

Product profile



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BITZER ECOLITE CO₂ series: CO₂ condensing units for medium and low temperature refrigeration

The air cooled condensing units of the new BITZER ECOLITE CO₂ series provide a simple and reliable entry into CO₂ applications thanks to their plug and play concept. Users benefit from a reliable solution that can be flexibly deployed in both medium and low temperature refrigeration applications whilst safeguarding investments over the long term. As a refrigerant, CO₂ (R744) stands out for its low environmental impact and is regarded as a future-proof choice.

As regulatory requirements for sustainability continue to increase, the use of natural refrigerants is becoming ever more important. In Europe, the F-Gas Regulation (EU) 2024/573 plays a particularly important role, requiring an accelerated phase-down of fluorinated refrigerants by 2050. With the ECOLITE CO₂ series, BITZER offers commercial users future-proof alternatives to condensing units using HFC/HFO refrigerants. The air cooled condensing units have been specifically developed for operation with the natural refrigerant CO₂ (R744). All components are optimally matched and pre-assembled to continue the proven plug and play concept of the BITZER ECOLITE family, enabling fast and straightforward installation and commissioning whilst ensuring maximum operational reliability.

Flexibility and high performance for medium and low temperature applications

The ECOLITE CO₂ series initially comprises the LHG7EF/S4ITE model. Additional models and housing sizes are already planned. Depending on the version, the current model can provide cooling capacities ranging from 13 to 27 kW* for medium temperature applications (MT) and from 6 to 16 kW* for low temperature applications (LT) (* operating points: $t_{amb} = +32^{\circ}\text{C}$, $t_o = -10^{\circ}\text{C}$ (MT) at 60 Hz, $t_o = -35^{\circ}\text{C}$ (LT) at 70 Hz, $\Delta t_{oh} = 10\text{ K}$, $\Delta t_{cu} = 1\text{ K}$). The wide application limits ($t_o = -45^{\circ}\text{C}$ to $+5^{\circ}\text{C}$; $t_{amb} = -20^{\circ}\text{C} \dots +43^{\circ}\text{C}$) enable flexible use across a wide range of medium and low temperature

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applications, such as small supermarkets or cold rooms in the hospitality sector (HORECA). For wholesalers, the flexibility of the condensing units supports optimised stockholding and simplified inventory planning.

The ECOLITE CO₂ condensing units operate with low noise levels and, thanks to their robust weatherproof housing, are suitable for outdoor installation. Their service-friendly design ensures direct access to all components at all times.

Operational reliability and high efficiency¹ with the natural refrigerant CO₂

The ECOLITE CO₂ condensing units are based on the extensive experience BITZER has with the natural refrigerant CO₂ and have been consistently designed to meet the specific requirements. At the heart of each unit is a specially developed 2-stage CO₂ reciprocating compressor from BITZER. The condensing units are also equipped with an integrated VARIPACK frequency inverter, which enables variable-speed compressor operation between 30 and 70 Hz, thereby covering a wide capacity range from full load to part load. In medium temperature applications, the ECOLITE CO₂ condensing units can achieve a SEPR value of approximately 3.4, whilst in low temperature applications a SEPR value of approximately 1.7 can be achieved (model: LHG7EF/S4ITE).

The ECOLITE CO₂ condensing units incorporate reciprocating compressors specifically developed for CO₂ applications, equipped as standard with the IQ MODULE CM-RC-02 and a dedicated extension board. The IQ MODULE controls the functions of the condensing unit and automatically regulates the high-pressure control valve to maintain optimum high pressure. Using BEST SOFTWARE or the APP, the ECOLITE CO₂ condensing units and their accessories can be configured particularly easily via Bluetooth or the BEST Converter. In addition, the IQ MODULE provides a complete operating data log, which can be clearly visualised and analysed. This comprehensive data basis supports commissioning as well as the analysis and evaluation of service and maintenance activities. If required, the IQ MODULE also provides access to the BITZER DIGITAL NETWORK (BDN), enabling remote access to operating data.

¹ Cf. <https://www.bitzer.de/empco>

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As an independent specialist for refrigeration, air conditioning and heat pump technology, BITZER is present all over the world: with products and services for refrigeration, air conditioning and process cooling as well as transport, BITZER ensures optimum temperature conditions for trade in goods, industry processes and indoor climate control – always striving for the highest possible energy efficiency and quality. BITZER is represented all over the world with 74 sites in 40 countries, including its sales companies and production facilities. Trade and service partners included, the BITZER network of manufacturing, development and sales extends to almost all countries in the world. In 2025, 4,500 employees generated a turnover of €1.135 billion; expenditure for research and development totalled €67 million.

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Image: The BITZER ECOLITE CO₂ condensing units provide a simple and cost-effective entry into CO₂ applications