DAS HERZ DER FRISCHE

CONDENSING UNITS

KP-261-4 EN



RECIPROCATING COMPRESSORS

NATURAL REFRIGERANTS

LOW GWP READY

IQ INTELLIGENT PRODUCTS

BITZER
EXPERTISE AND INNOVATION

AIR CONDITIONING

HEAT PUMPS

REFRIGERATION

PROCESS COOLING

TRANSPORT

We are always striving for the highest possible energy efficiency and quality at BITZER. As an independent global leader in refrigeration, air conditioning and heat pump technology for comfort air conditioning, process technology and mobile applications, we use our extensive experience to provide innovative products and intelligent solutions which create additional value for our partners and the environment all over the world.
Learn more at bitzer.de

INNOVATION DRIVER SINCE
1934

EMPLOYEES
4,500

SITES
74

COUNTRIES
40

CONTENTS

READY FOR THE REFRIGERANTS OF THE FUTURE

Key considerations for new and existing systems

Pages 6–7

ECOLITE

ECOLITE CO_2 (LHG) // ECOLITE (LHL)

Pages 9–28

LHE

LHE PRO // LHE // LHE for high ambiant temperatures // LHE 2-stage

Pages 29–52

K SERIES

K SERIES PRO // K SERIES // KB for seawater applications // K SERIES 2-stage

Pages 53–68

ELECTRONIC PRODUCTS FOR PRECISION AND EFFICIENCY

IQ MODULE // VARIPACK // PERFORMANCE KITS

Pages 69–90

GREEN COMPETENCE

BITZER SOFTWARE // BEST SOFTWARE // ePARTS // BITZER Apps // myBITZER // BITZER DIGITAL NETWORK // BITZER GLOBAL SERVICE NETWORK // BITZER ORIGINAL SPARE PARTS AND OILS // SCHAUFLER Academy

Pages 91–94

FOR EACH OF YOUR REQUIREMENTS

	REFRIGERANT	SERIES	CAPACITY CONTROL	HOUSING	CAPACITY RANGES
ECOLITE	CO_2 (R744)	ECOLITE CO_2	VARIPACK	YES	LT 6.0 .. 16.0 KW MT 13.0 .. 27.0 KW
	HFC/HFO	ECOLITE	VARIPACK + CR OR VARISTEP CRII		LT 1.3 .. 8.0 KW MT 3.2 .. 27.0 KW
LHE	HYDRO-CARBONS (R290, R1270)	LHE PRO	VARISTEP CRII OPTIONAL	OPTIONAL	LT 0.6 .. 15.8 KW MT 1.7 .. 44.9 KW
	HFC/HFO	LHE			LT 0.4 .. 23.0 KW MT 0.8 .. 60.0 KW
K SERIES	HYDRO-CARBONS (R290, R1270)	K SERIES PRO	VARISTEP CRII OPTIONAL	-	LT 0.4 .. 22.9 KW MT 1.7 .. 73.1 KW
	HFC/HFO	K SERIES			LT 0.3 .. 28.0 KW MT 0.8 .. 89.0 KW

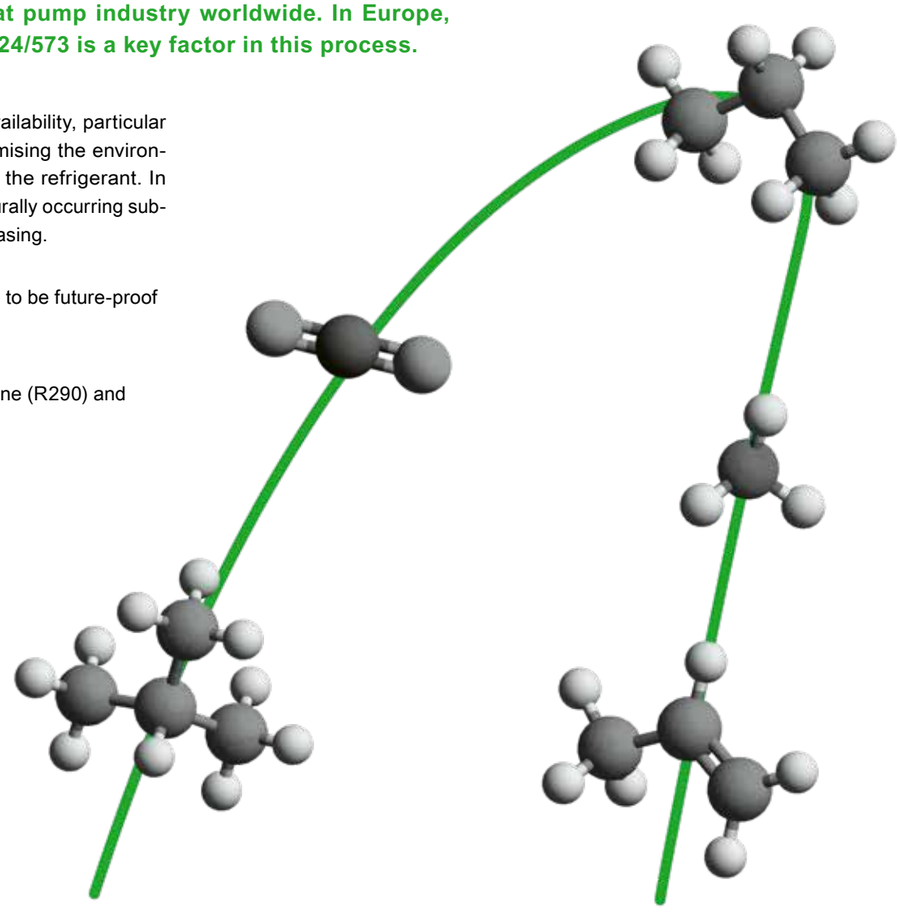
READY FOR FUTURE REFRIGERANTS

The accelerated phase down or final phase out of fluorinated refrigerants requires a new way of thinking about the refrigeration, air conditioning and heat pump industry worldwide. In Europe, the F-Gas Regulation 2024/573 is a key factor in this process.

In order to ensure long-term availability, particular attention must be paid to minimising the environmental impact when selecting the refrigerant. In particular the importance of naturally occurring substances as refrigerants is increasing.

The following are all considered to be future-proof refrigerants:

// Carbon dioxide (R744)
// Hydrocarbons such as propane (R290) and isobutane (R600a)
// Ammonia (R717)



R744 CO_2
HC HYDROCARBON
R717 NH_3

OPT FOR REFRIGERANTS WITH LONG-TERM AVAILABILITY

For new installations in the EU for all applications, it is strongly recommended to design and construct them in such a way that they can be operated with refrigerants that are available in the long term – preferably natural refrigerants. If the use of natural refrigerants is not possible – for example, for technical reasons – new systems in the EU should ideally resort to a refrigerant with a GWP <10. If refrigerants with a higher global warming potential are absolutely necessary, a GWP value below 150 should be the limit, taking into account the phase-down steps after 2030.For existing systems with high maintenance requirements or refrigerant loss, it is advisable from an economic point of view to switch to refrigerants with the lowest possible GWP value. In principle, alternative refrigerants together with suitable compressors and components can offer high energy efficiency and save costs.

EXPERTISE FOR PRACTICAL APPLICATIONS

BITZER has many years of experience in the use of natural refrigerants in its products and continues to develop its portfolio in that direction. With practical training courses at the SCHAUFLER Academy and further sources of information such as the digital Refrigerant Report, BITZER also helps its customers to use natural refrigerants safely.

RECIPROCATING COMPRESSORS FOR ANY APPLICATION

BITZER reciprocating compressors are used just about everywhere, whether for commercial refrigeration, low or medium temperature applications, high evaporation temperatures, heat pumps or special systems. The compressors are suitable for use with a variety of refrigerants, including many low GWP and natural refrigerants, and boast a tried-and-tested, robust design for reliable, efficient operation.

» DIGITAL AND ALWAYS UP TO DATE: BITZER REFRIGERANT REPORT

The BITZER Refrigerant Report has served as a reliable industry reference since 1992 and contains extensive information on various refrigerants, comparisons of their substance property data, and concrete recommendations for new and existing systems. The Refrigerant Report is available exclusively online and therefore always up to date in terms of regulations and requirements.

bitzer-refrigerantreport.com

BITZER Refrigerant Report

LEARN MORE: REFRIGERANTS ONLINE

ECOLITE ALWAYS THE RIGHT CHOICE

ECOLITE CO_2 (LHG) // ECOLITE (LHL)

Air-cooled ECOLITE condensing units are designed for a wide range of refrigeration applications and offer the performance, energy efficiency and reliability that refrigeration specialists worldwide rely on. Thanks to components that are perfectly matched to one another, they ensure reliable operation under a wide variety of operating conditions.

VERSATILE OPTIONS

// For all low and medium temperature applications
// Perfect adaptation to system requirements thanks to the standard VARISTEP mechanical capacity control
// For higher cooling capacities, VARIPACK + CR are standard equipment
// Thanks to their exceptionally quiet operation, ECOLITE condensing units are ideal for use in urban environments
// Designed for all climate zones: even at high ambient temperatures of up to +55°C, the cooling temperature remains constant
// ECOLITE CO_2 with the natural refrigerant CO_2 (R744) for long-term availability and regulatory certainty
// Heat recovery can be used to further increase system efficiency
// Five models with motor version 1 are available for extended application limits

FUTURE-PROOF AND CUSTOMISABLE

ECOLITE stands for intelligent system design that supports operational efficiency and enables sustainable refrigeration solutions: the series is fully compliant with the EU Ecodesign Regulation 2015/1095 and also bears the CE marking in accordance with the Pressure Equipment Directive 2014/68/EU. It is approved for all common HFC refrigerants as well as HFO and HFC/HFO blends. Thanks to its plug-and-play design, ECOLITE CO_2 also offers a simple and reliable way to get started with CO_2 applications. With its extensive standard equipment and optional accessories, ECOLITE has everything you could want. In addition, the ECOLITE controller allows for precise adjustment to meet any requirement. The ECOLITE EF and ECOLITE CO_2 models each offer various types of capacity control with the VARIPACK frequency inverter, while the ECOLITE model features the VARISTEP capacity control system.

CO_2
HFO
ECODESIGN CONFORM
BEST SOFTWARE
CONDENSING UNITS

FLEXIBLE FOR ANY APPLICATION

ECOLITE condensing units allow for flexible configuration of different cooling capacities within a clearly structured product line. By covering multiple applications with fewer variants – while remaining compatible with a wide variety of refrigerants – this simplifies inventory management and makes system selection significantly more efficient.

PETROL STATIONS

ECOLITE is a familiar sight at petrol stations around the world: thanks to the BITZER DIGITAL NETWORK, operators can always keep an eye on their systems, even remotely.

PHARMACEUTICAL INDUSTRY/ LABORATORIES

ECOLITE maintains your desired temperature level consistently – an essential feature for quality and precision in the pharmaceutical industry and laboratories.

SCALABLE



AS NEEDED

HORECA

For long piping runs and varying cooling loads, ECOLITE is the right choice – thanks to its oil return mode and integrated VARISTEP capacity control, or a combination of VARIPACK + CR.

CONVENIENCE STORES

By automatically adjusting the condensing temperature to the ambient temperature and utilising heat recovery, ECOLITE achieves operation with the lowest possible emissions.

COLD STORAGE

ECOLITE is suitable for both low and medium temperature applications, offering maximum flexibility in cold store applications.

EVERYTHING IN ONE PACKAGE

EFFICIENT

for reduced life cycle costs

READY FOR USE

thanks to easy commissioning and monitoring

FLEXIBLE

ready for use in a wide range of conditions

LOW SOUND

in all areas



ECOLITE (LHG)

combines proven BITZER quality with the future-proof nature of CO_2 as a refrigerant.



ECOLITE (LHL)

– the reliable all-around solution for medium and low temperature applications.

The ECOLITE series combines a wide range of applications with the latest BITZER technology, always with a focus on providing a highly economical condensing unit.

USER-FRIENDLY CONCEPT

The comprehensive standard equipment, easy access to all components and the plug-and-play design ensure convenient commissioning and integration into the system. The ECOLITE controller allows for continuous monitoring of parameters and easy adjustment of settings. Compressors and accessories can be conveniently connected to a laptop or smartphone via Bluetooth for commissioning, configuration and service using BEST SOFTWARE or APP, and/or for monitoring via the BITZER DIGITAL NETWORK.

LONG OPERATING TIME

The semi-hermetic design of the installed BITZER ECOLINE compressors and the new 2-stage series of ECOLINE CO_2 reciprocating compressors allows for repairs, thereby extending the operating time of the ECOLITE condensing unit. Its large service door provides direct access to all components. The optional heat recovery connections are another advantage for reducing CO_2 emissions.

CUSTOMISABLE CAPACITY CONTROL

ECOLITE condensing units automatically adjust to the actual cooling demand: choose between VARISTEP mechanical capacity control, the VARIPACK frequency inverter and a combination of VARIPACK and the CR mechanical capacity control system. This combination prevents the compressor from cycling frequently to ensure more efficient system operation with lower operating costs.

KP-261-4 EN

KP-261-4 EN

ECOLITE
SECURE IN THE LONG TERM

EXTENSIVE STANDARD EQUIPMENT

// BITZER liquid receiver with connection for pressure relief valve
// Sight glass, filter drier, ball valve
// High/low cartridge pressure switch and pressure transmitter
// Oil heater
// Sensors for suction gas, discharge gas and ambient temperature
// With sound insulation for the compressor compartment

SYSTEM-OPTIMISED CONDENSER

Mini-channel condenser with high heat transfer coefficient and low refrigerant charge

SOUND-INSULATED DESIGN

The robust housing and the sound-insulated compressor compartment are designed for maximum noise reduction

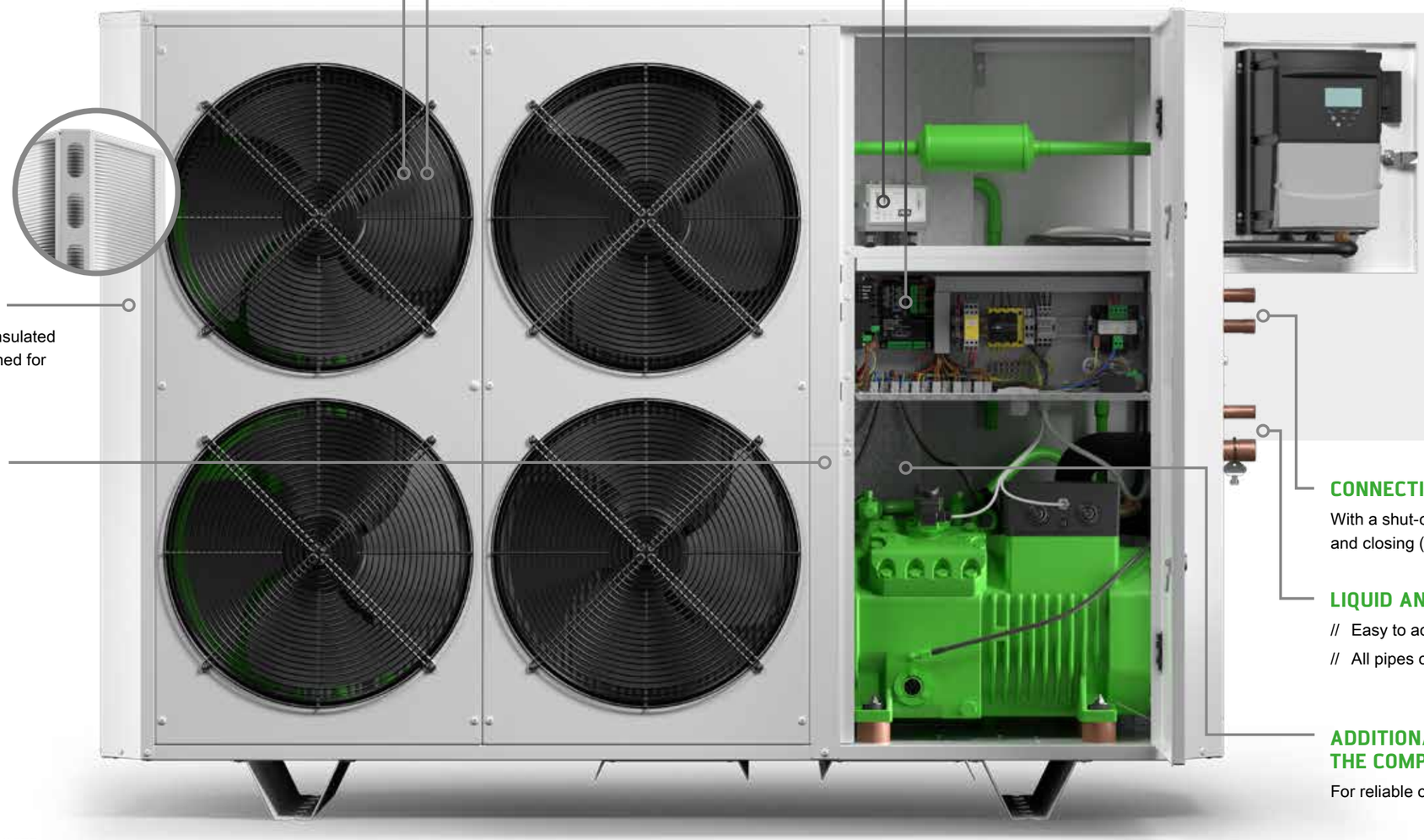
ADDITIONAL MAINTENANCE ACCESS FOR LHL7E(F)

SPEED-CONTROLLED AC FANS

// Adjustment based on ambient temperature for maximum efficiency
// LHL3E: one fan
LHL5E: two fans
LHL7E/LHL7EF: four fans

PRESSURE RELIEF VALVE FOR LIQUID RECEIVER

// In combination with cartridge pressure switch



RECIPROCATING COMPRESSORS
HFO
BEST SOFTWARE

The figure shows a fully equipped ECOLITE LHL7EF condensing unit. Please refer to the following pages for the standard scope of delivery and available optional equipment.

ECOLITE (LHL7EF)

ADJUSTABLE HIGH/LOW PRESSURE SWITCH

// Optional accessories for LHL3E, LHL5E, LHL7E, LHL7EF
// Retrofit kit available
// Standard cartridge pressure switches omitted

SMART CONTROL CONCEPT

// IQ MODULE with extension board (LHL7EF)
// Controller with specialised software developed by BITZER (LHL3E, LHL5E, LHL7E)
// Interface to BEST SOFTWARE and APP
// Approved for A2L refrigerants
// Modbus RTU (RS485)



ECOLITE (LHL5E)

BITZER ECOLINE COMPRESSOR WITH VARISTEP // COMBINED WITH VARIPACK + CR

// **LHL3E .. LHL7E:** High-efficiency BITZER ECOLINE compressor with VARISTEP capacity control from (10%) 50% to 100%
// **LHL7EF:** When used with a VARIPACK frequency inverter, the power control range is from 30 to 70 Hz + CR 50%/100%
// Motor version 1 for extended application limits

FREQUENCY INVERTER
MECHATRONIC CAPACITY CONTROL

CONNECTIONS FOR HEAT RECOVERY

With a shut-off valve in the ECOLITE for manual opening and closing (LHL5E, LHL7E and LHL7EF)

LIQUID AND SUCTION GAS LINE

// Easy to access
// All pipes on one side

ADDITIONAL EC FANS FOR COOLING THE COMPRESSOR COMPARTMENT

For reliable operation under demanding conditions

ECOLITE CO_2
THE SAFE INTRODUCTION TO CO_2

EXTENSIVE STANDARD EQUIPMENT

// Intermediate pressure vessel
// Sight glass, filter drier (suction side), ball valve
// Oil heater
// Sensors for hot gas, ambient, suction gas and gas cooler outlet temperatures
// High pressure control valve
// High pressure cartridge pressure switch
// 2 x pressure relief valve with change-over valve

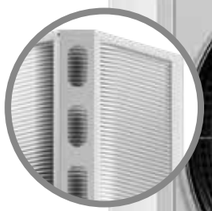
OIL SEPARATOR

// In combination with the OLM-IQ oil level controller and oil shut-off valve



GAS COOLER

Efficient heat dissipation for stable and energy-optimised operation



SOUND-INSULATED DESIGN

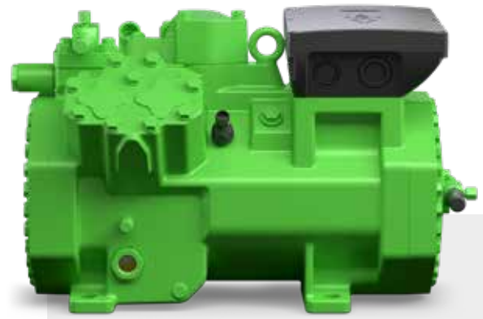
The robust housing and the sound-insulated compressor compartment are designed for maximum noise reduction

FILTER DRIER

// Integrated into the suction gas line as standard
// Supports a clean refrigerating circuit with CO_2

IQ MODULE WITH EXTENSION BOARD

// Developed specifically for ECOLITE CO_2
// Interface to BITZER SOFTWARE and APP
// Data log and Bluetooth
// Modbus RTU (RS485)



BITZER 2-STAGE CO_2 RECIPROCATING COMPRESSOR

// Semi-hermetic reciprocating compressor
// Highly efficient in combination with BITZER VARIPACK
// Many years of experience in CO_2 technology

BITZER ECOLINE COMPRESSOR WITH VARIPACK

FREQUENCY INVERTER



CONNECTION POINT FOR HEAT RECOVERY

// For greater system efficiency and lower operating costs

LIQUID AND SUCTION LINE

// Easy to access
// All pipes on one side (with K65)

ADDITIONAL EC FANS FOR STANDSTILL COOLING

OLM-IQ OIL LEVEL CONTROLLER

// Reliable stepless measurement via float
// High precision, regardless of oil foams
// Simultaneous measurement and oil injection

RECIPROCATING COMPRESSORS
CO_2
BEST SOFTWARE

The figure shows a fully equipped ECOLITE LHG7EF condensing unit. Please refer to the following pages for the standard scope of delivery and available optional equipment.

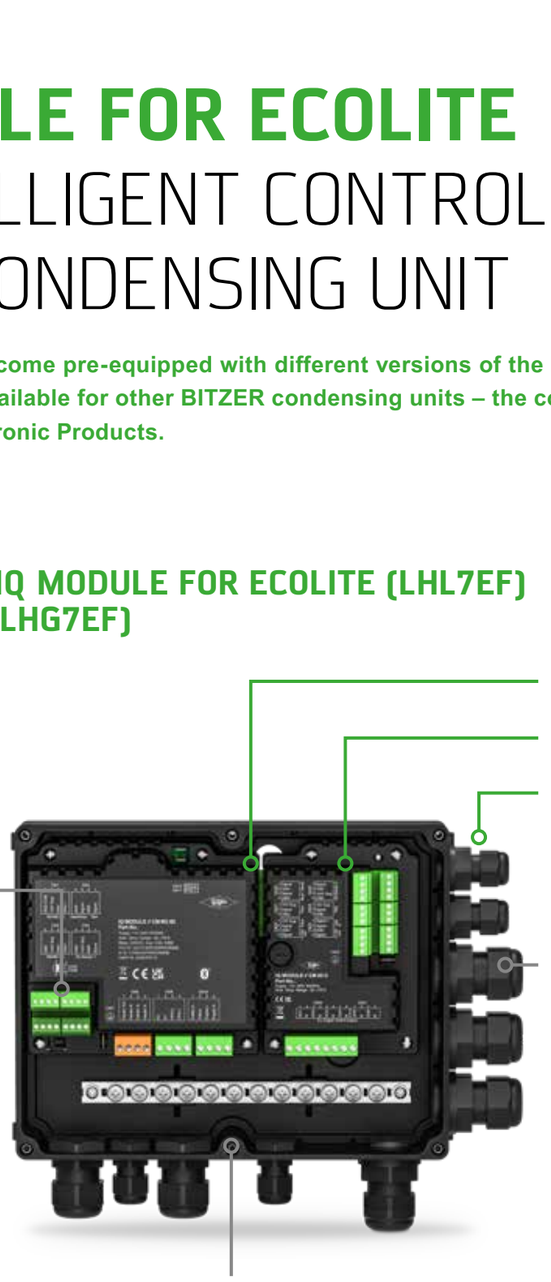
ECOLITE (LHG7EF)

IQ MODULE FOR ECOLITE

THE INTELLIGENT CONTROL CENTRE OF THE CONDENSING UNIT

Various ECOLITE models come pre-equipped with different versions of the IQ MODULE CM-RC-02. The IQ MODULE is also available for other BITZER condensing units – the corresponding functions are described under Electronic Products.

SMART CONTROL: IQ MODULE FOR ECOLITE (LHL7EF) AND ECOLITE CO_2 (LHG7EF)



COMPRESSOR MODULE

EXTENSION BOARD

MODULE HOUSING

SMART FUNCTIONS

// Oil return function
// Operation modes: Control of the evaporation temperature (suction pressure control) or control of the cold store temperature
// Heat recovery: Heat rejection/fan shutdown via BEST SOFTWARE or APP
// Capacity control: VARIPACK frequency inverter
// Winter start-up function
// Data storage
// Application limit monitoring
// Pump down system
// **LHG7EF:** Ready-to-start function

INPUTS AND OUTPUTS

Inputs, for example:
// Fan operating mode
// Set point control
// Heat recovery mode

Outputs, for example:
// Fault alarm
// Solenoid valve in the liquid line
// **LHG7EF:** Intermediate pressure limiter

CONNECTIVITY

// Easy communication via Bluetooth using BEST SOFTWARE and APP (mobile phone or laptop)
// Modbus

BEST SOFTWARE

BEST APP

CONTROLLER FOR ECOLITE LHL3/5/7E

OPERATION MODES

// Evaporation temperature control
// Cold room temperature control

PUMP DOWN SYSTEM

// Default = enabled

OUTPUTS

For example, Fault alarm

INPUTS

For example, Set point adjustment



VARISTEP

// One VARISTEP
→ Capacity control from 50% to 100%
// Two VARISTEP
→ Capacity control from 10% to 100%

DISPLAY OF ALARM CODES

// Alarm log for 20 alarms with timestamps

EMERGENCY OPERATION

// Pressure transmitter/sensor

MODBUS

BEST SOFTWARE

WINTER START-UP OPERATION

OIL RETURN MODE

SPEED-CONTROLLED AC FANS

// AC condenser fan(s) and EC fan for the compressor compartment

Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

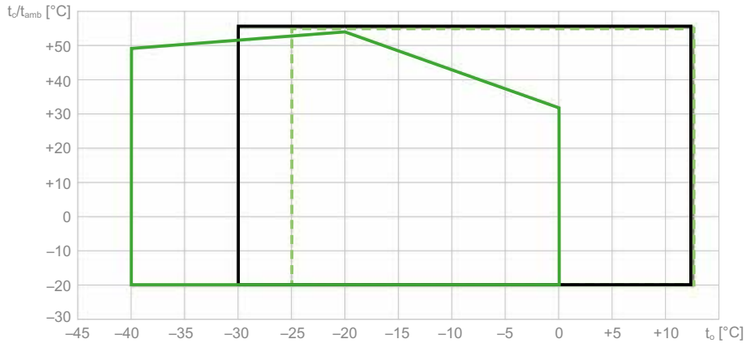
SCOPE OF DELIVERY

ECOLITE Air cooled condensing units		LHL3E/..	LHL5E/..	LHL7E/..	LHL7EF/..	LHG7EF/..
Semi-hermetic reciprocating compressor	ECOLINE with CRII capacity control (1×)	S				
	ECOLINE with CRII capacity control (1×) and CRII-prepared (1×)		S	S		
	ECOLINE with CR capacity control (1×) and VARIPACK frequency inverter				S	
	2-stage compressor and VARIPACK frequency inverter					S
Oil heater	Mounted	S	S	S	S	S
Air-cooled condenser with fans	– one fan; AC motor, speed controlled	S				
	– two fans; AC motor, speed controlled		S			
	– four fans; AC motors, speed controlled			S	S	
Gas cooler	– four fans; AC motors, speed controlled					S
Intermediate pressure vessel	Mounted with maximum level monitoring included					S
High pressure control valve	Mounted					S
Fan(s) for compressor compartment cooling*	EC motor	S	S	S	S	S
Liquid receiver	– with shut-off valve – with pressure relief valve connection – with three sight glasses (LHL7EF only)	S	S	S	S	
Sight glass, filter drier and ball valve(s)	In the liquid line LHL3E/LHL5E: screwed-in filter drier; LHL7E/LHL7EF: brazed filter drier Filter drier: LHGxEF in the suction gas line	S	S	S	S	S
High and low pressure switches	Cartridge pressure switch, non-adjustable	S	S	S	S	
High pressure switch	Cartridge pressure switch, non-adjustable					S
Pressure relief valve	LHLxE(F): 1 x Pressure relief valve and cartridge pressure switch LHGxEF: 2 x Pressure relief valve with changeover valve	•	•	•	•	S
Temperature sensors	– for suction gas temperature – for discharge gas temperature – for ambient temperature	S	S	S	S	
	– for hot gas temperature – for ambient temperature – for suction gas temperature – for gas cooler outlet temperature					S
Pressure transmitters	– for high and low pressure	S	S	S	S	
	– for high pressure – for intermediate pressure – for suction pressure					S
Discharge line		S	S	S	S	S
ECOLITE controller	Control of the capacity control system and other functions of the condensing unit	S	S	S	S	S
Complete piping and wiring		S	S	S	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants with t_c < +70°C	S	S	S	S	
	BSG68K (PAG oil)					S
Weather protective housing	With sound insulation for the compressor compartment	S	S	S	S	S
Approval for A2L applications	– Release certification for A2L	S	S	S	S	
CE-compliant in accordance with the Pressure Equipment Directive (PED)		S	S	S	S	S
Protection device	SE-B3	S	S	S		
	IQ MODULE				S	S
Oil separator	LHLxE/LHL7EF: with check valve, mounted, cannot be retrofitted LHGxEF: compatible for heat recovery	•	•	•	•	S
Heat recovery connections	Pipe connections equipped with a manual shut-off valve in combination with an oil separator and a check valve, mounted, cannot be retrofitted LHGxEF: compatible for heat recovery	•	•	•	•	S

• = Optional
S = scope of delivery

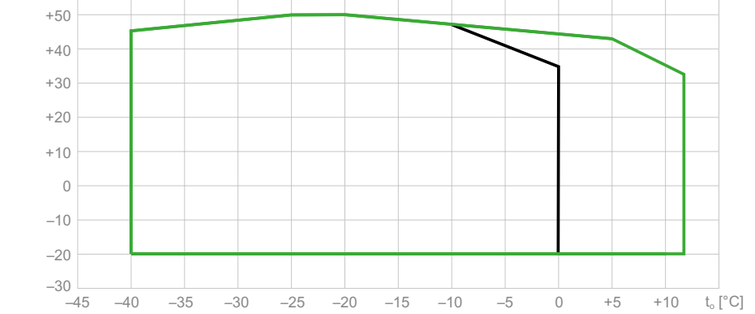
*Extended application limits – no refrigerant injection required, even for low-temperature operation
(Subject to change)

APPLICATION LIMITS



t_o Evaporation temperature [°C]
t_c Condensing temperature [°C]
t_{amb} Ambient temperature [°C]
t_{oh} Suction gas temperature [°C]

LHL5E/4DES-5Y, 50 Hz, R134a/450A, t_{oh} = +20°C
LHL7E/4NE-14Y, 50 Hz, R513A/R1234yf, t_{oh} = +20°C
LHL5E/4FES-3Y, 50 Hz, R448A/449A/454C, t_{oh} = +20°C



t_o Evaporation temperature [°C]
t_c Condensing temperature [°C]
t_{amb} Ambient temperature [°C]
t_{oh} Suction gas temperature [°C]

LHL5E/4EES-4Y, 50 Hz, R454C, t_{oh} = +20°C (M2 version)
LHL5E/4EES-6Y, 50 Hz, R454C, t_{oh} = +20°C (M1 version)

Preliminary data. The application limits shown refer to the application example illustrated. For refrigerants R448A/R449A, R455A and R454C, evaporating temperatures of up to +12.5°C are possible. Permissible condensing and ambient temperatures may vary
depending on the refrigerant and ECOLITE type.

KP-261-4 EN

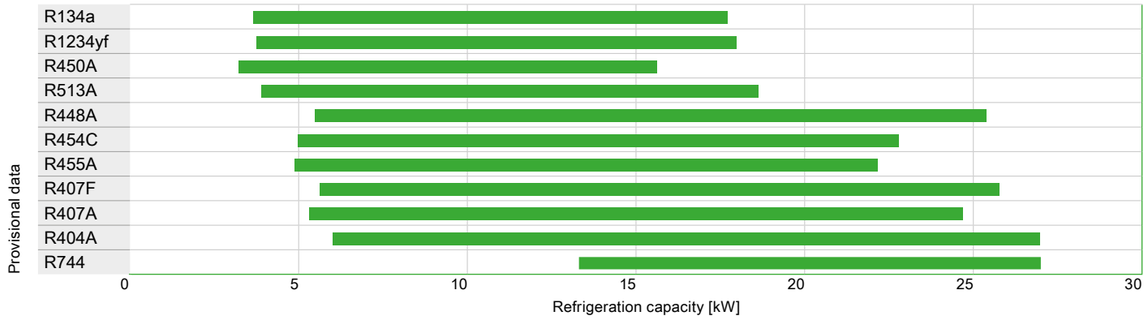
OPTIONAL EQUIPMENT

ECOLITE Air cooled condensing units		LHL3E/..	LHL5E/..	LHL7E/..	LHL7EF/..	LHG7EF/..
Warranty extension by up to five years	See the price list for details	●	●	●	●	●
Temperature sensors	For cold rooms	●	●	●	●	
Check valve*	In liquid line, mounted	●	●	●	●	
Sight glass for liquid receiver	– Sight glasses (2×) (LHL3E / LHL5E)* – Sight glasses (3×) (LHL7E)*	●	●	●	S	
Condenser with improved corrosion protection*	Copper or epoxy-coated fins	●	●	●	●	
BEST interface converter (BITZER Electronic Service Tool)	Interface converter with cable kit	●	●	●	●	●
Liquid receiver	BSE55 (ester oil) for HFC and HFC/HFO refrigerants – at high condensing temperatures, t_c > +70°C – for R1234ze(E) t_c < 70°C/t_o < 15°C[1]	○	○	○	○	
	B5.2: The "Y" in the compressor designation is omitted	○	○	○	○	
Medium pressure limiting valve	Retrofitting possible					●
OLC-K1 oil level monitoring – optoelectronic – factory mounted	Retrofitting possible with kit, part no. 34733491	●	●			
Oil differential pressure switch Delta-PII	– 115 .. 230 V-1-50/60 Hz – Retrofitting possible with kit, part no. 34733492			●		
Oil differential pressure switch DP-3 – mounted	24 V – for compressor module – retrofitting possible				●	
Second CRII capacity regulator – factory mounted	Retrofitting possible with kit, part no. 30235550		●	●		
BITZER DIGITAL NETWORK		●	●	●	●	●
High and low pressure switches – factory mounted	Adjustable, recommended for safety relief valve – Replaces the standard cartridge pressure switch – retrofitting possible with kit, part no. 34732505 (LHL3E/LHL5E) with kit, part no. 34732512 (LHL7E/LHL7EF)		●	●	●	

● = Option available ○ = Option available at no extra charge
* Cannot be retrofitted
[1] For R1234ze(E), t_c > +70°C/t_o > +15°C, upon request
(Subject to change)

APPLICATION RANGES

Refrigeration capacity
in accordance with EN13215
t_0 = –10°C, t_{amb} = +32°C, t_{oh} = +20°C



Refrigeration capacity
in accordance with EN13215
t_0 = –35°C, t_{amb} = +32°C, t_{oh} = +20°C

Further details can be found in the BITZER SOFTWARE.
BITZER SOFTWARE

PERFORMANCE VALUES

Refrigeration capacity Q_o @ t_{amb} +32°C

		Medium temperature –10°C, midpoint								Low temperature –35°C, midpoint				
		R134A	R513A	R1234yf	R404A	R448A/ R449A	R454C	R455A	R744	R404A	R448A/ R449A	R454C	R455A	R744
LHL3E/2EES-2Y		3.7	3.9	3.7	6.0	6.0	5.5	5.7		1.9	1.5	1.4	1.5	
LHL3E/2EES-3Y*		3.7	3.9	3.7	6.0	6.0	5.5	5.7		1.9	1.5	1.4	1.5	
LHL3E/2DES-2Y		4.3	4.6	4.3	6.8	6.7	6.2	6.4		2.2	1.8	1.7	1.8	
LHL3E/2CES-3Y		5.2	5.5	5.3	8.2	8.2	7.5	7.7		2.9	2.3	2.2	2.3	
LHL5E/4FES-3Y		5.8	6.1	5.9	9.9	9.9	9.1	9.4		3.3	2.6	2.5	2.7	
LHL5E/4FES-5Y*		5.8	6.1	5.9	9.9	9.9	9.1	9.4		3.3	2.6	2.5	2.7	
LHL5E/4EES-4Y		7.4	7.9	7.5	12.0	11.9	11.0	11.3		4.1	3.3	3.1	3.2	
LHL5E/4EES-6Y*		7.4	7.9	7.5	11.8	11.9	11.0	11.3		4.0	3.3	3.1	3.2	
LHL5E/4DES-5Y		8.5	9.0	8.4	13.4	13.2	12.2	12.5		4.7	3.7	3.5	3.6	
LHL5E/4CES-6Y		10.2	10.8	10.4	15.8	16.0	14.8	15.0		5.6	4.7	4.5	4.6	
LHL7E/4VE-7Y		11.5	12.2	11.7	18.5	18.1	16.6	17.1		5.7	4.5	4.1	4.4	
LHL7E/4VE-10Y*		11.1	11.8	11.4	18.4	18.2	16.3	16.8		5.7	4.5	4.0	4.3	
LHL7E/4TE-9Y		13.7	14.5	13.9	21.6	21.3	19.5	19.9		7.0	5.8	5.1	5.4	
LHL7E/4TE-12Y*		13.2	14.1	13.5	21.4	21.4	19.1	19.7		7.0	5.8	5.0	5.4	
LHL7E/4PE-12Y		15.2	16.2	15.5	23.8	23.4	21.7	22.1		7.6	6.3	5.6	5.8	
LHL7E/4NE-14Y		17.7	18.7	18.0	26.9	26.9	24.6	25.1		9.2	7.7	6.9	7.1	
LHL7EF/4VE-7Y	min	6.9	7.4	7.1	11.6	11.3	10.3	10.7		3.4	2.6	2.4	2.6	
	max	15.3	16.3	15.6	21.3	22.0	21.2	20.0		7.6	6.3	5.7	5.9	
LHL7EF/4TE-9Y	min	8.3	8.8	8.5	13.7	13.4	12.2	12.7		4.2	3.4	3.0	3.3	
	max	18.2	19.2	18.4	24.2	25.1	24.2	23.0		9.4	7.9	7.0	7.3	
LHL7EF/4PE-12Y	min	9.3	10.0	9.6	15.1	14.8	13.4	13.9		3.9	3.1	2.8	3.1	
	max	19.9	21.2	20.4	26.5	27.6	27.3	25.6		9.0	7.7	7.1	7.1	
LHL7EF/4NE-14Y	min	10.9	11.6	11.2	17.5	17.2	15.6	16.1		4.8	4.0	3.5	3.8	
	max	22.9	24.1	23.4	29.3	30.4	30.1	28.1		10.9	9.3	8.5	8.5	
LHG7EF/S4ITE-10MZ	min								13.0					6.0
	max								27.0					16.0

Provisional data

* Motor version 1, specifically designed for extended application limits with refrigerants such as R448A/R449A, R455A and R454C

BITZER CONDENSING UNITS
FULFIL THE REQUIREMENTS OF THE EU ECODESIGN DIRECTIVE 2015/1095

Complies with MEPS Tier 2; for further details, see BITZER brochure A-530-1	COP	SEPR
Medium temp. (t_0 = –10°C) – refrigerating capacity	0.2 .. ≤5 kW	5 .. 50 kW
Low temp. (t_0 = –35°C) – refrigerating capacity	0.1 .. ≤2 kW	2 .. 20 kW

TECHNICAL DATA AND PERFORMANCE VALUES

SEPR// COP

	Medium temperature –10°C, midpoint								Low temperature –35°C, midpoint				
	R134A	R513A	R1234yf	R404A	R448A/ R449A	R454C	R455A	R744	R404A	R448A/ R449A	R454C	R455A	R744
LHL3E/2EES-2Y	2.59	2.60	2.55	3.42	3.44	3.58	3.25		1.41	1.28	1.30	1.26	
LHL3E/2EES-3Y*	2.52	2.54	2.49	3.40	3.43	3.54	3.24		1.37	1.24	1.26	1.23	
LHL3E/2DES-2Y	2.53	2.54	2.49	3.19	3.22	3.42	3.06		1.93	1.29	1.32	1.26	
LHL3E/2CES-3Y	3.50	3.50	3.49	2.97	3.02	3.20	2.84		1.92	1.82	1.85	1.77	
LHL5E/4FES-3Y	3.56	3.63	3.59	3.48	3.49	3.61	3.30		1.87	1.75	1.73	1.76	
LHL5E/4FES-5Y*	3.51	3.58	3.55	3.50	3.52	3.62	3.34		1.86	1.73	1.71	1.75	
LHL5E/4EES-4Y	3.73	3.77	3.73	3.20	3.27	3.45	3.11		1.93	1.83	1.82	1.81	
LHL5E/4EES-6Y*	3.65	3.69	3.66	3.24	3.30	3.47	3.15		1.90	1.80	1.79	1.78	
LHL5E/4DES-5Y	3.61	3.62	3.62	3.06	3.17	3.34	2.99		1.92	1.84	1.87	1.80	
LHL5E/4CES-6Y	3.49	3.48	3.47	2.81	2.92	3.09	2.75		1.90	1.83	1.86	1.78	
LHL7E/4VE-7Y	3.62	3.68	3.67	3.34	3.55	3.53	3.21		1.94	1.83	1.79	1.80	
LHL7E/4VE-10Y*	3.57	3.63	3.61	3.43	3.61	3.55	3.24		1.94	1.82	1.75	1.74	
LHL7E/4TE-9Y	3.66	3.68	3.67	3.17	3.36	3.40	3.06		1.96	1.89	1.85	1.83	
LHL7E/4TE-12Y*	3.62	3.64	3.62	3.23	3.41	3.39	3.06		1.96	1.88	1.81	1.76	
LHL7E/4PE-12Y	3.63	3.65	3.63	3.09	3.26	3.35	3.00		1.97	1.89	1.88	1.84	
LHL7E/4NE-14Y	3.55	3.55	3.53	2.85	3.01	3.14	2.79		1.96	1.90	1.89	1.80	
LHL7EF/4VE-7Y	3.85	3.93	3.92	3.94	4.16	4.04	3.79		2.03	1.90	1.84	1.89	
LHL7EF/4TE-9Y	3.91	4.00	3.96	3.86	4.06	3.99	3.68		2.07	1.97	1.92	1.93	
LHL7EF/4PE-12Y	3.97	4.04	4.01	3.86	4.01	3.99	3.66		2.03	1.84	1.86	1.81	
LHL7EF/4NE-14Y	3.96	4.03	3.98	3.66	3.79	3.86	3.48		2.04	1.88	1.90	1.79	
LHG7EF/S4ITE-10MZ								3.40					1.70

Provisional data

*Motor version 1, specifically designed for extended application limits with refrigerants such as R448A/R449A, R455A and R454C

PERFORMANCE DATA

BITZER SOFTWARE is available in multiple languages, directly in a browser or as a Windows download. It is always up to date and optimised for mobile devices.

BITZER SOFTWARE comprises:

// Performance data for all conventional refrigerants in freely selectable operating conditions
// All relevant technical data
// Calculation results and individually defined performance tables for the compressors
// Seasonal calculations
// Compound operation
// Available accessories and their design
// All relevant technical documents

ASERCOM CERTIFICATION

The Association of European Refrigeration Component Manufacturers (ASERCOM) certifies compressor performance data. The high standard of this certification is assured by:

// Plausibility checks on the data carried out by experts
// Regular measurements by independent institutes

A number of BITZER compressors are already certified, and more will follow. Compressor performance data that meets these strict requirements is permitted to carry the label 'ASERCOM certified product'. All certified compressors are listed on the ASERCOM website with further information (www.asercom.org).

In BITZER SOFTWARE, the corresponding compressors are marked with this label.

EXPLANATION OF TYPE DESIGNATION

LHL3EF/ 2DES–2Y

- Condenser type
  - 3 = Small housing
  - 5 = Medium-sized housing
  - 7 = Large housing
- F = Frequency inverter
- Compressor type
- Oil charge
  - Y = Ester oil

LHG7EF/ S4ITE–10MZ–40M

- Condenser type
  - 7 = Large housing
- G = Gas cooler
- F = Frequency inverter
- Compressor type
- Motor size
- M = PM motor (permanent magnet motor)
- Oil charge
  - Z = PAG oil
- Motor code

SPECIFICATIONS

Type	Weight in kg (standard scope of delivery)	Max. power consumption of fans in W	Number of fans	Condenser air flow rate in m³/h	Receiver volume in dm³	Max. operating current in A	Sound pressure level**
LHL3E/2EES-2Y	157	120	1	3000	7.8	6.6	36.0
LHL3E/2EES-3Y*	160	120	1	3000	7.8	8.0	36.0
LHL3E/2DES-2Y	157	120	1	3000	7.8	8.0	36.0
LHL3E/2CES-3Y	159	120	1	3000	7.8	9.7	36.5
LHL5E/4FES-3Y	210	120	2	6000	15.0	10.0	37.0
LHL5E/4FES-5Y*	215	120	2	6000	15.0	11.8	37.0
LHL5E/4EES-4Y	214	120	2	6000	15.0	12.8	38.0
LHL5E/4EES-6Y*	216	120	2	6000	15.0	14.6	38.0
LHL5E/4DES-5Y	216	120	2	6000	15.0	15.1	38.5
LHL5E/4CES-6Y	218	120	2	6000	15.0	18.3	39.0
LHL7E/4VE-7Y	347	120	4	12000	25.0	17.6	41.0
LHL7E/4VE-10Y*	354	120	4	12000	25.0	21.9	41.0
LHL7E/4TE-9Y	349	120	4	12000	25.0	20.9	42.0
LHL7E/4TE-12Y*	353	120	4	12000	25.0	27.1	42.0
LHL7E/4PE-12Y	352	120	4	12000	25.0	23.7	43.0
LHL7E/4NE-14Y	360	120	4	12000	25.0	27.6	44.0
LHL7EF/4VE-7Y	360	120	4	12000	30.0	16.0	41.0
LHL7EF/4TE-9Y	360	120	4	12000	30.0	19.5	42.0
LHL7EF/4PE-12Y	360	120	4	12000	30.0	21.5	43.0
LHL7EF/4NE-14Y	360	120	4	12000	30.0	26.3	44.0
LHG7EF/S4ITE-10MZ	390	120	4	12000	27.0	28.0	49.0

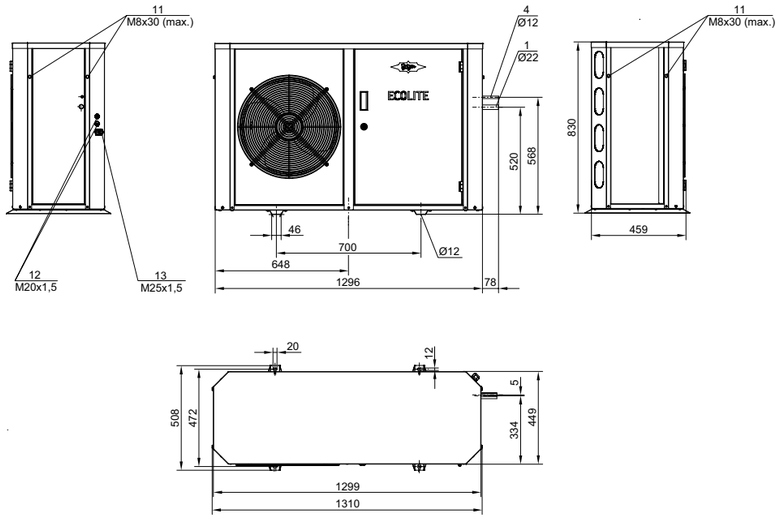
Provisional data

* Motor version 1, specifically designed for extended application limits with refrigerants such as R448A/R449A, R455A and R454C
** In dB(A) at –10/32°C, 50 Hz, at a distance of 10 m for R513A
(Subject to change)

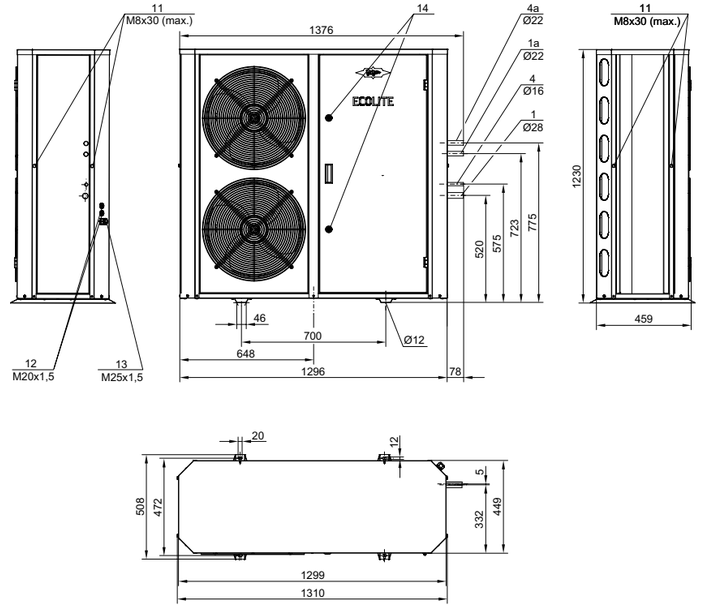
DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

LHL3E



LHL5E



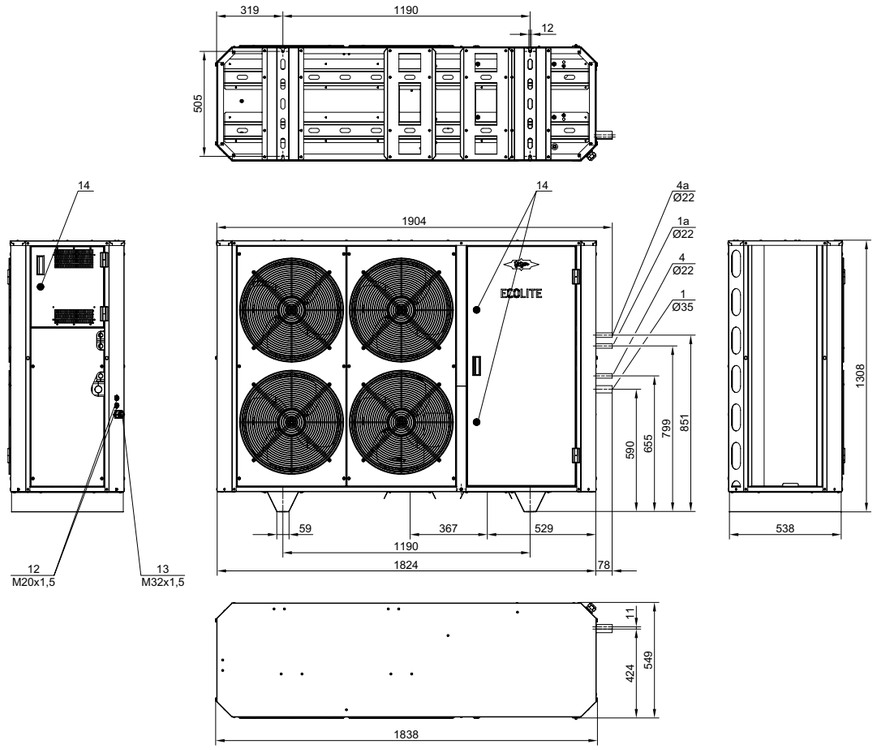
CONNECTIONS

1	Refrigerant inlet (suction gas line), SL	12	Plug for srewed cable gland
1a	Heat recovery inlet (optional)	13	Cable bushing (for cables with a diameter of 9–17 mm)
4	Refrigerant outlet, DL		
4a	Heat recovery outlet (optional)	14	Door lock
11	Load suspension points		

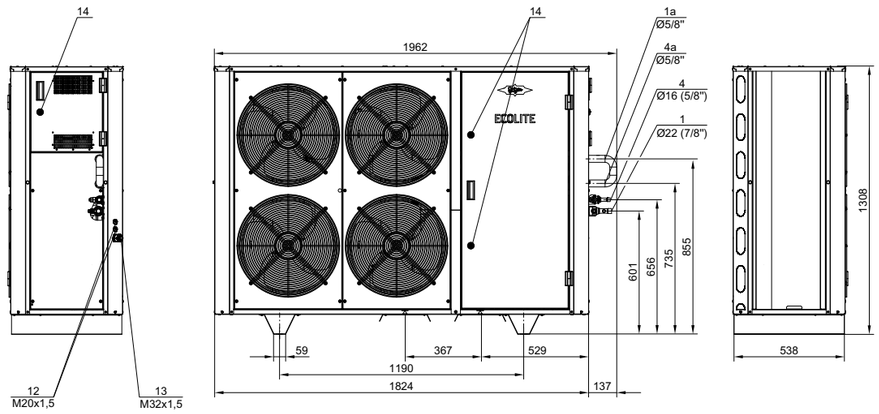
DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

LHL7E
LHL7EF



LHG7EF



CONNECTIONS

1	Refrigerant inlet (suction gas line), SL
1a	Heat recovery inlet (optional)
4	Refrigerant outlet, DL
4a	Heat recovery outlet (optional)
11	Load suspension points
12	Plug for screwed cable gland
13	Cable bushing (for cables with a diameter of 9–17 mm)
14	Door lock

ACCESSORIES

HEAT RECOVERY CONNECTION POINT

Heat recovery: a simple additional step toward energy savings and sustainability through a combination of heating and cooling.

// Optional accessories for LHL5E, LHL7E and LHL7EF
// Shut-off valve included in the condensing unit for manually closing and opening the heat recovery piping
// LHG7EF: compatible with heat recovery as a standard



OIL SEPARATOR

The correct oil level in the compressor at all times, even with long pipe layouts or multiple evaporators.

// Optional accessory for LHL3E, LHL5, LHL7E and LHL7EF (cannot be retrofitted), with check valve
// Standard for LHG7EF in combination with the OLM-IQ oil level controller and oil shut-off valve



OIL LEVEL MONITORING/OIL DIFFERENTIAL PRESSURE SWITCH

For additional compressor protection, especially when there are multiple evaporators and long pipe layouts.

// Standard for LHL3E, LHL5E and LHL7E/LHL7EF
// Retrofit kit available



ADJUSTABLE HIGH/LOW PRESSURE SWITCH

The standard cartridge pressure switches can be replaced with adjustable high/low pressure switches.

// Optional accessory for LHL3E, LHL5E and LHL7E/LHL7EF
// Retrofit kit available



MEDIUM PRESSURE LIMITING VALVE

The medium pressure limiting valve protects the system from overpressure.

// For LHG7EF only
// Maximum operational reliability
// Retrofit kit available



Further accessories can be found in the BITZER SOFTWARE.
The images shown are for illustrative purposes only.

LHE MODULAR AND CUSTOMISABLE

LHE PRO // LHE // LHE FOR HIGH AMBIENT TEMPERATURES **//**
LHE 2-stage

The BITZER LHE series guarantees a wide range of cooling capacities for low and medium temperature applications, as well as for high ambient temperatures, for a wide variety of applications and for refrigerants in safety classes A1, A2L and A3, such as propane and propene.

VERSATILE

// Wide selection of accessories and options, such as VARISTEP capacity control or weather protective housing
// A wide range of approved refrigerants, including those in safety group A2L with low global warming potential
// Applications with low and medium evaporating temperatures at high ambient temperatures up to +50°C
// The CM-RC-02 IQ MODULE is standard for all condensing units with ECOLINE compressor housings CE3 .. BE6; the extension board for condensing units is available as an optional add-on
// LHE PRO as a natural solution for the refrigerants propane and propene in safety class A3

HFO
PROPANE
BITZER SOFTWARE
ECODESIGN CONFORM
CONDENSING UNITS

A SOLUTION FOR EVERY REQUIREMENT

The LHE series comprises six product families with BITZER ECOLINE compressors for a wide range of applications in low and medium temperature applications. LHE condensing units with 2-stage compressors are particularly well-suited for low temperature applications with challenging temperature requirements, while LHE PRO expands the proven product portfolio to include models designed for operation with hydrocarbons in all climate zones. They all combine the decades of technical expertise of BITZER with continuous innovation and are fully compliant with the EU Ecodesign Directive 2015/1095 (not: LHE 2-stage).

ALWAYS PERFECTLY COORDINATED

The air-cooled condensing units in the LHE standard series are the ideal solution for customers looking for a proven and reliable product from BITZER. They are ideal for a variety of applications in the agricultural and food industries, as well as for logistics centres and process cooling.

TAILORED TO THE NEEDS OF EVERY BUSINESS

AGRICULTURE AND FOOD INDUSTRY

LHE condensing units ensure stable and precise cooling for food processing facilities such as bakeries, pastry shops and chocolate or ice cream manufacturers.

COLD STORAGE ROOMS

Whatever you have in your cold stores, the LHE series, featuring built-in semi-hermetic compressor technology from ECOLINE and ECOLINE PRO, ensures cooling capacity and operational reliability while maintaining the perfect cold store temperature.

PROCESS COOLING

You can count on the LHE series for process cooling because one thing matters most: reliability.

FLORISTS

Flowers are sensitive to temperature fluctuations. The LHE series reliably ensures that produce stays fresh, supported by the optional VARISTEP capacity control system.

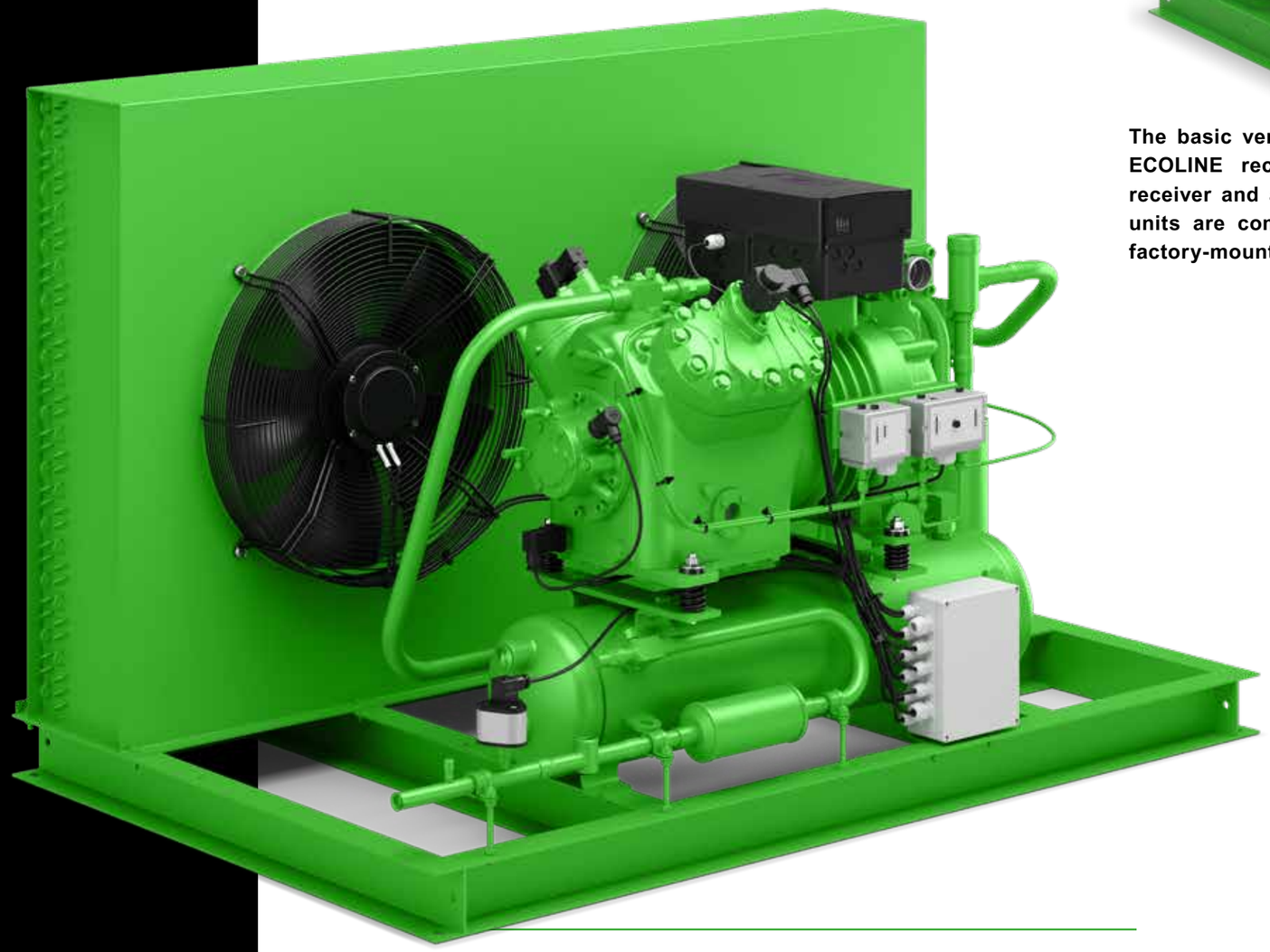
PRECISE COOLING ANYWHERE IN THE WORLD

FAST AND EASY
Commissioning, access, operation and maintenance

EFFICIENT
with low operating costs and outstanding efficiency

FLEXIBLE
for systems, applications and the choice of refrigerant

ROBUST
and ready for all operating conditions



LHE PRO
For use with natural refrigerants in safety class A3, such as propane and propene.



The basic version of the LHE series includes a BITZER ECOLINE reciprocating compressor, a BITZER liquid receiver and a mini-channel condenser. The condensing units are complemented by flexible solutions featuring factory-mounted components.

OUTSTANDING OPERATIONAL RELIABILITY
The semi-hermetic ECOLINE reciprocating compressor, along with the BITZER liquid receiver and the proven, robust mini-channel condenser, deliver exceptional operational reliability. To ensure the best possible protection for the compressor, all condensing units equipped with ECOLINE compressors in housing sizes CE3 through BE6 come standard with the CM-RC-02 IQ MODULE, which can be supplemented with the IO-C extension board for condensing units (add-on kit).

AVAILABLE CAPACITY
The virtually stepless VARISTEP mechanical capacity control system allows the cooling capacity to be perfectly adjusted to the system's requirements. This keeps operating costs to a minimum. Easy access to all components and the semi-hermetic design of the reciprocating compressor ensure a long service life and increase sustainability.

EASY INTEGRATION AND INSTALLATION
All condensing units are fully factory-tested and meet the requirements of EU Ecodesign Directive 2015/1095. Combined with the wide selection of approved refrigerants, these condensing units are future-proof and easy to integrate into existing or new systems.

LHE SERIES
Whatever your requirements.

KP-261-4 EN

LHE
THE STANDARD CONDENSING UNIT



LHE PRO SERIES

// For refrigerants in safety class A3 (R290/R1270)
// Ten sizes and two motor versions with displacements ranging from 4.06 to 110.5 m³/h at 1450 rpm
// Enhanced tightness in accordance with EN1127-1
// Optional: VARISTEP capacity control (CEP2S and higher), start unloading (CEP4S and higher), oil heater, oil monitoring, BITZER liquid receiver with PRV connection and sight glass, weather protective housing

ACCESSORY PACK

// Adjustable high/low pressure switch (mounted)
// Wiring to the junction box/terminal box
// Liquid line with sight glass and filter drier
// Insulated suction gas line to the outer edge of the condensing unit (up to LH84E)

IQ MODULE

// Compressor families CE3 .. BE6
// Protection mode (SE-B)
// CM-IO-C extension board as an add-on (optional)

BITZER ECOLINE COMPRESSOR

// Semi-hermetic reciprocating compressor
// Proven and reliable
// Oil heater
// Discharge gas temperature sensor
// Oil level/oil pressure monitoring

MINI-CHANNEL CONDENSER

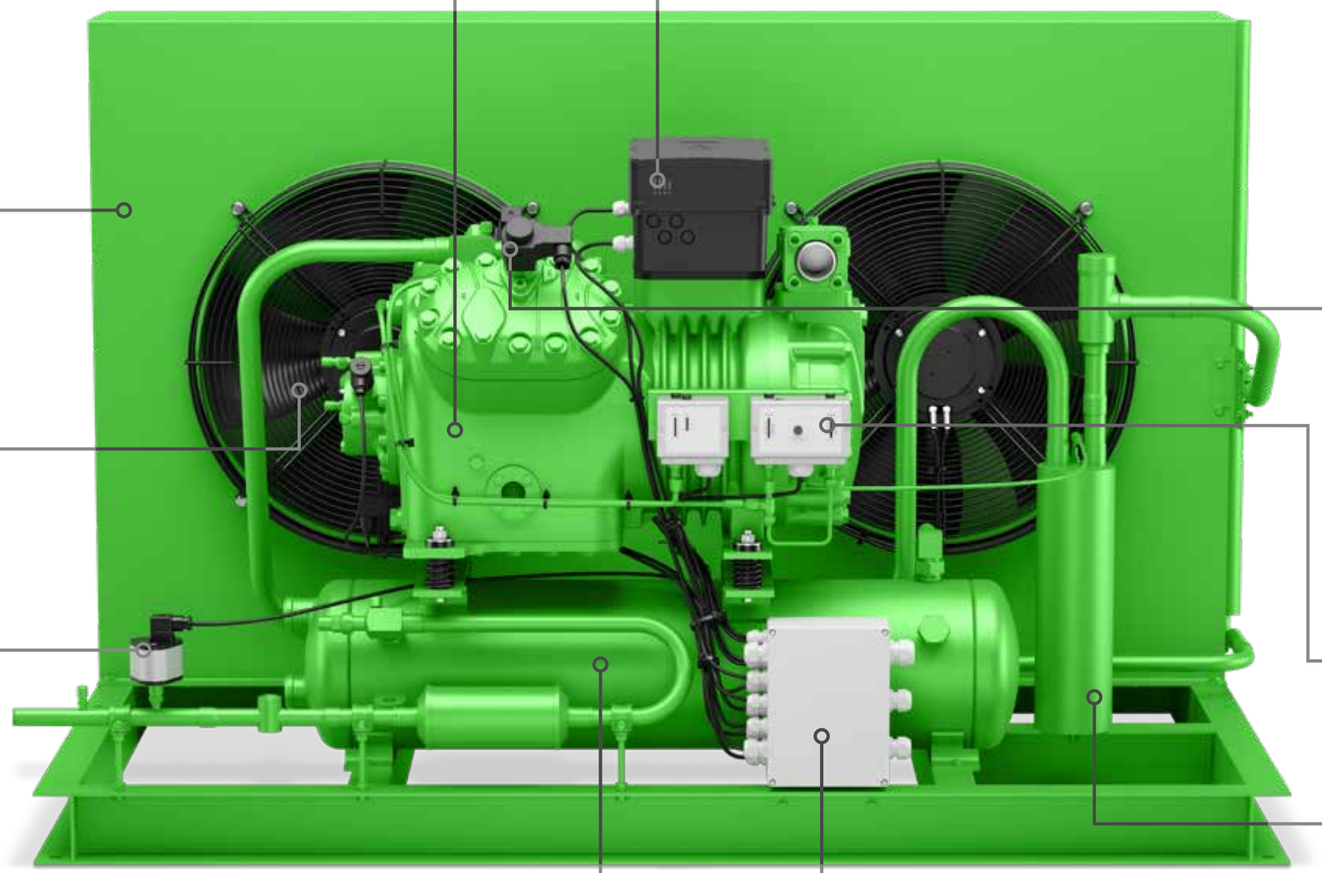
// Proven design: copper pipes, 5 mm** diameter, and aluminium fins
// Optimal heat transfer
// Lower refrigerant charge
// Optional: specially coated condenser

EFFICIENT AND LOW-SOUND EC FANS*

// Lower power consumption
// Sound-optimised design
// EU Ecodesign Regulation 327/2011

ELECTRONIC SPEED CONTROL DEVICE FOR THE CONDENSER FAN (WINTER CONTROLLER)

// Pressure range: 5 to 15 bar
// Pressure range: 8 to 25 bar



VARISTEP MECHANICAL CAPACITY CONTROL

// BITZER ECOLINE compressor with VARISTEP capacity control from 10% to 100% (details upon request)

START UNLOADER

// CE4 .. BE6 compressor family
// Cylinder head with PTC sensor (mounted)
// Control valve included

HIGH/LOW PRESSURE SWITCH

// Mounted
// With high-pressure safety pressure cut-out, installed (compressor model 4NES-14(Y) and higher)

OIL SEPARATOR

// With a check valve in the discharge line (mounted)

WIRING OF ELECTRICAL COMPONENTS

// Optional: factory mounted and wired
// To the compressor terminal box
// To the junction box (mounted)

RECIPROCATING COMPRESSORS
HFO
PROPANE
ECODESIGN CONFORM

LHE SERIES

BITZER LIQUID RECEIVER

// Optional: larger volume
// Pressure relief valve connection
// Sight glass and shut-off valve

PIPE WORK

// Made of steel

*Excluding LH265E – AC fans instead of EC fans **LH265E – copper pipe, 7 mm diameter

The figure shows a fully equipped LHE condensing unit.
Please refer to the following pages for the standard scope of delivery and available optional equipment

LHE PRO FOR HYDROCARBONS
THE NATURAL SOLUTION

NATURAL
// For refrigerants in safety class A3 (R290/R1270)

RELIABLE
// BITZER ECOLINE PRO compressor
// Enhanced tightness
// CE designation
// BITZER liquid receiver
// Fan with EC motor

FLEXIBLE
// Motor 1 or motor 2
// Protection modules: SE-B3 (standard) or IQ MODULE (starting from CEP3S)
// Optional accessories such as VARISTEP, oil heater, oil level monitor, differential oil pressure switch, weather protective housing

CONDENSING UNIT SIZES: LH32E .. LH135E
// 38 models
// 4.06 m³/h .. 110.5 m³/h

LHE CONDENSING UNITS
FOR HIGH AMBIENT TEMPERATURES

BITZER LHE condensing units ensure efficient operation even at high condensing temperatures:

HIGH COOLING CAPACITY
// 37 models up to 126.8 m³/h
// LH33E .. LH265E

ECOLINE COMPRESSOR
// Well-known and proven BITZER technology

SPEED-CONTROLLED EC FANS
// For efficient, low-sound operation (available as an option, except for the LH265E)

SYSTEM-OPTIMISED MINI-CHANNEL CONDENSER
// For optimal heat transfer and a low refrigerant charge

ROBUST CONSTRUCTION AND COMPACT DIMENSIONS
// Compact installation dimensions at the installation site

EASY OPERATION AND COMMISSIONING
// Easy maintenance thanks to direct access to all components

LHE WITH 2-STAGE COMPRESSOR
FOR LOW TEMPERATURE APPLICATIONS

// With a compressor design for very low evaporating temperatures
// Mini-channel condenser
// Approved for low-GWP refrigerants
// Eight models with a displacement of 119.70/12.60 m³/h ... 101.10/50.50 m³/h at 1450 rpm or 50 Hz

SCOPE OF DELIVERY

LHE – Air cooled condensing units including high ambient temperatures types		LH32E/ .. – LH84E/..	LH104E/ .. – LH135E/..	LH265E/..	LH32E/.. P – LH84E/.. P	LH104E/ .. P – LH135E/.. P
Semi-hermetic reciprocating compressors	– ECOLINE compressor – 2-stage compressors	S	S	S		
	– ECOLINE PRO compressor				S	S
Air-cooled condenser	– Mini-channel design with one fan – EC motor, speed-controlled	S				
	– Mini-channel design with two fans – EC motors, speed-controlled		S			
	– With two fans – 3-phase AC motors			S		
	– Mini-channel design with one fan – EC motor, speed-controlled – Enhanced tightness				S	
	– Mini-channel design with two fans – EC motors, speed-controlled – Enhanced tightness					S
Liquid receiver	With shut-off valve	S	S	S	S	S
Pressure relief valve connection	LH32E .. LH84E: additional connections required on the liquid receiver (accessory)		S	S		S
Discharge line	–	S	S	S	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants with tc < 70°C	S	S	S		
	BSG68K (PAG)				S	S
IQ MODULE CM-RC-02	Compressor module in module housing – Default protection mode setting (SE-B) – CE3 compressors and above	S	S	S	S	S
Protection device	SE-B3 – up to CE2 compressors	S	S		S	

S = scope of delivery
(Subject to change)

Further details can be found in the BITZER SOFTWARE. BITZER SOFTWARE

OPTIONAL EQUIPMENT

LHE Air cooled condensing units including high ambient temperature types		2KE- SP..4CESP	4DESP ..6HEP	2KES .. 2FES	2EES .. 2CES	4FES .. 4CES	4TES .. 4NES			4JE .. 4GE	6JE .. 6HE	S4T .. S4N	S4G	S6J .. S6G	
		LH32E/ .. P – LH84E/.. P	LH104E/ .. P – LH135E/.. P	LH32E/.. – LH64E/..	LH44E/.. – LH84E/..	LH64E/.. – LH114E/..	LH104E/.. – LH114E/..	LH135E/..	LH124E/4NES-.. – LH135E/ 4NES-..	LH135E/.. LH265E/..	LH135E/.. LH265E/..	LH104E/..	LH124E/..	LH135E/.. LH265E/..	
Warranty extension of up to five years	See the price list for details	●	●	●	●	●	●	●	●	●	●	●	●	●	
Liquid receiver with larger volume*	–			●	●	●	●					●			
Weather protective housing	Mounting kit	●	●	●	●	●	●	●	●	●*	●*	●	●	●*	*Except for LH265E/..
Condenser for enhanced corrosion protection*	With copper or plastic-coated fins			●	●	●	●	●	●	●	●	●	●	●	
Accessory pack*	– High and low pressure switches, mounted – Wiring to the terminal/connection box – Liquid line with sight glass and filter drier – LH32E .. LH84E with insulated suction line to outer contour			●	●	●	●	●	●	●	●				
Electronic speed control device for condenser fan	Pressure range: 5 to 15 bar			●	●	●	●	●	●	●*	●*	●	●	●*	*Except for LH265E/..
	Pressure range: 8 to 25 bar			●	●	●	●	●	●	●*	●*	●	●	●*	*Except for LH265E/..
High and low pressure switch (adjustable)	Mounted			●	●	●	●	●				●			
	With HP safety pressure cut-out, mounted								●	●	●		●	●	
Wiring of electronic components*	To the compressor terminal box – mounted – included in the accessory package			●	●*	●	●	●	●	●*	●*				*Except LH64E/LH84E
	To junction box – mounted – included in the accessory package				●*	●	●	●	●	●*	●*				*Except LH44E/LH53E/LH265E
Check valve*	In discharge line					●	●	●	●	●	●				
Oil separator*	With check valve in the pressure line – mounted			●	●	●	●	●	●	●	●	●	●	●	
Additional connections at receiver*	– Sight glass(es) – Pressure relief valve connection – included in the accessory package	●	●	●1	●	● S2	S	S	S						1 for LH44E/.. 2 Standard for LH104E/.. ; LH114E/..
Motor for special voltage*	Available motors: see Technical Information KT-410			●	●	●	●	●	●	●	●	●	●	●	
Oil charge	BSE55 (ester oil) for HFC and HFC/HFO refrigerants – at high condensing temperatures, tc > +70°C – for R1234ze(E) tc < 70°C/to < 15°C1			○	○	○	○	○	○	○*	○*				*Except for LH265E/ .. and 2-stage condensing units S4T .. S6G (not approved for A2L refrigerants)
	B5.2: The "Y" in the compressor designation is omitted			○	○	○	○	○	○	○	○	○	○	○	
	SHC226E (PAO)	●	●												

● = Option available ○ = Option available at no extra charge

*Retrofitting is not possible

[1]For R1234ze(E), tc > +70°C/t_0 > +15°C, upon request
[3]For R1234ze(E)

(Subject to change)

Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

KP-261-4 EN

OPTIONAL EQUIPMENT

LHE Air-cooled condensing units including high ambient temperature types		2KE- SP..4CESP	4DESP ..6HEP	2KES .. 2FES	2EES .. 2CES	4FES .. 4CES	4TES .. 4NES			4JE .. 4GE	6JE .. 6HE	S4T .. S4N	S4G	S6J .. S6G	
		LH32E/ .. P – LH84E/.. P	LH104E/ .. P – LH135E/.. P	LH32E/.. – LH64E/..	LH44E/.. – LH84E/..	LH64E/.. – LH114E/..	LH104E/.. – LH114E/..	LH135E/..	LH124E/4NES-.. – LH135E/ 4NES-..	LH135E/.. LH265E/..	LH135E/.. LH265E/..	LH104E/..	LH124E/..	LH135E/.. LH265E/..	
Opto-electronic oil level monitoring	Mounted	●*	●			●	●	●	●						*Starting with the CEP3S compressor
MP54 differential oil pressure switch	Mounted									●	●	●	●	●	
Differential oil pressure switch DP-2	Mounted									●	●	●	●	●	
Oil heater	See the price list for details	●	●	●	●	●	●	●	●	●	●	●	●	●	
Discharge gas temperature sensor	PTC 140 (included as standard) PT1000 with IQ MODULE					●	●	●	●	●	●	●	●	●	
Start unloader (SU)	Cylinder head with PTC sensor, mounted Control valve, included Check valve required		●*				●	●	●	●	●				*Starting with the CEP4S compressor
CRII capacity regulator (1×)	Cylinder head, mounted Control valve, included Possible configurations: see KT-101	●*	●		●	●	●	●	●	●	●				*Starting with the CEP2S compressor
Oil service valve							●	●	●	●	●	●	●	●	
Liquid subcooler – mounted	– Liquid injection valve for use with a subcooler – Complete with piping – Components mounted and insulated											●	●	●	
IQ MODULE CM-RC-02 Compressor module add-on	See the price list for details CE3 compressor and above	●	●			●	●	●	●	●	●				
BITZER DIGITAL NETWORK	Only with IQ MODULE	●	●			●	●	●	●	●	●				

● = Option available ○ = Option available at no extra charge

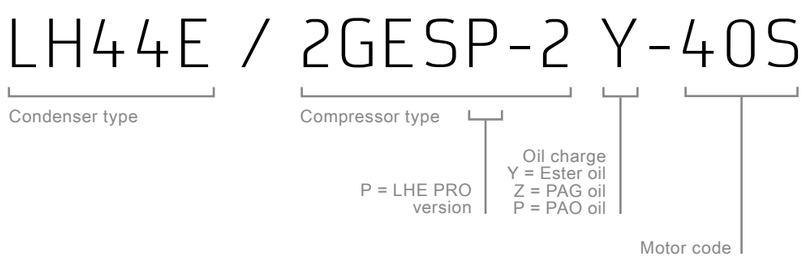
*Retrofitting is not possible

[1]For R1234ze(E), tc > +70°C/t_0 > +15°C, upon request

[3]For R1234ze(E)

(Subject to change)

EXPLANATION OF TYPE DESIGNATION



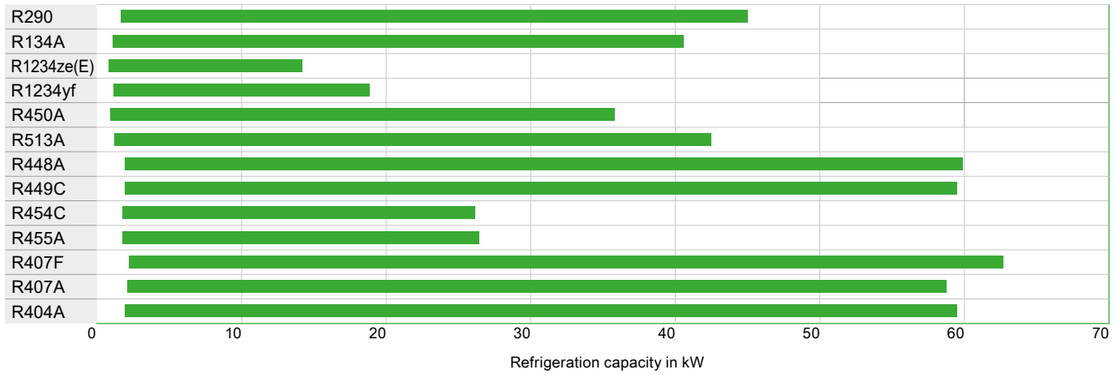
BITZER CONDENSING UNITS
FULFIL THE REQUIREMENTS OF EU ECODESIGN DIRECTIVE 2015/1095

Complies with MEPS Tier 2; for further details, see the BITZER brochure A-530-1	COP	SEPR
Medium temp. (t_0 = –10°C) – refrigeration capacity	0.2 .. ≤ 5 kW	5 .. 50 kW
Low temp. (t_0 = –35°C) – refrigeration capacity	0.1 .. ≤ 2 kW	2 .. 20 kW

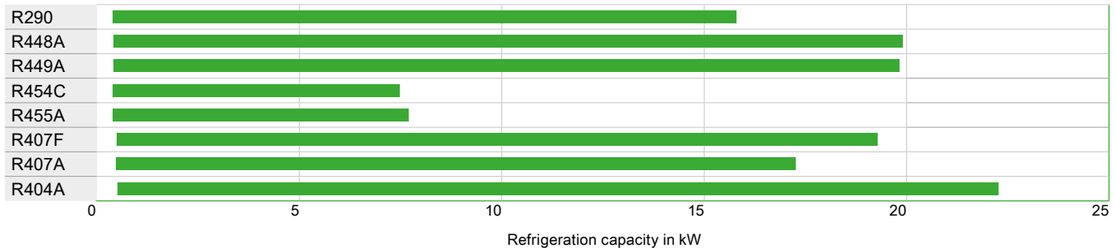
Further details can be found in the BITZER SOFTWARE. BITZER SOFTWARE

APPLICATION RANGES

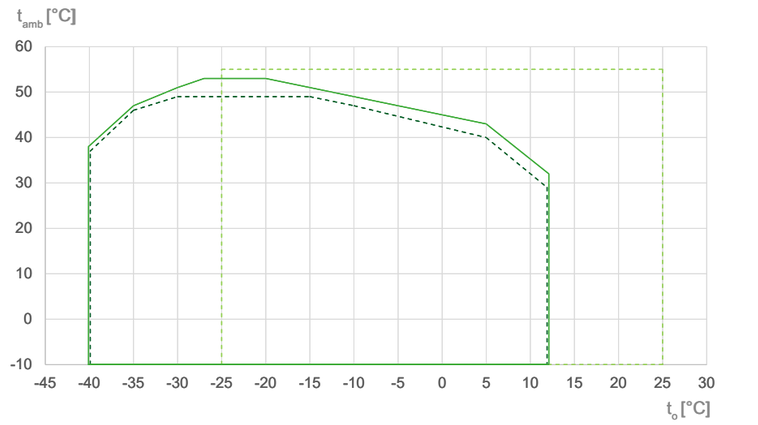
Refrigeration capacity
in accordance with EN13215
t_o = –10 °C, t_{amb} = +32 °C, t_{oh} = +20 °C



Refrigeration capacity
in accordance with EN13215
t_o = –35°C, t_{amb} = +32°C, t_{oh} = +20°C



APPLICATION LIMITS



t_o Evaporation temperature (°C)
t_c Condensing temperature (°C)
t_{amb} Ambient temperature (°C)
Δt_{oh} Suction gas superheat (K)

LH265E/4GE-30Y, 50 Hz, R448A/R449A, t_{oh} = +20 °C
LH135E/4PES-15Y, 50 Hz, R448A/R449A, t_{oh} = +20 °C
LH84E/4FES-5Y, 50 Hz, R134a/R513A, t_{oh} = +20 °C

PERFORMANCE DATA

BITZER SOFTWARE is available in multiple languages, directly in a browser or as a Windows download. It is always up to date and optimised for mobile devices.

BITZER SOFTWARE comprises:

// Performance data for all conventional refrigerants in freely selectable operating conditions
// All relevant technical data
// Calculation results and individually defined performance tables for the compressors
// Seasonal calculations
// Compound operation
// Available accessories and their design
// All relevant technical documents

ASERCOM CERTIFICATION

The Association of European Refrigeration Component Manufacturers (ASERCOM) certifies compressor performance data. The high standard of this certification is assured by:

// Plausibility checks on the data carried out by experts
// Regular measurements by independent institutes

A number of BITZER compressors are already certified, and more will follow. Compressor performance data that meets these strict requirements is permitted to carry the label 'ASERCOM certified product'. All certified compressors are listed on the ASERCOM website with further information (www.asercom.org).

In BITZER SOFTWARE, the corresponding compressors are marked with this label.

Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

PERFORMANCE DATA

Provisional data

Standard types		
Type	**Refrigeration capacity** Q_o in kW. 50 Hz	
	Medium Temperature R513A t_0/t_{amb} = –10°C/+32°C	Low Temperature R448A t_0/t_{amb} = –35°C/+32°C
LH32E/2KES-05Y	1.3	0.4
LH32E/2JES-07Y	1.6	0.6
LH33E/2HES-1Y	2.1	0.9
LH33E/2HES-2Y	2.1	0.9
LH33E/2GES-2Y	2.5	1.0
LH44E/2GES-2Y	2.5	1.0
LH44E/2FES-2Y	3.1	1.3
LH44E/2FES-3Y	3.1	1.3
LH44E/2EES-2Y	3.7	1.6
LH53E/2DES-2Y	4.5	2.0
LH64E/2EES-3Y	4.0	1.7
LH64E/2DES-3Y	4.7	2.0
LH64E/2CES-3Y	5.7	2.6
LH64E/4FES-3Y	5.9	2.8
LH64E/4EES-4Y	7.4	3.4
LH84E/2CES-4Y	5.9	2.7
LH84E/4FES-5Y	6.2	2.9
LH84E/4EES-6Y	7.9	3.6

Standard types		
Type	**Refrigeration capacity** Q_o in kW. 50 Hz	
	Medium Temperature R513A t_0/t_{amb} = –10°C/+32°C	Low Temperature R448A t_0/t_{amb} = –35°C/+32°C
LH84E/4DES-5Y	8.9	4.0
LH84E/4CES-6Y	10.7	5.1
LH104E/4DES-7Y	9.4	3.7
LH104E/4TES-9Y	14.0	6.2
LH114E/4CES-9Y	11.5	5.3
LH114E/4TES-12Y	14.0	6.3
LH114E/4PES-12Y	15.9	6.7
LH124E/4NES-14Y	18.7	8.4
LH135E/4PES-15Y	16.5	6.7
LH135E/4NES-20Y	19.4	8.7
LH135E/4JE-15Y	22.2	10.4
LH135E/4JE-22Y	21.8	9.6
LH135E/4HE-18Y	25.7	12.3
LH135E/4HE-25Y	25.3	11.7
LH135E/4GE-23Y	28.2	14.5
LH135E/6JE-25Y	30.4	14.7
LH135E/6HE-28Y	34.8	17.1

PERFORMANCE DATA

High Ambient temperatures		
Type	**Refrigeration capacity** Q_o in kW, 50 Hz	
	Medium Temperature R513A t_0/t_{amb} = –10°C/+32°C	Low Temperature R448A t_0/t_{amb} = –35°C/+32°C
LH265E/4HE-18Y	27.2	12.6
LH265E/4GE-23Y	30.2	15.1
LH265E/4GE-30Y	30.7	14.1
LH265E/4FE-28Y	36.1	17.8
LH265E/4FE-35Y	35.3	17.4
LH265E/6JE-25Y	32.8	15.5
LH265E/6HE-28Y	37.9	18.2
LH265E/6HE-35Y	37.3	17.3
LH265E/6GE-34Y	42.7	22.3

2-stage		
Type	**Refrigeration capacity** Q_o in kW, 50 Hz	
	R404A t_0/t_{amb} = –45°C/+32°C	R448A/R449A t_0/t_{amb} = –45°C/+32°C
LH104E/S4T-5.2Y	4.1	3.4
LH104E/S4N-8.2Y	5.7	4.8
LH124E/S4G-12.2Y	9.2	7.2
LH135E/S6J-16.2Y	13.2	10.9
LH135E/S6H-20.2Y	15.2	12.2
LH135E/S6G-25.2Y	17.3	13.9
LH265E/S6G-25.2Y	17.6	14.4
LH265E/S6F-30.2Y	20.8	17.3

LHE PRO		
Type	**Refrigeration capacity** Q_o in kW, R290, 50 Hz	
	Medium Temperature t_0/t_{amb} = –10°C/+32°C SH/ t_{cu} = 20°C/1K	Low Temperature t_0/t_{amb} = –35°C/+32°C SH/ t_{cu} = 20°C/1K
LH32E/2KESP-05Z	1.7	0.5
LH32E/2JESP-07Z	2.3	0.7
LH33E/2HESP-1Z	2.8	0.9
LH33E/2HESP-2Z	2.8	0.9
LH33E/2GESP-2Z	3.2	1.1
LH44E/2GESP-2Z	3.3	1.1
LH44E/2FESP-2Z	3.9	1.4
LH44E/2FESP-3Z	3.9	1.4
LH44E/2EESP-2Z	4.7	1.5
LH53E/2DESP-2Z	5.7	1.8
LH64E/2EESP-3Z	5.3	1.5
LH64E/2DESP-3Z	6.0	1.8
LH64E/2CESP-3Z	7.4	2.3
LH64E/4FESP-3Z	7.8	2.3
LH64E/4EESP-4Z	9.4	2.9
LH84E/2CESP-4Z	7.8	2.4
LH84E/4FESP-5Z	8.2	2.4
LH84E/4EESP-6Z	10.1	3.0
LH84E/4CESP-6Z	13.9	4.5
LH104E/4DESP-7Z	12.1	3.6
LH114E/4CESP-9Z	15.3	4.7
LH124E/4CESP-9Z	15.5	4.8
LH104E/4TESP-9Z	17.4	5.4
LH114E/4TESP-12Z	17.8	5.4
LH114E/4PESP-12Z	20.2	6.1
LH124E/4NESP-14Z	24.5	7.8
LH135E/4PESP-15Z	21.9	6.6
LH135E/4NESP-20Z	25.4	7.8
LH135E/4JEP-15Z	28.8	9.1
LH135E/4JEP-22Z	28.3	8.7
LH135E/4HEP-18Z	33.5	11.0
LH135E/4HEP-25Z	33.0	10.6
LH135E/4GEP-23Z	38.2	13.3
LH135E/6JEP-25Z	40.8	14.0
LH135E/6HEP-28Z	44.9	15.8
LH135E/6HEP-28Z	44.9	15.8

Provisional data

BITZER SOFTWARE

Further details can be found in the BITZER SOFTWARE.

TECHNICAL DATA

Standard types / LHE PRO						
Type	**Weight** in kg (standard scope of delivery)	**Max. power consumption of fans** in W	**Max. condenser air flow** in m³/h	**Receiver volume** in dm³	**Max. operating current** in A	**Sound pressure level** at –10/32°C 50 Hz at 10 m distance in dB(A)
LH32E/2KES(P)-05	71	135	1650	3.0	4.2	45.4
LH32E/2JES(P)-07	71	135	1650	3.0	5.1	45.5
LH33E/2HES(P)-1	70	135	1650	3.0	5.2	45.6
LH33E/2HES(P)-2	72	135	1650	3.0	5.9	45.6
LH33E/2GES(P)-2	72	135	1650	3.0	6.4	42.4
LH44E/2GES(P)-2	78	155	2000	5.6	6.4	42.4
LH44E/2FES(P)-2	77	155	2000	5.6	6.7	43.0
LH44E/2FES(P)-3	78	155	2000	5.6	7.5	43.0
LH44E/2EES(P)-2	96	155	2000	5.6	7.4	43.1
LH53E/2DES(P)-2	109	155	2600	5.6	9.0	44.0
LH64E/2EES(P)-3	121	330	4300	7.8	9.0	45.0
LH64E/2DES(P)-3	121	330	4300	7.8	10.1	45.1
LH64E/2CES(P)-3	119	330	4300	7.8	10.6	45.2
LH64E/4FES(P)-3	131	330	4300	7.8	11.0	45.6
LH64E/4EES(P)-4	133	330	4300	7.8	13.7	46.8
LH84E/2CES(P)-4	123	340	4600	13.0	11.5	45.3
LH84E/4FES(P)-5	140	340	4600	13.0	12.3	45.7
LH84E/4EES(P)-6	140	340	4600	13.0	15.1	46.9
LH84E/4DES(P)-5	143	340	4600	13.0	16.0	48.0
LH84E/4CES(P)-6	147	340	4600	13.0	19.2	48.2
LH104E/4DES(P)-7	188	2×330	8000	15.0	18.0	48.3
LH104E/4TES(P)-9	235	2×330	8000	15.0	21.4	48.7
LH114E/4CES(P)-9	199	2×330	9300	15.0	21.7	48.6
LH114E/4TES(P)-12	251	2×330	9300	15.0	26.6	48.7
LH114E/4PES(P)-12	249	2×330	9300	15.0	24.2	50.0
LH124E/4NES(P)-14	284	2×330	9800	30.0	28.1	55.3
LH135E/4PES(P)-15	303	2×340	10400	30.0	29.8	53.4
LH135E/4NES(P)-20	306	2×340	10400	30.0	34.8	55.5
LH135E/4JE(P)-15	343	2×340	10400	30.0	32.4	50.5
LH135E/4JE(P)-22	343	2×340	10400	30.0	38.8	50.5
LH135E/4HE(P)-18	352	2×340	10400	30.0	38.3	50.9
LH135E/4HE(P)-25	356	2×340	10400	30.0	45.6	50.9
LH135E/4GE(P)-23	345	2×340	10400	30.0	45.5	53.5
LH135E/6JE(P)-25	381	2×340	10400	30.0	48.0	52.1
LH135E/6HE(P)-28	381	2×340	10400	30.0	54.8	54.2
2-stage						
LH104E/S4T-5.2Y	252	2×330	9800	15.0	16.0	Upon request
LH104E/S4N-8.2Y	257	2×330	9800	15.0	19.0	Upon request
LH124E/S4G-12.2Y	348	2×330	9800	30.0	26.0	Upon request
LH135E/S6J-16.2Y	395	2×340	10400	30.0	33.0	Upon request
LH135E/S6H-20.2Y	406	2×340	10400	30.0	39.0	Upon request
LH135E/S6G-25.2Y	419	2×340	10400	30.0	47.0	Upon request
LH265E/S6G-25.2Y	605	2×760	26000	39	52	Upon request
LH265E/S6F-30.2Y	606	2×760	26000	39	60	Upon request

Provisional data

TECHNICAL DATA

High ambient temperature						
Type	**Weight** in kg (standard scope of delivery)	**Max. fan power** in W	**Max. condenser air flow** in m³/h	**Receiver volume** in dm³	**Max. operating current** in A	**Sound pressure level** at –10/32°C 50 Hz at 10 m in dB(A)
LH33E/2KES-05Y	71	135	1650	3.0	4.2	45.5
LH33E/2JES-07Y	71	135	1650	3.0	5.1	45.5
LH44E/2HES-1Y	80	155	2000	5.6	5.2	43.0
LH44E/2HES-2Y	81	155	2000	5.6	5.9	43.0
LH53E/2GES-2Y	92	155	2600	5.6	6.4	44.0
LH64E/2FES-2Y	104	330	4300	7.8	7.1	45.0
LH64E/2EES-2Y	127	330	4300	7.8	7.8	45.0
LH64E/2DES-2Y	127	330	4300	7.8	9.3	45.0
LH84E/2CES-3Y	136	340	4600	13.0	10.8	45.3
LH84E/4FES-3Y	148	340	4600	13.0	11.2	45.7
LH104E/2DES-3Y	182	2×330	8000	15.0	10.4	46.0
LH104E/2CES-4Y	182	2×330	8000	15.0	11.8	46.0
LH104E/4EES-4Y	196	2×330	8000	15.0	14.0	47.0
LH104E/4EES-6Y	198	2×330	8000	15.0	15.4	47.0
LH114E/4FES-5Y	212	2×330	9300	15.0	12.6	48.6
LH114E/4DES-5Y	212	2×330	9300	15.0	16.3	48.6
LH114E/4DES-7Y	215	2×330	9300	15.0	18.3	48.6
LH124E/4CES-6Y	254	2×330	9800	30.0	19.5	55.3
LH124E/4CES(P)-9	254	2×330	9800	30.0	22.0	55.3
LH124E/4TES-9Y	300	2×330	9800	30.0	21.7	55.3
LH124E/4TES-12Y	307	2×330	9800	30.0	26.9	55.3
LH135E/4PES-12Y	323	2×340	10400	30.0	24.7	53.4
LH135E/4NES-14Y	325	2×340	10400	30.0	28.6	55.3
LH265E/4JE-15Y	551	2×760	26000	39.0	33.0	Upon request
LH265E/4JE-22Y	582	2×760	26000	39.0	39.5	Upon request
LH265E/4HE-18Y	555	2×760	26000	39.0	39.0	Upon request
LH265E/4HE-25Y	575	2×760	26000	39.0	46.2	Upon request
LH265E/4GE-23Y	564	2×760	26000	39.0	46.2	Upon request
LH265E/4GE-30Y	578	2×760	26000	39.0	53.5	Upon request
LH265E/4FE-28Y	579	2×760	26000	39.0	55.0	Upon request
LH265E/4FE-35Y	579	2×760	26000	39.0	64.4	Upon request
LH265E/6JE-25Y	585	2×760	26000	39.0	48.7	Upon request
LH265E/6JE-33Y	603	2×760	26000	39.0	55.5	Upon request
LH265E/6HE-28Y	596	2×760	26000	39.0	55.5	Upon request
LH265E/6HE-35Y	607	2×760	26000	39.0	66.7	Upon request
LH265E/6GE-34Y	600	2×760	26000	39.0	67.8	Upon request
LH265E/6GE-40Y	610	2×760	26000	39.0	76.2	Upon request

Provisional data

BITZER SOFTWARE

Further details can be found in the BITZER SOFTWARE.



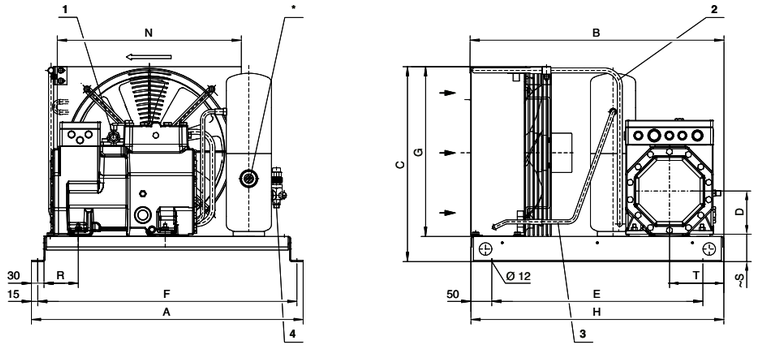
Modern floristry demands reliability. Easy work for BITZER LHE condensing units: they create ideal conditions for flowers and plants, allowing businesses to focus entirely on their core business.

DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

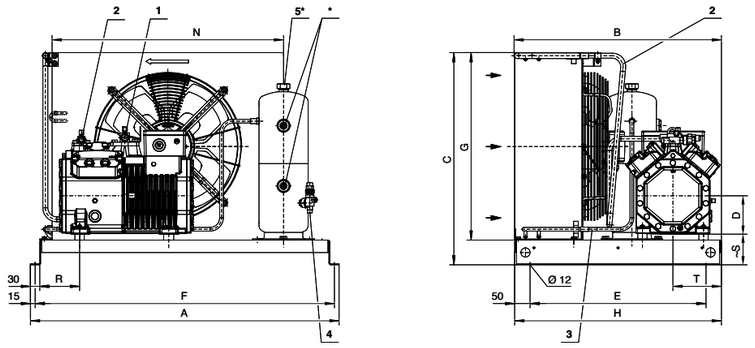
LH32E/2KES-05(Y) .. LH84E/2CES-4(Y)

Standard condensing unit (condensing units for high ambient temperatures available upon request)



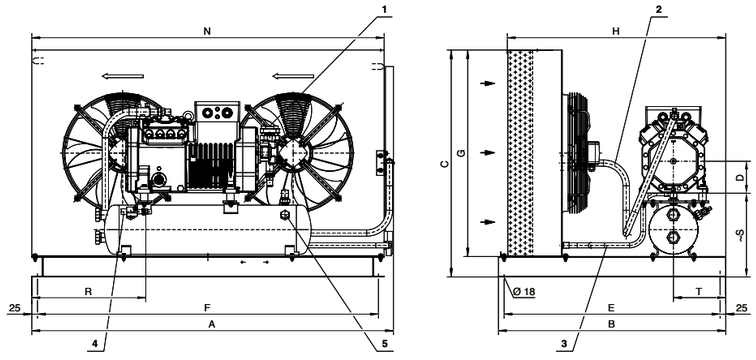
LH64E/4FES-3(Y) .. LH84E/4DES-5(Y)/LH84E/4CES-6(Y)

Standard condensing unit (condensing units for high ambient temperatures available upon request)



LH104E/4DES-7(Y) .. LH135E/6HE-28(Y)

Standard condensing unit (condensing units for high ambient temperatures available upon request)



CONNECTIONS

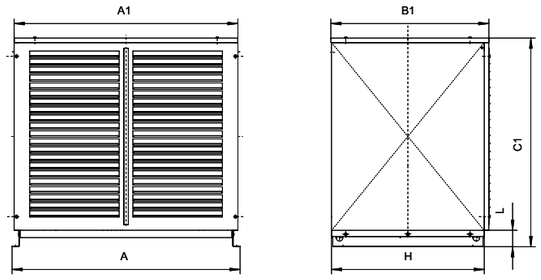
1 Suction valve
2 Discharge line
3 Condensate line
4 Refrigerant outlet (liquid line)
5 Pressure relief valve connection
Internal thread: 3/8-18 NPTF
External thread: 1 1/4-12 UNF

*Optional set

DIMENSIONS

Provisional data

Type	Dimensions in mm																Connections			
																	Suction valve		Refrigerant outlet	
	A	A_1	B	B_1	C	C1	D	E	F	G	H	L	N	R	S	T	mm	in.	mm	in.
LH32E/2KES(P)-05(Y)	650	630	607	645	466	574	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH32E/2JES(P)-07(Y)	650	630	607	645	466	574	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH33E/2HES(P)-1(Y)	650	630	607	645	466	574	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH33E/2HES(P)-2(Y)	650	630	607	645	466	574	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH33E/2GES(P)-2(Y)	650	630	607	645	466	574	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH44E/2GES(P)-2(Y)	650	630	607	645	516	574	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44E/2FES(P)-2(Y)	650	630	607	645	516	574	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44E/2FES(P)-3(Y)	650	630	607	645	516	574	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44E/2EES(P)-2(Y)	650	630	702	740	516	574	121	600	620	456	700	62	490	146	82	174	22	7/8	10	3/8
LH64E/2EES(P)-3(Y)	1000	982	672	693	687	915	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH53E/2GES(P)-2(Y)	1000	982	671	693	536	915	102	570	970	456	670	72	750	160	102	139	16	5/8	10	3/8
LH53E/2DES(P)-2(Y)	1000	982	671	693	536	915	121	570	970	456	670	72	750	160	102	157	22	7/8	10	3/8
LH64E/2DES (P)-3(Y)	1000	982	672	693	687	915	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH64E/2CES (P)-3(Y)	1000	982	672	693	687	915	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH84E/2CES (P)-4(Y)	1000	982	672	693	837	915	121	570	970	757	670	72	850	160	102	157	22	7/8	12	1/2
LH64E/4FES(P)-3(Y)	1000	982	672	693	687	915	125	570	970	607	670	72	750	129	99	157	22	7/8	12	1/2
LH84E/4FES(P)-5(Y)	1000	982	672	693	837	915	125	570	970	757	670	72	850	129	99	157	22	7/8	12	1/2
LH64E/4EES(P)-4(Y)	1000	982	672	693	687	915	125	570	970	607	670	72	750	129	99	157	28	1 1/8	12	1/2
LH84E/4EES(P)-6(Y)	1000	982	672	693	837	915	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2
LH84E/4DES(P)-5(Y)	1000	982	672	693	837	915	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2
LH84E/4CES(P)-6(Y)	1000	982	672	693	837	915	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2



A1, B1, C1:
Dimensions of the compatible weather protective housing

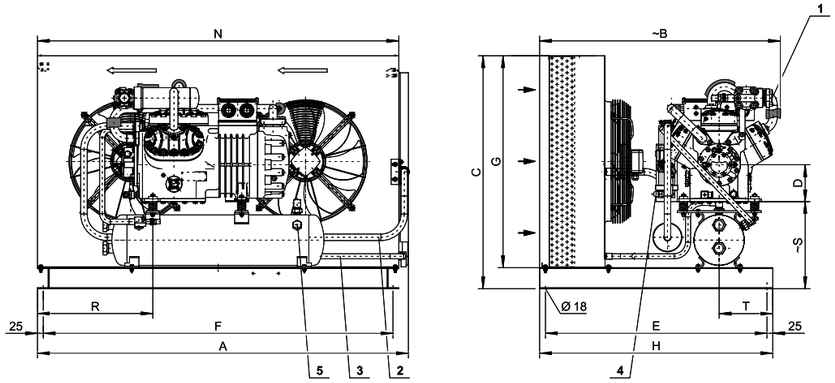
Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

LH104E/S4T-5.2Y .. LH135E/S6G-25.2Y



CONNECTIONS

1 Suction valve
2 Discharge line
3 Condensate line
4 Refrigerant outlet (liquid line)
5 Pressure relief valve connection
Internal thread: 3/8-18 NPTF
External thread: 1 1/4-12 UNF

*Optional set

DIMENSIONS

Type	Dimensions in mm															Connections			
																Suction valve		Refrigerant outlet	
	A	A_1	B	B_1	C	C1	D	E	F	G	H	L	N	R	S	T	in.	mm	in.
LH104E/4DES(P)-7(Y)	1140	1280	920	1060	723	795	125	870	1060	658	886	1100	326	282	215	28	1 1/8	16	5/8
LH114E/4CES(P)-9(Y)	1356	1480	920	1060	773	845	125	870	1270	708	886	1310	431	282	215	28	1 1/8	16	5/8
LH104E/4TES(P)-9(Y)	1140	1280	920	1060	773	795	142	870	1060	658	886	1100	289	297	215	35	1 3/8	16	5/8
LH114E/4TES(P)-12(Y)	1356	1480	920	1060	773	845	142	870	1270	708	886	1310	394	297	215	35	1 3/8	16	5/8
LH114E/4PES(P)-12(Y)	1356	1480	920	1060	773	845	142	870	1270	708	886	1310	394	297	215	35	1 3/8	16	5/8
LH135E/4PES(P)-15(Y)	1591	1720	1000	1140	998	1070	142	950	1500	908	961	1550	502	368	230	42	1 5/8	22	7/8
LH124E/4NES(P)-14(Y)	1591	1720	1000	1140	848	920	142	950	1500	758	961	1550	502	368	230	35	1 3/8	22	7/8
LH135E/4NES(P)-20(Y)	1591	1720	1000	1140	998	1070	142	950	1500	908	961	1550	502	368	230	42	1 5/8	22	7/8
LH135E/4JE(P)-15(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8
LH135E/4JE(P)-22(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8
LH135E/4HE(P)-18(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8
LH135E/4HE(P)-25(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8
LH135E/4GE(P)-23(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8
LH135E/6JE(P)-25(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8
LH135E/6HE(P)-28(Y)	1591	1720	1000	1140	998	1070	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8

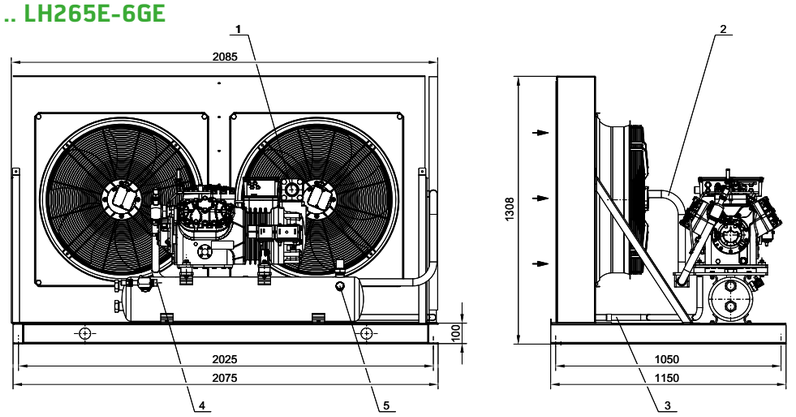
Provisional data

BITZER SOFTWARE

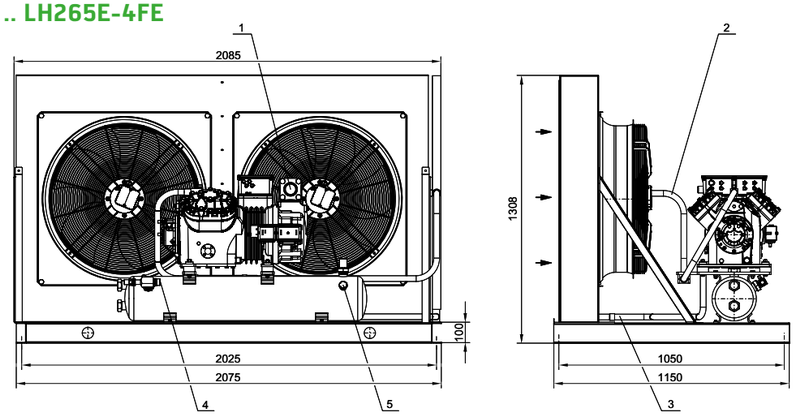
Further details can be found in the BITZER SOFTWARE.

DIMENSIONAL DRAWINGS

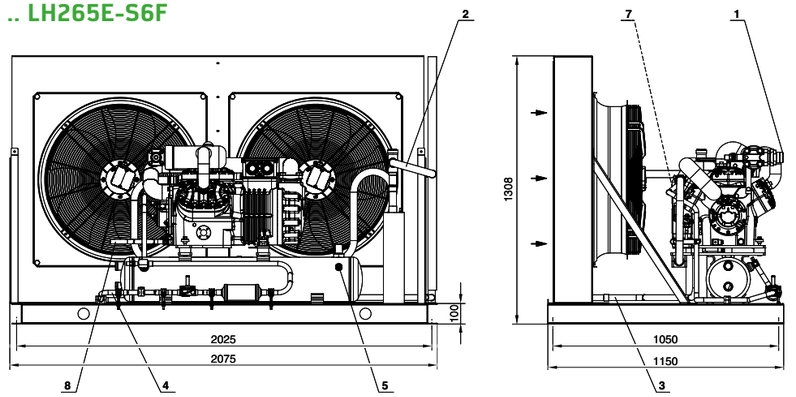
LH265E-6JE .. LH265E-6GE



LH265E-4JE .. LH265E-4FE



LH265E-S6G .. LH265E-S6F



CONNECTIONS

1 Suction valve
2 Discharge line
3 Condensate line
4 Refrigerant outlet (liquid line)
5 Pressure relief valve connection
Internal thread: 3/8-18 NPTF
External thread: 1 1/4-12 UNF
7 Refrigerant inlet on liquid subcooler
8 Refrigerant outlet on liquid subcooler UNF

*Optional set

ACCESSORIES



ALL-IN-ONE ACCESSORY PACK

The accessory pack simplifies installation of the unit thanks to its pre-wired and pre-assembled components, leading to time and cost savings during commissioning.

// High/low pressure switch (mounted)
// Wiring to the terminal box/junction box
// Liquid line with sight glass and filter drier
// Insulated suction gas line to the outer edge of the condensing unit (LH32E .. LH84E)



VARISTEP MECHANICAL CAPACITY CONTROL

With VARISTEP mechanical capacity control, fluctuating cooling demand is no problem. VARISTEP prevents the compressor from cycling too frequently and ensures efficient compressor operation. The capacity control system uses the principle of blocked suction.

// Capacity control range from 10% to 100% (see KT-101 for details) or with the CM-RC-02 IQ MODULE



WIRING THE ELECTRICAL COMPONENTS SAVES ADDITIONAL COSTS

Save time by letting BITZER handle the wiring and connection of the electrical components.

// To the compressor terminal box
// To the terminal box (mounted)



OIL SEPARATOR WITH CHECK VALVE, REGARDLESS OF THE APPLICATION

The right oil level for the compressor at all times – no problem with the optional oil separator with check valve in the discharge gas line.

// Available for the entire LHE series



IQ MODULE IO-C EXTENSION BOARD AS ADD-ON

All LHE models starting with the CE3 and LH104E can be equipped with the IQ MODULE extension board for condensing units (IO-C).

// Additional inputs and outputs for more complex control strategies
// Combination with VARISTEP mechanical capacity control
// Integration of additional safety components such as high and low pressure switches, temperature sensor or oil pressure monitoring

Fresh produce of consistently high quality – that is only possible with reliable cooling. BITZER LHE condensing units ensure stable temperatures and support efficient cooling operations in food processing facilities, among other applications.

AI GENERATED

K SERIES FOR WATER-COOLED APPLICATIONS

K SERIES PRO // K SERIES // KB SERIES FOR SEAWATER APPLICATIONS // K SERIES 2-STAGE

The K series guarantees efficiency and reliability in low-temperature and medium temperature applications, including those using natural refrigerants such as propane and propene, as well as seawater applications. Thanks to its modular design and the combination of proven BITZER components, the K series can be precisely tailored to the specific application.

SERVING THE MARKET

// The K(B) series of water-cooled condensing units can be operated using cooling tower water, municipal water or seawater
// Optimised for applications with limited space
// The perfect combination of a BITZER ECOLINE or ECOLINE PRO compressor and a water-cooled BITZER condenser for proven reliability under all conditions
// Approved for all common refrigerants as well as propane and HFO and HFC-HFO blends
// Condensers: approval in accordance with the EU Pressure Equipment Directive 2014/68/EU
// The CM-RC-02 IQ MODULE is included as standard with all condensing units with compressor housing sizes CE3 through BE6; the extension board for IO-C condensing units is available as an optional add-on

RECIPROCATING COMPRESSORS
COMMERCIAL REFRIGERATION
HFO
PROPANE

WIDE RANGE OF APPLICATIONS

With its K series, BITZER offers a broad portfolio of water-cooled condensing units designed to meet a wide range of requirements in commercial and process cooling. The K SERIES PRO is specifically designed for use with natural refrigerants and combines high efficiency with a future-proof system design. Designed to operate with seawater, the KB series is available for applications in special environmental conditions. The two-stage K SERIES is designed for demanding refrigeration applications involving large temperature differentials and ensures reliable, safe operation even under extreme conditions. They are all suitable for indoor spaces with limited room as well as for outdoor use. Its modular system, featuring a wide range of optional accessories, guarantees maximum flexibility.

A PERFECTLY COORDINATED UNIT

The K series is the perfect choice for a variety of applications, such as cold stores or food shops, be it low, medium or high temperature ranges. The models in this series can be perfectly tailored to cooling needs and combine efficiency with durability.



FOOD RETAIL

From cold stores to refrigerated display cabinets, the K series fits in anywhere – even with multiple evaporators.



PHARMA-CEUTICAL INDUSTRY/ LABORATORIES

The K series truly shines in processes where reliability, quality and precision are essential.

ON-DEMAND PERFORMANCE



HORECA

In the hotel and hospitality industry, the key advantage of the K series is the flexible choice of refrigerant. Even fluctuating cooling loads are no longer a challenge thanks to the optional oil separator and the VARISTEP capacity control system.



WAREHOUSES/ COLD STORES

The K series combines compatibility with low and medium temperature applications in a single condensing unit with a wide selection of refrigerants.

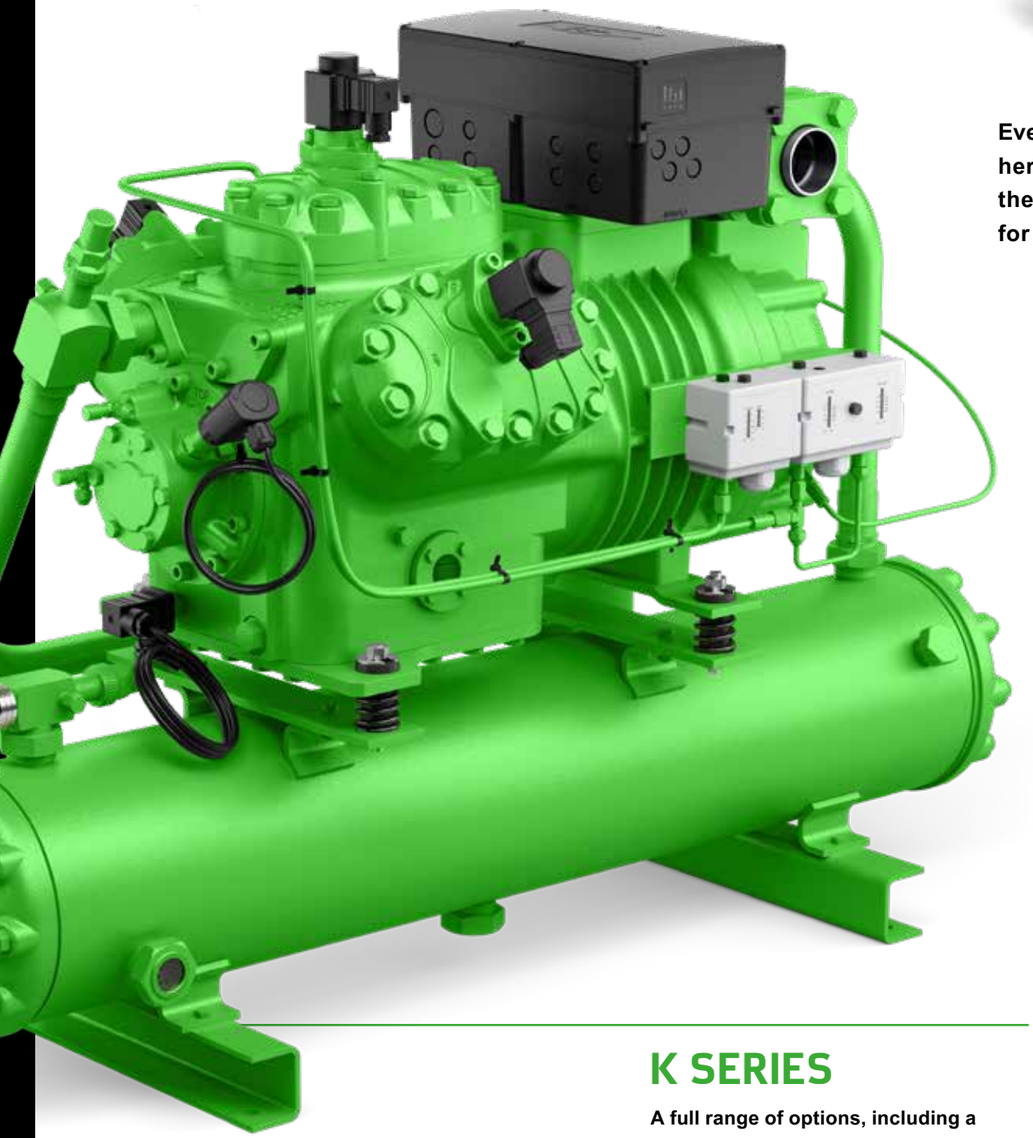
K SERIES
THE COMPACT SOLUTION

OPTIMISED
for compact space requirements

POWERFUL
for a wide range of cooling capacities

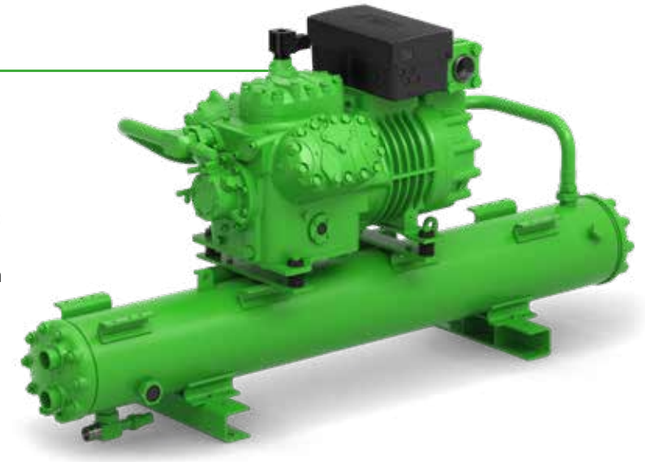
SOLID
with a robust, sturdy design

VERSATILE
for seawater, fresh water and many other cooling media



K PRO

The cost-effective solution for commercial and process cooling using the natural refrigerants R290 (propane) and R1270 (propene) – for cooling capacities ranging from 1.8 to 73.1 kW in medium temperature applications and from 0.4 to 22.9 kW in low temperature applications.



K SERIES

A full range of options, including a seawater-resistant design.

Every model in the K series is equipped with the semi-hermetic BITZER ECOLINE reciprocating compressor and the proven BITZER K series of shell and tube condensers for maximum reliability.

FOCUS ON PERFORMANCE

With a wide range of cooling capacities – from 0.3 kW to 28.0 kW for low temperature applications and from 0.8 kW to 89.0 kW for medium temperature applications – the ECOLINE compressor delivers optimal performance for all applications. To ensure the best possible compressor protection, all condensing units with an ECOLINE compressor housing size ranging from CE3 to BE6 come standard with the CM-RC-02 IQ MODULE. The optional VARISTEP mechanical capacity control system offers additional flexibility and efficiency.

SAVE SPACE IN ANY SETTING

The horizontal shell and tube condenser, combined with the compressor and a wide range of factory-installed options, allows for a compact design that takes up minimal space in any machinery room or outdoor facility.

EXTENDED LIFETIME

Approval for all common and new HFO and HFC-HFO blends, as well as propane, makes the K series future-proof. The semi-hermetic design of the reciprocating compressor and the shell and tube condensers allow for easy on-site maintenance. GREEN POINT service partners around the world can also provide support.

KP-261-4 EN

K SERIES
WATER-COOLED CONDENSING UNITS

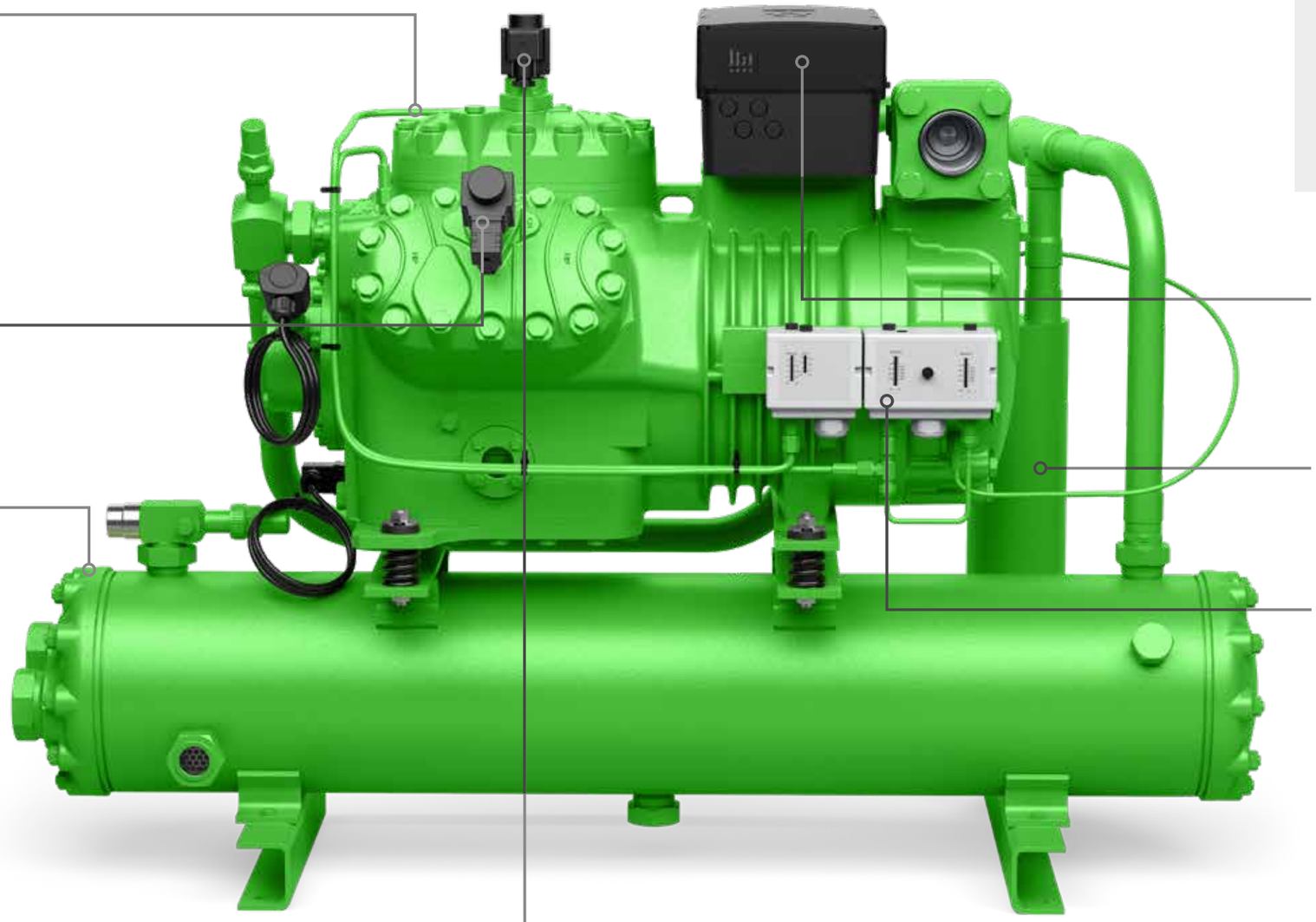


K SERIES PRO
// For refrigerants in safety class A3 (R290/R1270)
// Nine housing sizes and two motor versions with displacements ranging from 5.21 to 151.6 m³/h at 1450 rpm
// Enhanced tightness in accordance with EN1127-1

BITZER ECOLINE COMPRESSOR
// Semi-hermetic reciprocating compressor
// Proven and reliable
// Oil heater
// Discharge gas temperature sensor
// Oil level/oil pressure monitoring
– Oil level monitoring OLC-D
– Differential oil pressure switch MP54
– Differential oil pressure switch DP-2

VARISTEP MECHANICAL CAPACITY CONTROL
// BITZER ECOLINE compressor with VARISTEP capacity control from 10% to 100%

BITZER SHELL AND TUBE CONDENSER
// With connection for pressure relief valve
// With various cooling media
// Maximum allowable pressure:
– Refrigerant side: 33 bar
– Coolant side: 10 bar
// Seawater-resistant condenser version available



IQ MODULE CM-RC-02
// Compressor size CE3 .. BE6
// Protection mode (SE-B)
// With an extension board as an add-on (optional)

OIL SEPARATOR
// With a check valve in the discharge line

HIGH/LOW PRESSURE SWITCH (ADJUSTABLE)
// Mounted
// With high pressure safety pressure cut-out, mounted (for compressor type 4NES-14(Y) and higher)

RECIPROCATING COMPRESSORS
HFO
MECHATRONIC CAPACITY CONTROL
PROPANE

K SERIES

START UNLOADER
// CE4 .. BE6 compressor family
// Cylinder head with PTC sensor (mounted)
// Control valve included

The figure shows a fully equipped K series condensing unit.
Please refer to the following pages for the standard scope of delivery and available optional equipment.

KP-261-4 EN

K(B) SERIES WITH 2-STAGE COMPRESSOR
FOR LOW TEMPERATURE APPLICATIONS

// With a compressor design for very low evaporating temperatures
// Mini-channel condenser
// Approved for low-GWP refrigerants
// Seven models with a displacement of 19.70/12.60 m³/h ... 101.10/50.50 m³/h at 1450 rpm or 50 Hz

BITZER KB SERIES
SEAWATER-RESISTANT

BITZER KB condensing units are designed to meet the challenges of stationary applications that use seawater as a cooling medium and deliver reliable, long-lasting performance under varying operating conditions.

RELIABLE OPERATION

// Also suitable for seawater
// 22 types (1-stage)
// Seven types (2-stage)

ECOLINE COMPRESSOR

// Well-known and proven BITZER technology

SYSTEM-OPTIMISED WATER-COOLED CONDENSER

// For optimal heat transfer and a low refrigerant charge

ROBUST CONSTRUCTION AND COMPACT DIMENSIONS

// Convenient installation dimensions at the installation site

EASY OPERATION AND COMMISSIONING

// Direct access to all components

K SERIES PRO FOR HYDROCARBONS
THE NATURAL WAY

NATURAL

// For refrigerants in safety class A3 (R290/R1270)

RELIABLE

// BITZER ECOLINE PRO compressor
// BITZER condenser

FLEXIBLE

// Protection modules: SE-B3 (standard) or IQ MODULE (standard equipment for models CE3 through BE6)
// Optional accessories such as VARISTEP, oil heater, oil level monitor, differential oil pressure switch

CONDENSING UNIT SIZES: K SERIES K073H(B) .. K1353H(B)

// 41 types
// 4.06 m³/h .. 151.6 m³/h

SCOPE OF DELIVERY

Water-cooled condensing units – K series – K PRO series		K series			
		K..(B*)/..		K PRO	
		CE1S .. CE2S	CE3S .. BS6	CEP1S .. CEP2S	CEP3S .. BEP6
Semi-hermetic reciprocating compressor	– ECOLINE compressor – 2-stage compressors	S	S		
	– ECOLINE PRO compressor			S	S
Shell and tube condenser		S	S	S	S
Connection for pressure relief valve	Condenser	S	S	S	S
Discharge line	–	S	S	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants tc < 70°C	S	S		
	BSG68K (PAG)			S	S
IQ MODULE CM-RC-02	Compressor module in module housing, default protection mode setting (SE-B), for CE3 compressors and above		S	S	S
Protection device	SE-B3	S		S	

S = Scope of delivery
*Seawater-resistant
(Subject to change)

EXPLANATION OF TYPE DESIGNATION



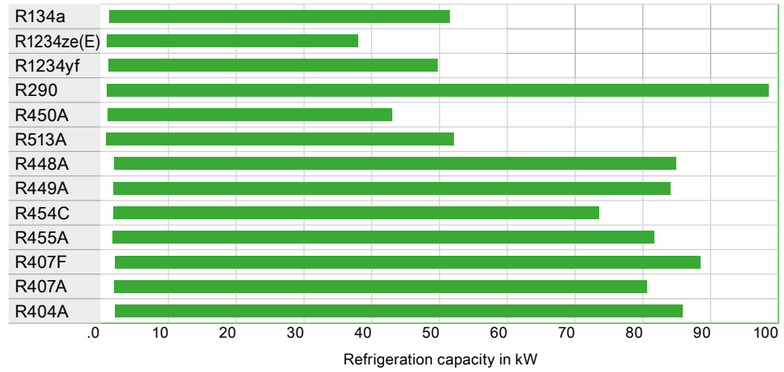
Further details can be found in the BITZER SOFTWARE.
BITZER SOFTWARE

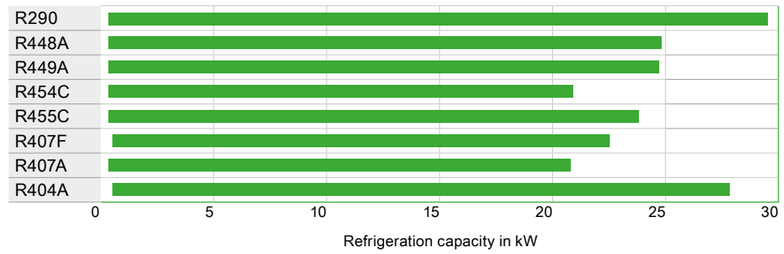
OPTIONAL EQUIPMENT

Water-cooled condensing units – K series – K PRO series		K../.. // K..B/..									K PRO series				
		ECOLINE						2-stage			K PRO				
		2KES .. 2FES	2EES .. 2CES	4FES .. 4CES	4TES .. 4NES	4JE .. 4GE	6JE .. 6FE	S4T .. S4N	S4G	S6J .. S6F	2KESP .. 2FESP	2EESP .. 2CESP	4FESP .. 4CESP	4TESP .. 4NESP	4JEP .. 6FEP
Warranty extension of up to five years	See the price list for details	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Check valve*	In pressure line				●	●	●								
Oil separator*	With a check valve in the pressure line – mounted	●	●	●	●	●	●	●	●	●					
High and low pressure switch (adjustable)	Mounted	●	●	●	●			●							
	With HP safety pressure cut-out, mounted				●[1]	●	●		●	●					
Motor for special voltage*	Available motors: see Technical Information KT-410	●	●	●	●	●	●	●	●	●					
Oil charge	BSE55 (ester oil) for HFC and HFC/HFO refrigerants – for high condensing temperatures tc > 70°C – for R1234ze(E): tc < 70°C/to < 15°C1	○	○	○	○	○	○	○**							
	B5.2: The "Y" in the compressor designation is omitted	○	○	○	○	○	○	○	○	○					
	SHC226E (PAO)										○	○	○	○	○
Oil level monitoring OLC-K1 – optoelectronic		●	●								●	●			
Oil level monitoring OLC-D – optoelectronic	Mounted			●	●								●	●	
MP54 differential oil pressure switch	Mounted					●	●	●	●	●					
Differential oil pressure switch DP-2	Mounted					●	●	●	●	●					●
Oil heater	See the price list for details	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Discharge gas temperature sensor	PTC 140 (included as standard) PT1000 with IQ MODULE			●	●	●	●	●	●	●					
Start unloader (SU)	Cylinder head with PTC sensor, mounted Control valve included Check valve required				●	●	●						●	●	●
Capacity regulator CRII (1×)	Cylinder head, mounted Control valve, included Possible configuration: see KT-101		●	●	●	●	●					●	●	●	●
Oil service valve					●	●	●	●	●	●					
Additional fan		●	●	●	●										
Liquid subcooler – mounted	– Liquid injection valve for use with a subcooler – Complete with piping – Components assembled and insulated							●	●	●					
IQ MODULE CM-IO-C Add-on module	See the price list for details			●	●	●	●						●	●	●
BITZER DIGITAL NETWORK	Only with IQ MODULE			●	●	●	●						●	●	●

● = Option available, ○ = Option available at no extra charge
* Cannot be retrofitted
** Exceptions: K1053H(B)/6FE-44(Y), K1353T(B)/6FE-50(Y) available upon request for A2L refrigerants
1 For R1234ze(E), tc > +70°C/to > +15°C, upon request
(Subject to change)

APPLICATION RANGES





PERFORMANCE DATA

SINGLE-STAGE COMPRESSORS

All performance values are based on the European standard EN13215:
suction gas temperature +20°C with 5 K liquid subcooling.

2-STAGE COMPRESSORS

All performance data are based on a suction gas temperature of +20°C in accordance with EN12900 at 50 Hz, including system-related liquid subcooling, based on an optional refrigerant subcooler.

CONDENSING UNITS

The standard performance data for water-cooled condensing units in accordance with EN13215 are determined at a condensing temperature of +40°C.
In the BITZER SOFTWARE, these values can be easily determined for many refrigerants by calculating the compressor data at the same condensing temperature and using the values listed above for suction gas temperature and liquid subcooling.

Performance data for specific operating conditions and 60 Hz operation: see the BITZER SOFTWARE.

Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

PERFORMANCE DATA

K PRO		
Type	**Refrigeration capacity** Q_o in kW, R290, 50 Hz	
	Medium temperature t_o/t_c = –10°C/+40°C SGT/ t_{cu} = 20°C/1K	Low Temperature t_o/t_c = –35°C/+40°C SGT/ t_{cu} = 20°C/1K
K073H(B)/2KESP-05Z	1.8	0.4
K073H(B)/2JESP-07Z	2.4	0.7
K073H(B)/2HESP-1Z	3.0	0.9
K073H(B)/2HESP-2Z	3.1	0.9
K073H(B)/2GESP-2Z	3.5	1.1
K073H(B)/2FESP-2Z	4.4	1.4
K123H(B)/2FESP-3Z	4.4	1.4
K123H(B)/2EESP-2Z	5.4	1.4
K123H(B)/2DESP-2Z	6.3	1.7
K123H(B)/2EESP-3Z	5.4	1.5
K123H(B)/2DESP-3Z	6.3	1.7
K123H(B)/2CESP-3Z	8.0	2.3
K203H(B)/4FESP-3Z	8.5	2.2
K203H(B)/4EESP-4Z	10.8	2.9
K203H(B)/2CESP-4Z	8.0	2.3
K203H(B)/4FESP-5Z	8.5	2.2
K203H(B)/4EESP-6Z	10.8	2.9
K203H(B)/4DESP-5Z	12.5	3.4
K203H(B)/4CESP-6Z	15.9	4.5
K283H(B)/4DESP-7Z	12.5	3.4
K373H(B)/4CESP-9Z	15.9	4.5
K283H(B)/4TESP-9Z	18.8	5.1
K373H(B)/4TESP-12Z	18.8	5.1
K373H(B)/4PESP-12Z	21.9	5.7
K373H(B)/4NESP-14Z	26.9	7.4
K573H(B)/4PESP-15Z	22.2	6.0
K573H(B)/4NESP-20Z	26.3	7.2
K573H(B)/4JEP-15Z	30.3	8.5
K573H(B)/4JEP-22Z	29.8	8.0
K573H(B)/4HEP-18Z	36.3	10.5
K813H(B)/4HEP-25Z	35.8	10.1
K573H(B)/4GEP-23Z	43.0	12.9
K573H(B)/6JEP-25Z	47.0	13.7
K813H(B)/6HEP-28Z	53.7	15.7
K813H(B)/4GEP-30Z	42.3	12.2
K813H(B)/6JEP-33Z	45.8	12.6
K1053H(B)/6HEP-35Z	52.5	14.6
K813H(B)/6GEP-34Z	62.1	19.0
K1353H(B)/6GEP-40Z	61.7	18.6
K1053H(B)/6FEP-44Z	73.7	23.4
K1353H(B)/6FEP-50Z	73.1	22.9

K SERIES		
Type	**Refrigeration capacity** Q_o in kW, 50 Hz	
	Medium temperature R134a t_o/t_c = –10°C/+40°C	Low Temperature R448A t_o/t_c = –35°C/+40°C
K073H(B)/2KES-05(Y)	1.1	0.4
K073H(B)/2JES-07(Y)	1.5	0.6
K073H(B)/2HES-1(Y)	2.1	0.7
K073H(B)/2HES-2(Y)	2.1	0.7
K073H(B)/2GES-2(Y)	2.4	0.9
K073H(B)/2FES-2(Y)	3.1	1.2
K123H(B)/2FES-3(Y)	3.0	1.2
K123H(B)/2EES-2(Y)	3.8	1.5
K123H(B)/2EES-3(Y)	3.8	1.5
K123H(B)/2DES-2(Y)	4.5	1.8
K123H(B)/2DES-3(Y)	4.5	1.8
K123H(B)/2CES-3(Y)	5.6	2.4
K203H(B)/2CES-4(Y)	5.6	2.4
K203H(B)/4FES-3(Y)	5.8	2.6
K203H(B)/4FES-5(Y)	5.8	2.6
K203H(B)/4EES-4(Y)	7.7	3.2
K203H(B)/4EES-6(Y)	7.7	3.2
K203H(B)/4DES-5(Y)	8.9	3.6
K203H(B)/4CES-6(Y)	11.0	4.8
K283H(B)/4DES-7(Y)	8.9	3.6
K283H(B)/4TES-9(Y)	14.0	5.7
K373H(B)/4CES-9(Y)	11.0	4.8
K373H(B)/4TES-12(Y)	13.7	5.7
K373H(B)/4PES-12(Y)	15.9	6.0
K373H(B)/4NES-14(Y)	18.9	7.7
K573H(B)/4PES-15(Y)	15.5	5.9
K573H(B)/4NES-20(Y)	18.7	7.8
K573H(B)/4JE-15(Y)	21.8	9.4
K573H(B)/4JE-22(Y)	21.3	8.6
K573H(B)/4HE-18(Y)	25.9	11.5
K573H(B)/4GE-23(Y)	29.2	13.9
K573H(B)/6JE-25(Y)	32.0	14.1
K813H(B)/4HE-25(Y)	25.4	10.8
K813H(B)/4GE-30(Y)	29.6	12.8
K813H(B)/6JE-33(Y)	32.2	12.6
K813H(B)/6HE-28(Y)	38.0	16.9
K813H(B)/6GE-34(Y)	43.7	21.3
K1053H(B)/6HE-35(Y)	37.2	16.0
K1053H(B)/6FE-44(Y)	52.9	24.8
K1353H(B)/6GE-40(Y)	43.5	18.9
K1353H(B)/6FE-50(Y)	51.6	23.1

2-stage		
K373H(B)/S4T-5.2(Y)		5.3
K373H(B)/S4N-8.2(Y)		7.5
K573H(B)/S4G-12.2(Y)		11.3
K573H(B)/S6J-16.2(Y)		17.0
K573H(B)/S6H-20.2(Y)		19.7
K813H(B)/S6G-25.2(Y)		22.6
K813H(B)/S6F-30.2(Y)		27.0

Provisional data

TECHNICAL DATA

K series / K PRO series			
Type	**Conden-ser** volume in dm³	**Weight** in kg (standard scope of delivery)	**Max. operating current** in A
K073H(B)/2KES(P)-05	3.4	54	2.8
K073H(B)/2JES(P)-07	3.4	54	3.7
K073H(B)/2HES(P)-1	3.4	55	3.8
K073H(B)/2HES(P)-2	3.4	56	4.5
K073H(B)/2GES(P)-2	3.4	56	5.0
K073H(B)/2FES(P)-2	3.4	56	5.3
K123H(B)/2FES(P)-3	5.1	61	6.1
K123H(B)/2EES(P)-2	5.1	82	6.0
K123H(B)/2EES(P)-3	5.1	85	7.5
K123H(B)/2DES(P)-2	5.1	82	7.5
K123H(B)/2DES(P)-3	5.1	85	8.6
K123H(B)/2CES(P)-3	5.1	84	9.1
K203H(B)/2CES(P)-4	11.8	95	10.0
K203H(B)/4FES(P)-3	11.8	107	9.5
K203H(B)/4FES(P)-5	11.8	111	10.8
K203H(B)/4EES(P)-4	11.8	109	12.2
K203H(B)/4EES(P)-6	11.8	111	13.6
K203H(B)/4DES(P)-5	11.8	111	14.5
K203H(B)/4CES(P)-6	11.8	116	17.7
K283H(B)/4DES(P)-7	11.3	116	16.5
K283H(B)/4TES(P)-9	11.3	161	19.9
K373H(B)/4CES(P)-9	14.5	126	20.2
K373H(B)/4TES(P)-12	14.5	176	25.1
K373H(B)/4PES(P)-12	14.5	174	22.7
K373H(B)/4NES(P)-14	14.5	176	26.6
K573H(B)/4PES(P)-15	29.4	206	28.2
K573H(B)/4NES(P)-20	29.4	209	33.2
K573H(B)/4JE(P)-15	29.4	249	30.8
K573H(B)/4JE(P)-22	29.4	249	37.2
K573H(B)/4HE(P)-18	29.4	249	36.7
K573H(B)/4GE(P)-23	29.4	251	43.9
K573H(B)/6JE(P)-25	29.4	287	46.4
K813H(B)/4HE(P)-25	27.7	256	44.0
K813H(B)/4GE(P)-30	27.7	268	51.2
K813H(B)/6JE(P)-33	27.7	293	53.2
K813H(B)/6HE(P)-28	27.7	290	53.2
K813H(B)/6GE(P)-34	27.7	290	65.5
K1053H(B)/6HE(P)-35	40.0	320	64.4
K1053H(B)/6FE(P)-44	40.0	326	83.2
K1353H(B)/6GE(P)-40	37.0	333	73.9
K1353H(B)/6FE(P)-50	37.0	336	96.2

2-stage			
K373H(B)/S4T-5.2(Y)	14.5	171	14.0
K373H(B)/S4N-8.2(Y)	14.5	176	17.0
K573H(B)/S4G-12.2(Y)	29.4	239	24.0
K573H(B)/S6J-16.2(Y)	29.4	268	31.0
K573H(B)/S6H-20.2(Y)	29.4	279	37.0
K813H(B)/S6G-25.2(Y)	27.7	295	43.0
K813H(B)/S6F-30.2(Y)	27.7	296	51.0

Provisional data

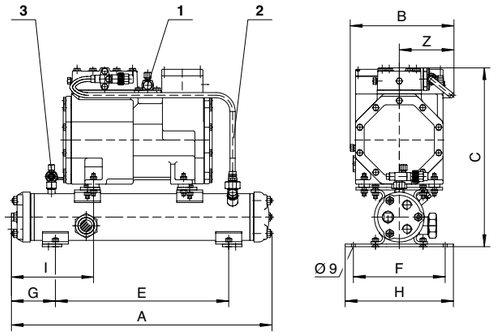
Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

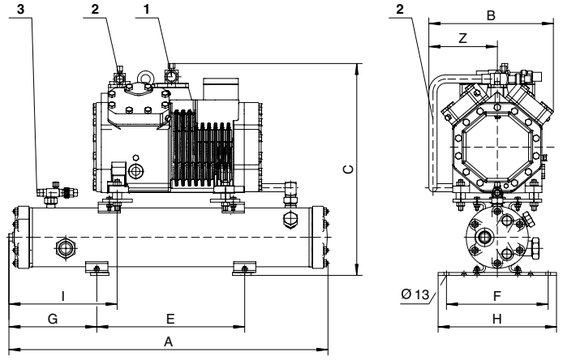
DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

K073H/2KES-05(Y) .. K203H/2CES-4(Y)



K203H/4FES-3(Y) .. K813H/4GE-30(Y)



CONNECTIONS

1 Suction valve 2 Discharge line 3 Refrigerant outlet (liquid line)

DIMENSIONS

Type	Dimensions in mm									
	A	B	C	E	F	Ø	G	H	I	Z
K073H/2KES(P)-05	602	251	413	400	212	9	102	250	190	126
K073H/2JES(P)-07	602	251	413	400	212	9	102	250	190	126
K073H/2HES(P)-1	602	251	413	400	212	9	102	250	190	126
K073H/2HES(P)-2	602	251	413	400	212	9	102	250	190	126
K073H/2GES(P)-2	602	251	413	400	212	9	102	250	190	126
K073H/2FES(P)-2	602	251	413	400	212	9	102	250	190	126
K123H/2FES(P)-3	852	251	435	400	275	13	227	320	348	112
K123H/2EES(P)-2	852	323	463	400	275	13	227	320	341	163
K123H/2EES(P)-3	852	323	463	400	275	13	227	320	341	163
K123H/2DES(P)-2	852	323	463	400	275	13	227	320	341	163
K123H/2DES(P)-3	852	323	463	400	275	13	227	320	341	163
K123H/2CES(P)-3	852	323	463	400	275	13	227	320	341	163
K203H/2CES(P)-4	863	323	528	400	275	13	238	320	308	163
K203H/4FES(P)-3	863	345	573	400	275	13	238	320	293	185
K203H/4FES(P)-5	863	345	573	400	275	13	238	320	293	185
K203H/4EES(P)-4	863	345	573	400	275	13	238	320	293	185
K203H/4EES(P)-6	863	345	573	400	275	13	238	320	293	185
K203H/4DES(P)-5	863	345	573	400	275	13	238	320	293	185
K283H/4DES(P)-7	863	345	573	400	275	13	238	320	293	185
K203H/4CES(P)-6	863	345	573	400	275	13	238	320	293	185
K373H/4CES(P)-9	1113	345	573	740	275	13	193	320	382	185
K283H/4TES(P)-9	863	363	626	400	275	13	238	320	256	204
K373H/4TES(P)-12	1113	363	626	740	275	13	193	320	382	204
K373H/4PES(P)-12	1113	363	626	740	275	13	193	320	382	204
K573H/4PES(P)-15	1176	363	672	740	305	18	218	360	360	204
K373H/4NES(P)-14	1113	363	626	740	275	13	193	320	382	204

Provisional data

Type	Dimensions in mm									
	A	B	C	E	F	Ø	G	H	I	Z
K573H/4NES(P)-20	1176	363	672	740	305	18	218	360	360	204
K573H/4JE(P)-15	1176	439	743	740	305	18	218	360	353	230
K573H/4JE(P)-22	1176	439	743	740	305	18	218	360	353	230
K573H/4HE(P)-18	1176	439	743	740	305	18	218	360	353	230
K813H/4HE(P)-25	1176	439	743	740	305	18	218	360	353	230
K573H/4GE(P)-23	1176	439	743	740	305	18	218	360	353	230
K813H/4GE(P)-30	1176	439	743	740	305	18	218	360	353	230

Provisional data

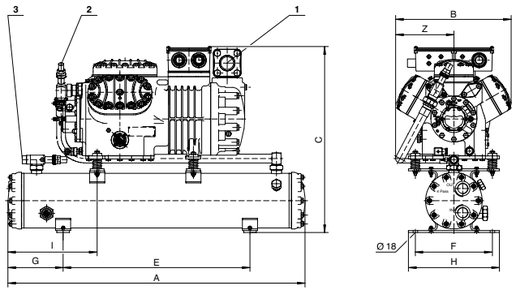
Further details can be found in the BITZER SOFTWARE.

BITZER SOFTWARE

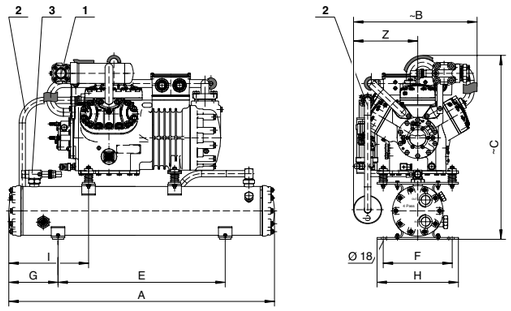
DIMENSIONAL DRAWINGS

Sample dimensional drawings, details in the BITZER SOFTWARE.

K573H/6JE-25(Y) .. K1353T*/6FE-50(Y)



K373H/S4T-5.2(Y) .. K813H/S6F-30.2(Y)



CONNECTIONS

1 Suction valve 2 Discharge line 3 Refrigerant outlet (liquid line)

DIMENSIONS

Type	Dimensions in mm									
	A	B	C	E	F	Ø	G	H	I	Z
K573H/6JE(P)-25	1176	458	736	740	305	18	218	360	353	231
K813H/6JE(P)-33	1176	458	736	740	305	18	218	360	353	231
K813H/6HE(P)-28	1176	458	736	740	305	18	218	360	353	231
K1053H/6HE(P)-35	1634	517	735	900	305	18	367	360	551	291
K813H/6GE(P)-34	1176	458	736	740	305	18	218	360	353	291
K1353T/6GE(P)-40	1634	517	797	900	305	18	367	360	551	291
K1053H/6FE(P)-44	1634	517	735	900	305	18	367	360	551	291
K1353T/6FE(P)-50	1634	517	797	900	305	18	367	360	551	291
K573H/6JE(P)-25	1176	458	736	740	305	18	218	360	353	231
K813H/6JE(P)-33	1176	458	736	740	305	18	218	360	353	231
K813H/6HE(P)-28	1176	458	736	740	305	18	218	360	353	231
K1053H/6HE(P)-35	1634	517	735	900	305	18	367	360	551	291
K813H/6GE(P)-34	1176	458	736	740	305	18	218	360	353	291
K1353T/6GE(P)-40	1634	517	797	900	305	18	367	360	551	291
K1053H/6FE(P)-44	1634	517	735	900	305	18	367	360	551	291
K1353T/6FE(P)-50	1634	517	797	900	305	18	367	360	551	291
Water-cooled condensing units with 2-stage compressors										
K373H/S4T-5.2(Y)	1113	490	~ 698	740	275	13	193	320	398	260
K373H/S4N-8.2(Y)	1113	490	~ 698	740	275	13	193	320	398	260
K573H/S4G-12.2(Y)	1176	491	~ 783	740	305	18	218	360	353	282
K573H/S6J-16.2(Y)	1176	~ 547	~ 814	740	305	18	218	360	353	284
K573H/S6H-20.2(Y)	1176	~ 547	~ 814	740	305	18	218	360	353	284
K813H/S6G-25.2(Y)	1176	~ 547	~ 814	740	305	18	218	360	353	284
K813H/S6F-30.2(Y)	1176	~ 547	~ 814	740	305	18	218	360	353	284

Provisional data

*For K1353T, refrigerant outlet at the bottom
Dimensions for the seawater-resistant design and information on fixing plates and fixing rails: see DP-200

ACCESSORIES

OIL SEPARATOR WITH CHECK VALVE: ALWAYS THE RIGHT OIL LEVEL IN THE COMPRESSOR

No problem with the optional oil separator with check valve in the discharge gas line.

// Available for the entire K series (mounted)



HIGH/LOW PRESSURE SWITCH

The adjustable high/low pressure switches are fully factory mounted and are available for the entire K series.



VARISTEP MECHANICAL CAPACITY CONTROL: THE COOLING CAPACITY ALWAYS ADJUSTS TO THE SYSTEM'S NEEDS

Thanks to VARISTEP mechanical capacity control, fluctuating cooling demand is no problem: it prevents the compressor from cycling too frequently and ensures efficient compressor operation. VARISTEP uses the principle of blocked suction.

// Capacity control from 10% to 100% (details available upon request; see KT-101) or with the IQ MODULE CM-RC-02



IQ MODULE IO-C EXTENSION BOARD AS ADD-ON

All K series models starting with CE3 can be equipped with the IQ MODULE extension board for condensing units (IO-C); mounting and wiring are the customer's responsibility.

// Additional inputs and outputs for more complex control strategies

// Combination with VARISTEP mechanical capacity control

// Integration of additional safety components such as high and low pressure switches, temperature sensor or oil pressure monitoring



Further accessories can be found in BITZER SOFTWARE.

ELECTRONIC COMPONENTS FOR PRECISION AND EFFICIENCY

IQ MODULE // VARIPACK

Electronic components are essential in refrigeration, air conditioning and heat pump systems. They simplify installation, optimise operation and enable preventive measures to be taken. This not only saves time and money, but also helps systems to comply with safety and efficiency requirements.

SMART DEVICES FOR OPTIMAL INTEGRATION

For many years, BITZER has demonstrated a spirit of innovation in electronics for refrigeration, air conditioning and heat pump technology and is constantly developing its portfolio. The components are optimised for BITZER compressors and speak 'refrigeration language'. Contractors and end users benefit from simple integration into the system and intuitive operation. These features increase efficiency and performance, and reduce downtime and operating costs.

IQ MODULE CM-RC-02

The IQ MODULE sets new standards for intelligent operation of all compressor functions – with user-friendly operation via the BEST SOFTWARE. All important parameters are logged and saved in real time, so the system can be continuously monitored, even remotely. Unfavourable operating conditions are reported promptly, preventing faults and failures. The module can be retrofitted at any time, and new features are easy to add.

VARIPACK FREQUENCY INVERTERS

Frequency inverters in the VARIPACK series are optimised for BITZER compressors and allow easy and reliable capacity control. The intelligent frequency inverters adapt the compressor capacity precisely to the actual refrigeration or heating demand. This smart adaptation means efficient operation, reduced energy consumption and operating costs – especially in part load.

IQ INTELLIGENT PRODUCTS
FREQUENCY INVERTER
RECIPROCATING COMPRESSORS
BEST SOFTWARE

INTELLIGENT CAPACITY CONTROL

The IQ MODULE controls the mechanical capacity control VARISTEP virtually steplessly and down to 10%. The logic is integrated in the IQ MODULE and all operating data is logged. Interfaces to the system controller are possible: digital via Modbus or analogue via a 0 .. 10 V signal.

PRECISE SPEED CONTROL

The VARIPACK enables capacity control with absolute precision, even beyond the supply frequency. Mechanical and electronic components are optimally harmonised to allow for constant operating conditions. The VARIPACK is easy to select in the BITZER SOFTWARE.

INTELLIGENT SOLUTIONS FOR EASY OPERATION

OPTIMAL ALSO IN COMPOUND SYSTEMS

The IQ MODULE and VARIPACK can demonstrate their full potential in compound systems: since they come from a single source, they make it much easier to control and monitor the compound system. It is often enough to equip one of the installed compressors with VARIPACK to achieve fine gradation across the entire capacity range of the system.

ADDED VALUE FOR CONDENSING UNITS

The IQ MODULE turns a simple condensing unit into a mini-system: the intelligent electronics provide clear added value, harmonising and controlling all components. Continuous monitoring and data logging open up new business opportunities for maintenance and service.

BOOST YOUR SYSTEM'S VALUE

SIMPLICITY

Intuitive operation, wired and preconfigured accessories

EFFICIENCY

Intelligent protective and operating functions for compressors

FLEXIBILITY

Modular concept with extension boards, including for retrofit

DIGITAL SERVICES

Configuration and troubleshooting with the BEST SOFTWARE, access to the BITZER DIGITAL NETWORK



The module takes care of essential protective and operating functions for the compressor, simplifies control and saves time and money.

REDUCED WORKLOAD

The IQ MODULE comes wired, preconfigured and tested ex works. This simplifies the arrangement of the wiring in the switch cabinet, and planning the operation is less complex. Hardware and function logic are directly connected to the compressor, making compressor installation, commissioning and integration into the system faster and easier.

OPTIMISED COMPRESSOR OPERATION

The IQ MODULE monitors all essential operating parameters of the compressor, such as motor and discharge gas temperature and oil supply, ensuring reliable and efficient operation without failures. Additional optional features such as VARISTEP mechanical capacity control or OLM-IQ oil level controller can be added with extension boards.

FLEXIBILITY AT ALL TIMES

The modular concept combines simplicity with flexibility. The extension boards allow for the direct electrical connection of additional compressor features – with minimal effort concerning arrangement of the wiring and documentation. The boards can either be ordered together with the compressor or retrofitted later.

DIGITAL ADDED VALUE

The IQ MODULE adds helpful digital applications to the compressor. With the BEST SOFTWARE and APP, compressor and accessories can be configured and operating data displayed via Bluetooth. The visualisation of the data supports maintenance and troubleshooting. Contractors also have access to tutorials and documentation on their smartphones at all times.

IQ MODULE

Whether as a flexible standard for new systems or retrofitted to existing ones, the IQ MODULE turns every reciprocating compressor into an intelligent device.

IQ MODULE

INTELLIGENT FEATURES FOR MORE EFFICIENCY

INTELLIGENT ACTIVATION TO IMPROVE SYSTEM EFFICIENCY

// Oil heater
// VARISTEP capacity control (CRII)
// Oil level monitoring with OLM-IQ: selecting this option eliminates the need for OLS (oil level monitoring) or DP (differential oil pressure switch).
// Additional fan
// RI system for refrigerant injection

MONITORING OF COMPRESSOR PARAMETERS

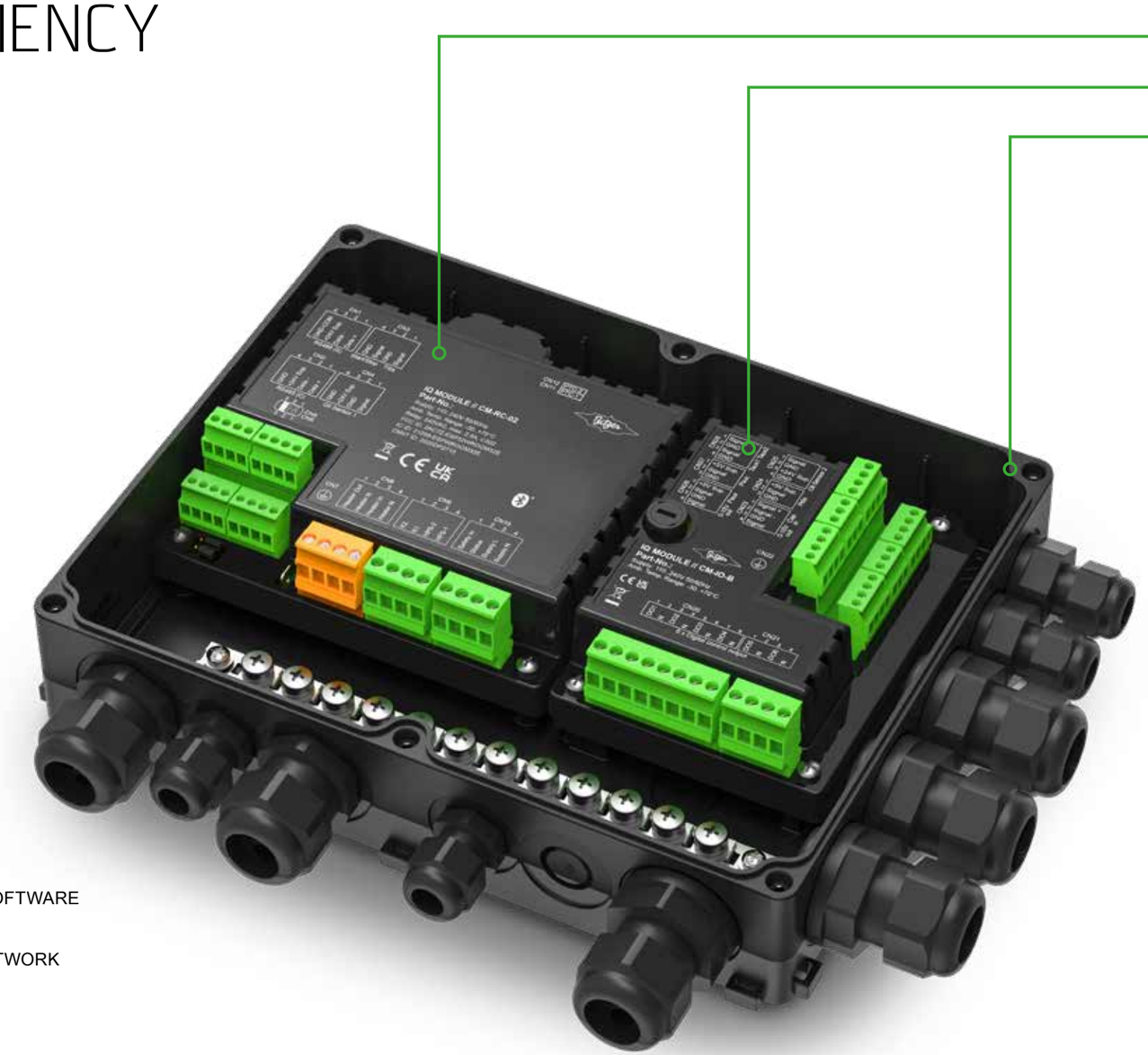
// Motor and discharge gas temperature
// Oil supply with OLS or DP
// Optional high pressure and low pressure
// Integration of the high pressure switch
// Application limit monitoring

ANALYSIS

// Overview of critical operating conditions
// Data log of all switch processes and measured values
// Alarm and warning history
// Operating time and load statistics

COMMUNICATION

// Via Modbus RTU (standardised interface)
// Via Bluetooth
// Configuration and operation monitoring via the BEST SOFTWARE
// Status LEDs for quick initial analysis
// Prepared for data analysis via the BITZER DIGITAL NETWORK



RECIPROCATING COMPRESSORS
INTELLIGENT PRODUCTS
DATALOG
BEST SOFTWARE

OPERATING MODES

The IQ MODULE can be configured and operated in two different operating modes and comes in compressor operation mode as standard. The operating mode can be changed at any time using the BEST SOFTWARE.

COMPRESSOR OPERATION MODE

// Motor temperature monitoring PTC
- Alarm message
// Integration of high pressure switch CN9:3 and CN9:4
- Alarm message
// Oil monitoring
- Alarm message
// Discharge gas temperature monitoring PT1000
- Alarm message
- Temperature measurement and log
// Oil heater
- Operation ON/OFF
- Warning message for missing voltage supply
// Compressor start/stop
- Compressor operation hours
- Cycle start/stop

COMPRESSOR PROTECTION MODE (SE-B)

// Motor temperature monitoring PTC
- Alarm message
// PTC 140 can be integrated into the safety chain similarly to protection device SE-B3
// Cable bridge set to CN9:3 and CN9:4 as standard

OPTIMISED INTEGRATION
OF ADDITIONAL COMPRESSOR FEATURES

PERIPHERAL DEVICES

In combination with the optional extension boards, the IQ MODULE can operate and control various peripheral devices installed on the compressor as well as analyse the data – depending on the equipment in use.

VARISTEP

// Stepless capacity control from 100 .. 10% possible
// Logic integrated into the IQ MODULE
// IQ VARISTEP also uses integrated logic to provide additional cooling with the fan and RI
// Simple interfaces with the superior system controller
- Digital via Modbus
- Analogue via 0 .. 10 V signal

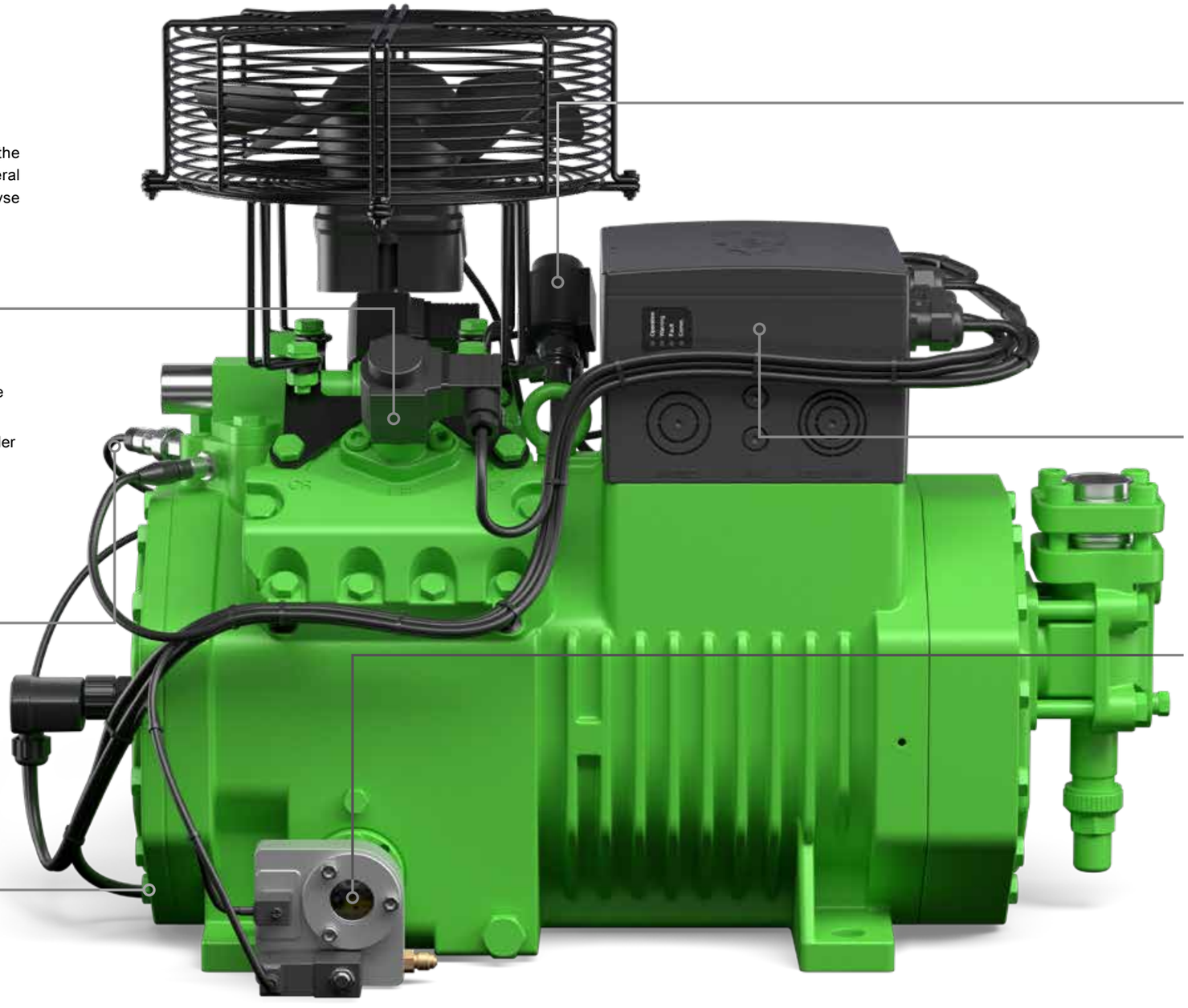
// Also available as an option ex works for many BITZER CO_2 compressors

APPLICATION LIMIT MONITORING

// Optimal compressor protection
// High and low pressure transmitters are connected directly to the IQ MODULE.
// Data analysis in real time and in the data log
// Additional connection of a temperature sensor for measuring medium or suction gas temperature with PREMIUM extension board

OIL HEATER

// The IQ MODULE controls and regulates oil heater operation.
// Operation only during compressor standstill
// Optimised energy efficiency
// Separate voltage input at the IQ MODULE
- Omission of the control transformer



THE RI SYSTEM

// Continuous control and dosing of refrigerant injection
// Cools the cylinder section
// Maintains a sufficiently low discharge gas temperature
// Ensures thermal application limits for low temperature applications – for example, with the refrigerants R454C, R407A, R407F, R448A and R449A

DATA ANALYSIS

// Analysis via Modbus, Bluetooth with PC and BEST SOFTWARE or APP
// Graphic display of compressor operating conditions in real time
// Alarm log

OLM-IQ

// OLM-IQ actuator sensor unit on the compressor
// Logic fully integrated into the IQ MODULE
- Trend assessment
- Simple communication with the superior system controller

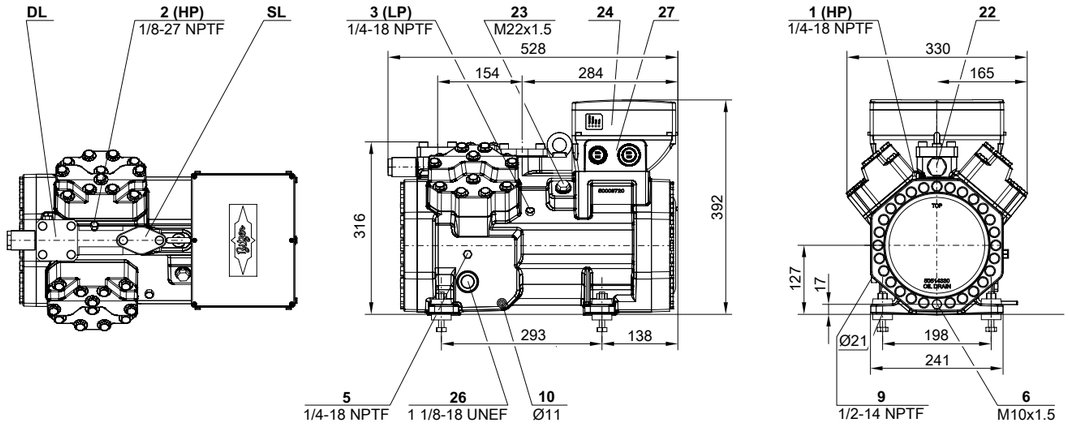
// Continuously operating oil level sensor
// Precise dosing of the oil return
- Stable oil level

// Automatic adjustment to oil supply pressure
// Available for HFC and HFO refrigerants as well as CO_2

Exemplary illustration

DIMENSIONAL DRAWINGS

Exemplary dimensional drawing, details in the BITZER SOFTWARE.
Compressor model 4PTE with IQ MODULE



CONNECTIONS

1 High pressure connection (HP)
Connection for high pressure switch (HP)
2 Connection for discharge gas temperature sensor (HP)
3 Low pressure connection (LP)
Connection for low pressure switch (LP)
5 Oil fill plug
6 Oil drain
9 Connection for oil and gas equalisation (parallel operation)
10 Connection for oil heater
22 Pressure relief valve to the atmosphere (discharge gas side)
23 Pressure relief valve to the atmosphere (suction side)
24 Module housing (IQ MODULE included)
26 Sight glass
27 Terminal box
SL Suction gas line
DL Discharge gas line

Dimensions subject to the tolerances specified in EN ISO 13920-B.

BITZER SOFTWARE **Further details can be found in the BITZER SOFTWARE.**

EXTENSION BOARDS







ADVANCED (CM-IO-A)

// Number of switching outputs: 3
// Order option 1
- OLM-IQ oil management
- Additional fan
- Refrigerant injection

// Order option 2
- OLM-IQ oil management
- VARISTEP 1 capacity regulator
- VARISTEP 2 capacity regulator

PREMIUM (CM-IO-B)

// Number of switching outputs: 6
// Options for switching outputs
- VARISTEP capacity regulator
- OLM-IQ oil management
- Refrigerant injection
- Start unloading
- Additional fan

// Monitoring functions
- Application limit monitoring

// Operation of external functions such as the condenser fan or a solenoid valve
// Direct control mode possible via suction pressure

CONDENSING UNIT (CM-IO-C)

// Number of switching outputs: 4
// Options for switching outputs
- VARISTEP capacity regulator
- Refrigerant injection
- Start unloading

// Monitoring functions
- Application limit monitoring

// Operation of external functions such as the condenser fan or a solenoid valve
// Direct control mode possible via suction pressure or cold room temperature

MAXIMUM POTENTIAL, MINIMUM EFFORT

EFFICIENT

Retrofitting of additional operating functions for existing ECOLINE and ECOLINE PRO reciprocating compressors

USER-FRIENDLY

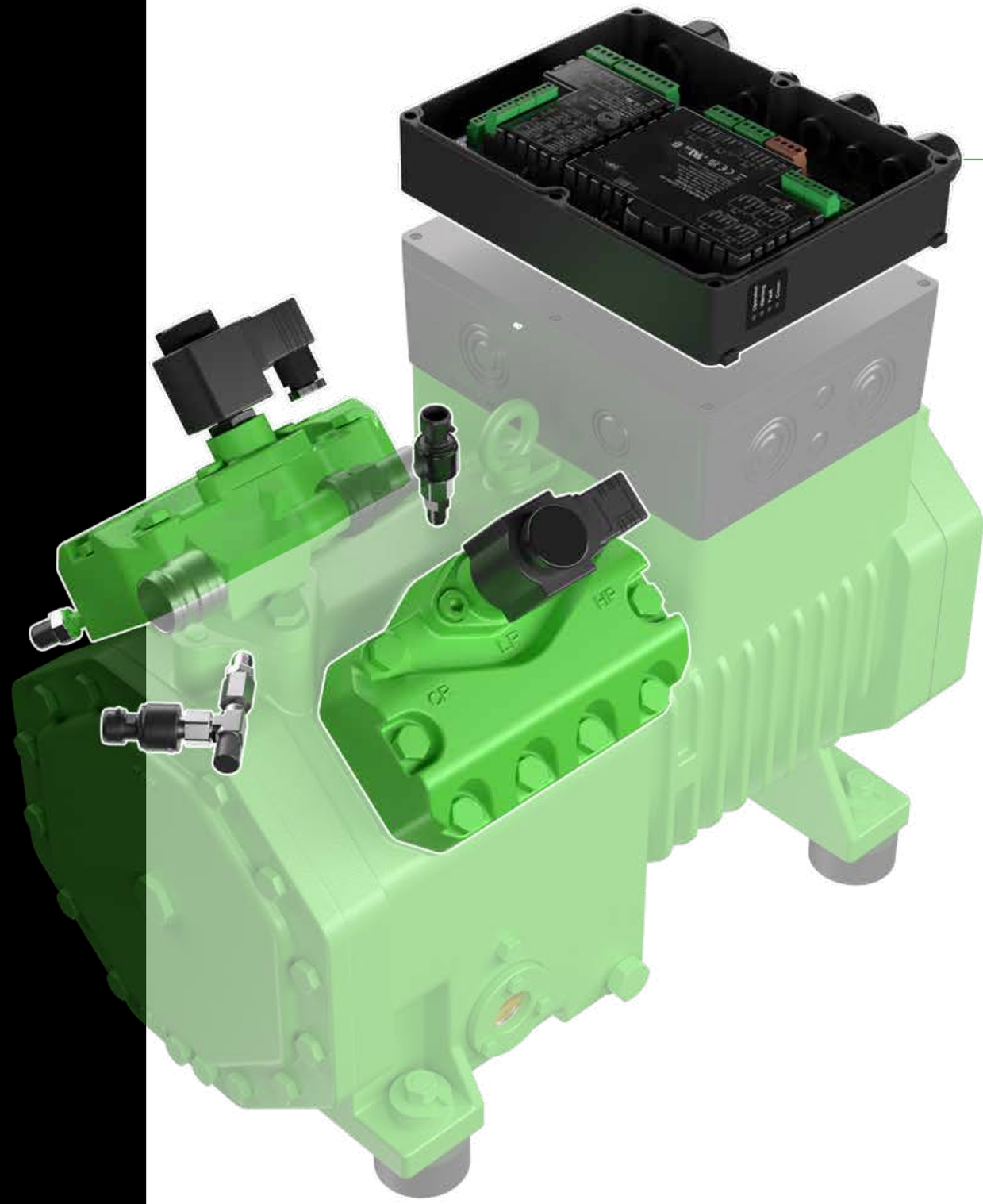
Quick and easy retrofitting

FLEXIBLE

Three variants with different functional scopes

DIGITALLY CONNECTED

Real-time data and remote access for optimised monitoring



PERFORMANCE KITS

enable simple, fast efficiency upgrades for selected BITZER reciprocating compressors.

BITZER PERFORMANCE KITS enable the easy retrofitting of reciprocating compressors in the ECOLINE series for HFC/HFO refrigerants as well as the ECOLINE PRO series for hydrocarbons (orders placed after 11 November 2024) that were not supplied ex works with the IQ MODULE CM-RC-02.

This allows you to unlock the full potential of existing systems with minimal effort – for example through capacity control, Bluetooth and Modbus interfaces, as well as oil heating or oil level monitoring. The retrofittable functions increase the compressors' operational safety, improve availability, enhance part-load efficiency and reduce operating costs. Depending on the selected kit, clear data visualisations and access to real-time data also support maintenance and service activities.

THREE OPTIONS, ONE COMMON GOAL

Additional functions without complex modifications – thanks to targeted retrofitting.



BITZER PERFORMANCE KITS include the CM-RC-02 compressor module and, depending on the kit selected, the CM-IO-B extension board. They can be mounted on the terminal box of existing compressors in a very short time. Wiring is carried out directly via the module and on the compressor – no complex modifications to the switch cabinet are required. Three different variants are available:

ENERGY KIT for optimised compressor operation thanks to mechanical capacity control	**OPERATIONAL SAFETY KIT** for increased operational safety	**CONNECTIVITY KIT** for intelligent compressor protection functions
// Mechanical capacity control VARISTEP (CRII) // Suction pressure control // Discharge gas temperature sensor (PT1000) // Pressure transmitter for application limit monitoring // All functions of the CONNECTIVITY KIT possible	// Oil heater (PTC) // Differential oil pressure switch (DP) // Oil level monitoring (OLS) // Discharge gas temperature sensor (PT1000) // All functions of the CONNECTIVITY KIT available; functionality can be extended	// Bluetooth and Modbus interface for connection to BEST SOFTWARE and App // Optional: access to the BITZER DIGITAL NETWORK // Functionality can be extended

EASY INSTALLATION AND CONFIGURATION



1. Compressor module and extension board: installation and wiring



2. Cylinder head and solenoid valve: preparation, installation and connection



3. Operating mode and compressor parametres: configuration in the BEST SOFTWARE

// Quick start guides
// Tutorials
// Answers to frequently asked questions
// Technical documentation and user manuals
// Information on BEST SOFTWARE and APP

IQ INTELLIGENT PRODUCTS **Installation and commissioning information on the IQ MODULE.**





In commercial refrigeration, reliability and energy efficiency are essential. BITZER electronic products enable precise system control, continuous monitoring of operating data and targeted service planning, helping to ensure efficient, reliable and safe operation.

IQ MODULE SCOPE OF DELIVERY AND OPTIONS

Choose the available IQ MODULE combination that's suitable for your application and compressor configuration.

Description	Function	Information
Delivered ex works for new compressors		
CM-RC-02 **compressor module**	// Motor temperature monitoring PTC // Integration of high pressure switch // Oil monitoring // Discharge gas temperature monitoring PT1000 // Oil heater operation and monitoring ON/OFF // Compressor operating status display	The CM-RC-02 compressor module is factory-mounted on reciprocating compressors and configured in compressor operation mode. Compressor protection mode can optionally be selected instead of SE-B motor protection devices or configured in the BEST SOFTWARE.
CM-RC-02 **compressor module** + extension board **CM-IO-A**	Activation of the options, including peripheral devices **Order option 1:** // OLM-IQ oil management // Additional fan // Liquid injection **Order option 2:** // OLM-IQ oil management // VARISTEP capacity control 1 // VARISTEP capacity control 2	The CM-RC-02 compressor module is factory-mounted on reciprocating compressors and configured in compressor operation mode. The optional peripheral devices are mounted on the compressor and connected to the compressor module and extension board. The default settings and functions of the options are configured and tested in the factory.
CM-RC-02 **compressor module** + extension board **CM-IO-B**	Activation of the options, including peripheral devices **Optional accessories:** // VARISTEP capacity control // OLM-IQ oil management // Liquid injection // Start unloader // Additional fan **Monitoring:** // Application limit monitoring // Wet operation monitoring via suction temperature // Operation of external functions such as a condenser fan for cooling units, solenoid valve liquid line // Control mode (system operation mode) - Possible via suction temperature	
Add-on kits for retrofitting		
CM-RC-02 **compressor module** + extension board **CM-IO-A** CM-RC-02 **compressor module** + extension board **CM-IO-B**	The functions of the combination of compressor module and CM-IO-A and CM-IO-B extension boards for add-on kits are available in the same way as the factory-mounted compressors; see above (delivery ex works for new compressors).	The add-on kits are particularly beneficial for existing compressors or new compressors in the wholesale business if the compressor has to be retrofitted or was not supplied with a factory-mounted extension board. Individual options can be ordered and retrofitted as needed. The CM-IO-C extension board is currently only available as an add-on and features a temperature sensor input that enables it to control condensing units via the cold store temperature. This minimises the cost and effort of wiring and components in an external switch cabinet.
CM-RC-02 **compressor module** + extension board **CM-IO-C**	Activation of the options, including peripheral devices, as an add-on kit with CM-IO-C extension board **Optional accessories:** // VARISTEP capacity control // Liquid injection // Additional fan **Monitoring:** // Application limit monitoring // Wet operation monitoring via suction temperature // Operation of external function such as a condenser fan or solenoid valve liquid line // Control mode (system operation mode) - Possible via suction temperature or cold store temperature	
PERFORMANCE KITS		
ENERGY KIT	// VARISTEP capacity control // Suction pressure control // Discharge gas temperature sensor (PT1000) // Pressure transmitter for application limit monitoring // All the functions of the CONNECTIVITY KIT available	BITZER PERFORMANCE KITS come with the CM-RC-02 IQ MODULE and related peripheral devices, and can be mounted on the terminal box of the existing compressor in no time. The wiring is done through the module and on the compressor directly – no complex modifications need to be made to the switch cabinet.
OPERATIONAL SAFETY KIT	// Motor temperature monitoring PTC // Integration of high pressure switch // Oil monitoring // Discharge gas temperature monitoring PT1000 // Oil heater operation and monitoring ON/OFF // All the functions of the CONNECTIVITY KIT available, additional functions can be added	
CONNECTIVITY KIT	// Bluetooth and Modbus interface for connecting to the BEST SOFTWARE and app // Optional access to the BITZER DIGITAL NETWORK // Additional functions can be added	

CM-RC-02 COMPRESSOR MODULE



+ EXTENSION BOARDS



CM-IO-A ADVANCED

CM-IO-B PREMIUM

CM-IO-C CONDENSING UNITS

SIMPLE AND SAFE CAPACITY CONTROL

INTELLIGENT INTERPLAY

Individual parameters for BITZER compressors and all common refrigerants

EASE OF USE

Intuitive commissioning, handles control functions of the system

EFFICIENCY

High efficiency, optimised adaptation to capacity demand

FLEXIBILITY

Control via external set point signal or evaporation temperature



The frequency inverters in the VARIPACK series offer a wide range of capacities. The optimised adaptation to the current refrigeration or heating demand of a system is effective at reducing energy consumption.

SIMPLE SELECTION AND CONFIGURATION

Select the optimal frequency inverter for your individual system in the BITZER SOFTWARE. The BEST SOFTWARE offers intuitive and full configuration, operation and monitoring functions. The optional extension kit enables control of evaporation and condensing temperature.

SAFER OPERATION

VARIPACK and BITZER compressors are matched to each other, tested and optimised. Selection of pre-configured data sets prevents incorrect configuration. A high starting current reserve and a special starting mode ensure a safe compressor start. When operating in field-weakening mode, the maximum frequency is automatically limited depending on the load.

FOR EVERY CAPACITY AND ENCLOSURE CLASS

VARIPACK frequency inverters can be used for rated output currents from 3 .. 480 A. Many models are dust and water-proof in accordance with enclosure class IP55 or IP66.

SELECTABLE OPERATING MODE

The compressor capacity control can be set with an external set point signal or via Modbus – or based on the evaporation temperature.

VARIPACK

VARIPACK frequency inverters are specially designed for refrigeration, air conditioning and heat pump systems. Their outstanding efficiency and optimised alignment with the compressors allow for double savings.

VARIPACK
CAPACITY CONTROL FOR EVERY COMPRESSOR

USER-FRIENDLY FEATURES

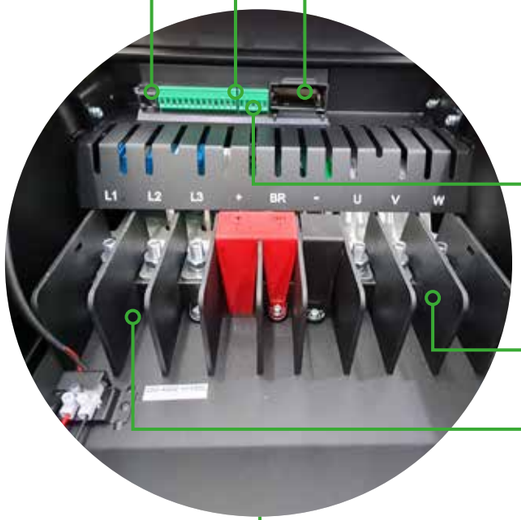
// Communication via Modbus RTU
// Design and calculations in the BITZER SOFTWARE
// Configuration via BEST SOFTWARE and BEST interface converter
// Regular firmware updates free of charge
// Extensive documentation online

WIDE PRODUCT RANGE IN THREE ENCLOSURE CLASSES

// FMU .. FSU with enclosure class IP20: protected against ingress of solid foreign objects ≥ 12.5 mm and fingers
// FPW .. FSW with enclosure class IP55: protected against harmful quantities of dust, complete touch protection, protection against water jets
// FMY .. FOY with enclosure class IP66: dust-tight, complete touch protection, protection against powerful water jets

FREQUENCY INVERTER
INTELLIGENT PRODUCTS
BITZER SOFTWARE
BEST SOFTWARE





BEST INTERFACE CONVERTER OR MODBUS RTU
TERMINALS FOR CONTROL SIGNALS
SLOT FOR EXTENSION KIT
RELAY CONTACTS 'COMPRESSOR READY TO OPERATE' 'COMPRESSOR IN OPERATION'
MOTOR CONNECTION
POWER CONNECTION



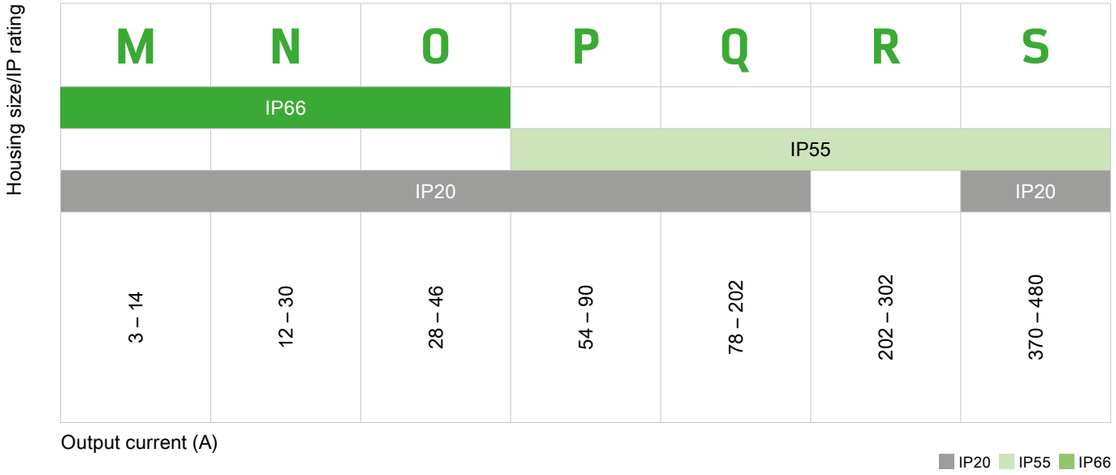
EXTENSION KIT FOR PRESSURE CONTROL

The optional extension kit with pressure transmitters enables control of evaporation and condensing temperature.

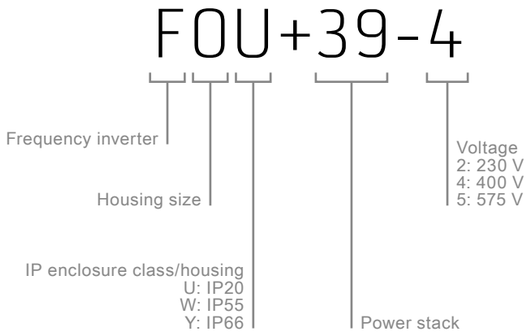
// Direct control of evaporation temperature via compressor speed
// Control of condensing temperature via activation of condenser fans with 0 .. 10 V signal
// Switching of a second compressor via relay

Compact, high-precision low and high pressure transmitters are included in the scope of delivery.

CAPACITY RANGES



EXPLANATION OF THE MODEL DESIGNATION



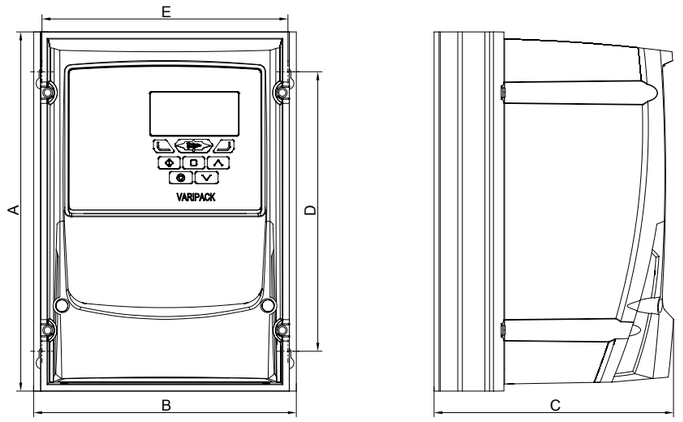
BITZER SOFTWARE

Further details can be found in the BITZER SOFTWARE.

DIMENSIONAL DRAWINGS

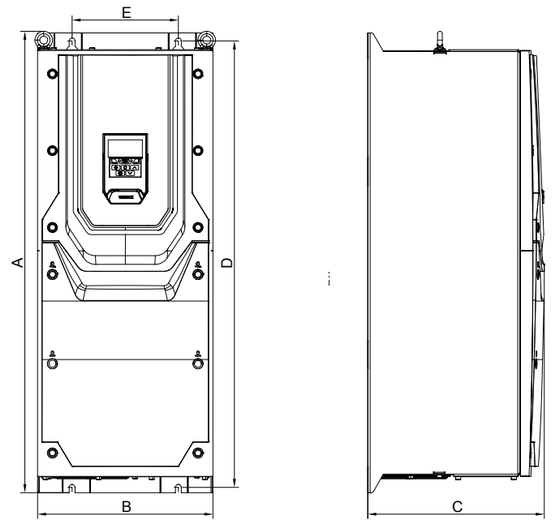
Exemplary dimensional drawings, details in the BITZER SOFTWARE.

VARIPACK IP66



Frequency inverter model	A mm	B mm	C mm	D mm	E mm
FMY	257	188	172	1200	176
FMY	257	188	196	200	176
FNY	310	211	225	252	198
FOY	360	240	260	300	227

VARIPACK IP55

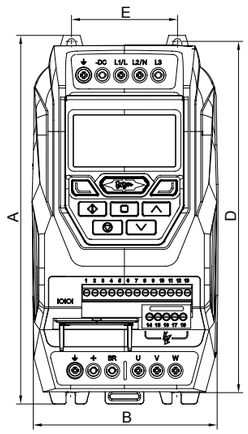


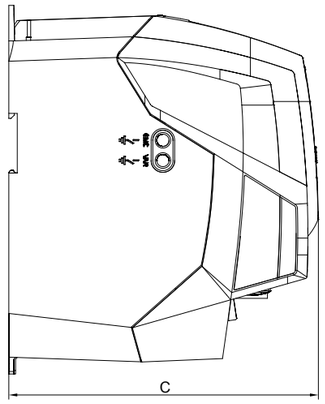
Frequency inverter model	A mm	B mm	C mm	D mm	E mm
FPW	540	235	270	520	175
FQW	865	330	330	840	200
FRW	1280	330	360	1255	200
FSW	1334	444	423	924	320

DIMENSIONAL DRAWINGS

Exemplary dimensional drawing, details in the BITZER SOFTWARE.

VARIPACK IP20





Frequency inverter model	A mm	B mm	C mm	D mm	E mm
FMU	221	110	185	209	63
FNU	261	131	205	247	80
FOU	418	172	240	400	125
FPU	486	233	260	460	175
FQU	614	286	320	578	200
FQU	726	330	320	680	225
FSU	974	444	423	924	320

BITZER SOFTWARE

Further details can be found in the BITZER SOFTWARE.





Industrial process refrigeration requires maintaining the target temperatures precisely and constantly. BITZER electronic components allow systems to be controlled with precision and monitored in real time – essential for preventive maintenance and energy optimisation.

GREEN COMPETENCE

BITZER expertise goes beyond just the products: we focus on our customers and their challenges. We aim to pass on our knowledge and provide guidance and instruction – to secure investments and equip our customers and partners in industry for the future. In addition to various digital solutions, we also offer in-person consultations and training.

LOCAL ROOTS – GLOBAL PRESENCE

Find your nearest BITZER location and get in touch.

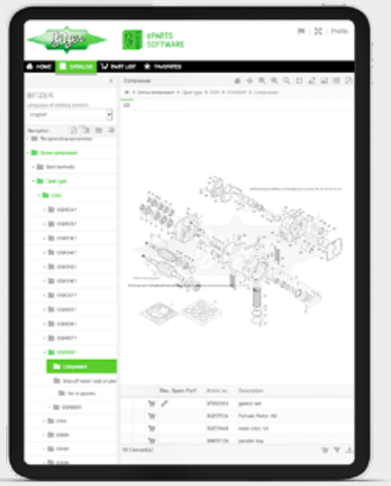
The BITZER Group is represented across the globe with distribution companies and production facilities at 74 locations in 40 countries. Find your dedicated contact partner and nearest BITZER location by clicking on the map or using the search feature on our website. You can reach out to your contact partner at any time.

BITZER TOOLS

BITZER SOFTWARE

Wherever you are and no matter what device you use, BITZER SOFTWARE helps you make the right selection from our extensive and flexible range of products and accessories. You can also find technical data here and quickly calculate the performance data for compressors and components. Furthermore, the AI agent HERMANN supports you with all questions about the BITZER portfolio.





ePARTS SOFTWARE

Our free tool makes finding the appropriate spare parts for our products fast and easy. They are listed by series and displayed as simple, enlargeable exploded drawings.

BEST APP AND BEST SOFTWARE

BEST provides complete access to all operating data and parameters. Its intuitive user interface shows a complete overview of the operating status, including a data log for easy commissioning and maintenance.



FIND ADDED VALUE:

- BEST APP
- BEST SOFTWARE
- BITZER SPOT APP
- BITZER SOFTWARE
- REFRIGERANT RULER APP
- ePARTS SOFTWARE
- BITZER APPS
- BITZER SOFTWARE TOOLS

DIGITAL TOOLS IN ONE PLACE

myBITZER

The central customer platform for product and technical information

// Access to all BITZER software tools via single sign-on (SSO)
// Delivery times and spare parts data at a glance
// Advanced system management and real-time monitoring
// Secure and flexible user management

BITZER DIGITAL NETWORK

Easy access to valuable digital services

// Complete product information
// Maintenance tracking
// Operation report
// Real-time data
// Notifications
// Flexible access rights

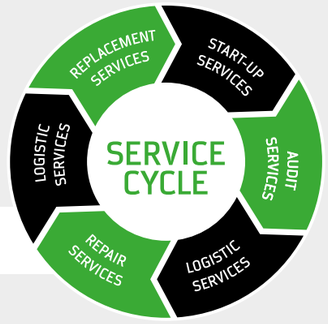


BITZER GLOBAL SERVICE NETWORK

Local support to global standards: GREEN POINT offers services at 54 locations, covering the entire life cycle of our components.

In addition, 40 AUTHORISED SERVICE CENTRES ensure that you receive qualified support worldwide.

With eight sites, the MARINE SERVICE NETWORK guarantees fast and reliable support near major ports, whilst authorised spare parts and oil dealers supply you with original spare parts and oils quickly all over the world.



Green Point®
A SERVICE BY BITZER GROUP

Bitzer AUTHORISED SERVICE CENTRE

Bitzer AUTHORISED MARINE SERVICE PARTNER

ORIGINAL IS KEY

SPARE PARTS AND OILS

BITZER ORIGINAL SPARE PARTS

// Ensure that the compressor remains operational and, above all, runs as intended – stably, reliably, efficiently and with minimal wear
// Guarantee precise fits, high-quality materials and correct tolerances
// Maintain energy efficiency
// Prevent premature wear and consequential damage

BITZER ORIGINAL OILS

// Are precisely tailored to the compressor, refrigerant and operating conditions
// Contain specially developed additives for optimum lubrication
// Provide reliable protection against wear – even under varying loads
// Ensure long-term performance with minimal energy consumption

SCHAUFLER ACADEMY

The SCHAUFLER Academy, the international seminar and training centre of BITZER, provides seminars and training on topics such as heat pumps, refrigeration, air conditioning and natural refrigerants. Our training courses are intended for project engineers and specialist planners as well as maintenance and installation specialists.



At the SCHAUFLER Academy, small groups study theoretical scenarios and carry out practical exercises on realistic systems. Through it all, experienced trainers from our Application Engineering team are on hand to answer any questions you might have. We look forward to seeing you there!

TRAINING AND SEMINARS



Training and knowledge exchange take centre stage here, and it is our mission to supply you with information about the applications and our products, as well as provide useful tools and basic knowledge. In situations where we cannot offer in-person training, we bring some of our content to your home or office in the form of webinars.

weB LEARNING

VISIT US ONLINE
AND BOOK YOUR TRAINING.

CLOSER TO YOU.
BITZER WORLDWIDE.



BITZER Kühlmaschinenbau GmbH
Peter-Schaufler-Platz 1 // 71065 Sindelfingen // Germany
Tel +49 7031 932-0 // Fax +49 7031 932-147
bitzer@bitzer.de // www.bitzer.de

Subject to change // www.bitzer.de/empco // 10.2026