

# Guide Specifications

## One Way Super Slim Cassette Series Fan Coils HVAC Guide Specifications

Size Range: **1.1 to 3.2 kW, Nominal Cooling**  
**1.1 to 3.2 kW, Nominal Heating**

Polar Air Models: **PCSL-V-ECM**

### Part 1 - GENERAL INFORMATION

#### **1.1 Unit Description**

Indoor, ceiling 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 MPa. 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**

One Way Super Slim Cassette Series Fan Coil available in 2 pipe shall be equipped with EC fan motor with on-off 3 speeds or modulating speed, stepping motor, fine-mesh nylon filter, LED display and mounting brackets. 2 Control methods will be available as S type full unit control or W type flexi unit control with transformer for external thermostat. Valve & Electric heater application shall be available as an option.

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

Cabinet shall be constructed of 2 mm flame resistance ABS plastic.

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

Drain pan shall be constructed of 2 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: Fascia**

Fascia 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 system. Additional 6 way valve kits shall be provided for installation in a 4 pipe system.

**2.** Coils shall be seamless copper tubes with 6 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 filter.

**4.** Coil connector shall be ½" female threaded.

#### **G: Insulation**

Insulation is 5 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 variable speed modulation 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**

**1.** FULL CONTROL OPTION (I/S Type): Microprocessor controller shall control fan motor, water valves (ON/OFF or modulating valve, drain pump, and electric heater (optional). Controller shall be capable of changing temperature settings, fan speed and other control functions using either infrared wireless handset or programmable wired wall mounted full function pendant controller with serial networking for addressable or global primary to secondary unit control. Controller shall provide

coil freeze and over heat protection using factory installed sensors, occupancy or economy mode contacts, auto restart, and error diagnostics. Controls shall include coil sensor(s) and a room sensor to allow fans to operate when coil is chilled (during cooling mode) and heated (during heating mode). It allows BMS control, Master-Slave control, VVW and VAV control.

2. FLEXIBLE CONTROL OPTION (W Type): Microprocessor controller shall be suitable to use with a standalone 220~240 VAC thermostat or 0-10 VDC signal from external source. Controller shall provide simplified error diagnostics, drain pump control and optional electric heater control. Controller shall include coil sensor(s).

**K: Condensate Pump and Float Switch**

A float control shall be with the condensate pump to detect the presence of condensate. The pump shall be fixed inside the unit.

**L: Filters**

Unit shall have factory supplied cleanable filters with tabs which allow direct access by taking off the return air grille. Standard filter thickness shall be 2 mm nylon with ABS frame.

**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/S' 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/S' controller.

**R: Infrared Remote Handset**

An infrared handset for remote communication shall be available as an optional accessory for the 'I/S' 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 fascia for all unit components.

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