

PentaCare V12 Compact Air Treatment Unit Series

With balanced fresh-air HRV performances certified by HVI



PentaCare V12 Compact Air Treatment Unit is 4 machines in 1:

Dehumidifier

Air Source Heat Pump

High Efficiency HEPA MERV 15 Air Filtration device

Compressor-based HRV with Net Zero Positive performances in some conditions

**The all-in-one compact HVAC solution for
Passive Houses and Multifamily Buildings**

Fresh air + Heating + Cooling + Humidity + Air filtration


MINOTAIR
THE SCIENCE OF AIR

Net Zero Positive⁺ Ventilation[®]

Provides more energy than it uses in certain conditions:

Discover the best heat recovery performances in North America with results tested and verified by Exova and certified by HVI

- 1 The **PentaCare V12** produces *Net Zero Positive⁺ Ventilation[®]* performances in certain conditions having the best heat recovery performances of all HRVs and ERVs available in North America using active heat recovery, world's most efficient recovery technology, along with our proprietary *Triple HEAT Recovery System[®]*.
- 2 Another first is the *ever-highest SRE of the industry at 116%* when moving 100 CFM indoor of 32°F outdoor air.
- 3 All that with a *record-breaking ASE of 178%*, it results providing fresh air indoor around 102°F *which helps heating at the same time.*

The all-in-one compact HVAC solution for Passive Houses and Multifamily Buildings

Fresh air
Heating
Cooling
Humidity
Air filtration

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PentaCare V12 Compact ATU takes care of 5 elements

Fresh Air FRESH AIR SUPPLY + AIR POLLUTANTS REDUCTION

The **PentaCare V12** brings in fresh air and gets rid of the pollutants contained in stale air.

Air Filtration WITH HIGH EFFICIENCY HEPA AIR FILTRATION

Our HEPA filter is **top of its class** at MERV 15/F9 filtration level. This impressive level of air filtration is made possible by the a special filtration medium and our powerful energy efficient ECM Constant Airflow fan technology.

Humidity Management WITH AUTOMATIC DEHUMIDIFICATION

The **PentaCare V12** uses its **HUMIWATCH 365[®]** exclusive system to eliminate excessive moisture better than all other HRV, ERV or heat pump based air exchangers. The end result: Minotair gets rid of up to 112 pints of water per day (this is about 50% more than our closest competitor).

PIONEERING HUMIDITY RECOVERY IN HEATING SEASON

A first in the market: our **"Automatic Shower Detector"** feature recirculates the warm moist air from your shower automatically when the indoor air is too dry.

Heating + Cooling FRESH AIR ALONG WITH "NET BTU" COOLING & HEATING

The **PentaCare V12** performs a very precise and efficient distribution of treated fresh air (filtered + cooled or heated or dehumidified) directly to all the rooms serviced by the ductwork. That means a healthier and more comfortable place to live.

In a certain temperature range, the **PentaCare V12** performs like no other HRV/ERV by supplying conditioned fresh air with a surplus heat (or cooling in summer) that will reduce the heating load, all while ventilating.

Energy-efficient free cooling

Useful during some cool nights (in summer for example) to both cool and freshen your home naturally at almost no cost using only the fans! And for a maximum effect you can also use the **Turbo Cooling mode** (making good use of the compressor) that will add cooling to that already naturally cool night air!

CONSTANT AIR FLOW FANS

Once only seen in commercial applications, you can count on our constant airflow ECM fans to deliver the right amount of fresh air in your ducts up to 1.6 inch of static pressure. As a result, our fans will do **REAL-TIME CALIBRATION OF INTAKE & EXHAUST AIRFLOWS** to help your home achieve balanced air flow pressure.

VOC AND CO₂ POLLUTANT SENSORS

Available from renown and specialized manufacturers and easily connect them to our machines. So you can do precise IAQ Multi-Room Sensing. Like monitoring a new-born bedroom in priority. (OPTION)

UPDATABLE CONTROLLER (updates done by USB key)

Our controller is the only one in the industry to be updatable and of industrial grade. Over time, not only will you benefit from the latest features and updates, but you will also stay away from obsolescence. In this regard the **PentaCare V12** is in a league of its own once again!

5000 WATTS ELECTRICAL DUCT HEATER (EDH)

Totally controlled by our microcontroller, the heat intensity is fully variable to generate the precise amount of auxiliary heat required the heating season. Minotair makes the EDH mandatory when the PentaCare V12 is used as the main heating source such as in a passive house or apartment.

MINOTAIR DYNAMIC CALCULATOR[®]

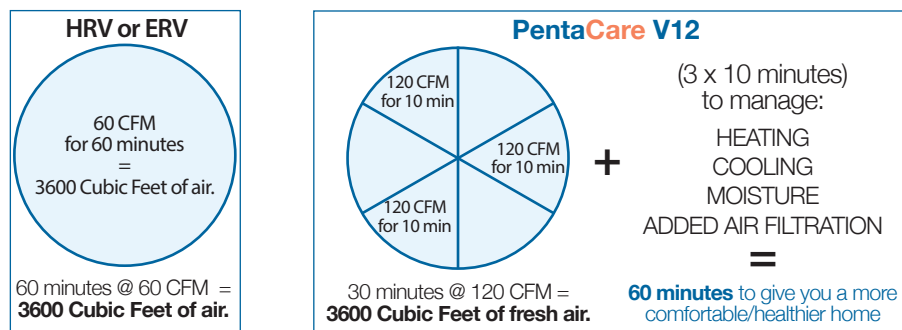
To provide data to insert into your Passive House modeling tools (PHPP and WUFI Passive) based on the design conditions of the fresh air, heating and cooling requirements. Gives also useful validation data for heating and cooling loads for all types of buildings (including non-Passive House buildings).(FREE).

DUCTWORK DESIGN AND LOAD CALCULATIONS SERVICES AVAILABLE

By partnering with engineering/technical firms, you can rely on professionals to take care of these very important details. Service available throughout the USA and Canada. (FEES APPLICABLE)

The basis for the modes of operation of our PentaCare V12 is its unique *Axis Damper[®]*

Here's how our *Axis Damper[®]* works compared to HRVs + ERVs. And for ease of explanation we use a one-hour window example:



This example above is **one of many multiple ways** on how the **PentaCare V12** effectively manage all the aspects of indoor climate with our advanced algorithms making a great difference!

FASTER + EASIER + LESS EXPENSIVE:

- NO roof curb to install
- NO refrigeration lines to pass
- NO more long inefficient ductwork
- NO enclosure to install outdoor resulting in a longer-lasting product being installed inside
- NO visual annoyance on facades

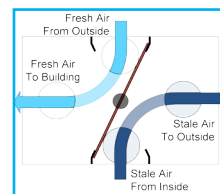
HIGH-QUALITY, COMMERCIAL-GRADE:

- World-class, durable product
- Multifamily remote control & monitoring with BACnet™ or Modbus®(option)
- Compliant with ASHRAE 62.1 & 62.2 versions 2010, 2013 and 2016
- Fully compliant with PHIUS
- For PHI please contact us.

The 2 positions of our *Axis Damper[®]*

VENTILATION / AIR EXCHANGE MODE

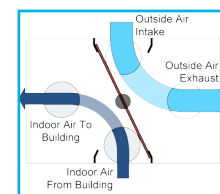
For fresh air, pollutants removal, active heat recovery, "net BTU" heating & cooling and summer fresh air free cooling & turbo cooling.



TOP VIEW

RECIRCULATION MODE

For indoor air heating, cooling, dehumidification and added filtration.



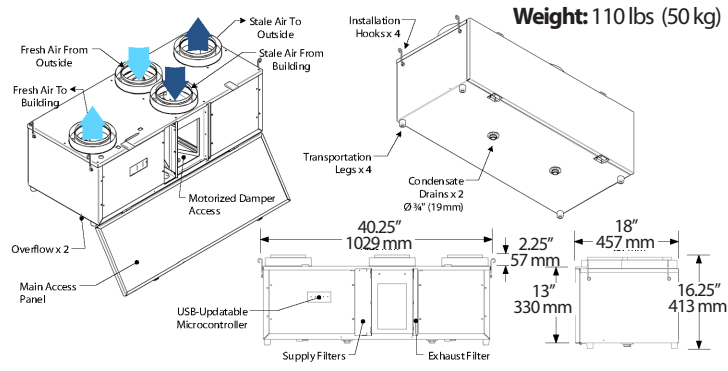
"A world premiere in the ventilation industry"

CERTIFICATIONS AND COMPLIANCE

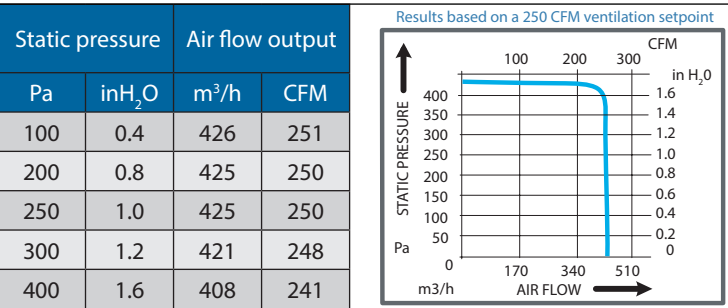


ANSI/UL STD 1995 CSA F326
 ASHRAE 62.1 PHUIUS
 ASHRAE 62.2 2016 STD CAN/CSA 22.2 No 236
 CAN/CSA C439-09

DIMENSIONS AND WEIGHT



FAN CURVE (2 Constant Air Flow ECM Fans)



COOLING + HEATING IN RECIRCULATION (Calculated using AHRI 210/240 Protocol)

Heat pump heating test conditions	BTU/H	COP	HSPF					
			Reg. I	Reg. II	Reg. III	Reg. IV	Reg. V	Reg. VI
Outdoor 47°F/43°F Indoor 70°F/60°F Airflow 250 CFM, 1 H ₂ O	8700	3.0						
Outdoor 35°F/33°F Indoor 70°F/60°F Airflow 250 CFM, 1 H ₂ O	6700	2.7	10.6	10.4	10.0	9.5	8.6	10.4
Outdoor 17°F/15°F Indoor 70°F/60°F Airflow 250 CFM, 1 H ₂ O	5600	2.4						
Heat pump cooling test conditions	BTU/H	EER	SEER					
Outdoor 95°F/75°F Indoor 80°F/67°F Airflow 250 CFM, 1 H ₂ O	11200	11.6	14.1					
Outdoor 82°F/65°F Indoor 80°F/67°F Airflow 250 CFM, 1 H ₂ O	11500	13.4	14.1					

SOUND PRESSURE LEVELS (SPL)

(Measured 3.28 ft (1 m) away)

Test conditions with compressor ON and fully ducted	SPL
100 CFM @ 0.2 H ₂ O	35 dB(A)
150 CFM @ 0.3 H ₂ O	37 dB(A)
180 CFM @ 0.4 H ₂ O	39 dB(A)
250 CFM @ 0.7 H ₂ O	43 dB(A)

CANADA AND USA CUSTOMER SUPPORT

WWW.MINOTAIR.COM

INFO@MINOTAIR.COM

TOLL FREE: 1.855.888.2292

HEAD OFFICE: 1.819.777.2454

Specifications PentaCare V12[®] Compact Air Treatment Unit

VENTILATION/AIR EXCHANGE MODE: ENERGY PERFORMANCE

CAN/CSA-C439-09 Standard, results tested and verified by Exova and certified by HVI	Sensible Recovery Efficiency (SRE) <i>"When all electricity is deducted"</i>	Adjusted Sensible Recovery Efficiency (ASRE) <i>"Mostly used by PHIUS"</i>	Apparent Sensible Effectiveness (ASE) <i>"A.K.A. the thermal efficiency"</i>
Certified + published online by HVI	YES	YES	No more published
Lab results from Exova Lab	YES	YES	YES

HEAT RECOVERY PERFORMANCE (fresh air from outside)

°F	°C	CFM	m ³ /h	%	%	%
32	0	100	170	116	119	178
32	0	248	421	87	94	112
-13	-25	100	170	72	74	98

CFM = Cubic Feet per Minute m³/h = Cubic meter per Hour

MOISTURE REMOVAL (Calculated using AHAM DH-1 Protocol)

Test conditions	Gallons per day	Pints per day	Liters per day
Outdoor 80°F/60% RH Indoor 80°F/60% RH Airflow @ 180 CFM (in Cooling)	14	112	53

Electrical Specifications

Electrical Specifications				Electronically Commutated Motor Fans [x2]			Fresh Air Range ASHRAE 62.2 & CSA F326 Compliant	Hermetic Rotary Compressor			Refrigerant
Tension	Phase/Hz	Circuit	Breaker	Power	FLA	Airflow Range		Power	RLA	LRA	
120 V	1/60	12.3 A	15 A	136 W max.	2 A	80-250 CFM ± 9%	20-180 CFM	725 W	6.6 A	39 A	R-410A
Coils Filters rating			High Efficiency Filter rating			Casing	Color	Round Ports [x4]			
MERV 8 (EN G4)			HEPA MERV 15 (EN F9)			100% Aluminium	Glossy White	ø 6-8 in (150-200 mm)			

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5-YEAR LIMITED WARRANTY
 Please refer to the User Guide for more detail.