

Product Specification

Ecovent® mini (EVCM) Compact Heat Recovery Units

1.1. General

A. Provide a heat recovery air handling unit to meet the performance and configuration as indicated in the schedule and detail drawings. The heat recovery air handling unit shall be tested to BS EN ISO 5801:2017 and shall be of the Ecovent type as manufactured by VES Andover Ltd, a company accredited with BS EN ISO 9001:2015.

1.2. Unit Construction

- A. The unit shall be provided pre-assembled comprising double skinned galvanised sheet steel panels, supply and extract centrifugal fans with direct drive motor, supply and extract G4 pleated panel filters, and plate heat exchanger with drain pan.
- B. The construction shall be tested in accordance with BS EN 1886:2007.
- C. The unit shall be supplied in one section.
- D. The unit shall be available in plantroom construction as indicated in the schedule and detail drawings.
- E. The unit shall be fitted with a heat exchanger bypass duct, incorporating a face and bypass damper to allow heating / cooling recovery.
- F. The units shall have either circular safe-fit spigots compatible with spiral ductwork, or rectangular connections compatible with 20mm MEZ flange connections as indicated in the schedule and detail drawings.
- G. The unit casework shall incorporate high quality rubber gasket seals on service doors and panels.
- H. Access for maintenance shall be via a removable panel, allowing access for the cleaning or removal of internal components as indicated in the detail drawings. The filters shall be bottom withdrawal as standard.
- I. Flat plantroom casework shall incorporate mounting brackets compatible with drop-rod systems.
- J. The unit shall be supplied in the configuration: flat, plantroom. Access and handing options shall be as indicated in the schedule and detail drawings.

1.3. Fans

- A. The fan impellers shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO 21940-11:2016.
- B. The fan impellers shall be mated with aerodynamic bell inlet eyes for high efficiency and low noise generation.
- C. The fan impellers shall be supplied in natural uncoated finish as standard.

1.4. Motors

- A. The fans shall incorporate external rotor motors to insulation class F, IP4X environmental protection rating and shall be supplied with thermal protection cut-out as standard.

1.5. Plate Heat Exchanger

- A. The unit shall be supplied with a Counterflow heat exchanger tested in accordance with BS EN 308:2022.
- B. The heat exchanger shall be to an efficiency of at least 75% (-5/+20 °C, 90/50% RH).
- C. The plate heat exchanger matrix shall be aerodynamically designed, with built-in spacers ensuring a constant plate separation.

1.6. Drain Pan

- A. The unit shall include a built-in condensate drain pan as standard.
- B. The unit shall be compatible with an internally-fitted peristaltic condensate pump.

1.7. Filtration

- A. The filters shall be pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.
- B. Filters shall be to BS EN ISO 16890 classification Coarse 65% (G4 EN 779:2012) as standard, grade as indicated in the schedule and detail drawings.

1.8 Heating

- A. The unit shall come with no heating as standard. Options for duct mounted ancillary heating are available as indicated in the schedule.

Product Specification continued

1.9. Operation Environment

A. The unit shall be designed to operate in ambient temperatures from -20 °C up to +40 °C and to run continuously at up to 90% relative humidity level.

2.0. Controls

A. The unit shall be fitted with an EC fan speed control system with min/max speed and 0-10 VDC BMS control

B. Temperature sensor shall be fitted as standard.

C. Fitted controls shall be positioned as indicated in the schedule and detail drawings.

D. Controls shall be supplied with internally mounted circuit breakers.

E. Fitted controls shall be supplied with a supply air duct sensor to be fitted by others onsite as indicated in the schedule.

F. Fitted controls shall be fully pre-wired to internal components.

2.1. Ancillaries

A. The unit shall be fully compatible with a standard range of spigot mounted silencers. The silencers shall be suitable for direct mounting to the unit.

B. The silencer shall be a rigidly constructed double skinned galvanised sheet steel case lined with resin bonded mineral wool.

C. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. External powder coat shall be available as indicated in the schedule. Colour shall be in accordance with schedule.

D. The units shall be available with duct mounted hot water or electric element heating as indicated in the schedule and detail drawings, suitable for direct fitting to the end of the unit.

E. The duct mounted hot water heater battery shall be of copper tube, aluminium fin block construction, with galvanised sheet steel casework.

F. The duct mounted hot water heater battery shall be available with alternative fin coatings by special order, as indicated in the schedule.

G. The duct mounted electric heater battery shall be suitable for single-phase supply and compatible with thyristor control as indicated in the schedule and detail drawings.

H. The duct mounted electric heater battery shall consist of an element array, sized to suit the steps and phases as indicated in the schedule and detail drawings. The elements shall consist of a tubular incoloy shroud containing compressed magnesium oxide powder packed around a nickel chromium resistance wire. The element array shall be evenly spread across the open area of the duct.

I. Where multiple elements are required to achieve the steps and phases as indicated in the schedule, elements shall be linked by copper busbar or terminated with electrical connectors.

J. The duct mounted electric heater battery shall be fitted as standard with a thermal safety cut out, adjustable from +40 °C to +80 °C, with automatic reset.

K. All duct mounted electric heaters shall be 1500 V flash tested, and resistance tested for correct component assembly. Test certificates shall be available on request.