Shaping the future of pool heating ...discover the next generation of heat pump with AI-powered control algorithms.

Elecro Engineering, Unit 3, G-Park, North Road, Stevenage, Hertfordshire SG1 4GY, UK
+44 (0) 1438 749 474 sales@elecro.co.uk www.elecro.co.uk

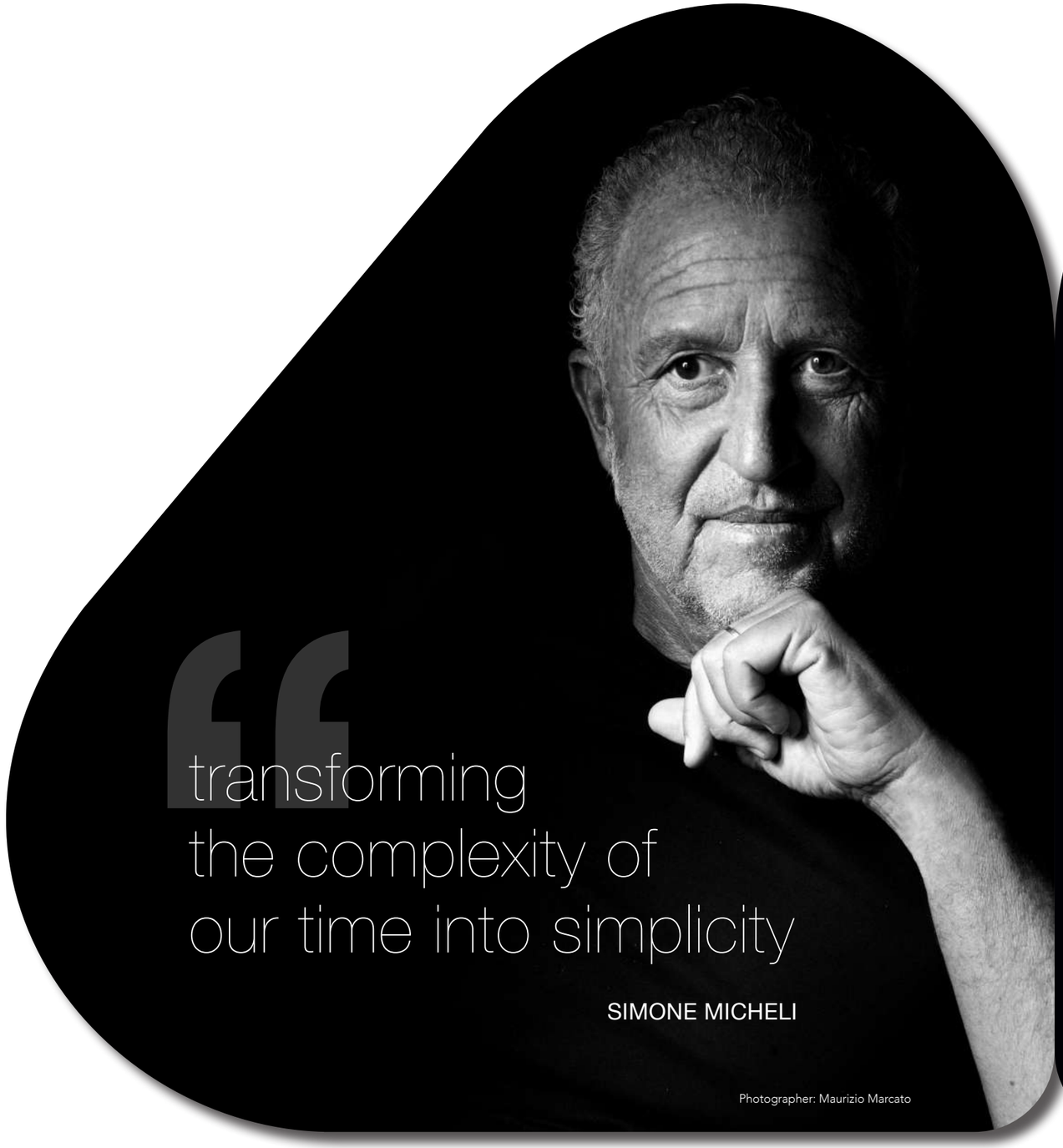
Avant-Garde

HEAT PUMP R290

with AI-powered control algorithms

designed by
SIMONE MICHELI
ARCHITECT

ELECRO
ENGINEERING
Improving water heating and sanitisation globally since 1997



“transforming
the complexity of
our time into simplicity

SIMONE MICHELI

Photographer: Maurizio Marcato

Where power and efficiency meet artful design by Simone Micheli

Your pool is often the centerpiece of the garden, deserving equipment that is not only powerful and efficient but also blends seamlessly into the landscape, enhancing the overall beauty of the environment. – This is the Avant-Garde. Experience a new era in pool temperature control with our heat pump system, designed in collaboration with renowned Italian architect and designer Simone Micheli. Marrying cutting-edge technology with Simone Micheli's iconic aesthetic vision, the Avant-Garde redefines heating and cooling systems' look, feel, and functionality. Now, efficient pool temperature control is as stylish as it is sustainable.

Concealed pipes design, by Simone Micheli

With Simone's vision of concealed pipe design, the Avant-Garde offers a streamlined appearance, keeping exterior walls and surroundings free from visible pipework. This makes our heat pump a fit in your garden gallery. The Avant-Garde offers maximum energy efficiency with a design that blends harmoniously into your environment. It's the perfect solution for those who want the power of advanced pool temperature control with aesthetic appeal.

Intelligent patented AI control with efficient operation and quick return on investment

Discover advanced residential pool heating with our innovative Avant-Garde heat pump, designed for optimal thermal comfort, energy efficiency, and cost-effective performance. Utilising patented AI algorithms, it adjusts dynamically to pool and user needs, optimizing energy use and reducing monthly costs. With a high coefficient of performance (COP), this system minimizes electrical consumption for sustainable temperature control. Each component is precisely chosen to enhance efficiency. The system's performance was modelled and simulated using advanced transient simulation techniques alongside computational fluid dynamics (CFD) analysis, conducted by our Research and Development (R&D) team. Elecro is currently validating this technology through rigorous lab testing. The Avant-Garde is also compatible with smart home systems and leading assistants like Alexa and Google Assistant, enabling seamless voice control. Through our smartphone app, users can adjust settings remotely, monitor energy use in real-time, and access detailed analytics, ensuring comprehensive, convenient, and efficient pool management from any location.

Embrace sustainable comfort with R290 refrigerant

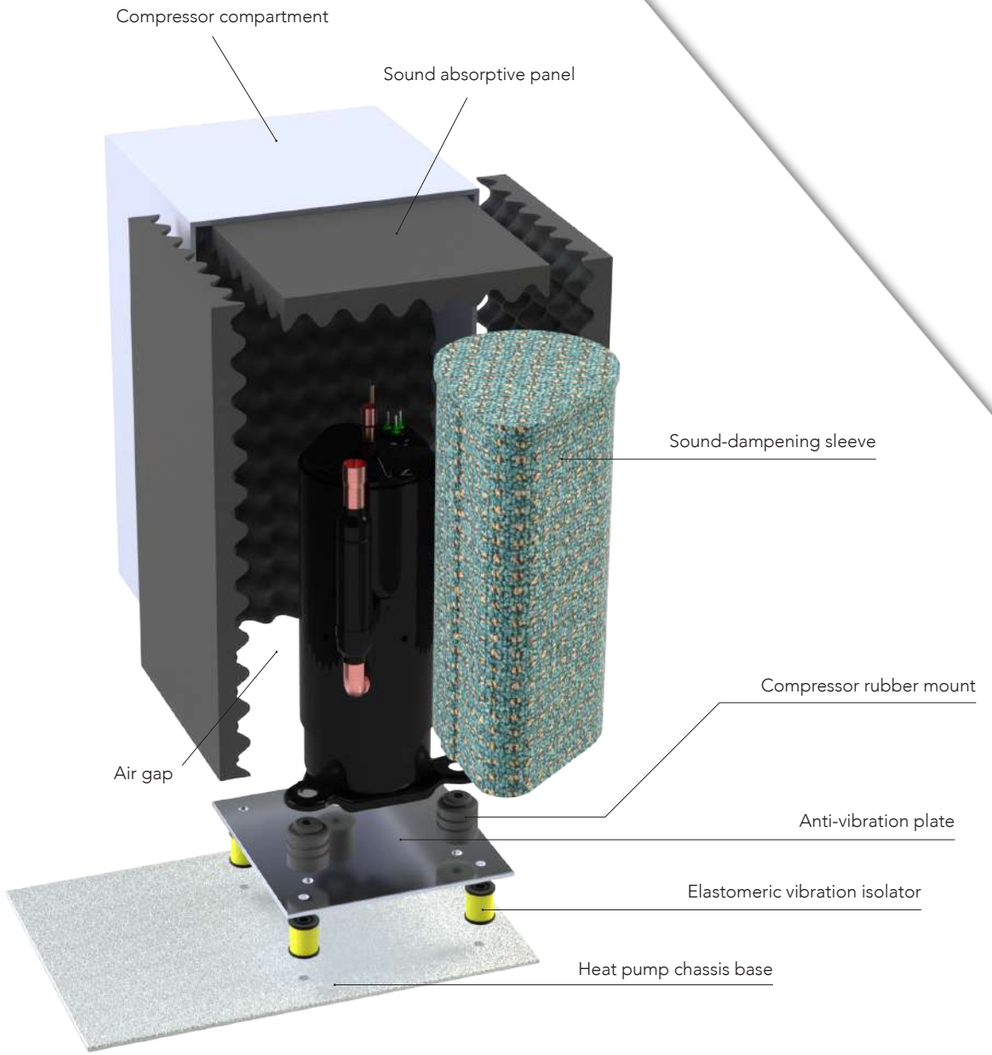
The environmentally optimised heat pump system is engineered to achieve high operational efficiency and minimise ecological impact. It employs R290 (propane), a hydrocarbon refrigerant characterised by a notably low global warming potential (GWP) of approximately 3 and an ozone depletion potential (ODP) of zero, aligning with stringent environmental standards. This system delivers consistent thermal comfort while significantly reducing greenhouse gas emissions. Furthermore, R290 exhibits low compression ratios, which contribute to an enhanced coefficient of performance (COP), thereby optimising energy utilisation across varying operating conditions.

Intuitive touchscreen interface

Introducing our advanced Avant-Garde heat pump system, equipped with a high-definition 7-inch touchscreen interface engineered for optimal user interaction and precision control. This innovative interface facilitates streamlined management of pool temperature, enabling rapid access to advanced settings and real-time data with a single touch. The high-resolution display provides comprehensive insights into system performance, including energy consumption metrics, operational parameters, and live environmental conditions. Integrated local weather and time displays allow for climate adjustments tailored to current conditions, enhancing both efficiency and user comfort through an intuitive and responsive navigation experience.

Whisper-quiet operation

Our Avant-Garde system combines advanced engineering with ultra-quiet functionality to maintain a serene ambient environment. It integrates high-performance acoustic management features like rubber isolation mounts, suspension dampers, and specialised anti-vibration materials. With dual-level mounting, vibration is significantly reduced, minimising acoustic emissions at all fan and compressor speeds. The compressor uses multilayer insulation, including acoustic-efficient materials and a robust outer casing, to further attenuate noise. Dual fans operate at reduced speeds for balanced airflow, reducing vibrations and dispersing sound effectively. Precision-engineered fan blades enhance airflow while limiting acoustic disturbances, making the system ideal for outdoor spaces. Additionally, an advanced air diffusion mechanism distributes airflow uniformly, minimising temperature variations and drafts. This setup ensures a comfortable, stable environment around the heat pump during heating or cooling operations.



Elevated View

Features

- Sleek, aesthetic design for a modern look
- AI-driven control for optimised performance and energy efficiency
- Fully inverter-controlled for adaptable power usage
- Intuitive user interface for easy navigation
- Smart app enables remote monitoring and management
- Wide model selection available, with capacities up to 35 kW
- Ultra-quiet operation for minimal disturbance
- Smart Grid (SG) ready, automatically adjusts to local grid demands
- Options for single-phase and three-phase configurations
- Suitable for indoor pools even in outdoor climates as low as -25°C
- Cloud-based storage to track operational performance and energy use
- Multiple operating modes: AI, Heating, Cooling, Auto, Away, Silent, and Boost
- Voice control compatibility with virtual assistance (Amazon Alexa and Google Assistant)
- Enhanced safety features, including active leak detection

AI Control | R290 | Inverter Compressor | Titanium Heat Exchanger | Dual Inverter Fan | Wifi Connectivity | -25°C