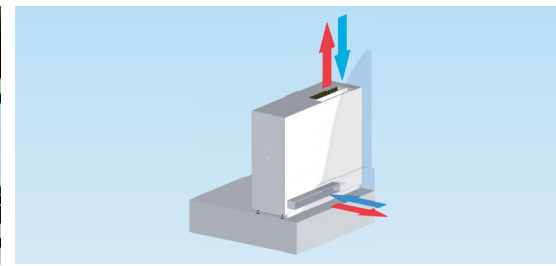




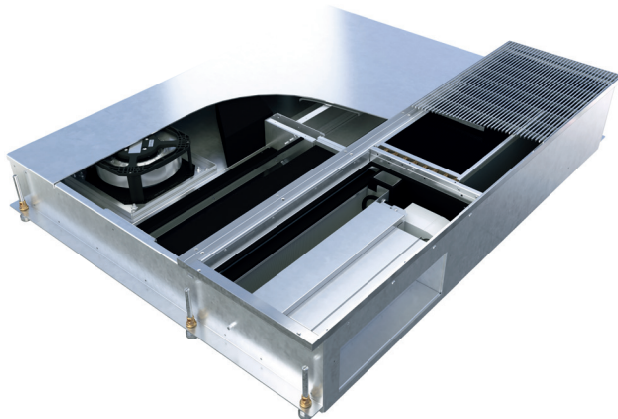
Time to breathe!

Decentralized ventilation unit *FVPpulse* System PulseVentilation



pulse
ventilation

Simply natural ventilation (supply and exhaust) using only one fan and one outside wall opening per unit.



- **Instationary (alternating) air flow:** Air conditioning with high ventilation effectiveness and thermal comfort by impulse ventilation.
- **Economical solution** thanks to low power consumption, highly efficient heat recovery and lower infrastructure investment.
- **Only one opening**, simple structural integration without airflow short circuiting.
- **High operational reliability** thanks to an innovative design and control concepts combined with minimal maintenance costs.
- **Flexible design integration**, two versions for installation, wall mount (-V) or in-floor (-B)

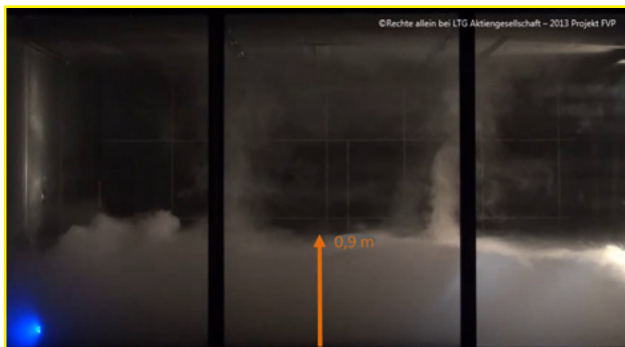
For air-conditioning of perimeter rooms directly via their outside wall, including highly efficient heat recovery, 12v DC power requirements and whisper quiet operation.

Function

Similar to the human respiratory system, the FVPpulse breathes outdoor 'fresh air' into the space and then reverses flow, breathing out exhaust air using the same single path. LTG uses an ingenious arrangement of air dampers within the FVP to switch the direction of the airflow while still allowing the single fan to run in one direction.

This 'respiratory system' for the space only needs one fan and one outside wall opening per unit. No short-circuiting of airflows occurs as ventilation and exhaust air is never 'breathed in and out' at the same time.

This transient mode of operation results in a highly inductive and pulsating flow to the space, which causes good mixing of ventilation air and room air, a rapid decrease in the temperature differential and airflow velocity leading, to high levels of comfort for the space occupants.



Visualization of an instationary air flow in a room in cooling mode, height of air stream approximately 3' at 14.5 °F below room temperature.

Characteristics

- **High-efficiency transient heat recovery**, up to 90 %.
- **Innovative ventilation concepts with built-in 'Connected Intelligence'** allows the unit to run independent of, or in unison with, the building BAS. **Some of the benefits include:**

Hybrid ventilation: Allows the occupier to open the windows in the summer instantly switching the unit to supply only mode, doubling the ventilation (filtered supply airflow rate) and increasing the cooling capacity without changing the room acoustics. In this mode, room exhaust now escapes via the open windows.

Master/Slave operation: A single FVP unit can control up to 63 other FVP or fan coil units. FVP's are linked in operation to overcome potential room pressurization issues.

Self-variation of cycle time: Monitors and corrects for wind over/under pressure on mid to high-rise buildings.

Nocturnal ventilation: Cooling down exposed slabs and structure at night to give some free radiant cooling/heat absorption during the day via a supply-and return-air-only mode.

True demand-based ventilation: Provided there is a method of detecting presence, i.e. CO₂ or PIR detectors etc., ventilation air is provided only when the space is occupied.

Product data

		FVP-V *	FVP-B **
Supply/exhaust air, heating, cooling		■	■
Condensing operation		■	■
Max. cooling capacity ¹⁾	[BTU/h]	≤ 4775 ¹⁾	≤ 4775 ¹⁾
Max. heating capacity ²⁾	[BTU/h]	≤ 8200 ²⁾	≤ 8700 ²⁾
Nominal supply air flow rate	[cfm]	70	70
Fan power consumption	[W]	25 ⁵⁾	18 ⁵⁾
Sound pressure level at V _{nom} (with 6 dB room absorption)	[dB(A)]	37 ⁵⁾	35 ⁵⁾
Dimensions [L x W x H]	[inch]	35.4x12.7x 30	45.3x38.6x 8.9 ³⁾ /9.2 ⁴⁾

* wall (sill) mounted 1) 43 °F chilled water inlet, 90 °F intake temp.

** in-floor mounted 2) 167 °F hot water inlet, 10 °F intake temp.

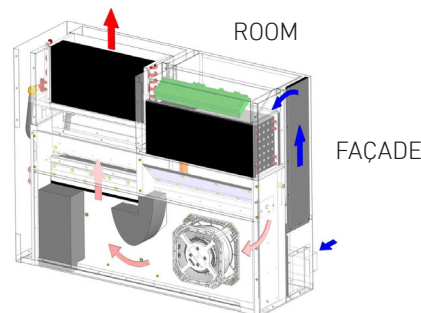
■ standard

3) Dimensions for stainless steel grille

4) Dimensions for aluminum grille

5) 120 cfm outside air (hybrid) resp. 60 cfm (pulse)

Example: breathing IN, winter situation (type FVPpulse-V)



The heat recovery unit is still warm from the outlet cycle. The Breathing IN cycle now starts: the outside air is drawn in through the facade opening and supply air filter.

1. The outside air flows through the heat recovery unit and is heated.
2. The air passes through the fan's inlet chamber (lower level).
3. The EC fan transports the air from the inlet chamber (lower level) into the pressure chamber (upper level)
4. The supply air passes through the silencer.
5. On the upper level, the supply air passes through the damper and into the supply air duct.
6. After leaving the supply air duct, the air is cooled or heated by the heat exchanger and is discharged out through a supply air grille.