clausius

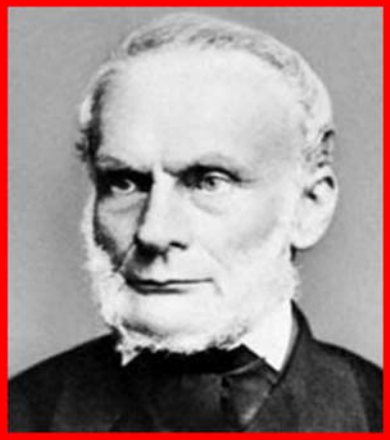
DOMESTIC RANGE

HIGH POWER

COP 5.01

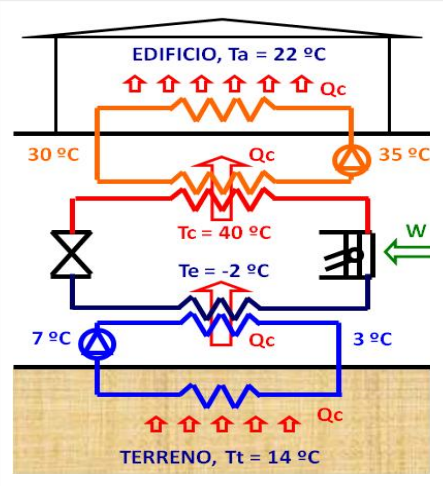
AIT Austria

New Generation of Ground Source Heat Pumps

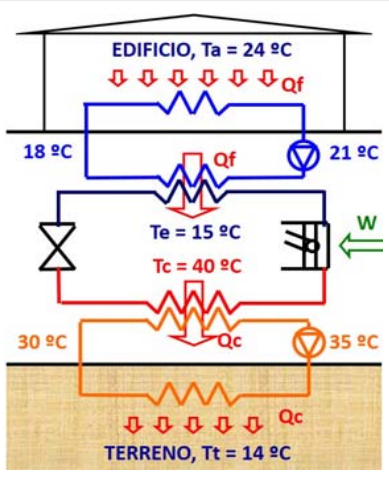


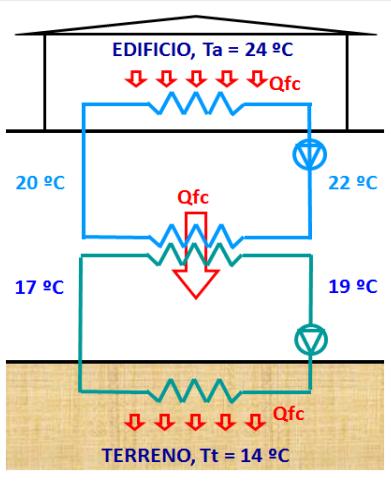
Rudolf CLAUSIUS (1822-1888). German physicist who enunciated the 2nd Law of Thermodinamics applied to Heat Pumps and Refrigeration Systems. Considered as one of the first ecologists, soon in 1885 predicted "*...the future of humanity depends on being able to feed our industries and machines with the only contest of renewable energy...*".

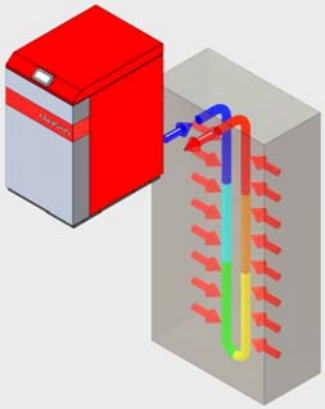
GROUND SOURCE HEAT PUMPS. THE FUTURE OF RENEWABLE ENERGIES



Geothermal energy is the thermal energy available in the ground that can be extracted as heat. If the temperature level of this energy is less than 30 °C, **Ground Source Heat Pumps** (GSHPs) can be used to extract ground heat for space heating and domestic hot water (DHW) production. Moreover, GSHPs can also be used for active and passive cooling using the ground as sink.
The geothermal energy is renewable, as recognized explicitly by the EU Directive 2009/28 / EC.

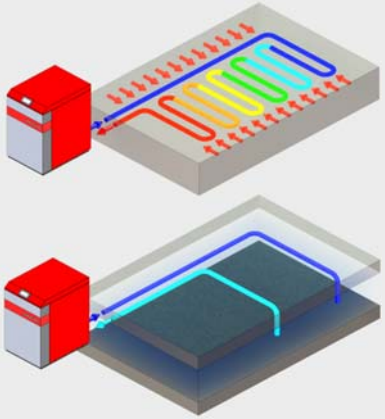






The extraction of ground energy using heat pumps requires a collector system. Collector systems commonly used to extract heat from the ground are vertical borehole collectors, horizontal ground collectors and groundwater systems.

Heating and cooling systems with GSHPs consist of the ground heat collector system, the heat pump and the heat distribution system inside the building. Distribution systems commonly used are underfloor heating and radiant surfaces, fancoil units or low temperature radiators.



ADVANTAGES OF HEATING AND COOLING SYSTEMS WITH GROUND SOURCE HEAT PUMPS

- **Integral HVAC and DHW,** allowing the production of heating, cooling, domestic hot water and even pool heating with a single installation.
- **User friendliness,** as they are fully automated systems and controlled with simple thermostats.
- **Clean and safe,** as they do not require any fuel and do not generate flames or smoke, they do not need storage tanks or exhaust gases ducts.
- **Reliability,** requiring minimum maintenance and providing a long life with a simple, proven and well known technology.
- **Energy efficiency far superior to traditional heating systems** which provides **significant cost savings.**

DOMESTIC RANGE

clausius DOMESTIC RANGE. classic and elite CONFIGURATIONS

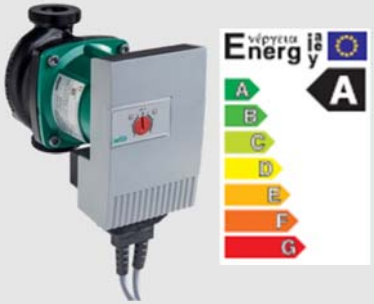
COP 5.01 AIT Austria

THE HIGHEST COP IN THE MARKET for GSHPs with inverter technology (Certified by the Austrian Institute of Tecnology, in accordance with standard EN14511).

COPELAND INVERTER TECHNOLOGY AND SCROLL COMPRESSORS with inverter heat recovery system for a better efficiency and reliability.

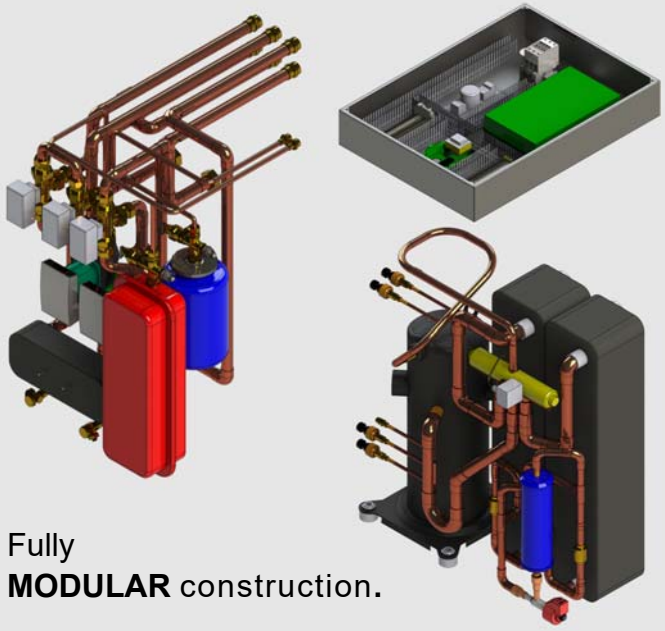
R410A

R410A REFRIGERANT, maximum efficiency and low environmental impact.
ALFA LAVAL ASYMMETRIC PLATE HEAT EXCHANGERS, the most efficient technology currently available.



CAREL ELECTRONIC EXPANSION VALVE for precise control of refrigerant flow.

WILO HIGH EFFICIENCY VARIABLE SPEED PUMPS (Class A).



Fully **MODULAR** construction.

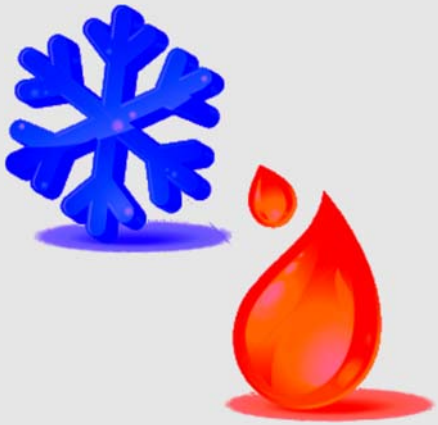
ACCESIBILITY. New opening system with hinged upper section (patented system).

clausius DOMESTIC RANGE. classic and elite CONFIGURATIONS

NEW

NEW DHW PRODUCTION SYSTEM UP TO 85 ºC without electrical heaters (patented system).

NEW



HEATING, DHW, PASSIVE AND ACTIVE COOLING, integrated in the GSHP. **CONTROL WITH PASSIVE COOLING PRIORITY**.

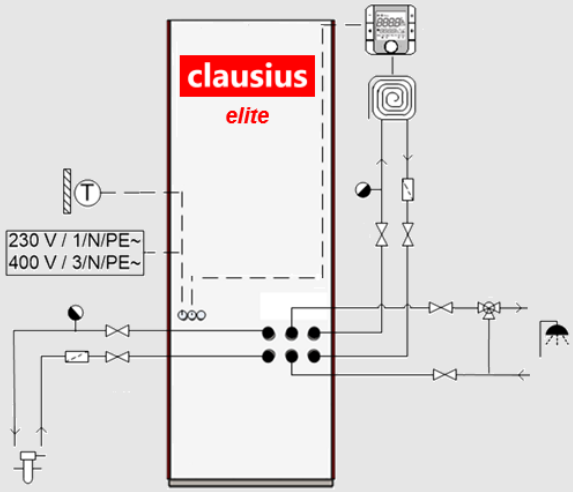
NEW

MINIMUM SOUND LEVEL. New sound - proofing system with a specific sound insulation box.

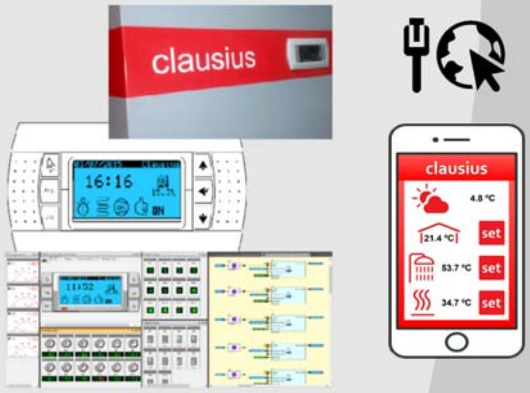
ALL IN ONE

PLUG & PLAY

ALL-IN-ONE and **PLUG & PLAY** design. Incorporation of circulation pumps, expansion vessels and safety and drain valves.



EASY INSTALLATION. No buffer tanks. Reduced time and assembly costs.



NEW CONTROL STRATEGIES, which provide efficient and safe installations.

MANAGEMENT AND DISPLAY BY INTERNET. Remote access, easy maintenance and sevice.

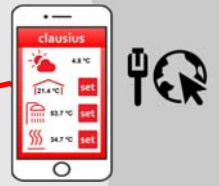
DOMESTIC RANGE

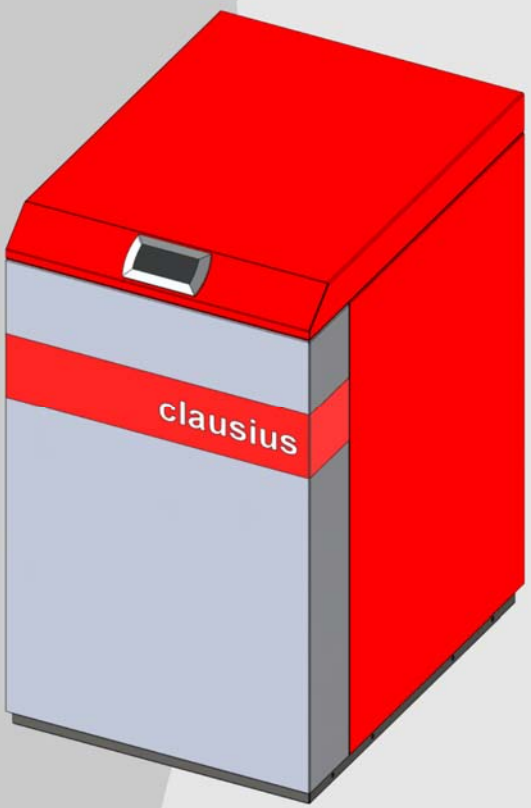
DOMESTIC RANGE

clausius DOMESTIC RANGE. classic CONFIGURATION

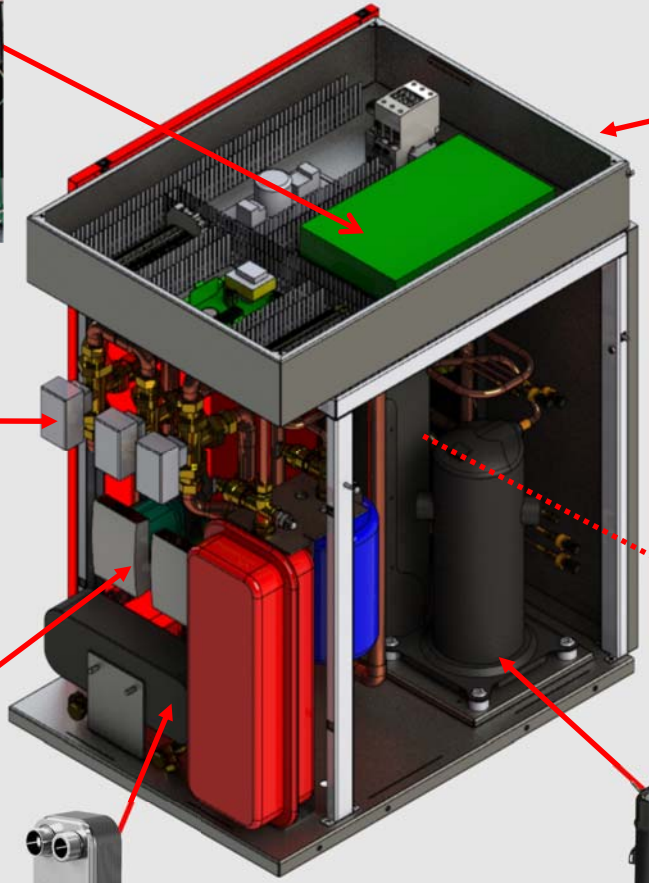
COPELAND
Inverter technology

Internet connection





HONEYWELL
Three-way valves



CAREL
Electronic expansion valve

WILO
High efficiency variable speed pumps (Class A)

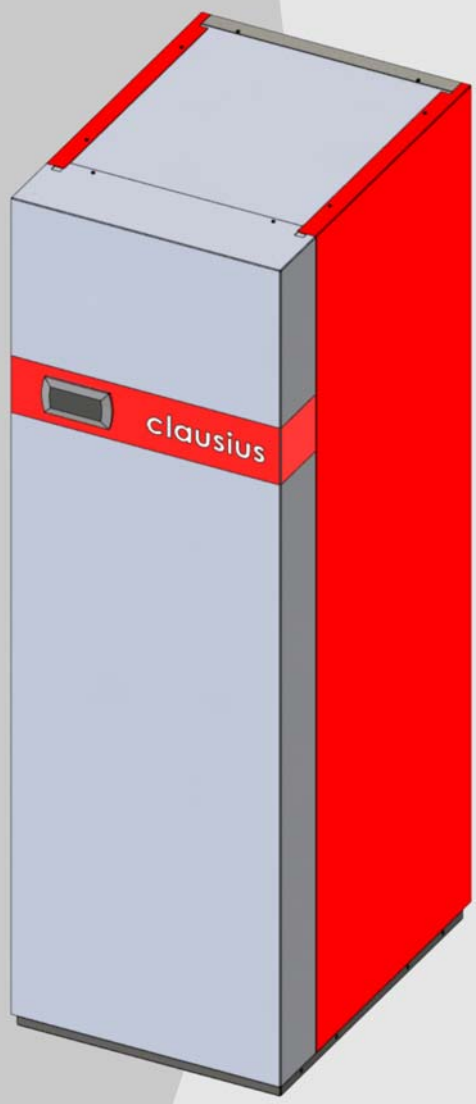
ALFA LAVAL
Asymmetric heat exchangers

COPELAND
Scroll compressor

Copeland Scroll · ALFA LAVAL · CAREL · wilo · Danfoss · Honeywell

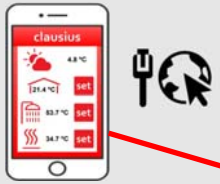
clausius

DOMESTIC RANGE. elite CONFIGURATION



COPELAND
Inverter technology

Internet connection



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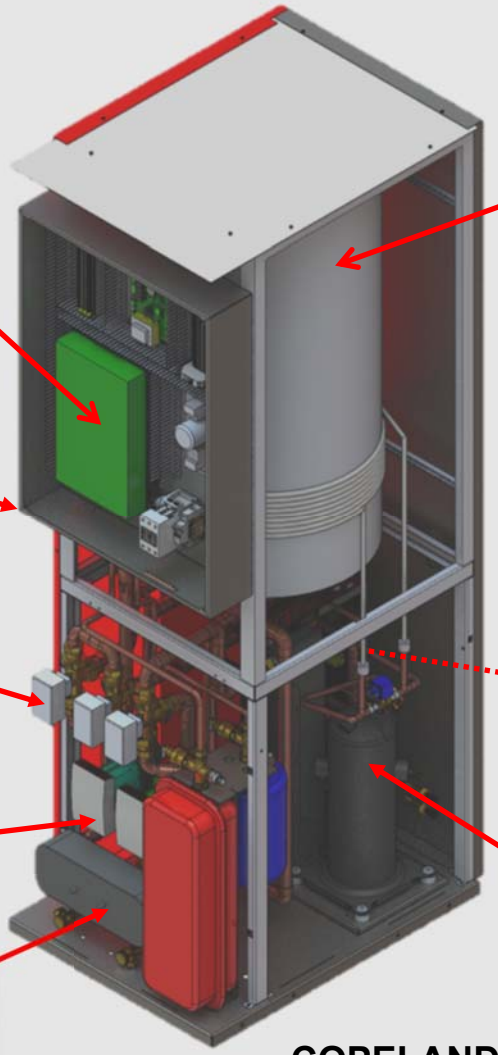
High efficiency variable speed pumps (Class A)

ALFA LAVAL
Asymmetric heat exchangers



DHW up to 85 ºC
200 l tank
Stainless steel (AISI 316 L)

CAREL
Electronic expansion valve

COPELAND
Scroll compressor

clausius

Copeland Scroll · ALFA LAVAL · CAREL · wilo · Danfoss · Honeywell

DOMESTIC RANGE

DOMESTIC RANGE

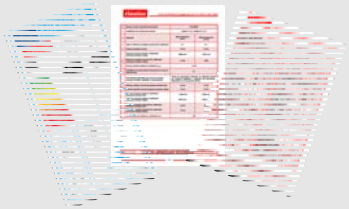
clausius

DOMESTIC RANGE. classic and elite CONFIGURATIONS

TECHNICAL SPECIFICATIONS

		H 3-15 (classic / elite)	HC 3-15 (classic / elite)	H 5-25 (classic / elite)	HC 5-25 (classic / elite)
Applications	Heating and DHW	X	X	X	X
	Passive cooling		X		X
	Active cooling		X		X
Power (kW)	Heating power[1]	3 - 15	3 - 15	5 - 25	5 - 25
	Cooling power[2]		4 - 16.5		7 - 30
	Electric power[1]	0.8 - 3.3	0.8 - 3.3	1.3 - 5.6	1.3 - 5.6
Electrical power supply	230 V 1/N/PE~	X	X	X	X
	400 V 3/N/PE~			X	X
Performance	COP[1]	4.61*	4.61*	5.01*	5.01*
	EER[2]		6.8		6.8
Components	Refrigeration unit	RU-H 3-15	RU-HC 3-15	RU-H 5-25	RU-HC 5-25
	Hydraulic unit	HU-H	HU-HC	HU-H	HU-HC
	DHW Tank	External / Integrated (200 l)	External / Integrated (200 l)	External / Integrated (200 l)	External / Integrated (200 l)
Refrigerant	Type	R410A			
	Load (kg)	1.5 / 1.75	1.5 / 1.75	1.8 / 2.1	1.8 / 2.1
	Maximum preassure (bar)	42			
Sound level (dB)		42			
Weight (kg)		163 / 243	174 / 254	168 / 248	179 / 259
Dimmensions (mm)	High x Width x Depth	1020 x 600 x 800 / 1920 x 600 x 800			

[1] In accordance with standard EN14511 under conditions 0/ -3 °C and 30/35 °C; [2] In accordance with standard EN14511 under conditions 7/12 °C and 30/35 °C; * Certified by the Austrian Institute of Technology (AIT) in Austria.



Energy labeling, product fiches and technical documentation in accordance with the Delegated Regulation (EU) Nº 811/2013

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clausius HIGH POWER. strong CONFIGURATION

NEW

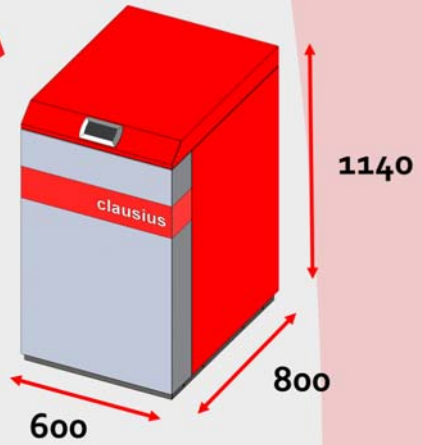
INVERTER
7-50 kW
12-75 kW

INVERTER with the **HIGHEST REGULATION POWER RANGE** in the market. Possibility of cascading up to 6 units.

NEW

FIRST BRAND in the market using the new range of **COPELAND HIGH POWER COMPRESSORS AND INVERTERS**.

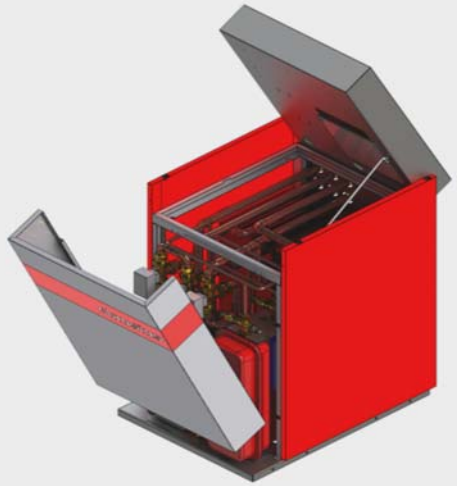
NEW



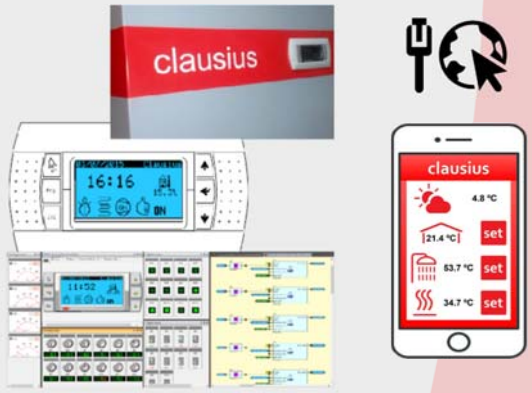
HIGH POWER IN A MINIMUN SPACE. Up to 75 kW in a case of 600 mm x 800 mm x 1140 mm (Wide x Long x High).

R410A

R410A REFRIGERANT, maximum efficiency and low environmental impact.
NEW ALFA LAVAL ASYMMETRIC PLATE HEAT EXCHANGERS.



ACCESIBILITY. New opening system with hinged upper section (patented system).



NEW CONTROL STRATEGIES, which provide efficient and safe installations.
MANAGEMENT AND DISPLAY BY INTERNET. Remote access, easy maintenance and service.

HIGH POWER

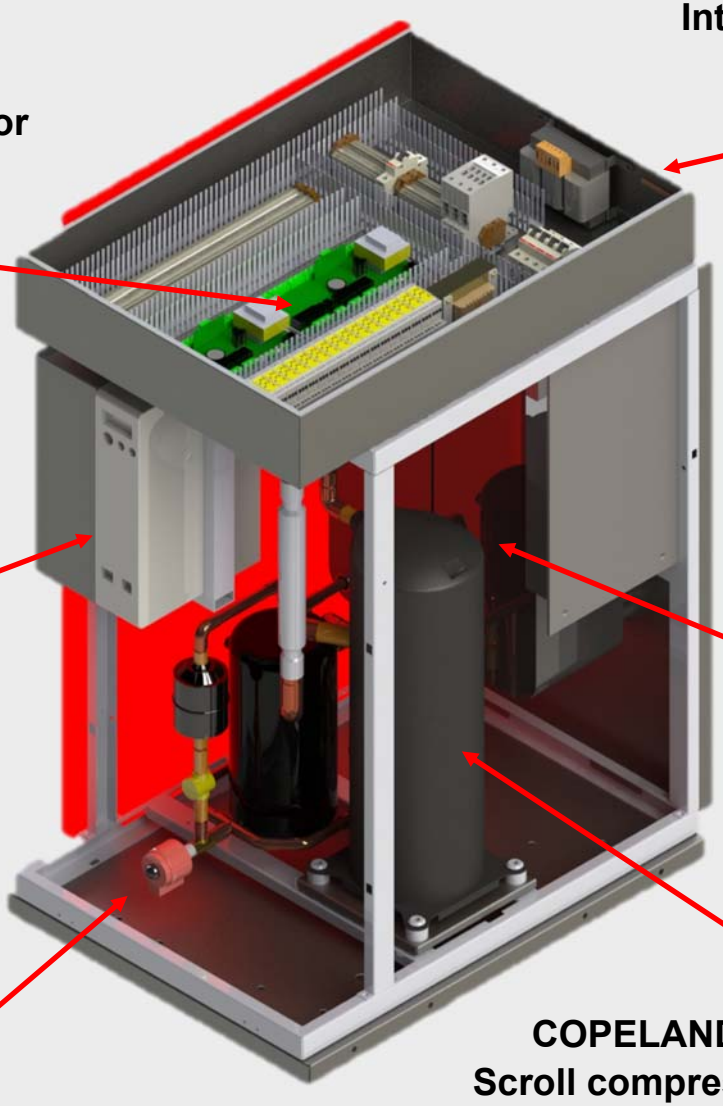
HIGH POWER

clausius HIGH POWER. strong CONFIGURATION

CAREL
Double microprocessor

COPELAND
Inverter technology

CAREL
Electronic expansion valve



Internet connection

New generation of ALFA LAVAL asymmetric heat exchangers

COPELAND
Scroll compressor

Copeland Scroll · ALFA LAVAL · CAREL · Danfoss

clausius

HIGH POWER. strong CONFIGURATION

TECHNICAL SPECIFICATIONS

		H 7-50	HC 7-50	H 12-75	HC 12-75
Applications	Heating and DHW	X	X	X	X
	Passive cooling control	X	X	X	X
	Active cooling		X		X
Power (kW)	Heating power[1]	7 - 50	7 - 50	12 - 75	12 - 75
	Cooling power[2]		9 - 52		14 - 78
Performance	COP[1]	4.9	4.9	4.9	4.9
	EER[2]		6.8		6.8
Refrigerant	Type	R410A			
	Load (kg)	3.6	3.6	3.8	3.8
	Maximum preassure (bar)	42			
Sound level (dB)		55			
Weight (kg)		240	251	258	269
Dimmensions (mm)	High x Width x Depth	1140 x 600 x 800			

[1] In accordance with standard EN14511 under conditions 0/-3 ºC and 30/35 ºC. [2] In accordance with standard EN14511 under conditions 7/12 ºC and 30/35 ºC.

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HIGH POWER