

Future-Proof Cooling



MAGNOTHERM IS THE FIRST TO MAKE MAGNETIC COOLING MARKET-READY

- ***NO REFRIGERANTS***

EN378 not applicable

Regulation and future proof innovation

- ***SAFE***

Non-flammable, non-explosive, non-toxic

- ***ENERGY EFFICIENT***

Up to 30% more energy efficient than compressor systems

- ***LOW-MAINTENANCE***

No legal operator duties, no certified trained refrigeration professionals

- ***RECYCLABLE***

Easily disassembled, circular-economy design

- ***SUSTAINABLE***

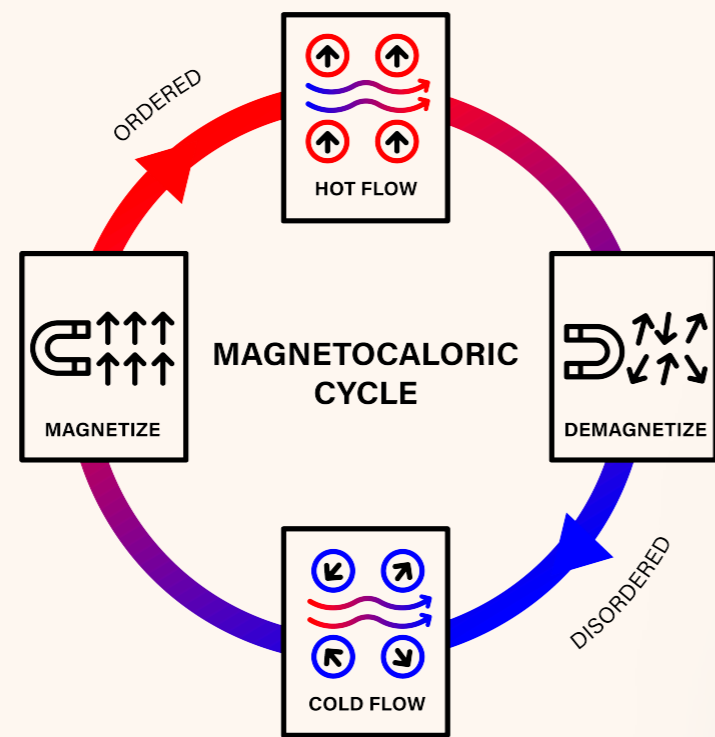
Zero direct global warming potential, vastly reduced carbon footprint for sustainability reporting

WHAT IS MAGNETIC COOLING?

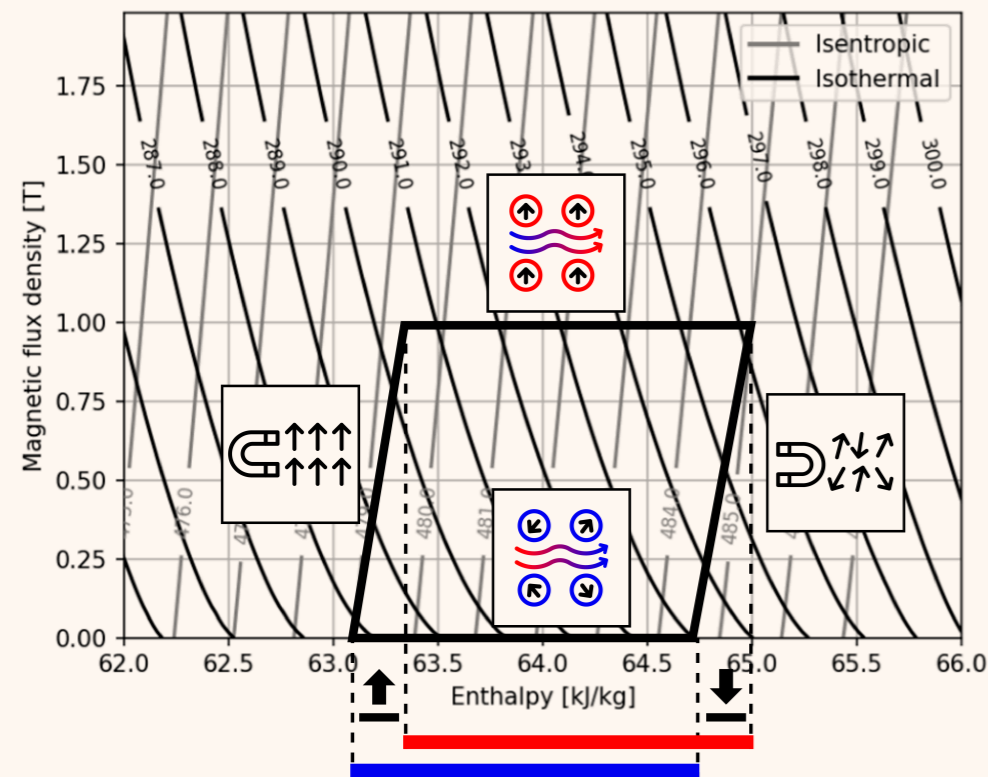
The magnetocaloric effect is a property with which certain metals heat up when magnetised, and cool down when demagnetised. We utilise this effect by pumping a water-based fluid through this metal, which then absorbs heat and cold. Therefore, we achieve the cooling effect.

Application Window
Cooling Capacity: 0 to 10 kW
Temperature Range: -253°C to +65°C
COP*: 2 to 5

*Coefficient of Performance



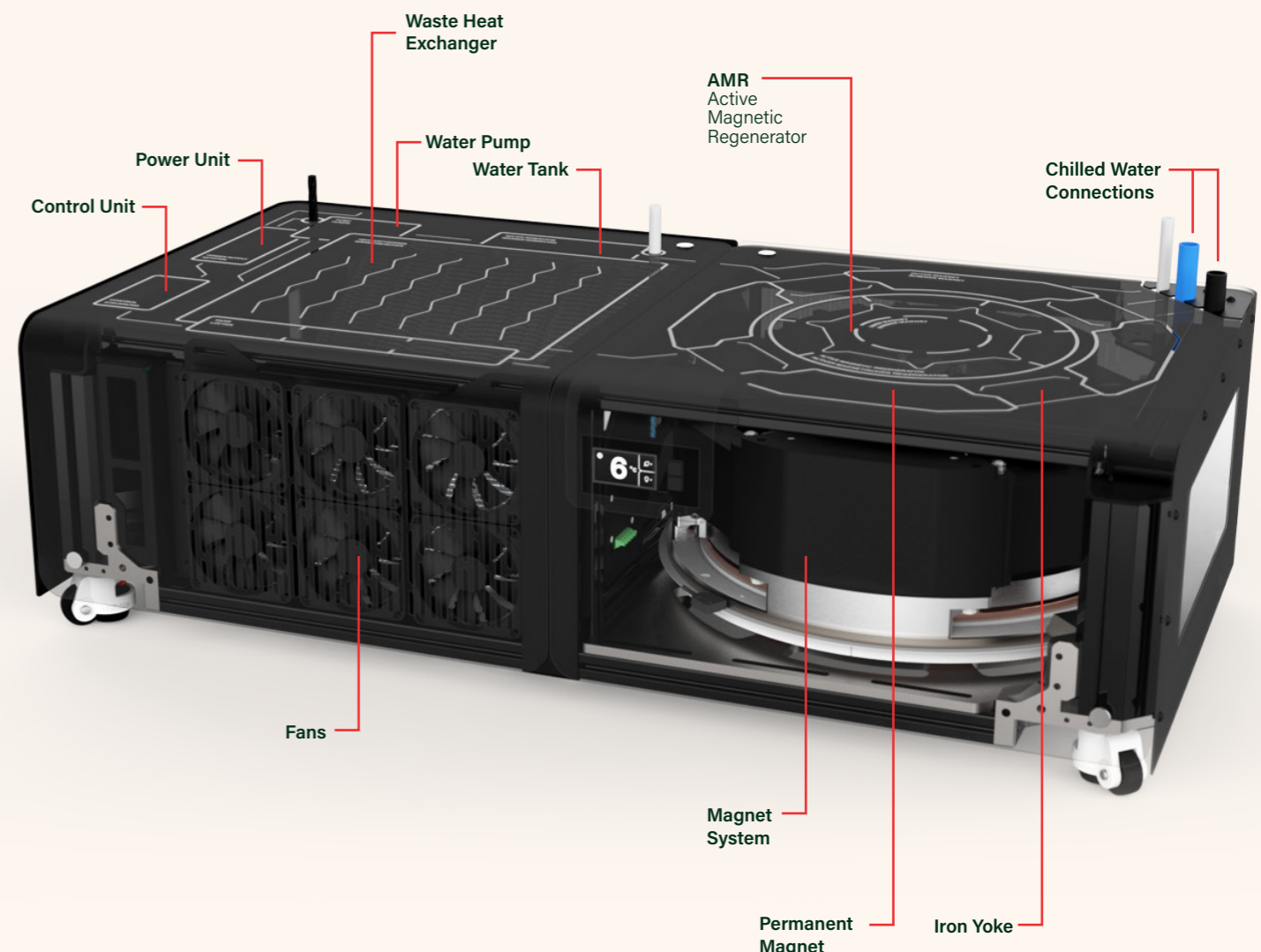
H-h Diagram
Analogy to the Log P-h Diagram



HOW IS IT SO EFFICIENT?

Our magnetocaloric system has a thermodynamic cycle with two adiabatic processes (magnetisation and demagnetisation), and we need only one component to drive both. This allows us to recover some of the invested work which then increases the efficiency of the cycle by up to 30%.

ECLIPSE COOLING UNIT

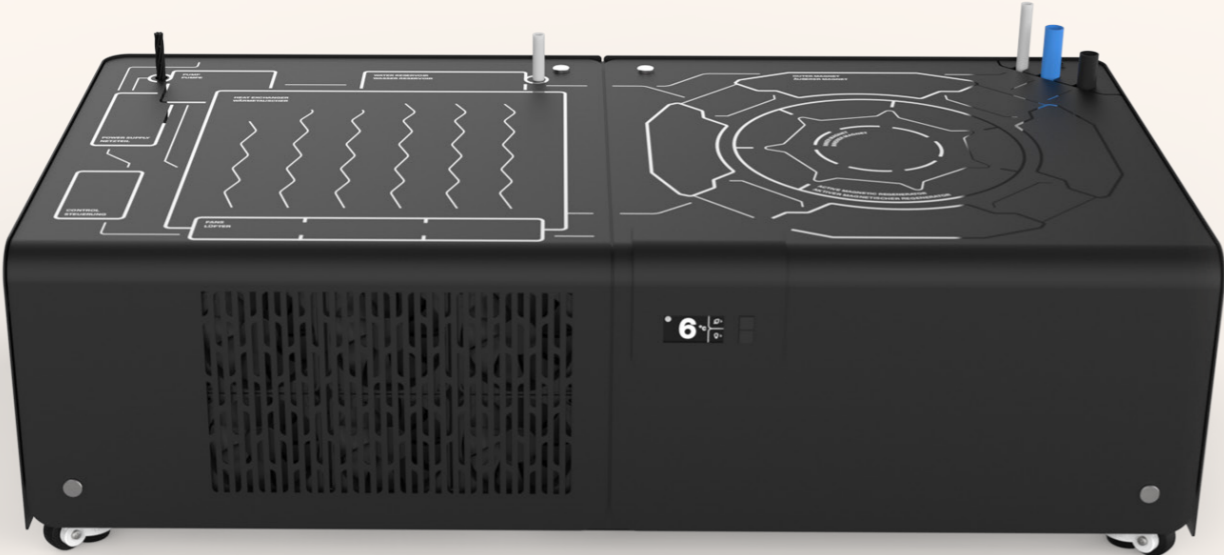


ECLIPSE APPLICATION WINDOW:

Cooling Capacity: Up to 1 kW
Temperature Range: -5°C to +50°C
COP: 2 to 5

ECLIPSE COOLING UNIT

APPLICATIONS



FIRST APPLICATIONS



Food and Beverage Retail

- Supermarket
- Convenience Store
- Catering

ADDITIONAL APPLICATIONS



IT Equipment Cooling

- Rack Cooling
- Switch Cabinet Cooling



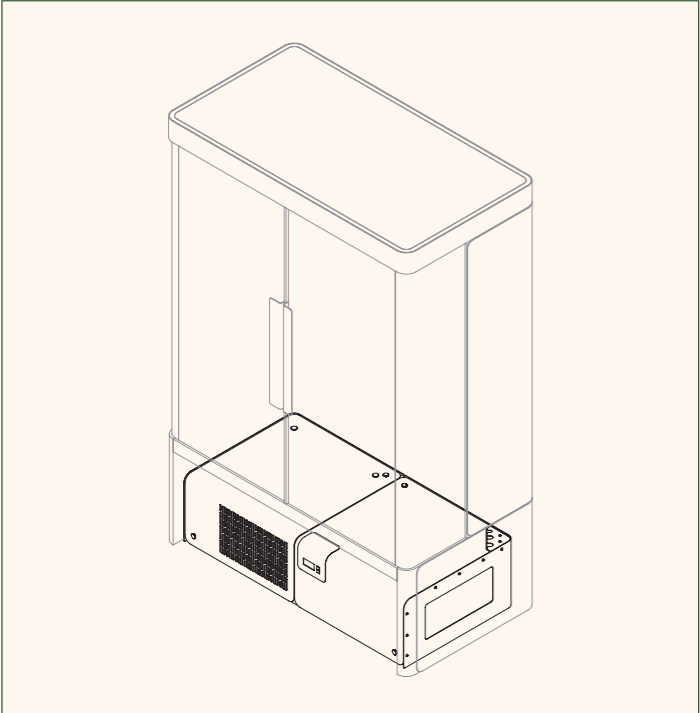
Gastro-Retail and Hospitality

- Hotel and Resort
- Restaurant
- Event Venue

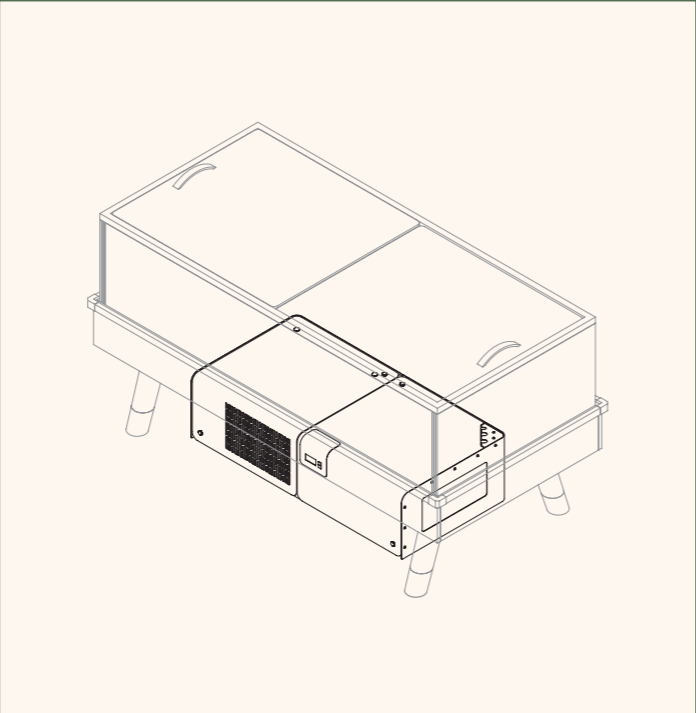


Industrial Process Cooling

- Dissipating Process Heat
- Low-Power Laser System



ECLIPSE 2D
Available: 2024
Cooling Capacity: 0.3 kW to 0.8 kW
Temperature Range: +2°C to +25°C
COP: 2 to 4



ECLIPSE TL
Available: 2025



Unattended Retail

- Self-Service Canteen
- Smart Market
- IoT Vending Machine



Laboratory and Medical

- Medicine Storage
- Climate Chamber
- Vaccine Storage

Don't see what you're looking for here?
Our technology is broadly applicable.
Contact us!

POLARIS BEVERAGE COOLER

Our CE-certified, mature prototype currently active and facing customers in supermarket settings.

- Available for delivery:** Now in limited quantities.
- Applications:** Supermarkets, marketing promotions, beverage companies, canteens, festivals.
- Cooling capacity:** 48 W
- Temperature range:** 0°C to 9°C
- Dimensions:** 60 cm x 60 cm x 120 cm
- Weight:** 60 kg
- Energy Consumption:** 0.96 kWh/24h

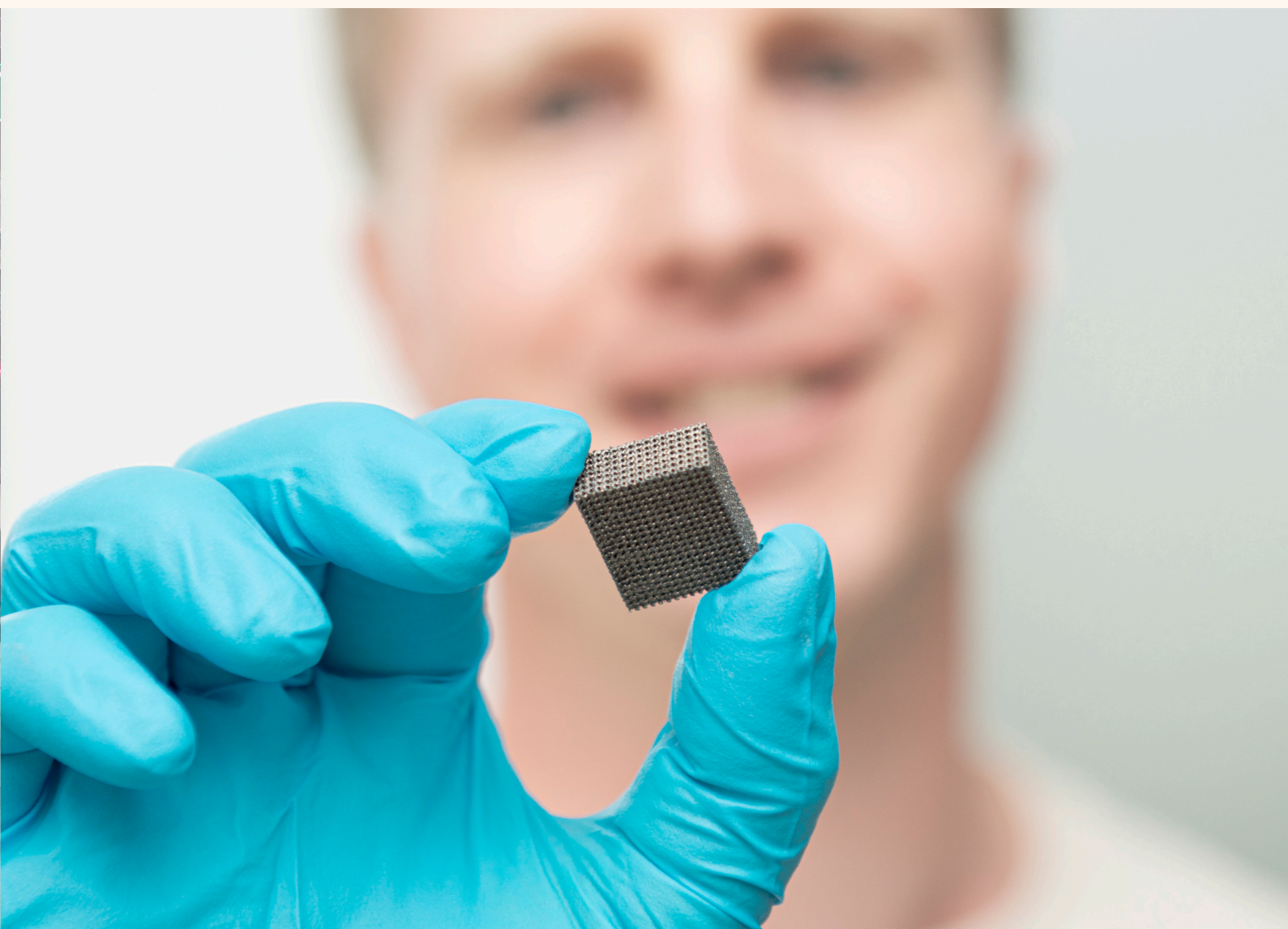
INNOVATION BASED ON PIONEERING MATERIAL SCIENCE

At MAGNOTHERM, our expertise in both building cooling units and material science sets us apart in the industry. We commercially pioneered Gadolinium-based magnetocaloric cooling systems and are now advancing with the untapped potential of Lanthanum Iron Silicon alloy (La-Fe-Si), utilizing cutting-edge 3D printing and plating techniques for superior results.

Innovative Manufacturing Process : Our demonstrated La-Fe-Si additive manufacturing enables us to supply high-performance La-Fe-Si.

Stable Performance: Our proprietary plating improves the durability and lifetime of La-Fe-Si.

Mass-Market-Ready: Manufactured from easily available materials at low cost, our material is suitable for a broad range of applications.



“Some revolutionary inventions are loud, radical, and cannot be overlooked. It’s different with the “POLARIS,” a beverage refrigerator from the Darmstadt-based startup MAGNOTHERM: it stands inconspicuously in the checkout area of the Edeka Center Patschull in Darmstadt and does what its conventional competitors do all day long: cool beverage cans.”

Dominik Großpietsch,
Frankfurter Allgemeine Zeitung

“In the future, energy-efficient systems will be needed that conserve resources and minimize climate-damaging emissions. MAGNOTHERM is taking a decisive step forward here, which fits in well with our technological expertise as a global market leader.”

Dr. Gunther Wobser,
LAUDA Dr. R. Wobser GmbH

AWARDS



BloombergNEF

<norrskén>
Impact/100



CONTACTS

Let's talk!



E-mail

sales@magnotherm.com

Phone Number

+49 6151 78039 20

Address

Magnotherm Solutions GmbH
Pfungstädter Str. 102
64297 Darmstadt
Germany

Website

MAGNOTHERM.COM

LinkedIn

[/company/magnotherm](https://www.linkedin.com/company/magnotherm)

Instagram

[@magnotherm](https://www.instagram.com/magnotherm)