

ComfortDisc™

Heating - Air Conditioning - HRV

**European Designed and Manufactured
Modular Small Duct High Velocity System**



**Delivering Conditioned Air for
Comfort, Efficiency and Economy**

ComfortDisc™

Heating - Air Conditioning - HRV

About ComfortDisc

ComfortDisc is an innovative heating, air conditioning and heat recovery system for residential, commercial and school buildings. ComfortDisc is an energy efficient small diameter duct distribution system that can provide heating, cooling, air filtration, fresh air, dehumidification, humidification and air purification. ComfortDisc eliminates the use of radiators, under floor heating, ductless split systems and fan coils.

Options

Using a combination of compact modules and accessories a complete indoor comfort and air quality system can be assembled. Modules available are supply fan, hot water, chilled water, heat pump, mixing box, heat recovery core and heat recovery exhaust fan. These can be assembled in a variety of configurations – horizontal, stacked horizontal or vertical.

Heat Sources

ComfortDisc can use a variety of heat sources including hot water from oil, gas or wood pellet boilers, ground source or air source heat pumps. In addition, heating and cooling can be provided by air to refrigerant (direct expansion DX) heat pumps or geothermal DX heat pumps. Cooling sources can be from chilled water, air source or geothermal heat pumps.

Heat Recovery (HRV)

The high efficiency heat recovery ventilation (HRV) core is made from 100% aluminium and offers ventilation rates up to 750 M3/Hr. It also has the ability to work with incoming air temperatures as low as -8C. The high pressure fans in the HRV fan module offer the ability to have long exhaust duct runs and multiple extract points. A carbon dioxide (CO2) sensor controls the building ventilation rate to maintain ventilation levels at their optimum level and minimize running costs.

Efficient Economical Control

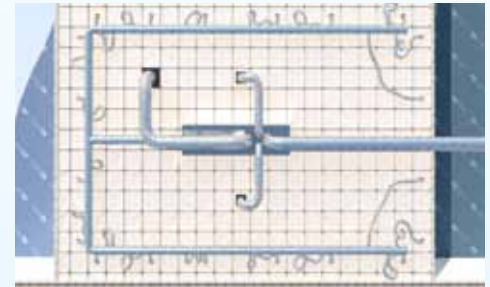
Control of the various modules is handled by a Programmable Logic Controller (PLC) with customized software. The PLC interfaces heating and cooling sources and can modulate their output to maintain a constant supply air temperature. Duct pressure is regulated by a sensor that maintains the pre-programmed duct static pressure in heat, cool or heat recovery mode. This further increases the energy efficiency of the ComfortDisc by keeping the duct pressure constant and regulating fan motor speed as zones open and close on multi zone installations.

Construction

All modules feature 1.2mm galvanized steel construction with 19mm closed cell foam for superior thermal insulation and sound isolation. All modules connect together with a high strength cam-lock mechanism and have resilient gaskets for a completely air tight seal. The supply fan module and heat recovery exhaust fan modules feature ebm-papst EC fan motors. This award winning motor technology is the ultimate in controllability, performance and energy efficiency.



Fresh air, heating and cooling is delivered through 125mm diameter ceiling outlets.



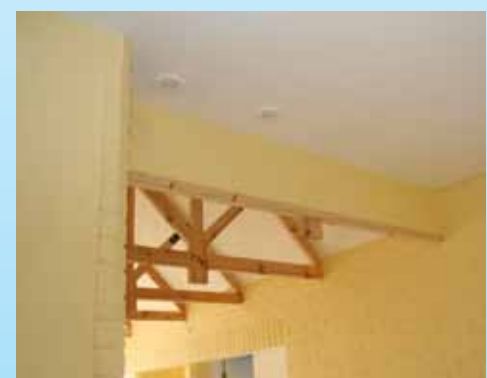
ComfortDisc above ceiling showing all ducting.



ComfortDisc above ceiling.



Fresh air, heating or cooling delivered without draughts.



ComfortDisc outlets in ceiling.

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Duct Distribution

The ComfortDisc air handling unit and coils combined with 300mm, 250mm, 200mm or 150mm main supply tubing (plenum) deliver heated, cooled and fresh air into the conditioned space via 110mm small flexible tubing terminating in a 125mm diameter outlet. It delivers a single column of air from each outlet located at the perimeter of the room. This ensures even air temperature with no draughts or complaints from the occupants.

How it works

A concentrated column of warmed or cooled air is delivered at “high velocity” out of the outlets via the duct distribution system. This column of air is similar to the concentrated column or jet of air flow you get from a hair dryer, but in case of ComfortDisc, without the noise!

The column of air delivered from the outlets has an effect on the room air. It causes the room air to be gently pulled towards the column exiting the outlet. This causes gentle and even mixing of room air from up to four meters away.

The air movement towards the exiting column of air from the outlets is so slow it is unnoticeable.

We recommend that the outlets are placed in the corners of a room or either side of a door or window, out of any traffic areas so the column of air is not blowing on anyone.

History

With over 20 years experience in heating, air conditioning and ventilation in North America and Europe, the designer EJ Fidgeon has combined the very best in European technology and components to bring ComfortDisc to the marketplace. In 2001 EJ Fidgeon was the first company to bring small duct high velocity systems (SDHV) into Europe.

ComfortDisc was engineered by EJ Fidgeon to eliminate the limitations of North American manufactured products used in the European market place by providing efficiency, reliability, controllability and installation flexibility.

The system is manufactured in Ireland at an ISO 9001:2008 and ISO 14001 facility. The production facility uses the latest in technology to produce the ComfortDisc modules. The ComfortDisc is CE certified and meets all applicable European standards for product safety and energy efficiency.

Further Information:

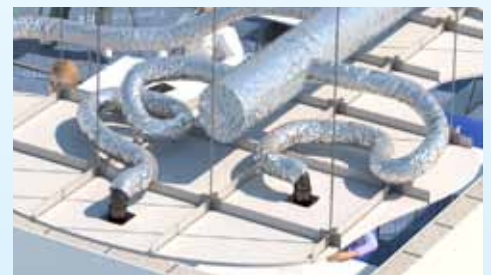
Visit www.comfortdisc.com to find your local distributor or contractor.



Complete ComfortDisc (6 modules) shown in horizontal configuration.



Comfort is delivered without draughts.

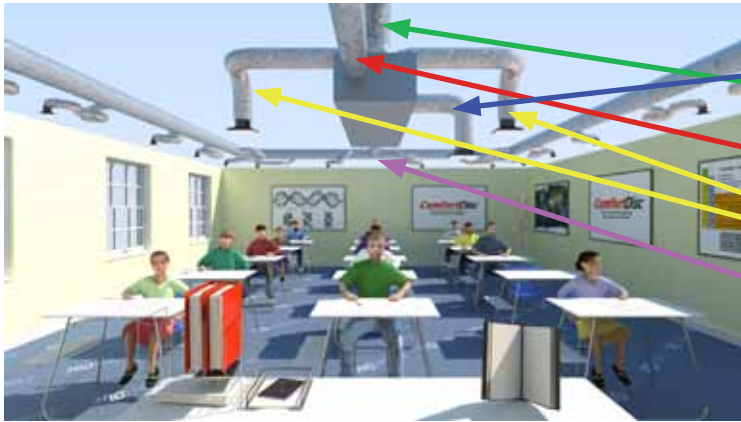


Flexible sound attenuated tubing delivers air to outlets.

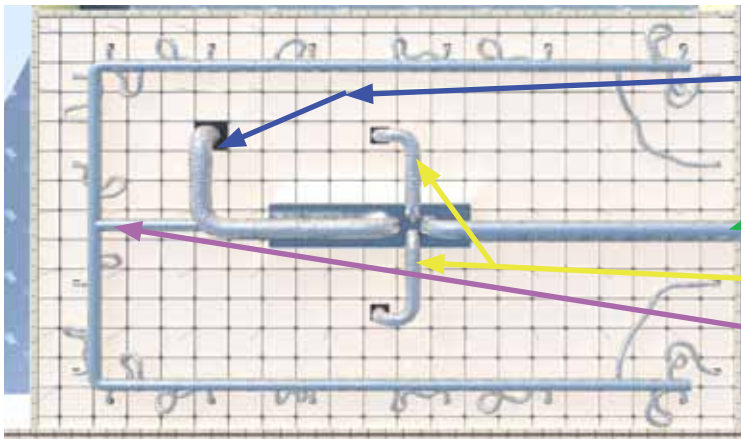


Air is delivered in a concentrated column causing the room air to mix evenly.

Sample Air Flow Layout Option



- Return air duct from room
- Fresh air supply from outside
- HRV exhaust air to outside
- Exhaust air to HRV from inside
- Main supply duct



- Return air duct from room
- Fresh air supply from outside
- HRV exhaust air to outside
- Exhaust air to HRV from inside
- Main supply duct

Configuration Options:

- Hot water heating
- Heat pump heating and cooling
- Chilled water cooling
- Heat Recovery Ventilation (HRV)
- Hot water heating + HRV
- Chilled water cooling plus HRV
- Heat pump heating and cooling + hot water heating
- Heat pump heating and cooling + hot water heating + HRV



FAN MODULE

- ebmpapst EC fan motor technology for optimal energy efficiency
- Dual side access module and multi position options
- Super quiet infinitely variable speed fan motor
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Programmable Logic Controller (PLC)
- Recycleable

Supply Fan Module **CD-ECF2000 & ECF2800**

Fan Model	Air Flow	Dimensions (mm)	Weight (KG)
CDECF2000	0 to 2000 M3/Hr	585 x 490 x 850	40
CDECF2800	0 to 2800 M3/Hr	585 x 490 x 850	40



HRV EC FAN MODULE

- ebmpapst EC fan motor technology for optimal energy efficiency
- Dual side access
- Super quiet infinitely variable speed fan motor
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Programmable Logic Controller (PLC)
- Recycleable
- 3 year warranty

Fan Model	Air Flow	Supply Duct Diameter
CDECFOXH2000	800 M3/Hr	250mm or 2 x 200mm



HOT WATER & CHILLED WATER MODULE

- High performance slide in hot water and chilled water coil
- Dual side access and multi position options
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Low pressure drop coils on air flow and water flow
- Recycleable

Hot Water Module **CD-HWCWMOD**

Hot/Chilled Water Coil	Capacity
CDHWCW2512	25KW @ 65C EWT, 12.5 KW @ 6C EWT



MIXING BOX MODULE

- 50mm heavy duty air filter
- Dual side access and multi position options
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Allows mixing of return and fresh air
- Recycleable

Mixing Box Module **CD-MIX2028**



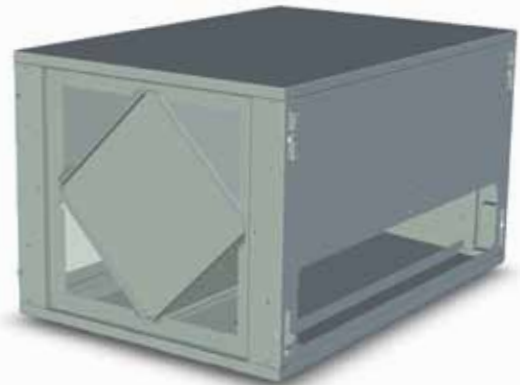


HEAT PUMP COIL MODULE

- High performance slide in hydrophilic coated heat pump coil
- Dual side access
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Low pressure drop coils specifically designed for inverter driven modulating capacity heat pumps
- Recycleable

Heat Pump Module CD-ACHPMOD

Coil Model	Capacity (Cooling/Heating)		
CDHP100	CDHP125	CDHP140	CDHP200
10KW/11KW	12.5KW/14KW	14KW/16KW	20KW/21KW



HRV CORE MODULE

- High efficiency aluminum core heat exchanger
- Dual side access
- Up to 800 M3/Hr supply air, Up to 800 M3/Hr exhaust air
- Up to 84% thermal efficiency
- 1.2mm galvanised steel construction
- Strong cam latch and heavy duty gasket provide air tight seal
- 19mm high performance insulation
- Recycleable

HRV Core Module CD-HRV750



CAREL

PLC CONTROLLER

- Carel PLC controller with custom ComfortDisc software
- Building Management Systems compatible
- Can interface with: BacNet™, LonWorks®, Modbus®, JCI's N2 Open®, Trend/Novar, Carel protocol on RS232 modem and TCP/IP Ethernet™ (FTP, HTTP, SNMP)
- Modulating capacity signal to control capacity of compatible inverter driven heat pumps
- Heat Pump, Chilled Water, Hot Water and HRV functions
- Wide ranges of sensors and inputs available
- 3 year warranty

PLC Models	Application
CDCONPXS	HW/CW/HP & ECF
CDCONP03	HW/CW/HP/ECF/ & HRVECF

ComfortDisc interfaces with most leading brands of heat pumps, including air to air and air to water



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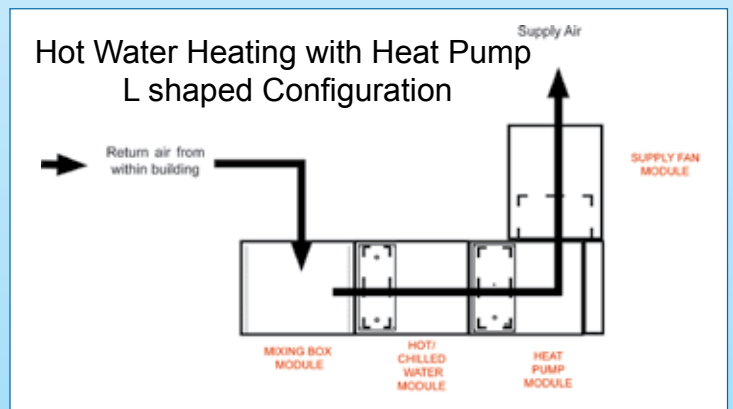
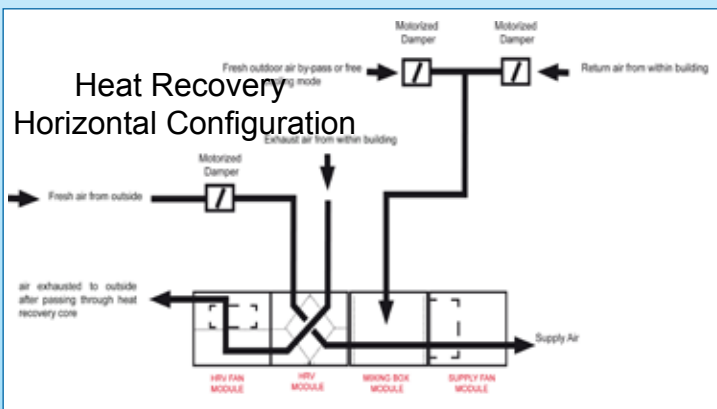
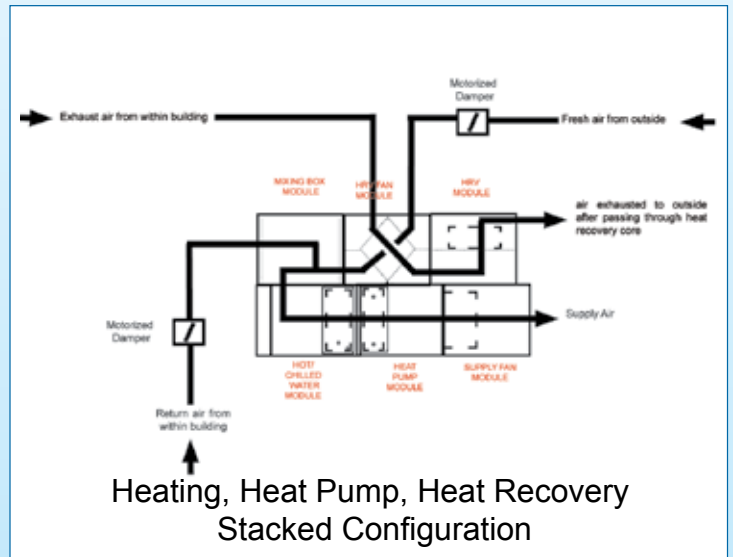
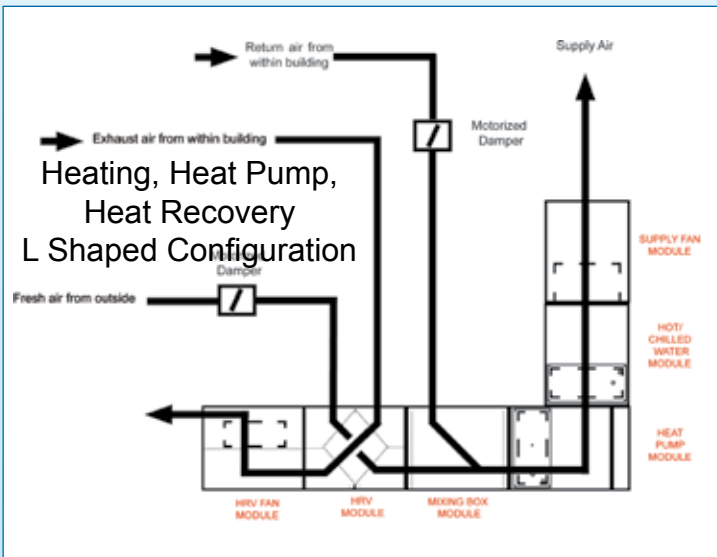
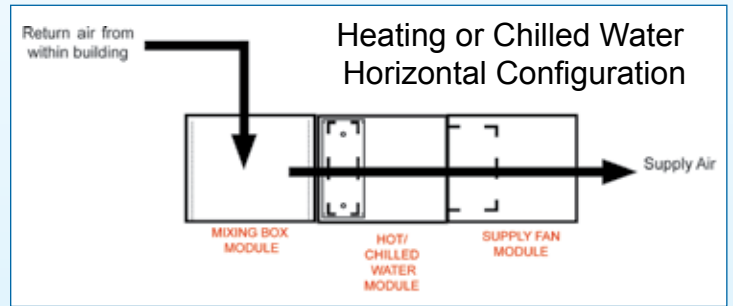
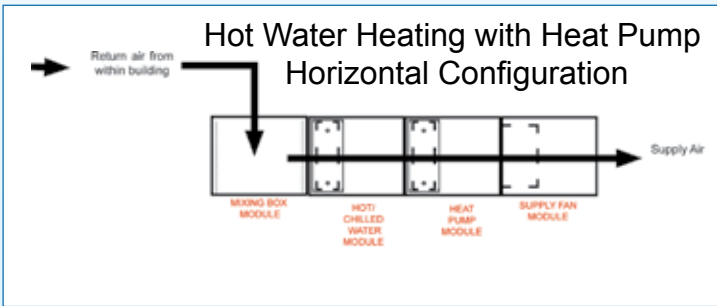
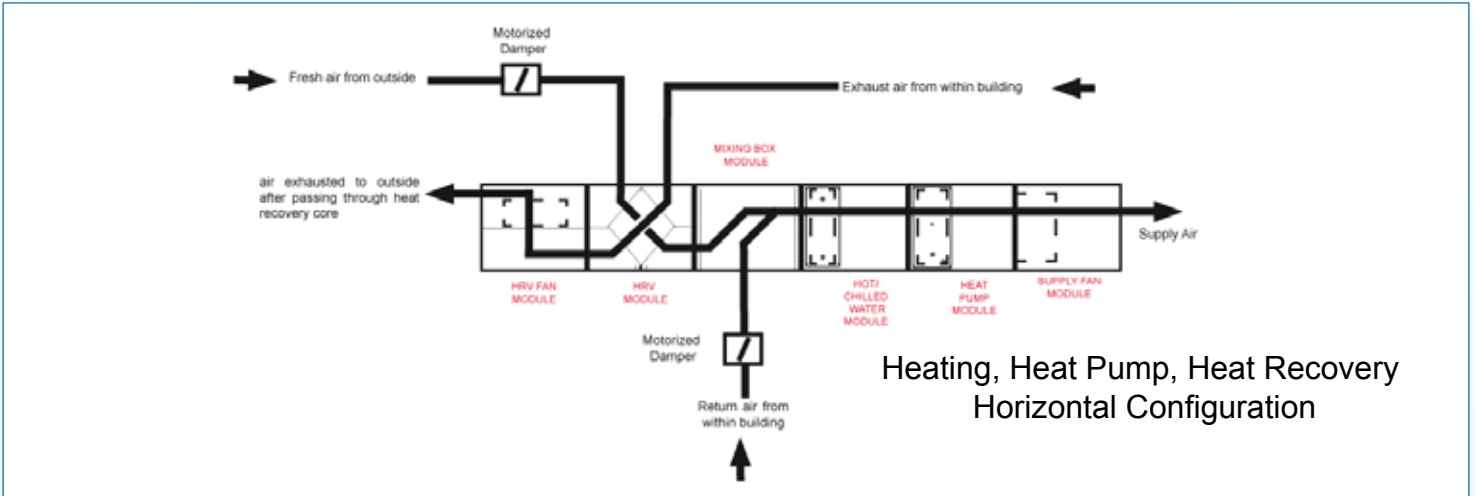
ISO 9001



ISO 14001



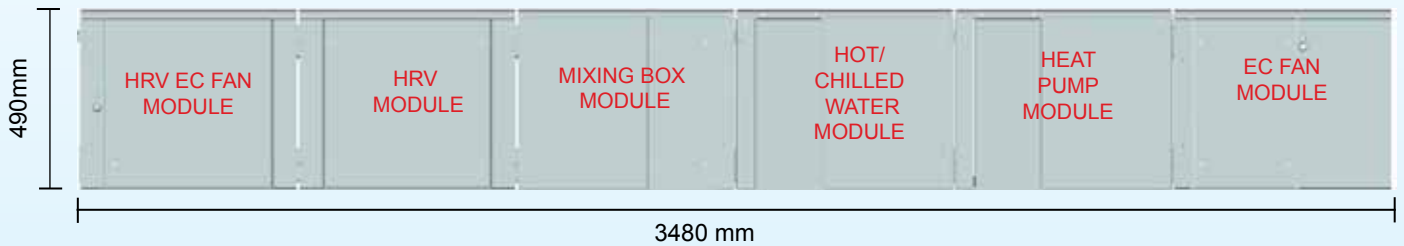
Configuration & Air Flow Options:



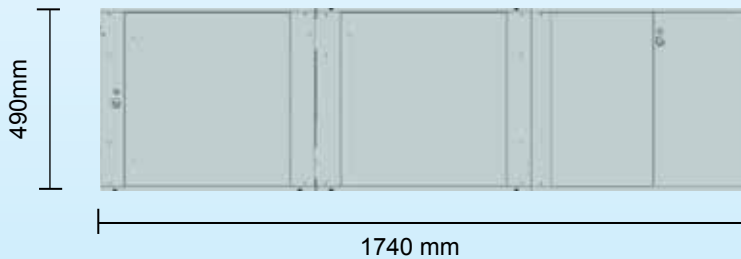
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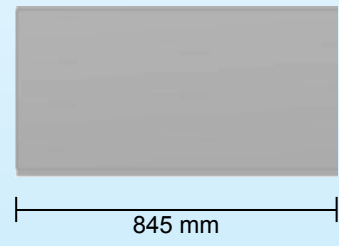
ComfortDisc Dimensions



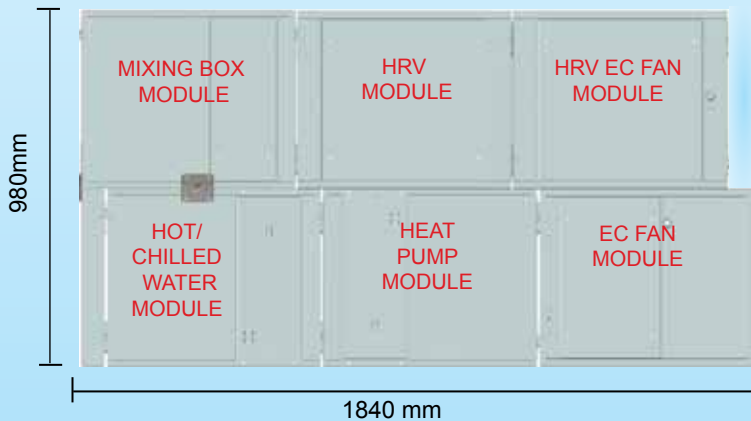
HRV, HOT WATER/CHILLED WATER, HEAT PUMP HORIZONTAL



HOT WATER OR HEAT PUMP



END VIEW



HRV, HOT WATER/CHILLED WATER & HEAT PUMP COMPACT HORIZONTAL

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