

# Guide Specifications

## High Wall Series Fan Coils HVAC Guide Specifications

Size Range: **1.12 kW to 6.57 kW, Nominal Cooling**  
**0.95 kW to 6.56 kW, Nominal Heating**

Polar Air Models: **PHW-V-ECM, PHW-VI-ECM**

### **Part 1 - GENERAL INFORMATION**

#### ***1.1 Unit Description***

Indoor, high wall mounted installation, chilled or hot water 2 row coil, to be matched with a commercial chiller, water source heat pumps, or hot water boiler (80°C maximum).

#### ***1.2 Quality Assurance***

Unit shall be certified by Eurovent. Each coil shall be factory tested for leakage by water pressure test 3.5 MPa for 3 minutes. Completed unit shall be air tested for leakage at 0.8 MPa for 3 minutes. The maximum working pressure is 2.0 MPa (excluding flexible hoses). Fan coils shall meet compliance requirements of ISO9001, and CE. All claims of capacity and sound performance shall be verified by an internationally recognized third-party testing agency.

#### ***1.3 Delivery, Storage, & Handling***

Unit shall be stored and handled per manufacturer's instructions.

### **Part 2 - PRODUCTS EQUIPMENT AND CONFIGURATION**

#### ***A: General***

High Wall Series Fan Coil available in 2-pipe or 4-pipe shall be equipped with EC fan motor with on-off 3 speeds or modulating speed, insulated stainless steel integral hoses, stepping motor, fine-mesh nylon filter, LED display and mounting plate. 2 Control methods will be available as I type complete control and W type flexi control with an external thermostat. Valve & Electric heater application shall be available as an option.

#### ***B: Unit Cabinet***

**1.** Cabinet shall be constructed of 2.0 mm flame resistance ABS plastic. Single mold casing shall provide quality assurance for durability and safety.

#### ***C: Drain Pan***

Drain pan shall be constructed of 2.0 mm flame resistance ABS plastic.

#### ***D. Air Delivery Grilles***

Supply and return air grilles shall be white color RAL9010 ABS. Supply air grilles are angle adjustable.

#### ***E: Front panel***

Front panel shall be RAL 9010 white color and made of fire-retardant ABS plastic for lightweight and corrosion resistant operation.

#### ***F: Coil***

**1.** Standard unit shall be equipped with a cooling / heating coil for installation in a 2-pipe or 4-pipe system. 6-way valve shall be equipped as an option.

**2.** Coils shall be seamless copper tubes with 7.0 mm outside diameter, mechanically expanded into corrugated hydrophilic coated aluminum fins for a permanent primary to secondary surface bond.

**3.** Each coil shall have a manual air vent and a manual drain valve directly accessible under the air intake panel.

**4.** Coil connector shall be 12.7 mm (½") threaded female type.

#### ***G: Insulation***

Insulation is 5.0 mm NBR plastic foam.

#### ***H: Motors***

**1.** High efficiency EC motor shall be enclosed with thermal overload protection, sealed for life lubricated bearings and include driver control Printed Circuit Board, constant torque, permanent magnet, brushless DC motor with 3 speeds and modulating speed setting that allows for precise air balancing.

**2.** Fan motor shall be IP40 Class B.

#### ***I: Fan Section***

Fan shall be direct drive, tangential type dynamically balanced. Impellers shall be made of fire retardant ABS plastic for lightweight and corrosion resistant operation. Air outlet louvers shall be made from fire retardant ABS plastic and to prevent condensation from forming. Louvers shall be automatically adjustable and driven by stepping motor.

#### ***J: Control Options***

Controllers shall provide on-off or modulating fan control, integral condensate pump control, and auxiliary electric heater control. Controls shall include coil temperature sensors which will allow fans to operate when coil is chilled (during cooling mode) and heated (during heating mode) and provide alarm configurations.

1. FULL CONTROL OPTION (I/S Type): Microprocessor controller shall be a complete function integrated control, compatible with infra-red remote handset controller, programmable wired wallpad controller, louver and on/off valve control, drain pump control (optional), occupancy or economy mode contacts, auto restart, and error diagnostics displayed on the front panel. Controls shall include a coil sensor and a room sensor to allow fans to operate when coil is chilled (during cooling mode) and heated (during heating mode). It also allows BMS control, Master-Slave control, VWV and VAV control.

2. FLEXIBLE CONTROL OPTION (W Type): Microprocessor controller shall be a flexible function control for external thermostat applications with control of drain pump (optional), louvers, limited diagnostics display on front panel. It shall provide an alarm interlock relay for unit failure notification with normally open or normally closed contacts available for field connection. Controller shall include a coil sensor.

**K: Condensate Pump and Float Switch (Optional)**

A float control shall be with the condensate pump to detect the presence of condensate. The pump shall be fixed to a mounting bracket on the casing.

**L: Filters**

Unit shall have factory supplied cleanable filters with tabs which allow direct access without dismantling the casing. Standard filter thickness shall be 2.0 mm with ABS framed nylon medium.

**M: Electrical Requirements**

Unit shall operate on 220~240V/1Ph/50~60Hz power supply.

**N: Electric Heat (Optional)**

Removable module included PTC type stainless steel electric heaters shall be provided with thermal protection switches. Heater Modules shall be suitable for factory or field installation and controlled via onboard controller.

**O: Low and High temperature protection available with 'I' Microprocessor controller**

The freezing and over heat protection sensors on the coil shall prevent freezing of the coil assembly and plastic distortion from overheating.

**P: Low temperature protection available with 'W' Microprocessor controller**

The freezing protection sensor on the coil shall prevent freezing of the coil assembly.

**Q: Wall Mounted Wired Pad**

A wired wall pad for communication shall be available as an optional accessory for the 'I' controller.

**R: Infrared Remote Handset**

An infrared handset for remote communication shall be available as an optional accessory for the 'I' controller.

**S: Thermostat**

A thermostat shall be available as an optional accessory for the "W" controller.

**T: Safety Ratings and Performance Verification**

Fan Coil Unit shall be Eurovent Listed. Performance shall be confirmed by accepted third party (Eurovent for performance and sound).

**Part 3 – MAINTENANCE**

Maintenance access shall be via the front panel for all unit components.

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