

Propane air-to-water heat pump with scroll inverter

With natural refrigerant R290

iMEX-N

R290

Range :

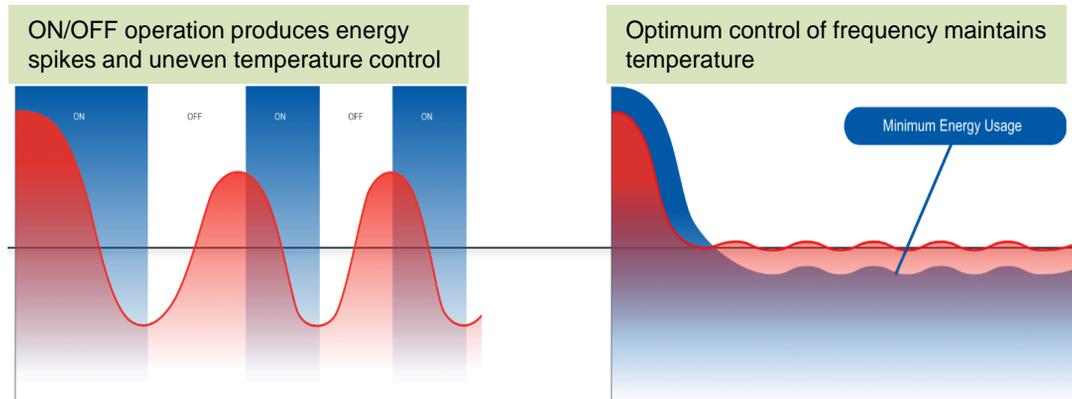
- 8 – 30 kW (first release)

- Up to 70 kW (second release Q3 2024)



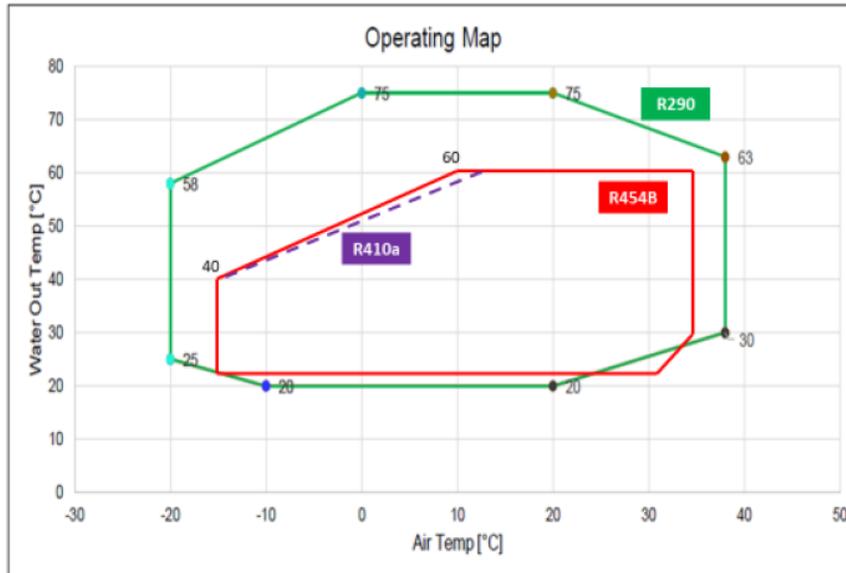
Why propane and inverter driven compressor(s)?

- Propane R290 design answers to following market trends: phase-down of fluorinated refrigerants, sustainability/decarbonization efforts, and rising energy costs
- “Inverter driven” and “natural refrigerant” technology as primary heating and cooling method
 - *Inverter drives on fan(s) and the compressor*



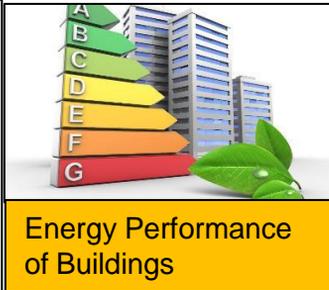
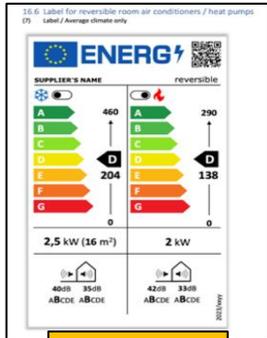
All-electric heat pumps are the most popular technology for decarbonizing heating and cooling. Inverter drive improves energy efficiency + Comfort

Operating map – refrigerant comparison



EU level

National level



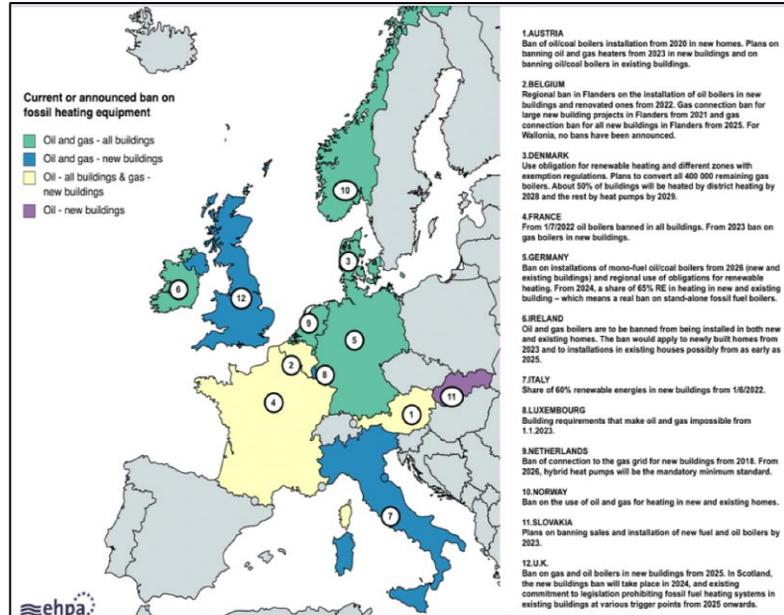
Ecodesign

Stricter F-Gases Regulation

Strasbourg, 5.4.2022
COM(2022) 150 final
2022/0099 (COD)

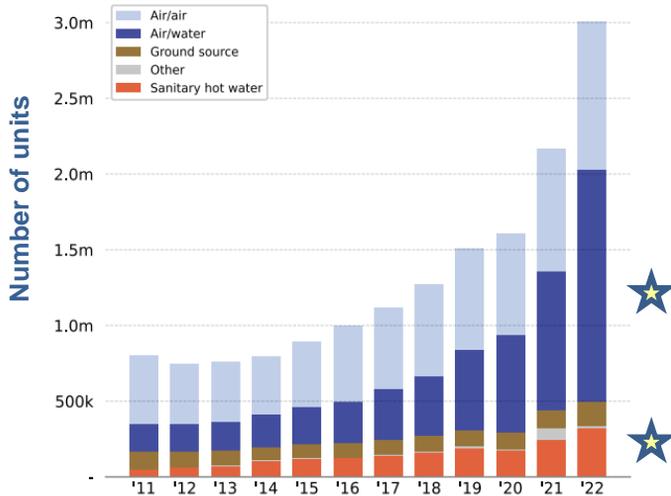
Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014



Increasing number of EU/national authorities force both residential and light commercial customers towards ultra-low GWP (high temp) heat pumps instead of gas boilers

EHPA data – Market Size Europe



- 87% of European market volume was sold in only ten countries.
- Five largest European heat pump markets in 2022:
 - France: 620,000 units
 - Italy: 514,000 units
 - Germany: 275,000 units
 - Sweden: 215,000 units
 - Poland: 208,000 units
- Expected annual market growth: ~30% YoY

European Heat Pump Market and Statistics Report 2023

★ = potential playground

Ten Countries Represent 87% of Total Europe (FY 2022)
“We Are In The Heat Pump Decade”

Propane heat pump design, its features and its benefits

IMEX-N targets residential and light commercial needs of space heating, cooling and DHW production all year round. It is the perfect replacement for gas boilers as well.

NEW



Heating Capacity (kW)
30/35° C - 7° C - RH 87%



L (mm)	W	H
1253	547	1066

L (mm)	W	H
1253	547	1365

L (mm)	W	H
1887	748	1816

L (mm)	W	H
1887	748	1816

One unique unit for heating, cooling, and DHW production

iMEX-N Highlights



High efficiency

Full inverter technology (on compressor and fan) for achieving very high efficiency in all working conditions



Heating optimized

Heat pump operates down to -20°C outdoor air. Providing hot water of

75°C at 0°C air

60°C at -15°C air



Quiet operation

Optimized for low noise emissions in every condition. Full load 62 dB(A)*.

** 8 kW capacity*



Certified performance

All models will be Eurovent certified



Packaged solution

Plug & play unit, thanks to the integrated hydronic module and available options



Easy installation and maintenance

Improved accessibility, practicality and flexibility.

Propane HP design, its features and its benefits (models 002 and 004)

Protection grill

Optional protective grille, robust and effective

Hermetically sealed refrigerant circuit

avoids the risk of refrigerant leakage

VSD scroll compressor

Highly efficient and low-noise inverter scroll compressor, optimized for R290

Electronic expansion valve

Brazed plate heat exchanger

Efficient and compact

Water/refrigerant separator

This separator is an insurance that separates refrigerant from the water flow in case of heat exchanger failure.



Remote display

4,3" Touch screen, with user friendly interface

Source-side heat exchanger

Coils are copper pipes and aluminum fins, sized to guarantee the best performance in all working conditions, also during defrost.

Continuos fan speed control

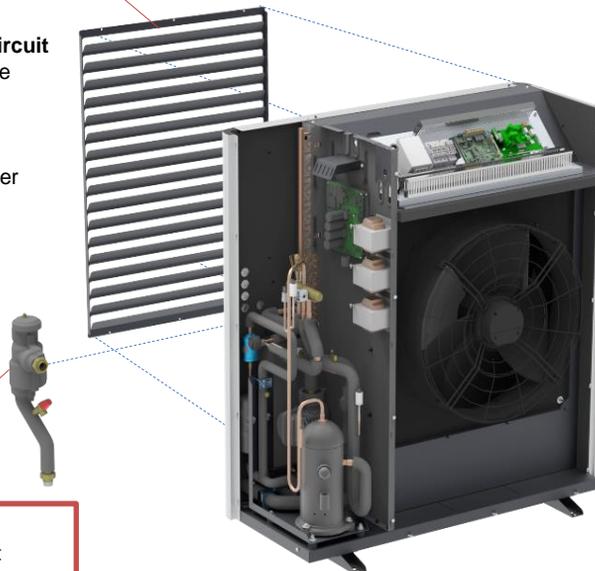
All units are equipped with EC fan technology, for high efficiency and low-noise emissions

Removable panels

Great accessibility to internal components for service operations

Integrated pump

High efficiency integrated hydraulic pump



Propane HP design, its features and its benefits (models 006 and 008)

Sealed electrical box

The core parts are protected within a sealed and ventilated metallic box

On-board display

4,3" Touch screen, with user friendly interface

Safety relief valves

On both high and low pressure sides

Improved natural ventilation

Ventilation grills in the panels and basement

Safety equipment

The refrigeration circuit compartment is equipped with a leak detector and a ventilation fan, Atex certified



Main function for all models

Heating

Cooling

DHW management (expansion required)

Scheduled operation

Smart grid ready

Integration with different sources (EI. Heaters)

Low noise operation

Dynamic control of the water supply temperature

Preliminary Performances

OAT +35° C

Model	Pc	SEER on
002	6,2	4,4
004	10,7	4,6
006	16,5	4,8
008	22,3	4,8

12/7°C

OAT +7° C / RH 87%

Av. ηs
174

Model	Ph	COP	SCOP LT / ηs
002	8,7	4,2	4,4 / 173
004	14,4	4,4	4,4 / 172
006	21,5	4,4	4,5 / 177
008	29,3	4,4	4,5 / 175

30/35°C

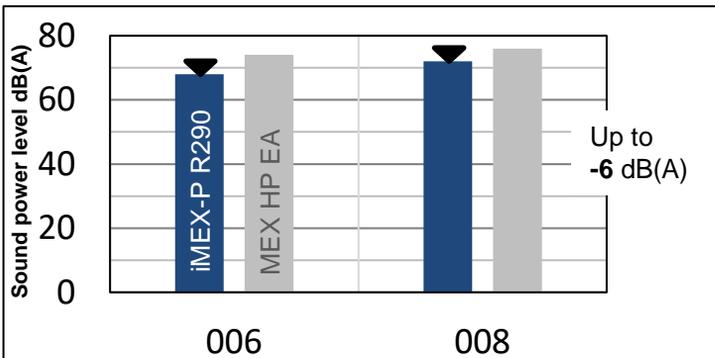
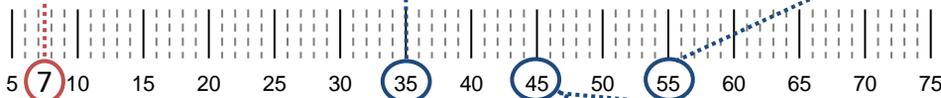
OAT +7° C / RH 87%

Av. ηs
142

Model	Ph	COP	SCOP MT / ηs
002	8,1	3,0	3,5 / 138,5
004	13,3	3,2	3,7 / 143,7
006	20,0	3,1	3,7 / 143,9
008	27,5	3,1	3,6 / 142,5

47/55°C

Leaving water temperature



OAT -5° C / RH 80%

Model	Ph	COP
002	5,6	2,5
004	8,9	2,7
006	13,7	2,5
008	17,8	2,5

40/45°C

OAT +7° C / RH 87%

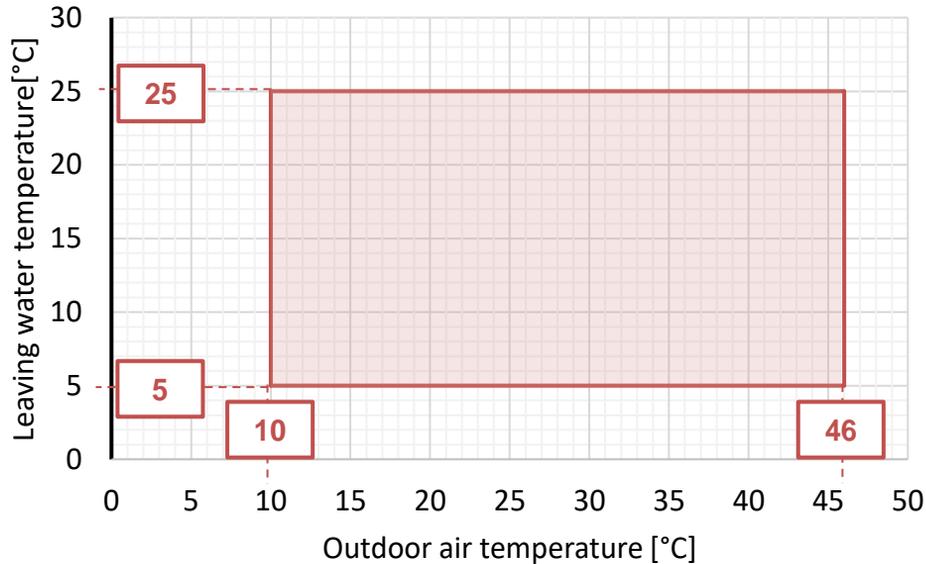
Model	Ph	COP
002	8,4	3,5
004	13,8	3,8
006	20,8	3,7
008	28,4	3,7

40/45°C

**High efficiency in all conditions.
Compliant with Italian incentives
(Conto Termico)**

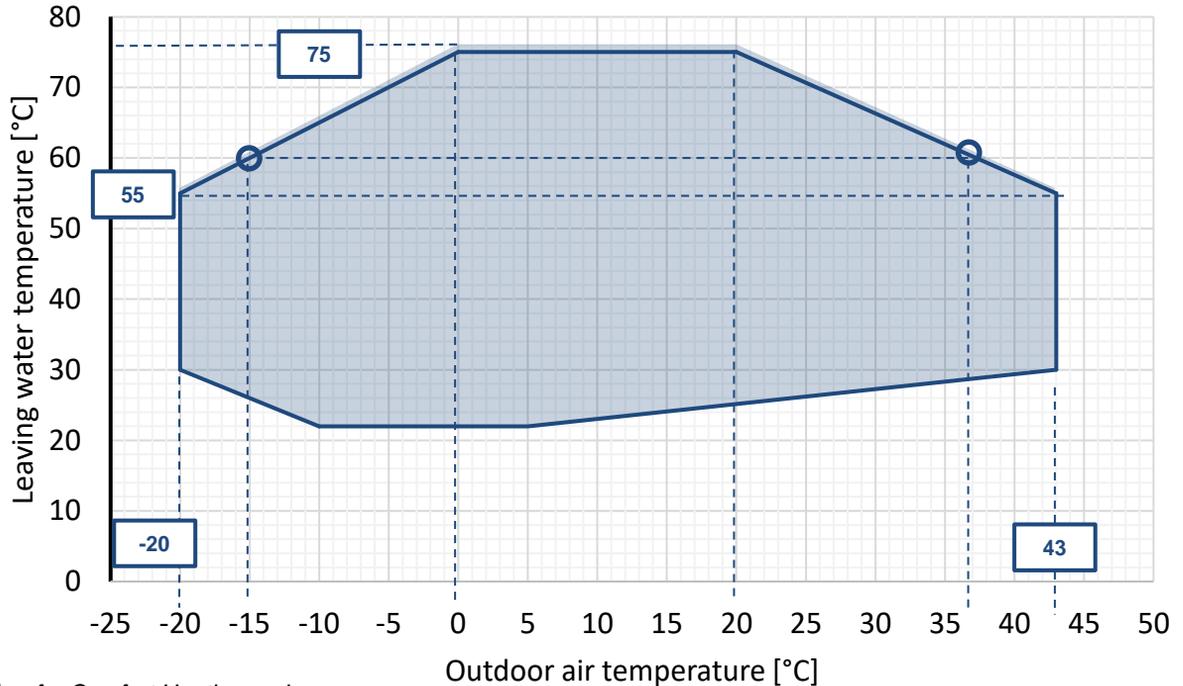
Preliminary Operating Maps

Operating map in cooling mode



Optimal operation with high outdoor air temperature

Operating map in heating mode



Ideal solution for Comfort Heating and Domestic Hot Water:

60° Chot water down to -15° C outdoor air !

Note: >60° C allows killing Legionella Bacteria

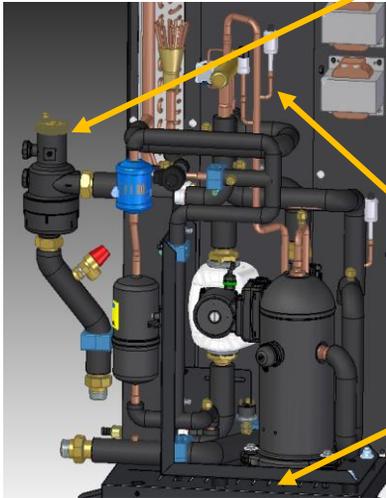
Strong Heating Operating Map ! Opening access to Domestic Hot Water market and for replacing gas boilers in older light commercial buildings.

Safety approach

002 – 004 models (8-14 kW heating)

CEI EN 60079 – 10 – 1: 2016
IEC 60335 – 2 – 40:2022

Hermetically sealed circuit:
No additional safety requirements



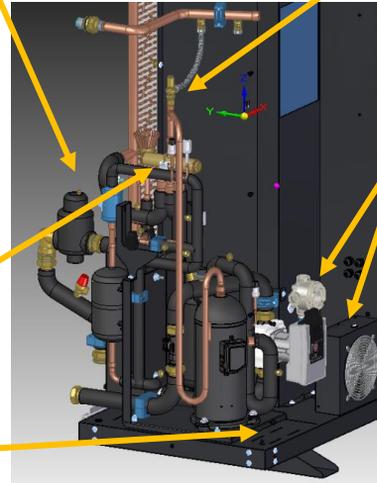
Safety deaerator on water circuit to remove refrigerant in case of leakage

Pressure safety switch and Pressure transducer soldered

Holes in the basement to promote a natural ventilation

006 – 008 models (21-29 kW heating)

CEI EN 60079 – 10 – 1: 2016
CEI EN 378:2021



Safety Valve

ATEX certified Leak Sensor and ATEX 'Washing' fan



Preliminary list prices are available upon request!

Contact our Sales Department to receive preliminary quotes on **iMEX-N with R290**, air-to-water heat pump with thermal power from **8 kW to 30 kW!**

**THANK YOU FOR YOUR
KIND ATTENTION!**