

Guide Specifications

One Way Super Slim Cassette Series Fan Coils HVAC Guide Specifications

Size Range: **2,800 to 9,000 BTU/H, Nominal Cooling**
4,500 to 14,000 BTU/H, Nominal Heating

Polar Air Models: **PCSL-VY-AECM**

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 (176F maximum).

1.2 Quality Assurance

ETL certification pending. Each coil shall be factory tested for leakage by water pressure test 500 psi for 3 minutes. Completed unit shall be air tested for leakage at 116 psi for 3 minutes. The maximum working pressure is 300 psi. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation. Insulation shall be rated to UL94 VO. All equipment wiring shall comply with NEC requirements. Fan coils shall meet compliance requirements of ETL, 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.

1.4 Warranty

(See Appendix A).

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 1/16" flame resistance ABS plastic.

C: Drain Pan

Drain pan shall be constructed of 1/16" 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 rated UL94 V1 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 1/4" 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 1/2" male-NPT.

G: Insulation

Insulation is 3/16" 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 rated UL94 VO 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. The 'S' Microprocessor shall be a complete function integrated control, compatible with infra-red remote handset controller, programmable wired pendant control, with serial networking for addressable or global primary to secondary unit control, MODBUS BMS functionality, modulating valve with 24V transformer or on/off valve control, drain pump control, occupancy or economy mode contacts, auto restart, and error diagnostics displayed on the fascia.

2. The 'W' Microprocessor controller shall be a flexible function control for external thermostat applications with control of drain pump, louvers, limited diagnostics display on fascia, 24V transformer for supplying power to thermostat or modulating valves, and zone control product operations. It shall provide an alarm interlock relay for unit failure notification with normally open or normally closed contacts available for field connection.

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 1/16" with ABS framed nylon medium.

M: Electrical Requirements

Unit shall operate on 115V/1ph/60Hz (PCSL-Y-AECM) 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 'S' 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 'S' controller.

R: Infrared Remote Handset

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

S: Thermostat

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

T: Safety Ratings and Performance Verification

ETL certification pending. Performance shall be confirmed by accepted third party (AHRI for performance or Eurovent for performance and sound).

U: Disconnect Switch

Factory installed disconnect switch shall be located outside the electric box of the unit and shall be sized for the full load ampere of the unit to enable the unit to be disconnected from the power supply prior to any maintenance.

Part 3 – MAINTENANCE

Maintenance access shall be via the fascia for all unit components.

Appendix A

POLAR GLOBAL LIMITED WARRANTY

Polar Global products are warranted against failure due to defect in materials or workmanship under normal use and maintenance for a period of one year from date of installation.

Polar Global warrants Polar Global products to be free from defects in materials and workmanship under normal use and maintenance as follows:

For a period of twelve (12) months from the date of original installation or for a period of eighteen (18) months from the date of shipment from the factory, whichever comes first. This warranty is offered for Polar Global products sold and installed in the U.S. and Canada.

All parts claimed to be defective must be returned to Polar Global U.S. office within 60 days of the date of failure of the part. Freight to be prepaid. If Polar determines the part to be defective and the part failure to be within the limits of this warranty, and the part has been replaced or repaired. Polar Global U.S., Polar Global will provide a replacement part to an authorized contractor or service company, ex-stock Polar Global U.S. office, freight prepaid.

Exclusions:

1. Shipping or handling damage.
2. Damage and/or repairs required due to faulty installation or inappropriate application.
3. Electrical damage caused by voltage fluctuations of +-5% of rated voltage or any other electrical service related issue.
4. Damage due to abrasion or corrosion.
5. Improper operation, alterations not approved by Polar Global, or abuse of parts or equipment.
6. Parts or components not provided by Polar Air regardless of the cause of failure.
7. Misuse, negligence, accidents, or incorrect system design.
8. Products installed or operated other than as approved by Polar Air.
9. Damage due to mold, mildew, fungus, or bacteria.
10. Costs to replace or repair system components damaged as a result of defective parts covered under this warranty.
11. Labor or other costs required to replace or repair defective parts covered under this warranty.
12. Shipping or transportation costs from place of installation to Polar Air U.S.A.

This warranty is absolute and in lieu of any and all other warranties expressed or implied. Remedies stated in this warranty are exclusive and shall establish the only liabilities of Polar Air.

Polar Global
May 13, 2020

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