

HueVen EBN

Product Proposal
HIMPEL, Air Ventilation Solutions

HRD-EP250IBN



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* This is a secret document containing development information of Himpel products.

* Exteriors and specifications of the product may be changed for product improvement purposes.



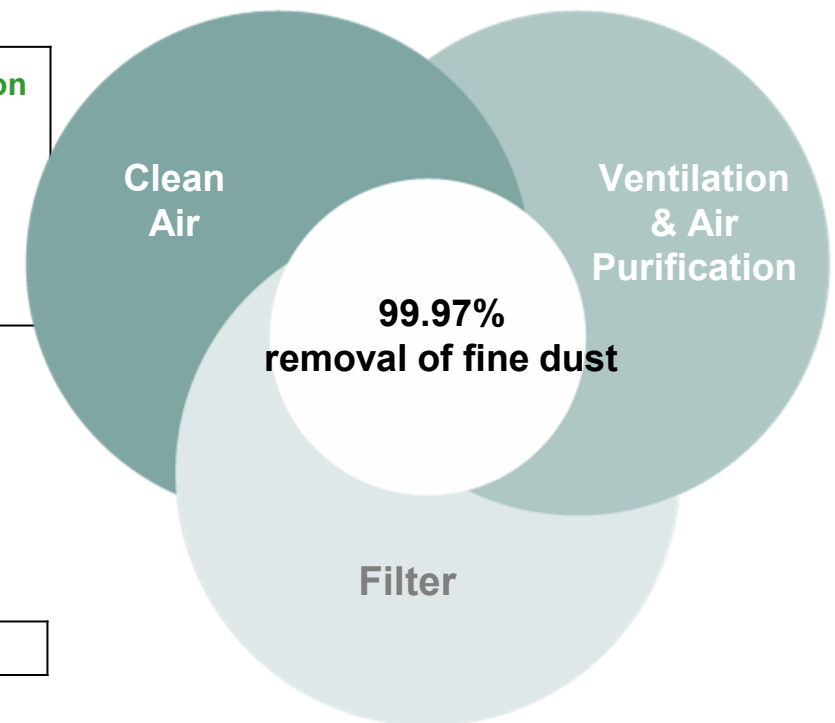
Ventilate with Windows Closed!

Ventilation & Air Purification

- Take in outdoor fresh air and discharge contaminated indoor air – **Ventilation**
- No need for air purifier – **Ventilation + air purification**
- Noise down, efficiency up – **eco-friendly EPP material**
- Backflow prevention with **electric dampers!**
- Convenient and smart with **IoT room controller** (optional)

Complete removal of particulate matters with pre-filter and HEPA filter

- Removal of harmful gases and virus with windows closed



Need to Improve Indoor Air Quality

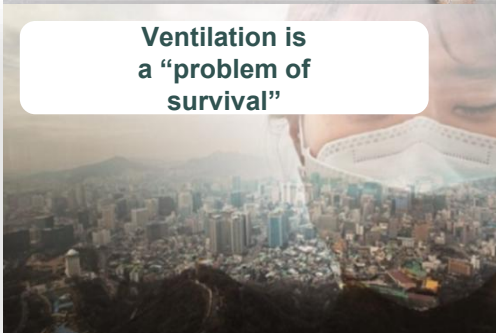
Issues

More Stay-at-Home
& Less Ventilation

Increase of contaminated air,
indoor activity

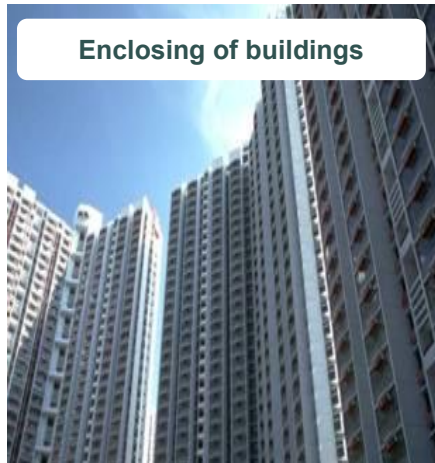


Ventilation is
a “problem of
survival”

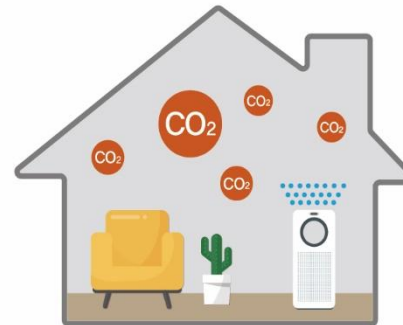


Modern Buildings & Issues

Enclosing of buildings



Poor removal of CO₂



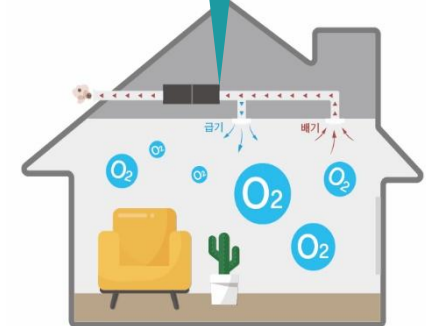
Generation of
harmful substances



- Inability to remove
contaminants (CO₂, Virus)
- Inability to supply/access
fresh air

Solution

HueVen EBN



Cleaner, Safer

Fresh air through ventilation system

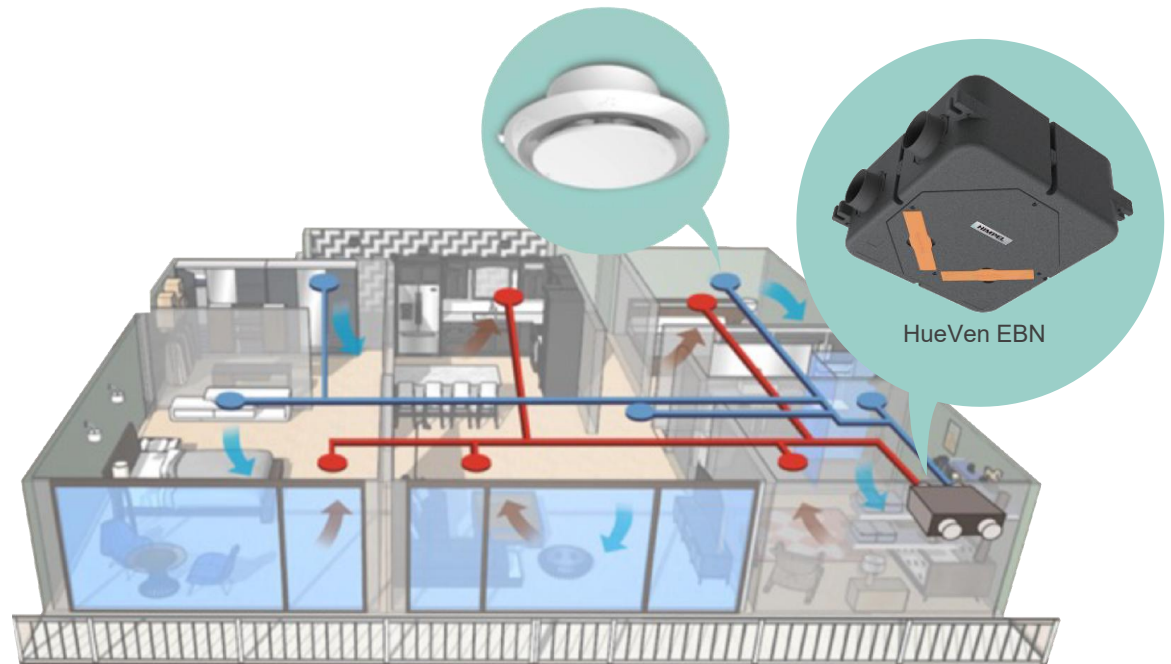
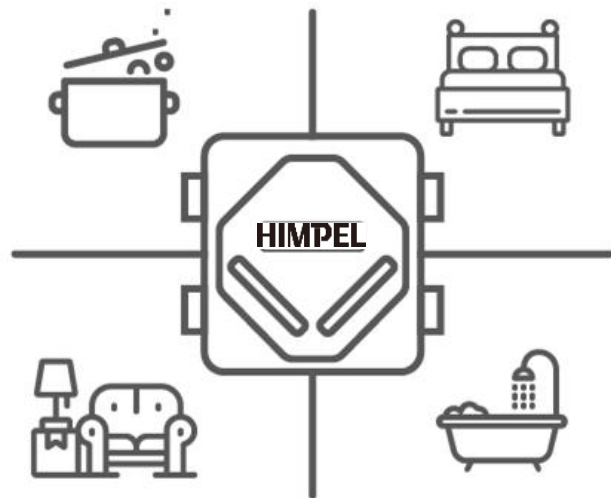
- ✓ **Covers entire house with a single unit**
- ✓ **EPP material for less condensation and noise**
- ✓ **4 modes (Ventilation/Bypass/Auto/Purification)**
- ✓ **5 sensors for real-time measurement of air quality**
- ✓ **IoT room controller (optional)**
- ✓ **Ventilation + air purification**
(99.9% removal of floating bacteria, 93.3% removal of floating virus)



Takes in Fresh Outdoor Air and Discharges Contaminated Indoor Air

Ventilation system ensuring clean spaces through diffusers installed on each room ceiling

Air care for entire space with a single unit



“High-performance insulation material, greater thermal performance”

Maximized Sound Absorption for Minimized Noise Levels



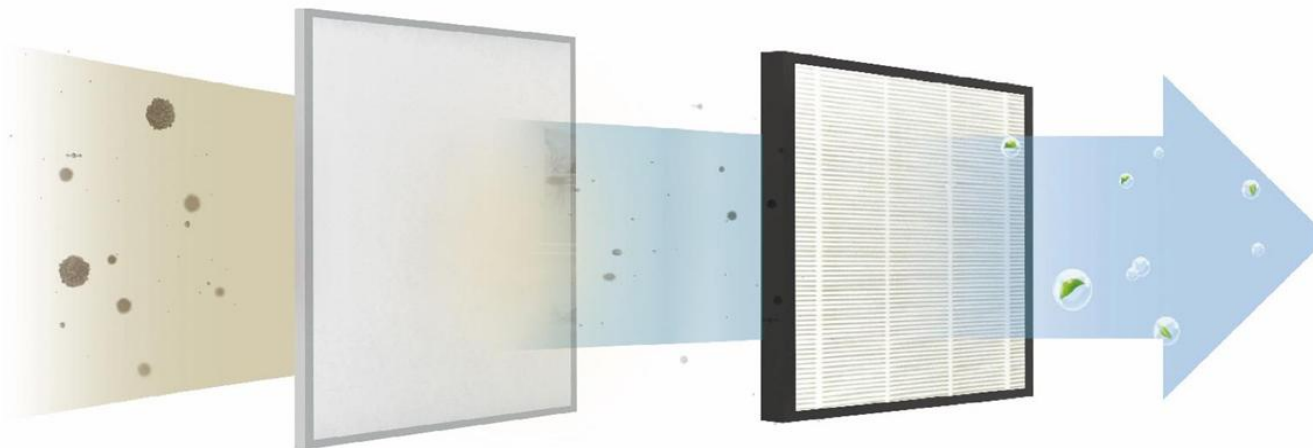
What is EPP [Expanded Poly-Propylene]?

Made through physical foaming of pure polypropylene (PP) into spherical particles without using chemical foaming agents and inducing internal chemical changes

- ✓ A high-performance insulator with **minimized condensation** achieved through with greater thermal performance
- ✓ Outstanding durability and strength ensure excellent sound absorption, **minimizing noise levels**
- ✓ **Eco-friendly material**, recyclable and harmless to humans

Excellent Removal of Particulate Matter (99.97% of 0.3 μm PM Removal)

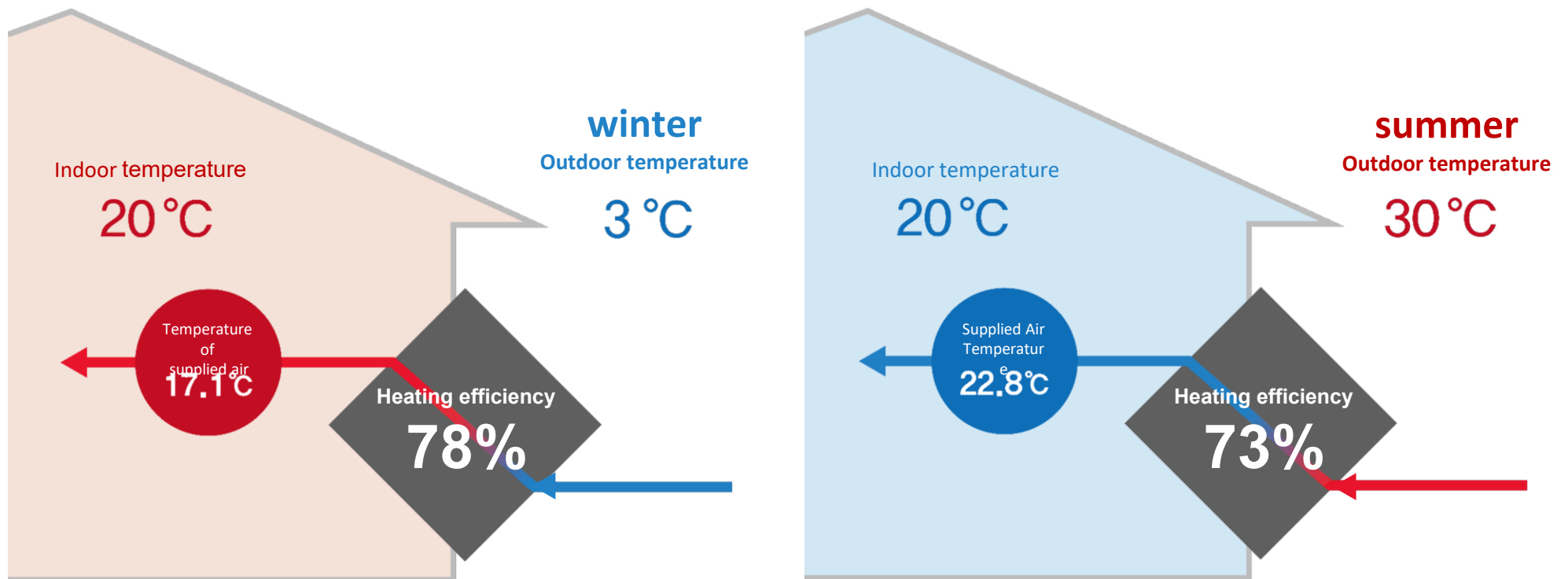
High-performance Filter System with Pre-filter and HEPA Filter



Stage 1	Stage 2
[Pre-filter] Base filter (5T) Removes large particles with size of 10 μm or bigger (90% or higher dust collection)	[HEPA Filter] H13 rated high-performance filter (40T) Removes particulate matter with size of 0.3 μm or bigger (99.97% dust collection)

“Less Cold during Winter, Less Hot during Summer!”

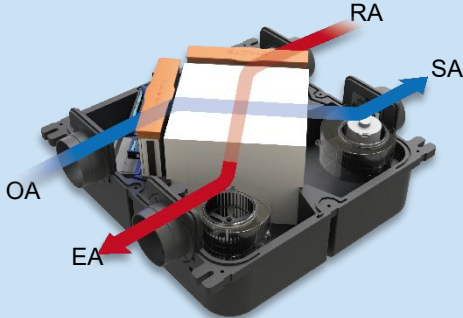
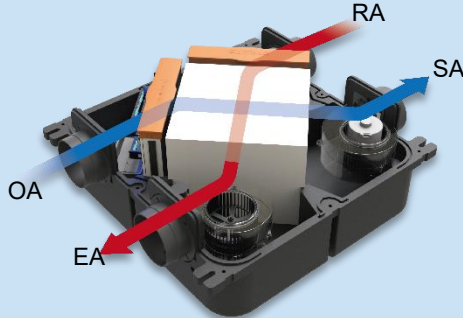
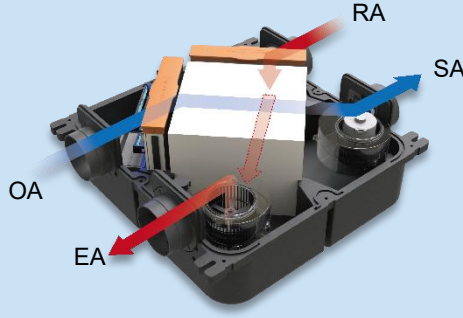
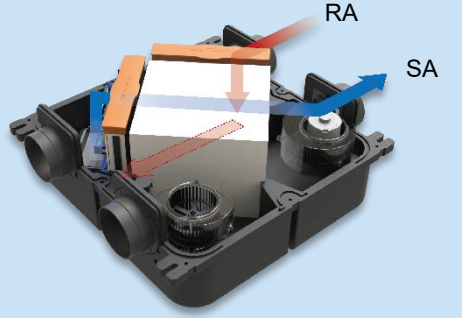
Incorporates high-efficiency energy exchange technology for maintaining comfortable levels of indoor temperature and humidity



* Figures based on EBN 100CMH / The above image is provided for easier understanding. Actual performance may vary depending on the environment and application.

Refreshing Indoor Air All Year Long!

With Operation Modes that Adjust to Changing Indoor/Outdoor Environments

Ventilation Mode	Auto Mode	Bypass Mode	Air Purification Mode
			
✓ Minimizes energy loss through heat exchange - Maintains suitable indoor temperature and humidity while replacing contaminated indoor air with fresh outdoor air - Recollection of heat through heat exchanger element	✓ Automatic indoor air quality control using sensors that monitor indoor air quality - Automatically adjusts operation based on levels of indoor carbon dioxide (CO₂) and fine particulate matter - Recollection of heat through heat exchanger element	✓ Delivering natural cooling effect indoors during seasonal changes - Discharges contaminated air and takes in fresh outdoor air without heat exchange during spring and autumn, when indoor and outdoor temperatures are similar	✓ Refreshing indoor air through purification mode - On days with high levels of particulate matter in the outdoor environment, blocks off contaminated outdoor air and circulates indoor air

“Easy Filter Replacement and Maintenance”



Maintenance of Filter and Heat Exchanger Element

Good
Normal
Bad
Very bad
4-stages CO2 monitoring

- ✓ Notification is displayed on the controller when filter cleaning or replacement is required.
- ✓ Filter case can be removed easily, allowing easy replacement of the filter.

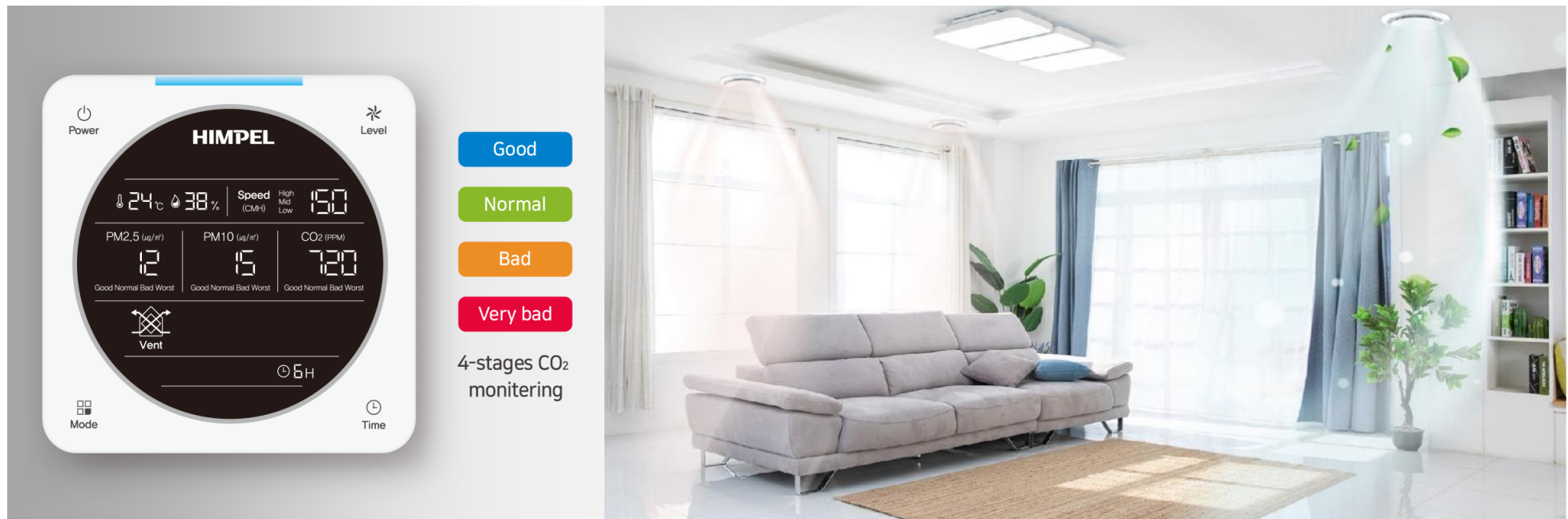
Filter Cleaning & Replacement Cycle

Classification	Standard
Cleaning of filter & heat exchanger element	2,000 hours of operation (approx. 5 months with 12 hour/day operation)
Filter replacement	4,000 hours of operation (approx. 10 months with 12 hour/day operation)
Replacement of heat exchanger element	2,0000 hours of operation (approx. 49 months with 12 hour/day operation)

Replacement and cleaning cycles may vary depending on the operation environment and maintenance method.

PM 2.5, PM10, CO₂, Temperature, Humidity

5 Sensors to Monitor Air Quality in Real-time



Function	Information Display
- Power ON/OFF 4 Operation Modes (Ventilation/Auto/Purification/Bypass) 3-level Air Volume Control	- Mode, air volume, reservation setting - Cleaning and replacement of filter & heat exchanger element - Indoor Air Quality (4-level display depending on CO₂, particulate matter, fine particulate matter)

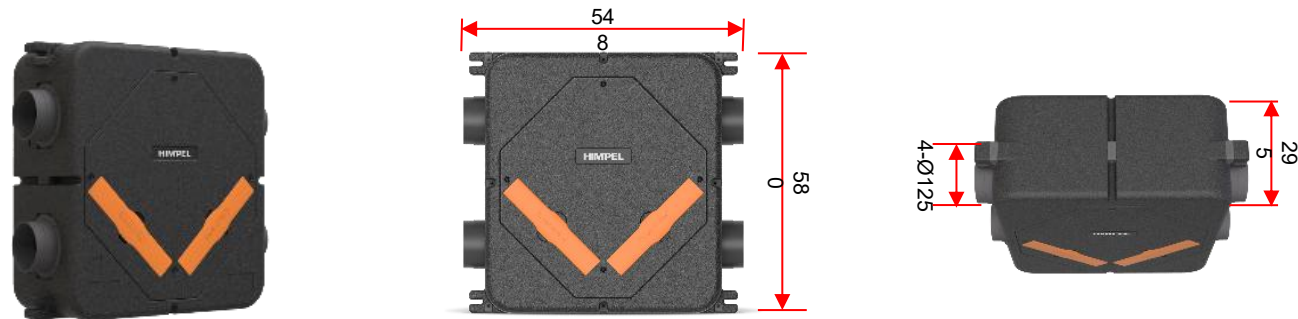
Automatic Operation Based on Levels of Indoor CO₂ and PM

Automatic air volume setting based on indoor CO₂ and fine particulate matter levels

Item	Good	Normal	Bad	Worst
CO ₂	700 ▼	701~1000	1001~1500	1501 ▲
Fine PM 2.5	15 ▼	16~35	36~75	76 ▲

* Included sensors vary according to the controller. Standard specification without sensors repeats 20-minute operation in 'Lv1' and 40-minute stops.

HIMPEL Ventilation System – HueVen EBN



Model	HRD-EP100IBN	HRD-EP150IBN	HRD-EP200IBN	HRD-EP250IBSN
Size (mm)	680(W) X 620(D) X 295(H)			
Ventilation Mode	Lv3 / Lv2 / Lv1			
Air Volume (CMH)	110 / 100 / 70	160 / 150 / 110	220 / 200 / 150	270 / 250 / 150
Power Consumption (W)	33 / 30 / 23	51 / 47 / 32	101 / 98 / 47	110 / 103 / 47
Noise (dB)	50dB↓			
Energy Exchange Efficiency (%)	Heating 78 / Cooling 73	Heating 77/ Cooling 67	Heating 78 / Cooling 73	Heating 72 / Cooling 58
Filters	Pre + HEPA			
Weight (kg)	9			
Installation	Ceiling Installation Type, Power : 1Ø X 220 ~ 240V / 50Hz, 60Hz			
Options	Air Purification, Sterilization, IoT Room Controller			

EU Declaration of Conformity

We

Company name: HIMPEL Co., Ltd.
Postal address: 183-1, Annyoung-dong, Hwasung-si, Gyeonggi-do, Korea
Telephone number: +82-31-424-8403
E-mail address: Youngki Kim (thomas@himpel.co.kr)

declare that the DoC is issued our sole responsibility and belongs to the following product:

Apparatus model/Product : Energy Recovery Ventilator
Type : HRD-EP250IBN
Multi List : HRD-EP100IBN, HRD-EP150IBN, HRD-EP200IBN

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:
EMC Directive 2014/30/EU

The following harmonisation standards and technical specifications have been applied:

Title:	Date of standard
EN IEC 55014-1	2021
EN IEC 55014-2	2021 Category II
EN IEC 61000-3-2	2019/A1:2021
EN 61000-3-3	2013/A2:2021

Additional information:

Signed for and behalf of:

Senior manager

Apr. 17, 2024

Place and date of issue

Youngki Kim

Name, Signature

Kim

EU Declaration of Conformity

Manufacturer: HIMPEL Co., Ltd.
Address: 183-1, Annyoung-dong, Hwasung-si, Gyeonggi-do, Korea



We declare our sole responsibility that the product

Product: Energy Recovery Ventilator

Model Number(s): HRD-EP250IBN, HRD-EP200IBN, HRD-EP150IBN, HRD-EP100IBN

to which this declaration relates is in conformity with the following standards and therefore bears CE marking:

EN 60335-2-80:2003 + A1:2004 + A2:2009 used in conjunction with EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017 + A1:2019 + A14:2019 + A2:2019
household and similar electrical appliances – Safety
Part 2-80: Particular requirements for fans

Following the provisions of the applicable directives

Low Voltage Directive 2014/35/EU

amended by the CE Marking Directive 93/68/EEC

Name: Youngki Kim

Title: Senior Manager

Authorized person: Date: April 17, 2024

Signature

Kim

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