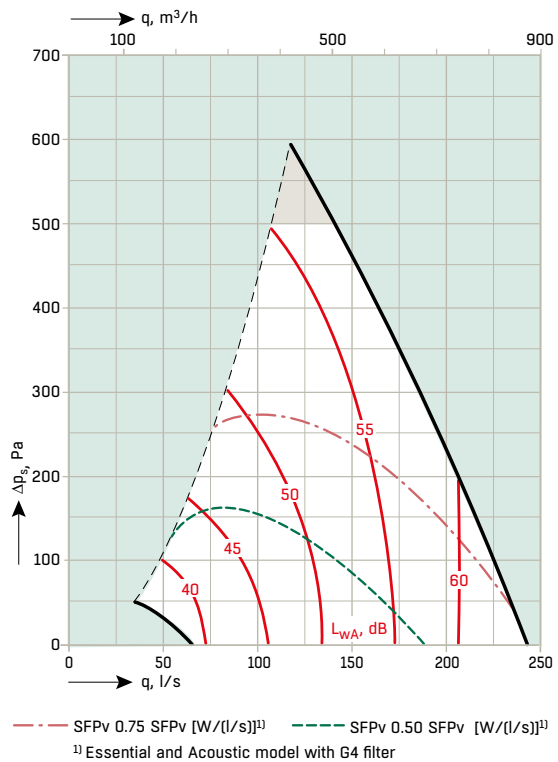
PERFORMANCE CHARTS

SIZE 1

SUPPLY AIR FAN



EXTRACT AIR FAN



SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power noise levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

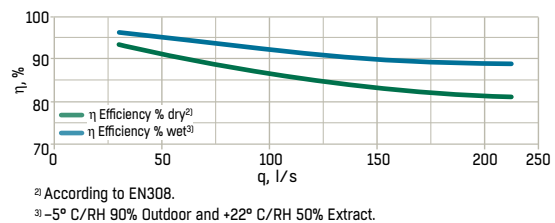
External fuse: Recommended 10 A.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential Enhanced HW Elite HW	0.338	-	0.358	2.8	230/1/50
Enhanced HE Elite HE	0.338	1.0	1.358	7.1	230/1/50

TEMPERATURE EFFICIENCY



FILTER

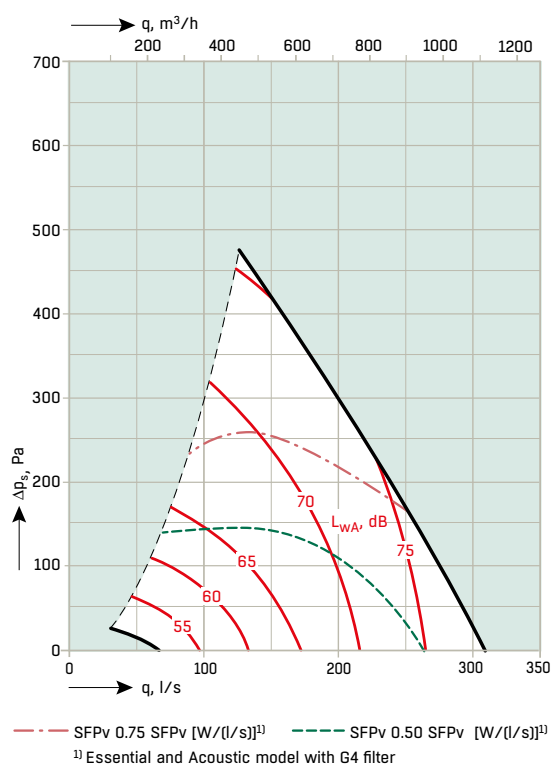
Supply air: 550 x 307 x 48 mm, G4 alt F7

Extract air: 550 x 307 x 48 mm, G4 alt M5

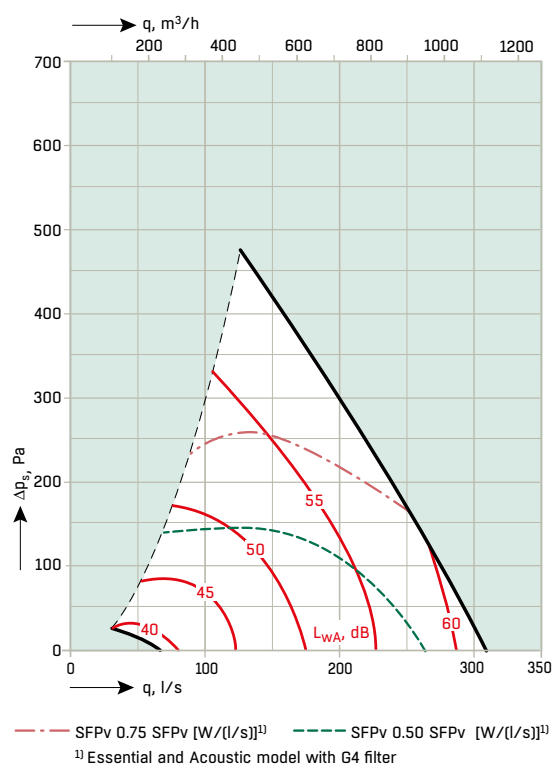
PERFORMANCE CHARTS

SIZE 2

SUPPLY AIR FAN



EXTRACT AIR FAN



SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power noise levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

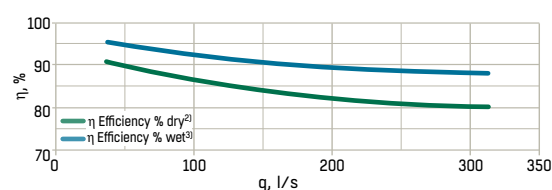
External fuse: Recommended 10 A.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential Enhanced HW Elite HW	0.34	-	0.36	2.9	230/1/50
Enhanced HE Elite HE	0.34	1.0	1.36	7.2	230/1/50

TEMPERATURE EFFICIENCY



²⁾ According to EN308.

³⁾ -5° C/RH 90% Outdoor and +22° C/RH 50% Extract.

FILTER

Supply air: 550 x 307 x 48 mm, G4 alt F7

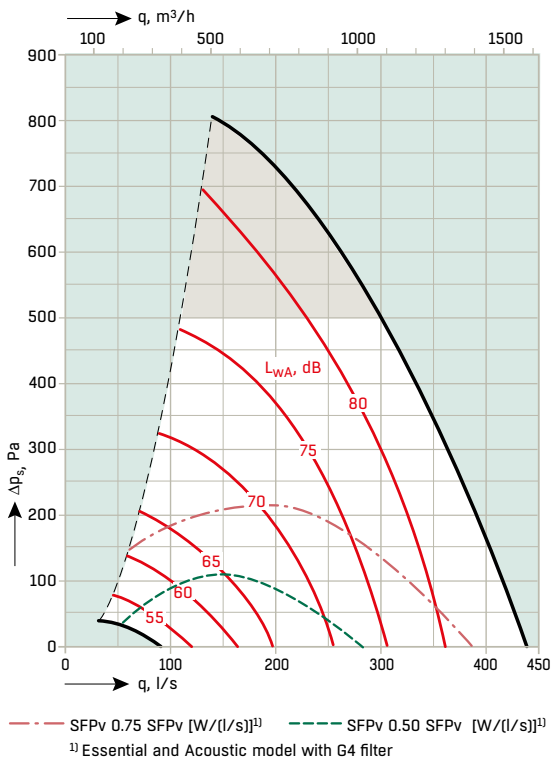
Extract air: 550 x 307 x 48 mm, G4 alt M5



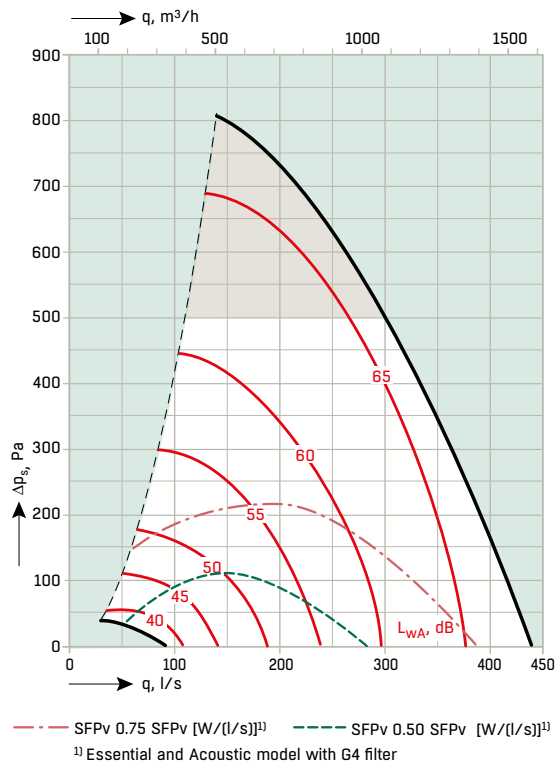
PERFORMANCE CHARTS

SIZE 3

SUPPLY AIR FAN



EXTRACT AIR FAN



SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

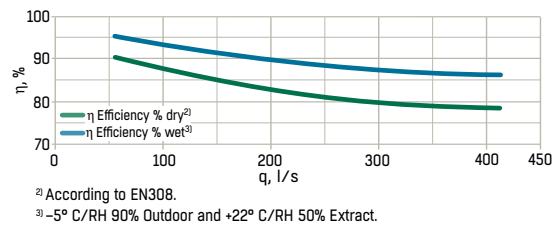
External fuse: Recommended 10 A without electrical heater.
 Recommended 16 A with electrical heater.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential Enhanced HW Elite HW	0.77	-	0.79	5.1	230/1/50
Enhanced HE Elite HE	0.77	1.5	2.29	11.6	230/1/50

TEMPERATURE EFFICIENCY



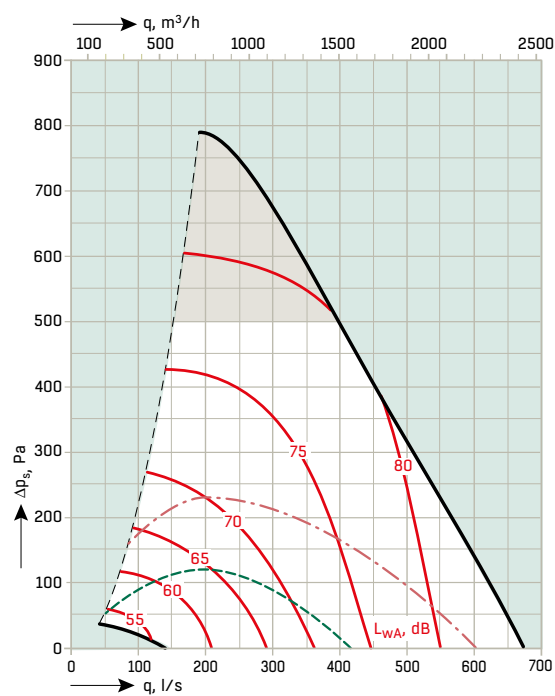
FILTER

Supply air: 2 x 348 x 352 x 48 mm, G4 alt F7
 Extract air: 2 x 348 x 352 x 48 mm, G4 alt M5

PERFORMANCE CHARTS

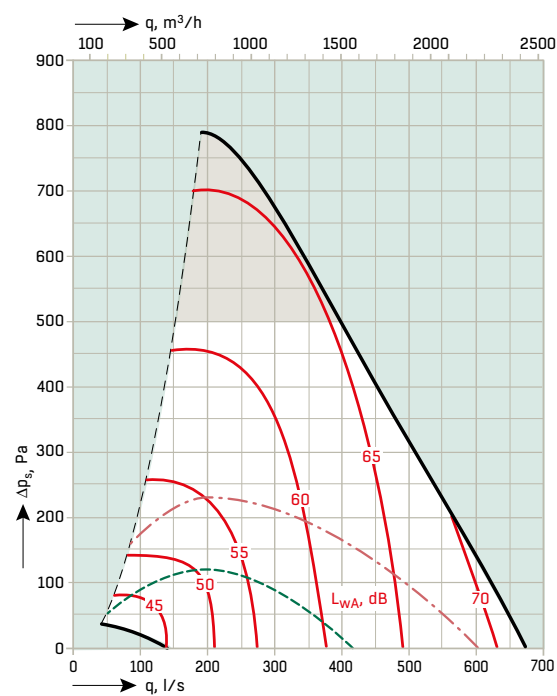
SIZE 4

SUPPLY AIR FAN



--- SFPv 0.75 SFPv [W/(l/s)]¹⁾ --- SFPv 0.50 SFPv [W/(l/s)]¹⁾
¹⁾ Essential and Acoustic model with G4 filter

EXTRACT AIR FAN



--- SFPv 0.75 SFPv [W/(l/s)]¹⁾ --- SFPv 0.50 SFPv [W/(l/s)]¹⁾
¹⁾ Essential and Acoustic model with G4 filter

SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power noise levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

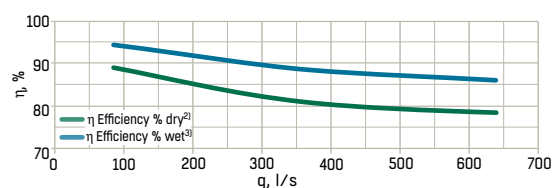
External fuse: Recommended 10 A without electrical heater.
 Recommended 16 A with electrical heater.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential					
Enhanced HW	1.0	-	1.02	4.5	230/1/50
Elite HW					
Enhanced HE	1.0	2.0	3.02	13.2	230/1/50
Elite HE					

TEMPERATURE EFFICIENCY



²⁾ According to EN308.

³⁾ -5° C/RH 90% Outdoor and +22° C/RH 50% Extract.

FILTER

Supply air: 2 x 348 x 352 x 48 mm, G4 alt F7

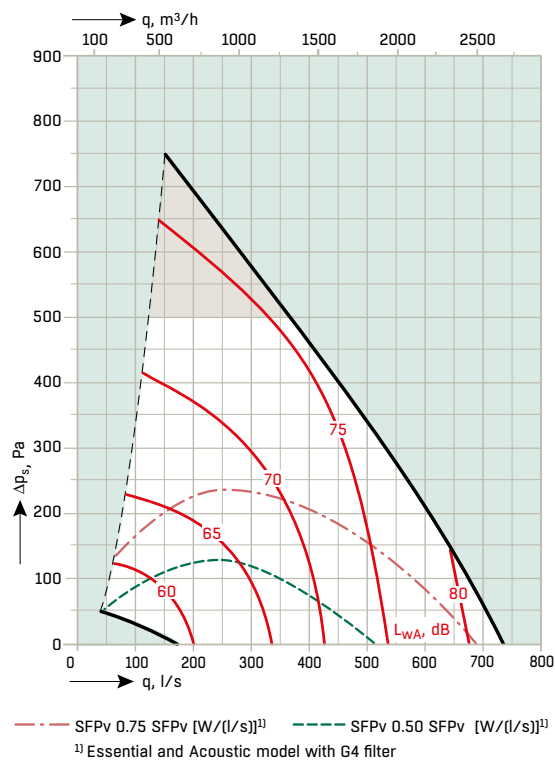
Extract air: 2 x 348 x 352 x 48 mm, G4 alt M5



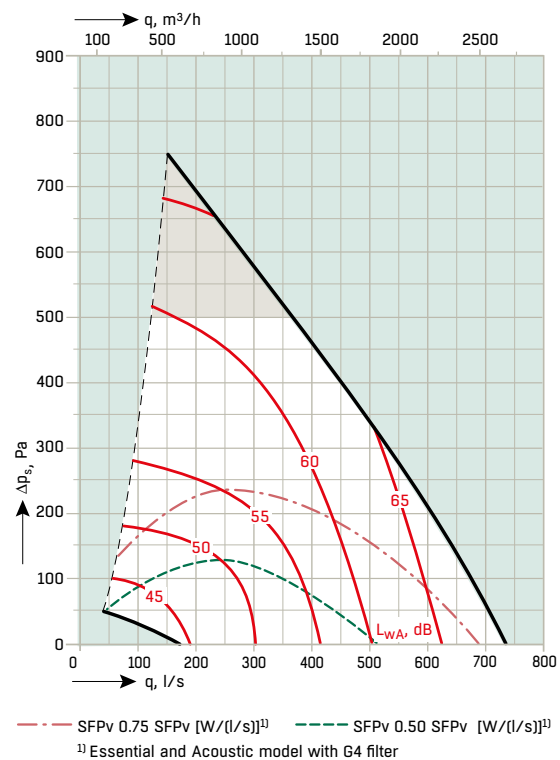
PERFORMANCE CHARTS

SIZE 5

SUPPLY AIR FAN



EXTRACT AIR FAN



SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power noise levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

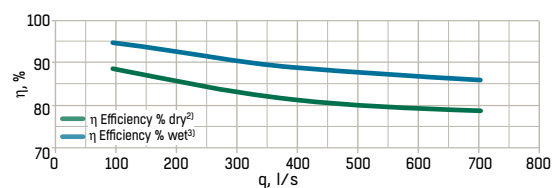
External fuse: Recommended 10 A without electrical heater.
 Recommended 16 A with electrical heater.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential Enhanced HW Elite HW	1.0	-	1.02	4.5	230/1/50
Enhanced HE Elite HE	1.0	2.5	3.52	15.4	230/1/50

TEMPERATURE EFFICIENCY



²⁾ According to EN308.

³⁾ -5° C/RH 90% Outdoor and +22° C/RH 50% Extract.

FILTER

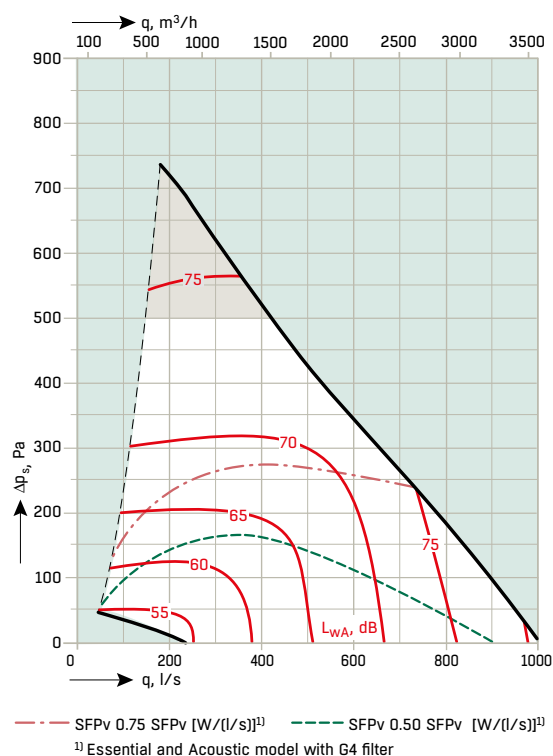
Supply air: 2 x 398 x 407 x 48 mm, G4 alt F7

Extract air: 2 x 398 x 407 x 48 mm, G4 alt M5

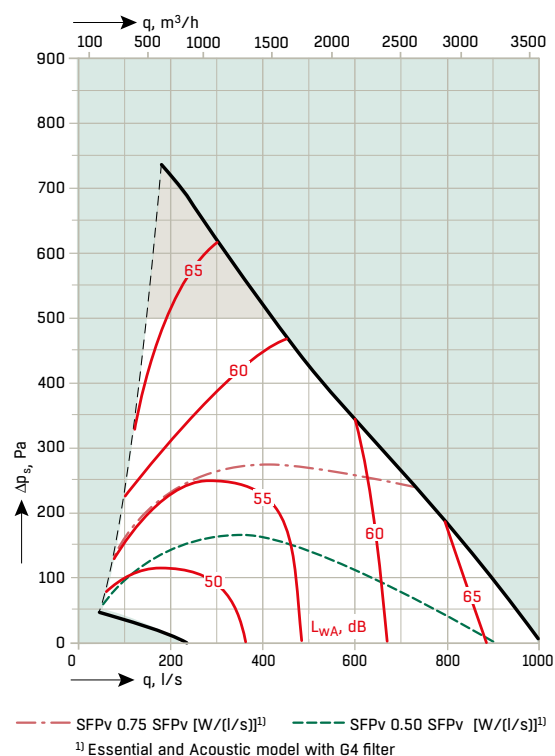
PERFORMANCE CHARTS

SIZE 6

SUPPLY AIR FAN



EXTRACT AIR FAN



SYSTEM OVERVIEW

The diagrams show the available external pressure for the duct system. The weighted sound power noise levels given in dB(A) apply to ducts on the supply fan's outlet side (diagram 1) and extract fans' inlet side (diagram 2). The SFP_v values for each fan are calculated according to clean filters. SFP_v is calculated for the complete unit and includes power to both supply and extract fan divided by either the supply or extract volume whichever is the greater.

ELECTRICAL DATA

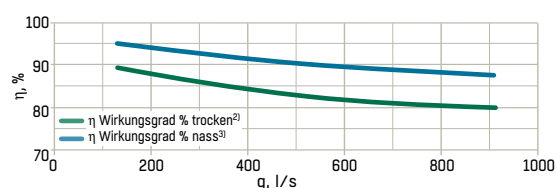
External fuse: Recommended 10 A.

The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit.

Ambient temperature during operation -20° - +40°C

Unit Version	Fan Motors Power, 2 fans kW	Post Heater kW	Rated Power kW	Rated Current A	Electrical Supply V/Ph/Hz
Essential Enhanced HW Elite HW	1.0	-	1.02	4.4	230/1/50
Enhanced HE Elite HE	1.0	3.0	4.02	8.0	400/3/50

TEMPERATURE EFFICIENCY



²⁾ According to EN308.

³⁾ -5° C/RH 90% Outdoor and +22° C/RH 50% Extract.

FILTER

Supply air: 2 x 398 x 602 x 48 mm, G4 alt F7

Extract air: 2 x 398 x 602 x 48 mm, G4 alt M5



ACCESSORIES

DUCT MOUNTED COOLING COIL - REDZ-14



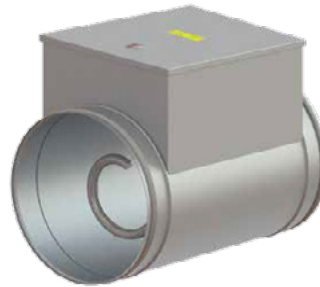
Air cooler for cold water with copper tubes and aluminum fins. The air cooler is built into a galvanized sheet steel casing, AZ 185 with 9 mm insulation. The casing has a removable hatch for cleaning and duct connections with rubber ring seals. The air cooler has to be installed so that the distance to the fan or bend upstream of the cooler is at least 600 mm. The cooler is only available in a left-hand configuration.

Venting and draining is carried out via the pipe system. The pipe connection, \varnothing 22 mm, is located on the outlet end, is smooth and is intended for a compression fitting. The drainage tray is in stainless steel and has an R 1/2" connection.

Max. Operating pressure 1.0 Mpa.

Max. Operating temperature 100°C.

DUCT MOUNTED PRE HEATER - REDZ-82



An optional electric pre-heater (frost heater) is available as part of frost protection strategy and is delivered in the unit version ELITE. The heater is a stand alone device and has no electrical connection with the unit. The heater is made in Aluzink steel plate and its element in stainless steel according EN 1.4301. The heater complies with protection class C to EN 15727. Built-in electronic flow switch and regulator via built-in temperature sensor in duct. Set point adjustment is set on the heater cover.

Unit size	Diameter [mm]	Rated Power [kW]	Supply voltage [V]	Supply phase [nr]
1-2	250	3	230	1
3-4	250	6	400	2
5	315	9	400	3
6	400 ¹⁾	12	400	3

¹⁾ Needs a dimension change from 500 to 400.

WEATHER COVER ROOF - REDZ-80



eCO PREMIUM™ unit can be installed outside when a weather cover roof is fitted. The separate roof made in Aluzink is done to resist outdoor environment and fulfills the C4 class (BSK 94/99 and ISO 12944-2).

STANDARD SILENCER - BDER



The standard silencer is a straight circular duct silencer with 50 mm mineral wool filling. Duct connections have rubber seals. The silencer consists of a perforated sheet metal pipe surrounded by a galvanized sheet steel mantle and end pieces sandwiching mineral wool covered with nonwoven fabric to prevent fibre migration. Fire resistance rating EI30. The available nominal lengths are 600, 900 & 1200 mm.

ACCESSORIES

SHUT OFF DAMPER WITH ACTUATOR - REDZ-87



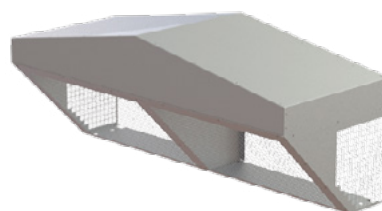
Duct mounted damper in leakage class 3 (CEN 3). The damper is made of galvanized sheet steel and has a spring return on/off actuator mounted on it. The actuator is connected to a terminal block in the electrical cabinet. The damper has a duct connection with a rubber ring seal and it can be mounted directly onto the unit or into the duct. It is designed for duct insulation of up to 50 mm. At air speeds below 10 m/s and the damper fully open the sound power level is below 20 dB. A spring return shut-off damper should be used for units with a water coil. IP 54.

MOUNTING FEET - REDZ-88



The unit can be mounted directly onto the surface if this is flat and horizontal. The height of the mounting feet can be adjusted between 15 - 85 mm. Rubber feet are included in the kit.

WEATHER COWL KIT - REDZ-89



Outside wall cowl for outdoor air and exhaust air. The cowl comes with bird guard net and is made of Aluzink to resist outdoor environment. It fulfills the C4 class (BSK 94/99 and ISO 12944-2). The size allows to have a shut off damper (REDZ-87) mounted on the unit.



ACCESSORIES

CONTROLS

GENERAL

eCO PREMIUM™ is delivered with the integrated control platform Curo® and the belonging control panel, Curo® Touch. All internal components are prewired and the eCO PREMIUM™ is factory tested. The controls are easy to use. The control equipment can communicate via Modbus RS485 or Modbus TCP/IP. For adjustments and settings use the control panel Curo® Touch.



STANDARD CONTROL FUNCTIONS

- Fan speed control
 - VAV, Variable air volume (supply and extract)
- Temperature control
 - Supply air control
- Communication Modbus RS 485
- Fan monitoring
- Fire Protection system
- Night cooling
- Cooling recovery
- Frost protection, standard with a unit equipped with water heater coil
- Schedule
- Demand controlled defrosting (Thermo Ice)

ACCESSORIES / OPEN OPTIONS

- Fan speed control
 - CAV, Constant Air Volume
 - COP, Constant Pressure (supply and exhaust)
 - VAV, Variable Air Volume with CO₂ function
- Temperature control
 - Extract air control
 - Room control
 - Outdoor air compensation
- Communication Modbus TCP/IP
- Filter monitoring
- Extended and / or forced operation
 - External timer
 - PIR

STANDARD CONTROL FUNCTIONS

FAN SPEED CONTROL - VAV

Fan speeds are set individually between 30-100%

TEMPERATURE CONTROL

Supply air control

Constant supply air temperature is maintained.

COMMUNICATION

eCO PREMIUM™ is delivered with BMS communication (MODBUS RS-485)

FAN MONITORING

The controls will stop the unit and generate an alarm if the flow of the fans is too low.

FIRE PROTECTION

A separate fire protection system may be connected to the unit.

Function: stop the unit.

NIGHT COOLING (FREE COOLING)

Night cooling is used during warm summer nights in order to reduce the indoor temperature. This is done by cooling down the warm indoor temperature with cold outdoor air.

COOLING RECOVERY

When there is a cooling demand the unit will automatically close the bypass to cool the supply air. It happens when the extract air temperature is lower than the outdoor air temperature and there is a cooling demand.

SCHEDULE

The controller has three types of internal time schedules, Weekly, Single date and Date period.

DEFROSTING (THERMO ICE)

eCO PREMIUM™ uses an advanced defrosting function that ensures that the annual heat recovery efficiency is as high as possible.

During cold periods if icing has occurred on the counter flow heat exchanger then the defrosting function will stop the supply fan and start the defrosting process.

The defrosting function will only be active when necessary, a large part of the counter flow needs to be iced before the defrosting function starts.

ACCESSORIES

CONTROLS CONT.

ACCESSORIES /OPEN OPTIONS

FAN SPEED CONTROL

REDA-a-b-cc-d-e-ff

Different fan speed control is available to individually adjust the airflow for supply and exhaust side. The following options can be selected and will automatic be handled by the CURO® Control.

- **COP.** Constant Pressure
- **CAV.** Constant Air Volume
- **VAV+CO₂.** Fan speeds are set individually, overrides by the demand ventilation (CO₂) when the set PPM value is exceeded.

TEMPERATURE CONTROL REDZ-01

Extract air control

Constant extract air temperature is maintained via cascade regulation of the supply air temperature with min- and max temperature limits.

Room air control

Constant room air temperature is maintained via cascade regulation of the supply air temperature with min- and max temperature limits.

Outdoor air compensation

The function offsets the set point of the supply air temperature. Not available with extract- or room air control.

COMMUNICATION - REDZ-05

eCO PREMIUM™ can be delivered with Modbus TCP/IP via separate Ethernet card.

FILTER MONITORS - REDZ-28



The controls will generate an alarm if the pressure drop over each filter exceeds set value.

SAFETY SWITCH - REDZ-39



The mains supply cable must be fitted with an external safety switch, which can cut the current to the entire unit. Is available in 16A & 25 A.

EXTENDED FORCED OPERATION - REDZ-40



External timer



PIR

External timer (setting 0-5 hours) or occupancy detector (PIR). Both for external and recessed mounting.

COIL CONTROL - REDZ-70

Air heater

Control signal (0-10V) for a valve actuator.

Freeze protection: When the unit is not in operation mode the water temperature will be held constant at 25°C. During operation mode the valve will be controlled so that the returned water temperature will not be below 15° C. The unit will be stopped and an alarm will be activated if the returned water temperature is below 7° C.

Air cooler

Control signal 0-10 V for air cooler, water.

Valve actuator for air heater/ cooler

Valve actuator customized to fit a valve with a 5.5mm and G3/4" thread.