

Thermoacoustic Heat Pump Engine

for residential space heating, air conditioning and industrial applications.



Temperatures up to 80°C



Silent (<35dB)



Maintenance free &
20 years lifetime



Easy to install



Compact



Multi-source

"The heart of next generation heating- and cooling applications."

"A game changing solution for sustainable heating & cooling."

Groundbreaking technology

Blue Heart Energy is a deep cleantech company which sells a thermoacoustic heat engine, named "BlueHeart", which radically improves performance of heating- and cooling applications.

The BlueHeart is the core component for our clients. Systems are silent and can operate across a wide range of temperatures. The BlueHeart engine is a versatile solution for a large variety of applications without the need for HFC- or flammable refrigerants which make it a future proof solution.

Application by our clients



Residential

- Space heating
- Air conditioning
- Domestic hot water up to 80°C
- Central heating systems with stacked BlueHeart units (>60kW)



Industrial

- Air-drying / dehumidification
- Clean rooms
- Explosive environments with ATEX, IECEx restrictions
- Plus many other...

Advantages for our clients and end-users



High temperatures, enabling versatile applications

Suitable for both new and existing houses. Source -25°C to 40°C, Sink: 25°C to 80°C.



Silent

Less than 35dB; similar to a modern fridge.



Improved lifetime

Maintenance free and 20 years of lifetime.



Easy to install

Simplified and fail-proof installation in every type of building.



Compact

Fits into small spaces with a footprint of only 55cm x 55cm. The applications enable a reduction of the DHW auxiliary tank.



Multi-source

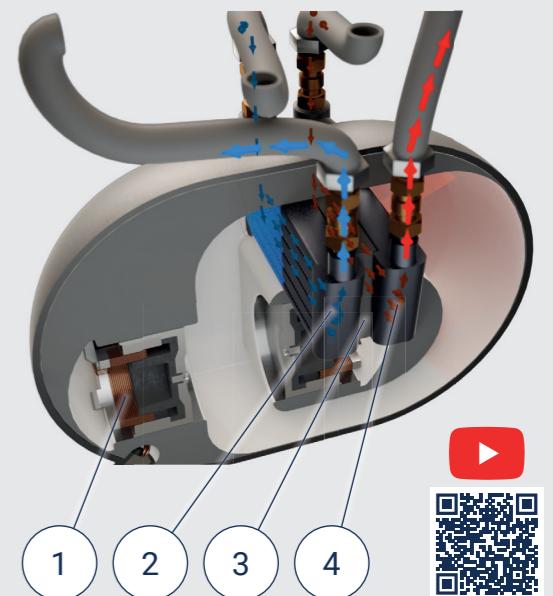
Can easily work with multiple sources like air, ground, PVT, water and district heating.



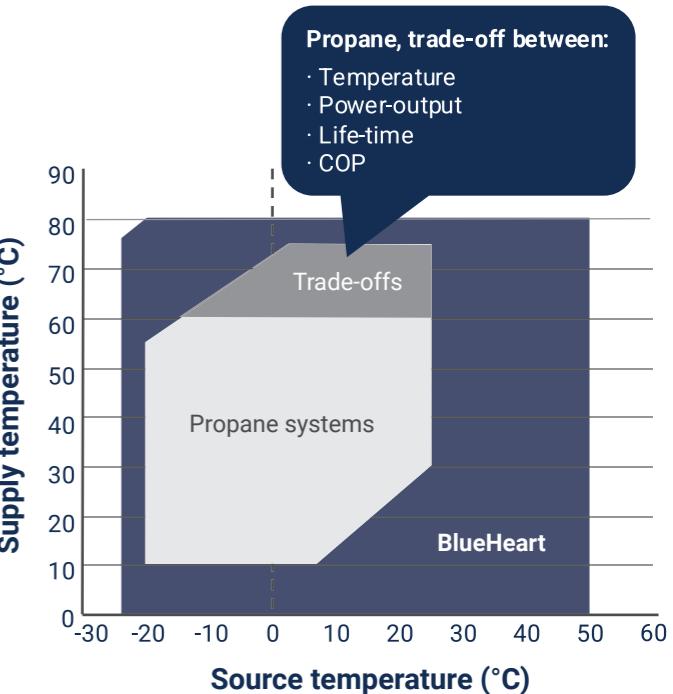
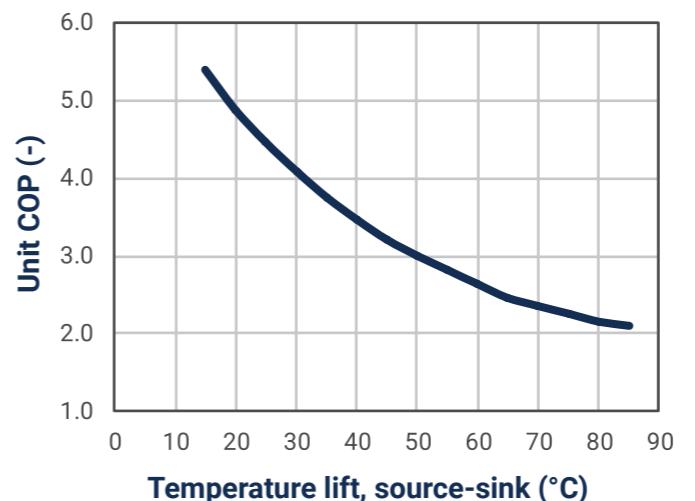
How it works

BlueHeart's engine concentrates heat through sound waves inside a sealed and pressurized helium loop. Two linear drivers create pressure oscillations, expanding and compressing the gas at precise locations. This process absorbs and transfers energy efficiently, silently and across a wide temperature range.

1. Electric drive (generates pressure wave)
2. Internal heat exchanger
3. Regenerator
4. Internal heat exchanger



Superb performance at high lifts



A wider operating envelope

BlueHeart operates across a wide temperature range efficiently.

This is what makes BlueHeart an award winning- and a versatile solution for both residential- and industrial applications.

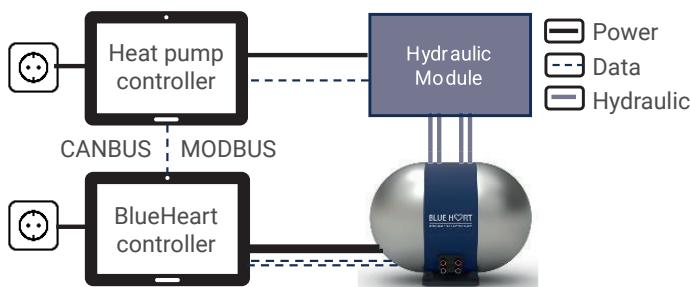
Technical data [1]

Energy class [2]	A++/A+++ (SCOP55/SCOP35)
Heating capacity	1-6 kW
Maximum temperature	80°C
Source compatibility	Air / PVT / Ground / Water / District Heating
Source brine(s)	Water / Detoxified Ethylene Glycol / Propylene Glycol
Supported applications	Space Heating / DHW / Cooling
Working medium	Helium
Nominal pressure	Up to 60 bar
Weight	60 kg
Place of installation	Inside / Outside
Installation orientation	Horizontal / Vertical
Footprint (L x W)	55 x 55 cm
Communication	MODBUS, CANBUS

[1] Specifications are based on current development and may be subject to change in the final market model.

[2] This is the energy class attainable; actual energy label will depend on efficiency of OEM's source and sink systems.

Controller overview



HP Controller sends power request to BH Controller as % of max power

BH Controller sets power target in BH Unit (voltage modulated)

Connecting points



2x Supply connections (hot)
2x Source connections (cold)



2x Power cables
2x Data cables

We invite you to contact us and discover how BlueHeart can make your heating and cooling application more sustainable!

BLUE H[♥]RT

TECHNOLOGY FOR A BETTER PLANET

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