unilux
VFC

Vertical Stack Fan Coil with Integrated HRV/ERV

APARTMENTS | CONDOS | ASSISTED LIVING | HOTELS | RESORTS

PRODUCT SPECIFICATIONS INTEGRATED

The HRV or ERV option is available across the entire Unilux product line from 300 cfm to 1200 cfm and in a 2 pipe or 4 pipe configuration.

U.S. Patent No. 8939826

CDN Patent No. 2746405

Designed for Efficiency and Performance

Unilux VFC has developed a patented vertical stack fan coil system, which includes an integrated heat or energy recovery ventilation system (HRV or ERV).

Heat recovery ventilation (HRV) products have been used in residences for many years to introduce fresh air to homes and minimize energy loss. HRVs remove stale air from inside the home and bring fresh air into the living space. A heat transfer core uses inside air to heat or cool the outside air, most often transferring 60 to 70 percent of the energy to the fresh air. This results in less energy use and more rapid cooling and heating where the outside and inside temperatures are significantly different.

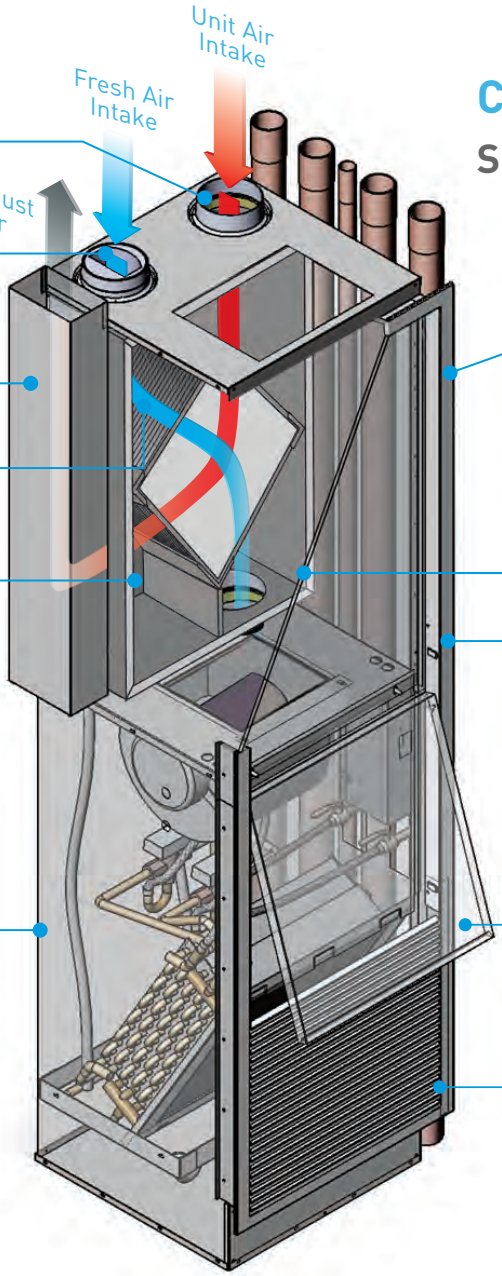
Vertical fan coils can be further upgraded to use an ERV core, which assists in transferring moisture between the exhaust and fresh air. This results in reduced cost for moisture control and added comfort inside the home.

Often in high-rise construction each unit will have a stand-alone HRV/ERV to exchange air, as well as a vertical stack fan coil product to provide heating and cooling. Unilux's integrated HRV/ERV vertical fan coil provides a complete solution for all HVAC requirements. The Unilux solution integrates with bathroom and other exhaust systems in the home to provide an all encompassing heating, cooling and ventilation solution. Unilux's patented design incorporates multiple dampers and temperature sensors to ensure the HRV/ERV core does not freeze up when outside temperatures are below freezing – a common issue with HRV/ERV products in areas with low temperatures.




Component Diagram

SERIES – HRV/ERV



Unit Air Intake (Connect to Bath Exhaust)

Fresh Air Intake Connection

Exhaust Air Connection

Thermostatically Controlled Dampers to Prevent Freeze Up of Core

Adjustable Speed ECM or PSC Fan on Exhaust and/or Supply (Constant CFM)

Conventional Unilux Vertical Stack 4 Pipe Fan Coil (See 4-Pipe and 2-Pipe Brochures for Details)

Unit Mounting Grille

HRV/ERV Core

Hinged & Removal Upper Access Panel

Hinged & Removable Access Panel

Access Panel Frame – Filter Mounted Behind Frame, Easy Access Grille

UNILUX CONTINUES TO BE A MARKET LEADER IN DEVELOPING EFFICIENT HEATING AND COOLING SOLUTIONS FOR HIGH RISE, MULTI UNIT APPLICATIONS

Unilux has been manufacturing vertical stack fan coil HVAC systems for over 40 years. Unilux has gained market leadership by designing and building the most reliable and efficient vertical fan coil products available in the marketplace. Vertical stack fan coils provide very efficient and effective heating, cooling and ventilation for high-rise applications.

Unilux VFC Integrated HRV/ERV – Specifications and Available Options

Cabinet
Galvanized steel construction, lined with 1" fibreglass insulation backed with aluminum protective coating. Duct diameter 5" (127 mm), drain connection 3/8" (10 mm).

Cores
Energy recovery core
High Latent Transfer Enthalpy
Heat recovery core
Polypropylene, washable core

HRV/ERV Motor/blower assembly configurations and options
Product can be specified with either one motor/blower assembly, or with 2 motor/blower assemblies. All blowers are single inlet centrifugal impeller types with forward curved blades.

Motors are available in either: 1) Permanent Split Capacitor (PSC) motors or 2) Electronically Commutated Modulation (ECM) motors. These motors are IP-44, shielded bearing, high efficiency types with internal thermal overload protection.
Motors meet CSA and UL approved.
Electrical Requirements – 115 vac, 60 hz, 155 watts

Anti Freeze
Unilux VFC has developed and patented (U.S. Patent No. 8939826, CDN Patent No. 2746405) the integrated design whereby high speed temperature sensors trigger a motorized spring return damper to isolate the core and introduce exhaust air to the unit. This ensures the core temperature remains above 32 degrees Fahrenheit (0 degrees Celsius) to prevent the core from freezing and rendering the hrv/erv inoperable.

Controls
PSC motors with zero crossing phase control.
ECM motors using pulse width modulation.
Motor speed is controlled using either manual push button (+/-) or optional auxiliary controls. Timer switches are available with 20-40-60 minute options.

Filters
2 washable foam filters.

HRV Performance

	Summer	Winter			
CFM	Effectiveness (cooling)	Effectiveness (heating)	Mean Effectiveness	PD Supply	PD Exhaust
40	74.7	75.5	75.1	0.1	0.04
60	69	68.7	68.85	0.15	0.05
80	64.6	62.6	63.6	0.2	0.07
100	61	59.9	60.45	0.29	0.09
120	58	58.2	58.1	0.45	0.11

ERV Performance

	Summer			Winter				
CFM	Sensible Eff. Cooling	Latent Eff. Cooling	Total Eff. (Cooling)	Sensible Eff. Heating	Latent Eff. Heating	Total Eff. (Heating)	Mean Sensible Eff.	PD Supply/Exhaust
40	72.5	52.8	60.3	74.1	63	70.3	73.3	0.09
60	68.5	44.1	53.4	70	57.4	65.7	69.25	0.13
80	65.1	37.1	48.1	66.4	52	61.5	65.75	0.18
100	62	33	44	63.3	47.4	57.9	62.65	0.23
120	59.3	29.4	40.8	60.5	43.5	54.7	59.9	0.28

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