

AIR-AND WATER-COOLED
CONDENSING UNITS
 THE RIGHT CHOICE FOR YOUR APPLICATION

KP-263-1 EN

CLOSER TO YOU.
 BITZER WORLDWIDE.



STANDARD RANGE
 air- and water-cooled



ADVANCED RANGE
 air-cooled



PREMIUM RANGE
 air-cooled

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-  COMMERCIAL REFRIGERATION
-  CONDENSING UNITS
-  RECIPROCATING COMPRESSORS

BITZER – EXPERTISE AND INNOVATION



We at BITZER are always striving for the highest possible energy efficiency and quality. As the world's leading independent company active in the field of refrigeration, air conditioning and process cooling as well as transport, we use our collective genius to provide the market with innovative products and intelligent solutions, with the aim of generating value for our partners and the environment worldwide.



AIR CONDITIONING



HEAT PUMPS



REFRIGERATION



PROCESS COOLING



TRANSPORT



87
YEARS OF
INNOVATION

3900
EMPLOYEES

72
SITES

37
COUNTRIES

Learn more at bitzer.de.

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BITZER Digital Network / BITZER Services / BITZER Green Point / SCHAUFLEER Academy
BITZER Selection Software / BEST Software / eParts / BITZER Apps

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FOR EVERY CUSTOMER FOR EVERY REQUIREMENT

	APPLI- CATIONS	CAPACITY CONTROL	HOUSING	REF. CLASS	Q _o RANGE
PREMIUM ECOSTAR (air-cooled)		✓ VARISPEED FI 25–87 Hz	✓	A1	LT 1.2 up to 9.3 kW MT 2.6 up to 26 kW
ADVANCED ECOLITE (air-cooled)		✓ VARISTEP CRII 10%–100%	✓	A1 + A2L	LT 1.3 up to 5.6 kW MT 3.2 up to 16.4 kW
STANDARD LHF (air-cooled)		optional VARISTEP CRII 10%–100%	optional	A1	LT 0.4 up to 23 kW MT 0.8 up to 60 kW
STANDARD K-SERIES (water-cooled)		optional VARISTEP CRII 10%–100%	–	A1 + A2L	LT 0.3 up to 28 kW MT 0.8 up to 89 kW

ECOSTAR

THE PREMIUM CHOICE

WHETHER SUPERMARKET OR PROCESS COOLING – THE ECOSTAR SERIES GUARANTEES THE HIGHEST EFFICIENCY WHILE ENSURING SAFE OPERATION AND CONTINUOUS ADAPTATION TO THE COOLING DEMAND

- INTELLIGENT PRODUCTS**
- HFO BLEND READY**
- ECODESIGN CONFORM**
- BEST SOFTWARE**
- BITZER DIGITAL NETWORK**

EXTENSIVE UNIT PACKAGE

- // Low and medium temperature applications are fully covered
- // ECOSTAR controller via BEST Software/ BEST App for easy configuration, diagnosis, analysis and communication
- // Highly efficient VARISPEED compressor
- // Highest fan efficiency due to EC fans controlled by ECOSTAR controller

AHEAD OF MARKET DEMANDS

ECOSTAR units are compliant with low GWP refrigerants of the A1 safety group as well as for common HFC and HFO blend refrigerants. Furthermore, the series fully complies with the EU Ecodesign Product Regulation 2015/1095. The unit is supplied fully tested from the factory, including factory-fitted equipment and extensive software functions.



THE PREMIUM SOLUTION FOR YOUR APPLICATION

The ECOSTAR air-cooled condensing unit offers intelligent technology for efficient and safe operation at any time. It is the ideal solution for customers who are looking for a sustainable, robust and easy plug-and-play concept made of proven BITZER components. It is a perfect match for commercial refrigeration with different applications, such as cold storage, hotels and pharmaceutical processes.

RETAIL + CONVENIENCE STORES



The ECOSTAR is ideal for systems with cold rooms and cabinets, even with multi-evaporators. The series adjusts safely and efficiently to cooling demands.

PHARMA/ LABS



The BITZER controller of the ECOSTAR series enhances close temperature control and safe operation of pharmaceutical processes and vaccine conservation.

SCALABLE PERFORMANCE ACCORDING TO YOUR NEEDS

PROCESS COOLING + COLD STORAGE



Process cooling and cold storage rooms require different cooling capacities with a wide application range of the evaporating temperature. The ECOLINE VARISPEED compressor enables low and medium temperatures with a large frequency band (from 25 [30] up to 87 Hz).

HOTEL/ BISTRO



The ECOSTAR, an IQ product, combines the highest efficiency for low operating costs with individual user profiles – to provide guests with a warm welcome.

THE INTELLIGENT SOLUTION: ECOSTAR – FOR COMMERCIAL REFRIGERATION



READY TO USE

PLUG-AND-PLAY CONCEPT



FAST RETURN ON INVESTMENT/LOW LIFE CYCLE COSTS

ALWAYS PERFECTLY ADAPTING TO THE SYSTEM DEMAND



INSTALLATION FLEXIBILITY

SUITABLE FOR SYSTEMS WITH LONG PIPES



FAST COMMISSIONING

QUICK START-UP WITH FIVE PARAMETERS ONLY

The premium choice for commercial refrigeration – no matter if single or multi-evaporator installation. The BITZER VARISPEED compressor with integrated frequency inverter guarantees precise refrigeration capacity adaptation. The fully equipped product allows convenient and easy on-site installation.



The ECOSTAR combines the latest technologies, such as highly efficient EC fans, comprehensive controller functions and optimised mini-channel condensers.

PLUG AND PLAY

The complete equipment permits quick and easy on-site set-up without complex installation of additional components. With easy access to all components, commissioning is also made easy and convenient.

CAPACITY CONTROL

The large band of frequency modulation from 25 (30) up to 87 Hz allows quick and precise adaptation of refrigeration capacity to the demand. This enhances the installation efficiency while ensuring precise temperature control.

PREMIUM BITZER CONTROLLER

The controller makes simple configuration, safe operation, quick analysis and easy communication possible. The unit can thus reach the highest level of efficiency combined with reliability and user-friendliness.

SUSTAINABLE

The ECOSTAR enables low refrigerant charges due to the optimised condenser and receiver design. It is also Ecodesign-compliant thanks to its ECOLINE VARISPEED semi-hermetic compressor combined with EC fan(s).

ECOSTAR: THE PREMIUM AIR-COOLED CONDENSING UNIT

COMPREHENSIVE STANDARD EQUIPMENT

- // BITZER inclined liquid receiver
- // Robust metal weather protection housing
- // Sight glass + filter dryer
- // HP/LP cartridge pressure switches* and transmitters
- // Oil heater
- // Suction, discharge and ambient temperature sensors
- // Complete piping and wiring
- // Oil charge

BITZER CONTROLLER WITH DISPLAY AND PREWIRED SWITCHBOARD

- // Access to the most important parameters via controller
- // Full access to all parameters via Bluetooth and BEST Software (via laptop or BEST App)
- // Modbus RS485

IQ INTELLIGENT PRODUCTS

B_o BITZER DIGITAL NETWORK



LIQUIDLINE WITH FILTER DRYER AND SIGHT GLASS AND SUCTION GAS LINE



HFO BLEND HFO BLEND READY

B BEST SOFTWARE

ECO ECODSIGN CONFORM



SPEED-CONTROLLED EC FAN(S)

- // Low power consumption

SYSTEM-OPTIMISED CONDENSER

- // Mini-channel condenser with high heat transfer rate and low refrigerant charge
- // Optional: with improved corrosion protection

SOUNDPROOF AND ROBUST DESIGN

- // Optional sound insulation of compressor housing (mandatory RI system)
- // Reduces sound emissions up to 5 dB(A)

BITZER ECOLINE VARISPEED COMPRESSOR WITH INTEGRATED FREQUENCY INVERTER

- // Capacity control from 25 (30)–87 Hz
- // Low starting current
- // Precise cooling

F FREQUENCY INVERTERS

OPTIONAL EQUIPMENT

- // RI system for refrigerant injection for low temperature application
- // Oil separator with check valve
- // Check valve in liquid line
- // Cold room temperature sensor
- // OLC-K1 or Delta-PII

The product picture shows an almost fully equipped ECOSTAR unit. For the standard extent of delivery and optionally available equipment, please see the following pages.

*Exception LHV7E/4NE-14.F3Y with adjustable high-pressure switch

BITZER CONTROLLER: FUNCTIONS

OPERATION MODES

- // Suction pressure control
- // Cold room temperature control

PUMP DOWN/OUT MODE AND PI-CONTROL MODE

OUTPUTS

- // Status of the Inputs unit
- // e.g. second setpoint

COMPRESSOR OPERATION

e.g. RI system, oil heater

LIMITER CONTROL AND APPLICATION LIMITS PROTECTION

e.g. min. evaporating/
max. condensing temperature

EMERGENCY MODE

- // HP/LP or cold room sensor
- // Frequency inverter



COMMUNICATION

- // Bluetooth via BEST Software (via laptop or BEST App)
- // Mini USB via BEST Software/ BEST App
- // Modbus RTU (RS485)

VARISPEED CONTROL

- // Integrated frequency inverter
- // 25–87 Hz for four cylinders
- // 30–87 Hz for two cylinders

ALARM CODE VISUALISATION

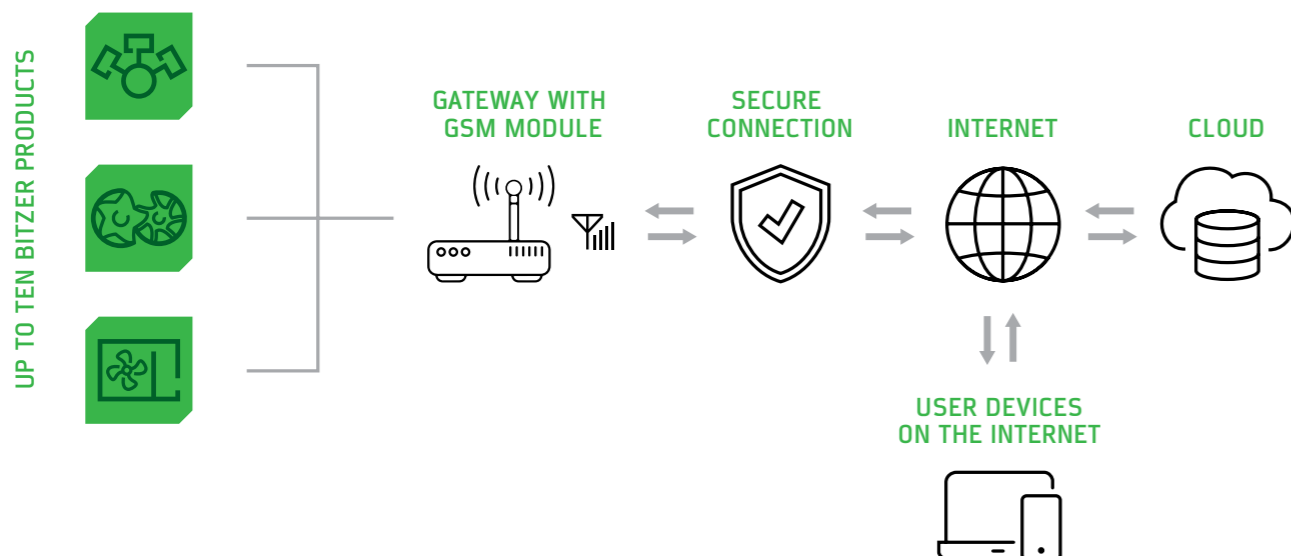
- // On integrated display with alarm number, failure code and short text
- // Via BEST Software
- // Via status lamps

FUNCTIONS

- // Winter start
- // EC fan(s) control
- // Oil return mode
- // Wet operation detection
- // ..

BITZER DIGITAL NETWORK: ALL-ROUND VIEW OF THE HEART OF REFRIGERATION AND A/C SYSTEMS

This provides you with important product and application-related information on all the BITZER products, including, among others, data analyses and compressor operation reports.



EXTENT OF DELIVERY

ECOSTAR AIR-COOLED CONDENSING UNITS WITH ECOLINE VARISPEED COMPRESSORS		LHV5E/..	LHV7E/..
Semi-hermetic reciprocating compressor	ECOLINE VARISPEED with integrated frequency inverter	S	S
Oil heater	200 .. 260 V, PTC	S	S
Air-cooled condenser	- mini channel design with 1 fan - EC motor, speed controlled	S	
	- mini channel design with 2 fans - EC motors, speed controlled		S
Weather protection housing		S	S
Liquid receiver	with shut-off valve	S	S
Connection for pressure relief valve	at receiver / condenser	S	S
Sight glass and filter drier	in liquid line	S	S
High and low pressure switch	- cartridge pressure switch (not adjustable)	S	S
	- LHV7E/4NE-14.F3Y: adjustable high pressure switch		
Temperature sensor	- for suction gas temperature	S	S
	- for discharge gas temperature		
	- for ambient temperature		
Pressure transmitters	for high and low pressure	S	S
Complete piping	- discharge line	S	S
	- liquid line		
	- suction line (insulated)		
ECOSTAR controller	control of compressor speed and further functions of condensing unit	S	S
Complete wiring	main switch, compressor contactor, etc.	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants tc < 70 °C	S	S

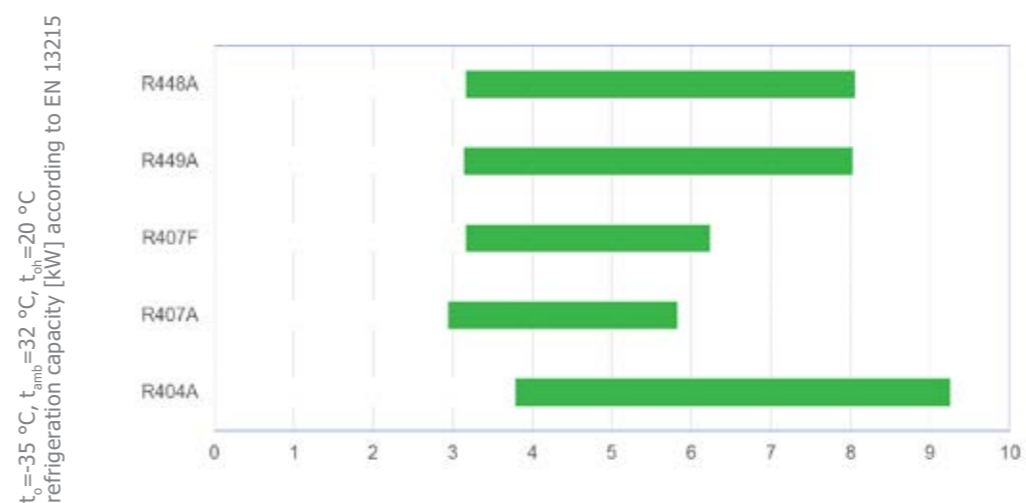
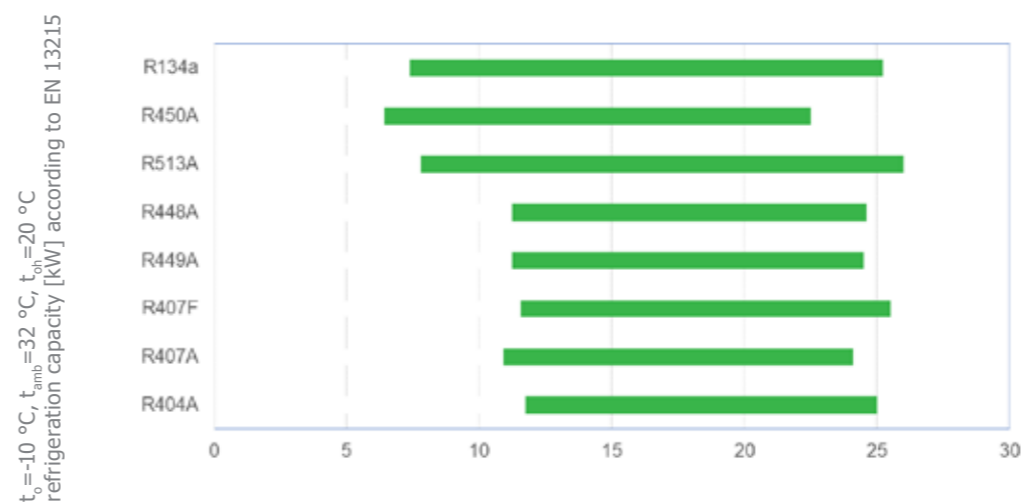
S = extent of delivery
(Subject to change without notice)

EXTRAORDINARY OPTIONAL EQUIPMENT TO FULFILL YOUR DEMANDS

ECOSTAR AIR-COOLED CONDENSING UNITS WITH ECOLINE VARISPEED COMPRESSORS		LHV5E/..	LHV7E/..
Warranty extension up to 5 years	details see price list	•	•
Temperature sensor	for cold store temperature	•	•
Check valve*	in liquid line - mounted	•	•
Oil separator*	with check valve in discharge line - mounted	•	•
RI system (refrigerant injection cooling)*	- mounted	•	•
Condenser improved corrosion protection*	plastic coated fins or copper fins	•	•
Sound insulation for compressor housing*	RI system (refrigerant injection cooling) is mandatory	•	•
Oil charge	BSE55 (ester oil) for HFC and HFC/HFO refrigerants - at high condensing temperatures $t_c > 70\text{ °C}$	○	○
	B5.2: "Y" in compressor designation omitted	○	○
Oil level monitoring OLC-K1 - opto-electronic	230 V-1-50/60 Hz mounted	• ¹	-
Differential oil pressure switch Delta-PII	115 .. 230 V-1-50/60 Hz mounted	•	•
BITZER Digital Network		•	•

• = option available, ○ = option without extra charge, * = retrofitting not possible, 1 = only for LHV5E/2DES-3.F1(Y)
(Subject to change without notice)

APPLICATION RANGE

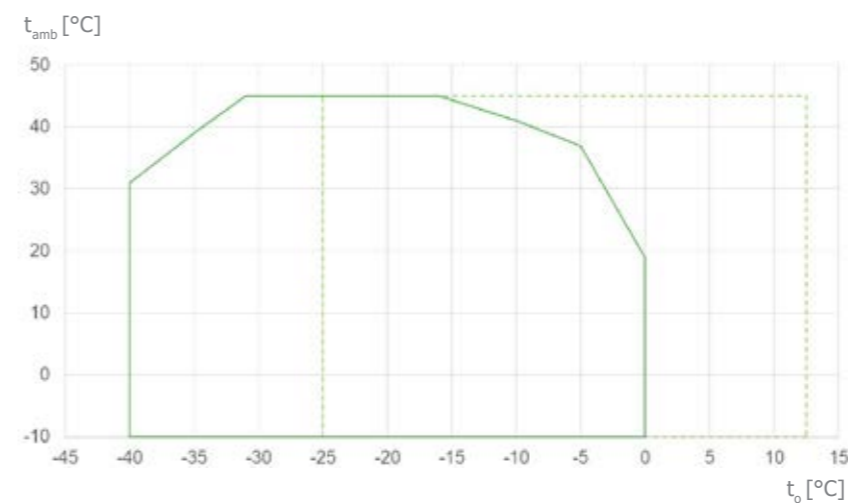


For further details
please refer to
BITZER Software



Scan for
additional
information

APPLICATION LIMITS



LHV7E/4FE-5.F1Y 80Hz R448A/R449A $t_{oh} = 20\text{ °C}$
LHV7E/4CE-9.F3Y 80 Hz R134a/R513A $t_{oh} = 20\text{ °C}$

t_o Evaporating temperature [°C]
 t_{amb} Ambient temperature [°C]
 t_{oh} Suction gas temperature [°C]

ASERCOM CERTIFIED PERFORMANCE DATA

The Association of European Refrigeration Component Manufacturers (ASERCOM) has implemented a procedure of certifying condensing units performance data.

The high standard of this certification is assured by
 // plausibility checks of the data performed by experts
 // regular random tests at independent institutes

These high efforts result in the fact that only a limited number of condensing units can be submitted. Due to this not all BITZER products are certified yet. Performance data of condensing units which meet the strict requirements carry the label "ASERCOM certified performance". All certified condensing units and further information are listed on ASERCOM web site (www.ASERCOM.org).



In the BITZER Software the appropriate condensing units are marked with this label.

PERFORMANCE DATA

REFRIGERATION CAPACITY Q_o @ t_{amb} 32 °C							
	MT, -10 °C, mid-point					LT, -35 °C, mid-point	
	R404A	R448A R449A	R513A	R450A	R134a	R404A	R448A R449A
LHV5E/2DES-3.F1Y	11,77	11,24	7,82	6,48	7,38	3,79	3,16
LHV5E/4FE-5.F1Y	14,92	14,68	9,82	8,17	9,28	5,3	4,42
LHV5E/4EE-6.F1Y	17,36	17,19	12,43	10,54	11,89	6,38	5,39
LHV7E/4FE-5.F1Y	16,17	15,67	10,1	8,35	9,51	5,42	4,53
LHV7E/4EE-6.F1Y	19,17	18,7	13,04	10,89	12,38	6,55	5,55
LHV7E/4DE-5.F1Y			14,82	12,43	14,09		
LHV7E/4CE-6.F1Y			17,69	15,01	16,92		
LHV7E/4DE-7.F3Y	21,6	20,7	14,82	12,42	14,08	7,76	6,21
LHV7E/4CE-9.F3Y	25	24,6	17,69	15,01	16,92	9,26	8,06
LHV7E/4VE-7.F3Y			18,26	15,5	17,44		
LHV7E/4TE-9.F3Y			21,2	18,18	20,4		
LHV7E/4PE-12.F3Y			23	19,81	22,1		
LHV7E/4NE-14.F3Y			26	22,6	25,2		

SEPR							
SEPR	MT, -10°C, mid-point					LT, -35°C, mid-point	
	R404A	R448A R449A	R513A	R450A	R134a	R404A	R448A R449A
LHV5E/2DES-3.F1Y	2,68	2,57	2,88	2,83	2,88	1,65	1,56
LHV5E/4FE-5.F1Y	2,4	2,35	2,73	2,68	2,72	1,53	1,5
LHV5E/4EE-6.F1Y	2,15	2,14	2,65	2,66	2,68	1,53	1,5
LHV7E/4FE-5.F1Y	2,59	2,51	2,8	2,78	2,81	1,61	1,54
LHV7E/4EE-6.F1Y	2,4	2,36	2,75	2,73	2,76	1,58	1,52
LHV7E/4DE-5.F1Y			2,7	2,68	2,71		
LHV7E/4CE-6.F1Y			2,57	2,59	2,61		
LHV7E/4DE-7.F3Y	2,29	2,27	2,67	2,64	2,68	1,57	1,49
LHV7E/4CE-9.F3Y	2,05	2,05	2,57	2,59	2,61	1,55	1,49
LHV7E/4VE-7.F3Y			2,55	2,54	2,58		
LHV7E/4TE-9.F3Y			2,46	2,47	2,48		
LHV7E/4PE-12.F3Y			2,38	2,42	2,42		
LHV7E/4NE-14.F3Y			2,23	2,31	2,28		

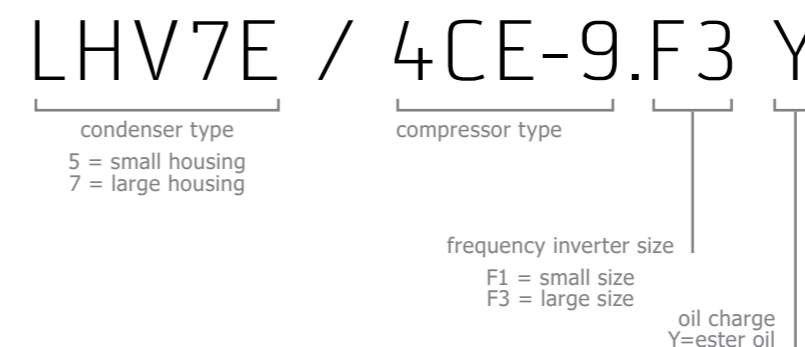
Tentative data

BITZER CONDENSING UNITS

COMPLYING WITH THE EU ECODESIGN REGULATION 2015/1095

According to MEPS Tier-2, for more details please see BITZER brochure A-530-1	COP	SEPR
MT (t_o -10 °C) - refrigeration capacity	0,2...≤5 kW	5...50 kW
LT (t_o -35 °C)- refrigeration capacity	0,1...≤2 kW	2...20 kW

EXPLANATION OF TYPE DESIGNATION



TECHNICAL DATA

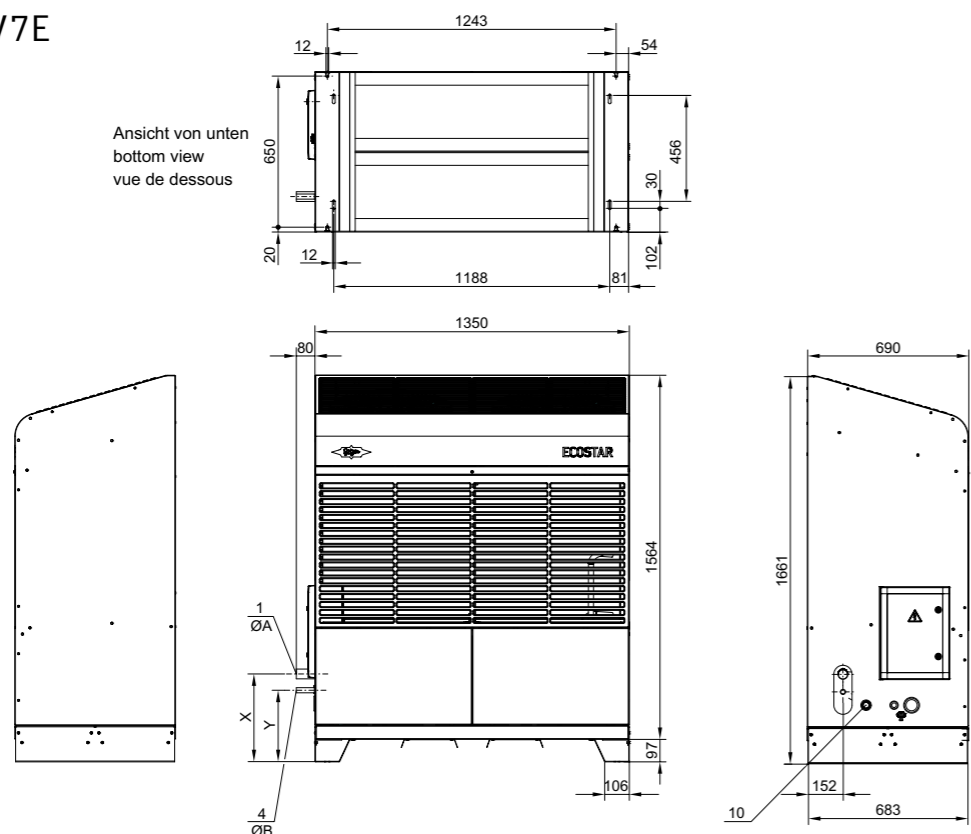
Type	weight in kg (standard extent of delivery)	max fan power in W	max condenser air flow in m ³ /h	receiver volume in dm ³	max. operating current in A	sound pressure level*
LHV5E/2DES-3.F1Y	295	1 x 350	5200	21	16	41,5
LHV5E/4FE-5.F1Y	312	1 x 350	5200	21	21	42,5
LHV5E/4EE-6.F1Y	312	1 x 350	5200	21	23	43
LHV7E/4FE-5.F1Y	330	2 x 350	10400	21	22	43
LHV7E/4EE-6.F1Y	330	2 x 350	10400	21	24	43,5
LHV7E/4DE-5.F1Y	330	2 x 350	10400	21	24	47
LHV7E/4CE-6.F1Y	330	2 x 350	10400	21	24	47,5
LHV7E/4DE-7.F3Y	330	2 x 350	10400	21	30	47
LHV7E/4CE-9.F3Y	330	2 x 350	10400	21	36	47,5
LHV7E/4VE-7.F3Y	390	2 x 350	10400	21	25	47,5
LHV7E/4TE-9.F3Y	390	2 x 350	10400	21	28	48
LHV7E/4PE-12.F3Y	390	2 x 350	10400	21	32	48,5
LHV7E/4NE-14.F3Y	390	2 x 350	10400	21	36	49,5

*= in dB(A) at t_o -10 °C/ t_{amb} +32 °C 80 Hz at 10 m distance (Subject to change without notice)

Tentative data

DIMENSIONS

LHV5E/LHV7E



Type	Ø A		Ø B		X	Y
	mm	inch	mm	inch		
LHV5E/2DES-3.F1Y	22	7/8	16	5/8	372	310
LHV5E/4FE-5.F1Y	28	1 1/8	16	5/8	375	310
LHV5E/4EE-6.F1Y	28	1 1/8	16	5/8	375	310
LHV7E/4FE-5.F1Y	28	1 1/8	16	5/8	375	310
LHV7E/4EE-6.F1Y	28	1 1/8	16	5/8	375	310
LHV7E/4DE-5.F1Y	35	1 3/8	22	7/8	383	308
LHV7E/4CE-6F.1Y	35	1 3/8	22	7/8	383	308
LHV7E/4DE-7.F3Y	35	1 3/8	22	7/8	383	308
LHV7E/4CE-9.F3Y	35	1 3/8	22	7/8	383	308
LHV7E/4VE-7.F3Y	42	1 5/8	22	7/8	383	308
LHV7E/4TE-9.F3Y	42	1 5/8	22	7/8	383	308
LHV7E/4PE-12.F3Y	42	1 5/8	22	7/8	383	308
LHV7E/4NE-14.F3Y	42	1 5/8	22	7/8	383	308

Connection positions: 1= Suction gas line, 4= Refrigerant outlet, 10= Sight glass

Tentative data

ACCESSORIES



OIL SEPARATOR WITH CHECK VALVE KEEPS THE COMPRESSOR LUBRICATED

The right oil supply to the compressor at any time with the optional oil separator with check valve in the discharge line.

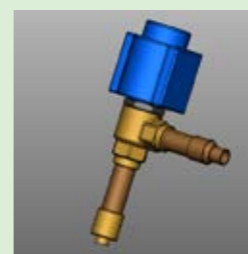
- // Optional accessory (no retrofit possible)
- // Available for whole ECOSTAR series



CONDENSER WITH PLASTIC-COATED/COPPER FINNS FOR IMPROVED CORROSION PROTECTION

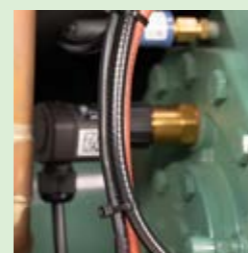
For safe installation worldwide even in a challenging environment.

- // Optional accessory



RI SYSTEM FOR LOW TEMPERATURE APPLICATION

- // Optional accessory
- // Refrigerant injection with solenoid valve
- // Required for optional sound insulation



OIL LEVEL MONITORING/ DIFFERENTIAL OIL PRESSURE SWITCH FOR SAFE ECOSTAR OPERATION

- // Optional accessory
- // OLC-K1 for LHV5E/2DES-3.F1(Y)
- // Delta-PII for LHV5E/LHV7E

Images are for illustration purposes only

ECOLITE

ALWAYS THE RIGHT CHOICE!

WHETHER FOR PETROL STATIONS OR CORNER SHOPS – THE BITZER ECOLITE GUARANTEES EASY HANDLING AND A TIME-SAVING INSTALLATION



HFO
READY



ECODESIGN
CONFORM



BEST
SOFTWARE



CONDENSING
UNITS

VERSATILE APPLICATION POSSIBILITIES

- // Low and medium temperature applications are fully covered
- // Perfect adaptability to the system demand with VARISTEP as standard
- // Use in urban areas is easily possible thanks to the low sound level
- // Designed for all climate zones even in rural areas: even at high ambient temperatures up to 55°C, the cooling temperature remains constant
- // Heat recovery can be used to achieve the highest system efficiency

FLEXIBILITY

The extensive standard equipment and the multitude of functions leave nothing to be desired. The units are ready for all common HFC refrigerants, including HFO blends and HFOs meaning they are future-proof. Furthermore, they fully comply with the EU Ecodesign Product Regulation 2015/1095.



THE RIGHT SOLUTION FOR YOUR APPLICATION

The advanced ECOLITE air-cooled condensing unit for commercial refrigeration fits perfectly with the well-proven standard and premium series from BITZER. It is the ideal solution for demanding customers who are looking for a sustainable, future-proof and easy-to-install plug-and-play concept product made of approved BITZER components. It is a perfect match for different applications, such as petrol stations, corner shops, rest stations, fast food restaurants and many more.

PETROL STATION



A perfect match: ECOLITE and petrol stations worldwide. Always connected with your unit and up to date thanks to the BITZER DIGITAL NETWORK.

PHARMA/ LABS



With ECOLITE, certain temperature levels can be maintained precisely and constantly. In industry, this reliability, quality and precision is a must-have.

HORECA



The ECOLITE is the right choice for long pipe runs and varying cooling loads thanks to the oil return mode and integrated VARISTEP capacity regulation.

SCALABLE PERFORMANCE ACCORDING TO YOUR NEEDS

CONVENIENCE STORE



Sustainability is our demand. With the integrated floating condensing pressure and possible heat recovery, we reach an outstanding level of efficiency and a low carbon footprint.

COLD STORAGE



Even challenging applications are no problem for the ECOLITE. We combine LT and MT within one unit to reach the highest flexibility for your demands.

ALL-IN-ONE PACKAGE: PROVEN BITZER COMPONENTS



REDUCED LIFE CYCLE COSTS

HIGHEST EFFICIENCY IN CLASS



CONVENIENT COMMISSIONING, OPERATION AND MONITORING

READY TO USE



HIGHEST FLEXIBILITY

MULTIPLE REFRIGERANTS APPROVED FOR LT AND MT APPLICATIONS



SUITABLE FOR ALL AREAS

LOW SOUND



Highly efficient BITZER ECOLINE compressors with mechanical capacity control combined with system-optimised condensers and speed-controlled fans make all seven types suitable for low and medium temperature applications as standard.



Due to its versatility and future-proof design, this new series is a state-of-the-art and affordable line of condensing units featuring the latest BITZER technology.

EASY-TO-USE CONCEPT

Comprehensive standard equipment, easy access to all components and the plug-and-play concept offer convenient commissioning and integration into the system. The smart and user-friendly BITZER controller allows you to constantly monitor the parameters and change settings. Thanks to the BEST Software and/or BITZER DIGITAL NETWORK, everything is under control – everywhere and any time.

RELIABLE BITZER COMPONENTS

The proven semi-hermetic ECOLINE reciprocating compressor is the heart of our ECOLITE. The solid and robust design combined with proven BITZER components and versatile software functions offer a high degree of reliability.

SUSTAINABLE

Thanks to the large service door, all components are accessible and maintenance is made easy. In addition, the semi-hermetic design of the ECOLINE compressor makes repair possible, which increases the sustainability of the ECOLITE condensing unit by prolonging the operating lifetime. The option of heat recovery connections is certainly an additional plus for a small carbon footprint.

ADAPTABILITY – CAPACITY CONTROL

The standard mechanical virtually stepless capacity control enables you to match the provided refrigeration capacity to the actual cooling demand. It prevents high switching frequency of the compressor, thereby ensuring more efficient operation of the system, which results in lower operation costs. The ECOLITE adapts automatically to system demands 365 days a year.

ECOLITE: THE ADVANCED AIR-COOLED CONDENSING UNIT

COMPREHENSIVE STANDARD EQUIPMENT

- // BITZER liquid receiver
- // Sight glass + screwed filter dryer + ball valve
- // HP/LP cartridge pressure switches and transmitters
- // Oil heater
- // Suction, discharge and ambient temperature sensors

SPEED-CONTROLLED AC FANS

- // Floating condensing pressure for the highest efficiency

SYSTEM-OPTIMISED CONDENSER

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

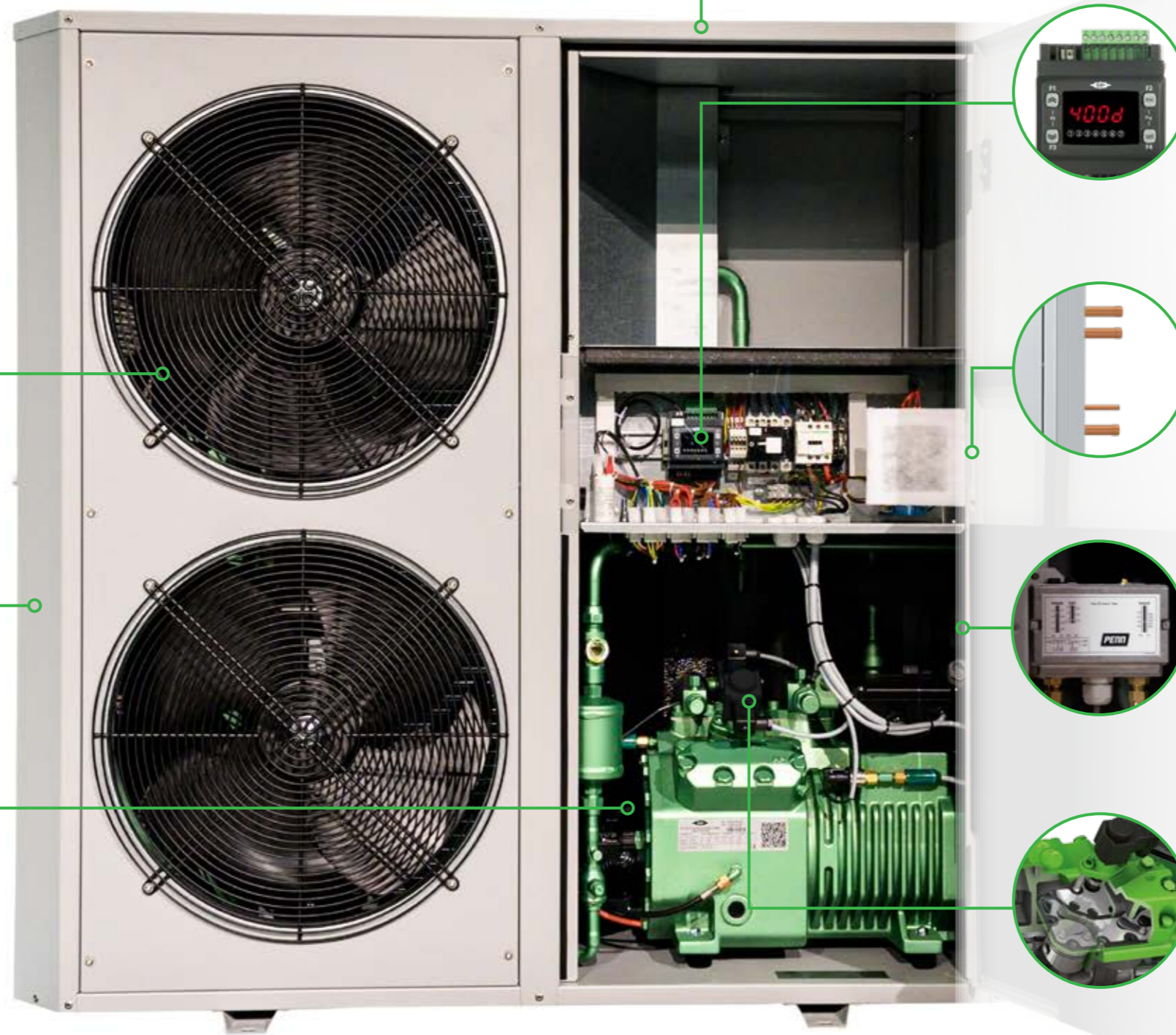
ADDITIONAL EC FAN FOR COOLING OF COMPRESSOR COMPARTMENT

- // For reliable operation at demanding conditions

RECIPROCATING COMPRESSORS

HFO READY

BEST SOFTWARE



SOUNDPROOF DESIGN

- // The robust housing and compressor compartment including sound insulation is developed for maximum sound protection

CONTROLLER WITH DISPLAY + PREWIRED SWITCHBOARD

- // Controller including dedicated software developed by BITZER
- // BEST Software connectivity
- // Approved for A2L refrigerants
- // Modbus RTU (RS485)

HEAT RECOVERY CONNECTIONS

- // Ready-to-use connections with shut-off valve to manually close and open

LIQUID AND SUCTION LINE

- // Easily accessible, with all pipes on one side

ADJUSTABLE HP/LP SWITCH

- // Optional accessory for LHL3E/LHL5E
- // Retrofit kit available
- // Standard cartridge pressure switches omitted

BITZER ECOLINE COMPRESSOR WITH VARISTEP

- // Highly efficient BITZER ECOLINE compressor with VARISTEP capacity control from (10%) 50% to 100%

MECHATRONIC CAPACITY CONTROL

The product picture shows a fully equipped ECOLITE unit. For the standard extent of delivery and optionally available equipment, please see the following pages.

BITZER CONDENSING UNIT: CONTROLLER FUNCTIONS

OPERATION MODES

- // Evaporating temp. control
- // Room temp. control

PUMP DOWN/OUT MODE

Standard = enabled

OUTPUTS

e.g. fault alarm

INPUTS

e.g. setpoint adjustment

MODBUS



VARISTEP CONTROL

- // 1x VARISTEP
→ 50%–100% capacity modulation
- // 2x VARISTEP
→ 10%–100% capacity modulation

ALARM CODE VISUALISATION

Alarm memory for 20 alarms with timestamp

EMERGENCY MODES

Transducers/sensors

WINTER START

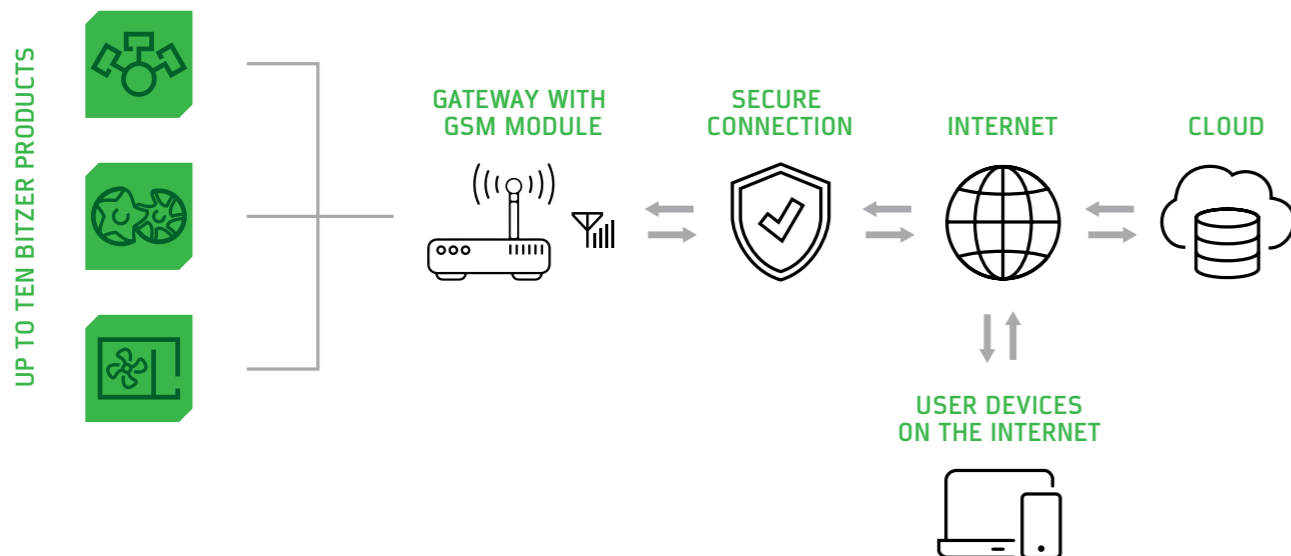
OIL RETURN MODE

FAN(S) SPEED CONTROLLED

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

BITZER DIGITAL NETWORK: ALL-ROUND VIEW OF THE HEART OF REFRIGERATION AND A/C SYSTEMS

This provides you with important product and application-related information on all the BITZER products, including, among others, data analyses and compressor operation reports.



EXTENT OF DELIVERY

ECOLITE AIR-COOLED CONDENSING UNITS WITH ECOLINE COMPRESSORS		LHL3E/..	LHL5E/..
Semi-hermetic reciprocating compressor	with capacity regulator CRII (1x)	S	
	with capacity regulator CRII (1x) and CRII prepared (1x)		S
Oil heater	200 .. 260 V, PTC	S	S
Air cooled condenser with fans	- with 1 fan - AC motor, speed controlled	S	
	- with 2 fans - AC motors, speed controlled		S
Fan for compressor compartment cooling*	EC motor	S	S
Liquid receiver	with shut-off valve	S	S
Sight glass, screwed filter drier and ball valve	in liquid line	S	S
High and low pressure switch	cartridge pressure switch not adjustable	S	S
Temperature sensor	- for suction gas temperature - for discharge gas temperature - for ambient temperature	S	S
Pressure transmitters	for high and low pressure	S	S
Discharge line		S	S
Unit controller	fully wired switch board	S	S
Complete piping and wiring	insulated suction line, main switch and compressor controller	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants tc < 70 °C	S	S
Weather protection housing	with sound insulation for compressor compartment	S	S

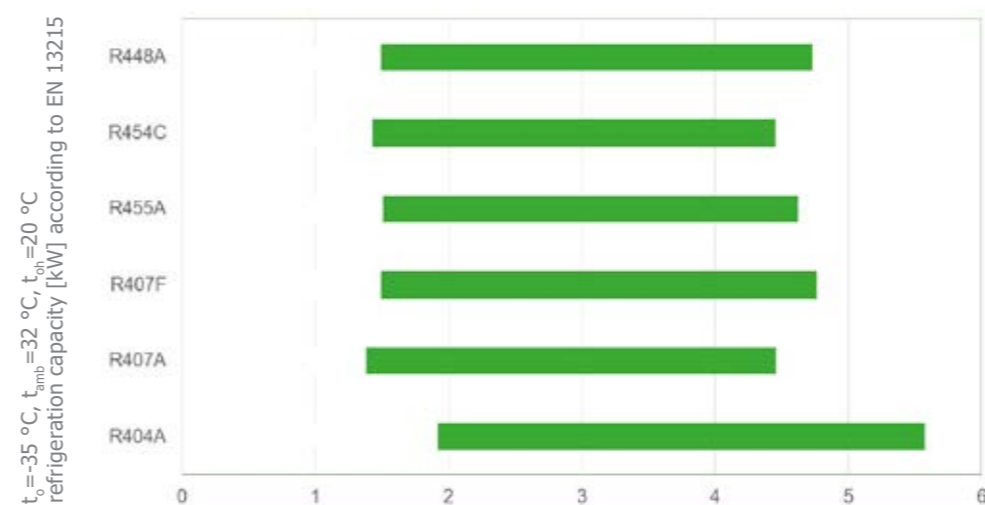
S = extent of delivery, *= Large application envelope - even for low temperature application no refrigerant injection needed (Subject to change without notice)

EXTRAORDINARY OPTIONAL EQUIPMENT TO FULFILL YOUR DEMANDS

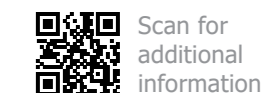
ECOLITE AIR-COOLED CONDENSING UNITS WITH ECOLINE COMPRESSORS		LHL3E/..	LHL5E/..
Warranty extension up to 5 years	details see price list	•	•
Approval for A2L application	- with release certification for A2L - with access code to unlock released refrigerants in the controller (R1234ze(E)/yf, R454C, R455A)	•	•
Temperature sensor for cold room		•	•
Oil separator with check valve*	mounted	•	•
Check valve*	in liquid line - mounted - sight glasses and connection for pressure relief valve required	•	•
liquid receiver with 2x sight glasses and connection for pressure relief valve*		•	•
Condenser improved corrosion protection*	plastic coated or copper fins	•	•
Heat recovery connections*	piping only		•
BEST converter (BITZER Electronic Service Tool)	interface converter device with cable kit	•	•
Oil charge	BSE55 (ester oil) for HFC and HFC/HFO refrigerants - at high condensing temperatures $t_c > 70\text{ °C}$ - for R1234ze(E) $t_c < 70\text{ °C}/t_0 < 15\text{ °C}^1$	○	○
	B5.2: "Y" in compressor designation omitted	○	○
Oil level monitoring OLC-K1 - opto-electronic - mounted ex-factory	retrofitting possible with kit part no. 34733491	•	•
Second capacity regulator CRII - mounted ex-factory	retrofitting possible with kit part no. 30235550		•
BITZER Digital Network		•	•
High pressure and low pressure switch - mounted ex-factory	adjustable, recommended for pressure relief valve - replaces standard cartridge pressure switch - retrofitting possible with kit part no. 34732505	•	•

•= option available, ○= option without extra charge, *= retrofitting not possible, 1= for R1234ze(E) $t_c > 70\text{ °C}/t_0 > 15\text{ °C}$ on request (Subject to change without notice)

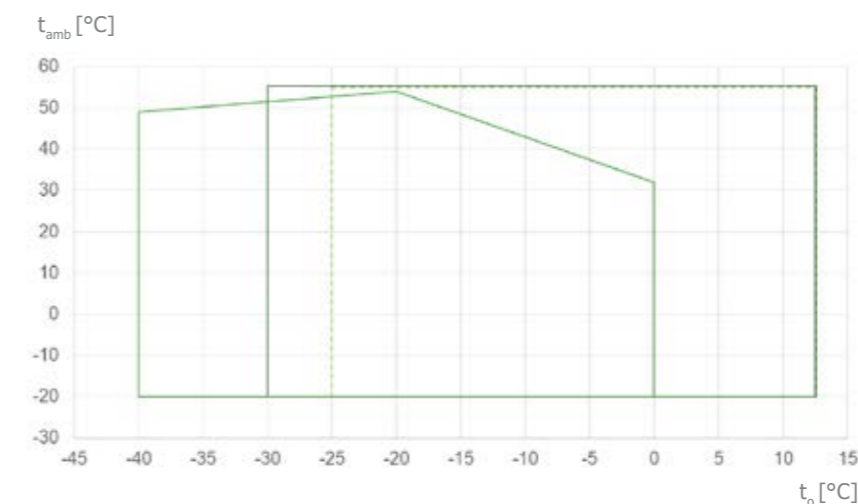
APPLICATION RANGE



For further details please refer to BITZER Software



APPLICATION LIMITS



LHL5E/4DES-5Y 50 Hz R134a/450A $t_{oh} = 20\text{ °C}$
 LHL5E/4DES-5Y 50 Hz R513A/R1234yf $t_{oh} = 20\text{ °C}$
 LHL5E/4FES-3Y 50 Hz R448A/449A/454C $t_{oh} = 20\text{ °C}$

t_o Evaporating temperature [°C]
 t_{amb} Ambient temperature [°C]
 t_{oh} Suction gas temperature [°C]

ASERCOM-CERTIFIED PERFORMANCE DATA

The Association of European Refrigeration Component Manufacturers (ASERCOM) has implemented a procedure of certifying condensing units performance data.

The high standard of this certification is assured by
 // plausibility checks of the data performed by experts
 // regular random tests at independent institutes

These high efforts result in the fact that only a limited number of condensing units can be submitted. Due to this not all BITZER products are certified yet. Performance data of condensing units which meet the strict requirements carry the label "ASERCOM certified performance". All certified condensing units and further information are listed on ASERCOM web site (www.ASERCOM.org).



In the BITZER Software the appropriate condensing units are marked with this label.

PERFORMANCE DATA

REFRIGERATION CAPACITY Q_o @ t_{amb} 32 °C																
	MT, -10 °C, mid-point										LT, -35 °C, mid-point					
	R134a	R450A	R513A	R1234yf	R404A	R407A	R407F	R448A R449A	R454C	R455A	R404A	R407A	R407F	R448A R449A	R454C	R455A
LHL3E/ 2EES-2Y	3,66	3,24	3,88	3,74	6,02	5,73	6,08	5,92	5,49	5,66	1,92	1,38	1,49	1,49	1,43	1,51
LHL3E/ 2DES-2Y	4,32	3,82	4,56	4,28	6,78	6,49	6,88	6,69	6,21	6,38	2,24	1,66	1,79	1,78	1,7	1,77
LHL3E/ 2CES-3Y	5,22	4,63	5,5	5,29	8,17	7,89	8,35	8,12	7,54	7,7	2,86	2,19	2,34	2,33	2,2	2,28
LHL5E/ 4FES-3Y	5,76	5,09	6,11	5,9	9,85	9,63	10,08	9,8	9,08	9,39	3,29	2,55	2,63	2,6	2,47	2,65
LHL5E/ 4EES-4Y	7,44	6,58	7,84	7,53	11,96	11,48	12,16	11,82	10,97	11,28	4,09	3,04	3,27	3,24	3,09	3,23
LHL5E/ 4DES-5Y	8,47	7,5	8,94	8,39	13,42	12,77	13,52	13,14	12,21	12,5	4,67	3,44	3,7	3,67	3,48	3,61
LHL5E/ 4CES-6Y	10,23	9,08	10,75	10,35	15,83	15,46	16,36	15,88	14,77	15,03	5,57	4,46	4,76	4,73	4,45	4,62

SEPR // COP																
COP SEPR	MT, -10 °C, mid-point										LT, -35 °C, mid-point					
	R134a	R450A	R513A	R1234yf	R404A	R407A	R407F	R448A R449A	R454C	R455A	R404A	R407A	R407F	R448A R449A	R454C	R455A
LHL3E/ 2EES-2Y	2,59	2,53	2,59	2,55	3,42	3,44	3,4	3,43	3,61	3,25	1,41	1,24	1,27	1,27	1,3	1,26
LHL3E/ 2DES-2Y	2,53	2,5	2,53	2,49	3,21	3,26	3,2	3,24	3,42	3,06	1,93	1,26	1,28	1,28	1,32	1,26
LHL3E/ 2CES-3Y	3,5	2,47	3,49	3,49	2,97	3,04	2,98	3,01	3,2	2,84	1,92	1,78	1,79	1,81	1,85	1,78
LHL5E/ 4FES-3Y	3,56	3,45	3,61	3,59	3,48	3,48	3,45	3,48	3,61	3,3	1,87	1,69	1,7	1,72	1,73	1,76
LHL5E/ 4EES-4Y	3,73	3,65	3,75	3,73	3,22	3,31	3,25	3,29	3,45	3,11	1,93	1,77	1,79	1,81	1,82	1,81
LHL5E/ 4DES-5Y	3,61	3,57	3,61	3,62	3,06	3,18	3,12	3,15	3,34	2,99	1,92	1,79	1,8	1,83	1,87	1,8
LHL5E/ 4CES-6Y	3,49	3,49	3,47	3,47	2,81	2,94	2,88	2,91	3,09	2,75	1,9	1,79	1,8	1,82	1,86	1,78

Tentative data

BITZER CONDENSING UNITS

COMPLYING WITH THE EU ECODESIGN REGULATION 2015/1095

According to MEPS Tier-2, for more details please see BITZER brochure A-530-1	COP	SEPR
MT (t_o -10 °C) - refrigeration capacity	0,2...≤5 kW	5...50 kW
LT (t_o -35 °C) - refrigeration capacity	0,1...≤2 kW	2...20 kW

EXPLANATION OF TYPE DESIGNATION



TECHNICAL DATA

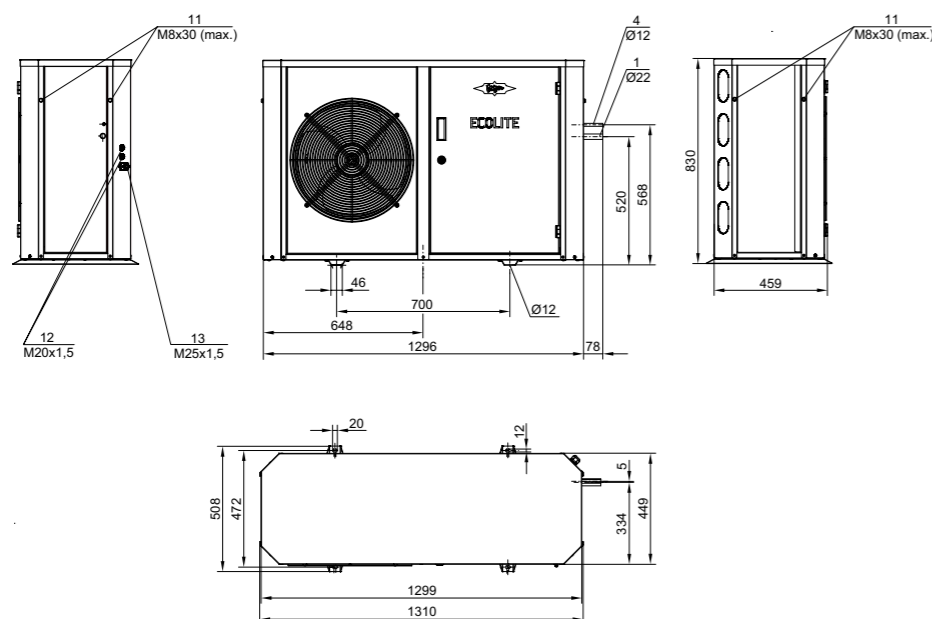
Type	weight in kg (standard extent of delivery)	max fan power consumption in kW	air flow condenser in m ³ /h	receiver volume in dm ³	max operating current in A	sound pressure level*
LHL3E/2EES-2Y	163	0,12	3000	7,8	6,56	35,8
LHL3E/2DES-2Y	163	0,12	3000	7,8	8,06	36,2
LHL3E/2CES-3Y	163	0,12	3000	7,8	9,65	36,5
LHL5E/4FES-3Y	222	0,24	6000	15	10,06	37
LHL5E/4EES-4Y	222	0,24	6000	15	12,76	37,8
LHL5E/4DES-5Y	222	0,24	6000	15	15,06	38,5
LHL5E/4CES-6Y	222	0,24	6000	15	18,26	39,1

*= in dB(A) at -10/32 °C 50 Hz at 10 m distance (Subject to change without notice)

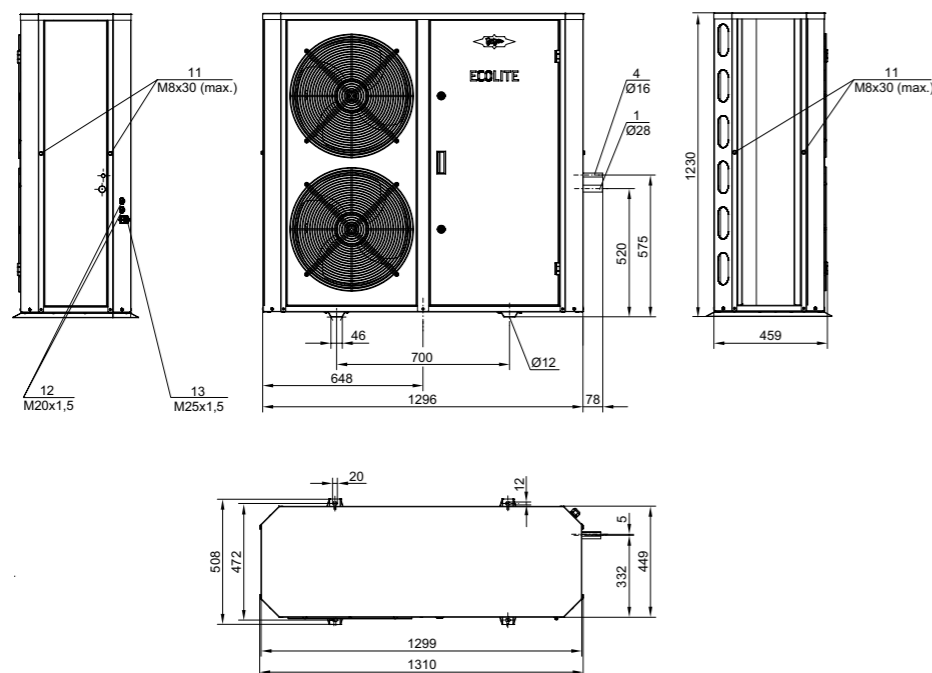
Tentative data

DIMENSIONS

LHL3E



LHL5E



CONNECTIONS

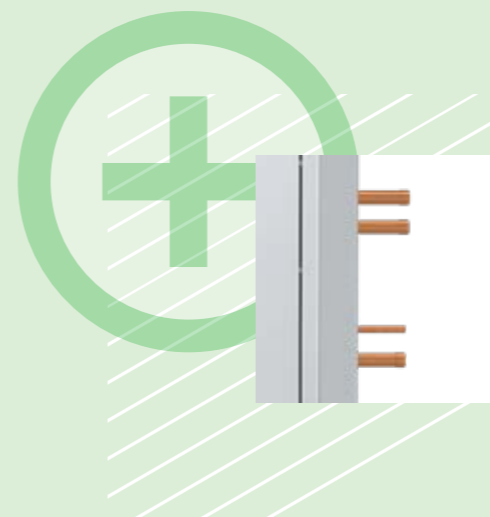
- 1 Refrigerant inlet (suction gas line), SL
- 4 Refrigerant outlet, DL
- 11 Load suspension points
- 12 Plug for screwed cable gland
- 13 Cable bushing (for cables 9–17mm)

Type	ØA mm	ØB mm	C mm	F mm	X mm	Y mm
LHL3E/2EES-2Y .. LHL3E/2CES-3Y	22	12	830	334	520	575
LHL5E/4FES-3Y .. LHL5E/4CES-6Y*	28	16	1230	332	520	575

*= Heat recovery connections on request

Tentative data

ACCESSORIES



HEAT RECOVERY CONNECTION COMBINATION OF HEATING AND COOLING

Heat recovery: an easy next step towards energy saving and sustainability. With it, the system efficiency increases, while operating costs are minimised. The digital output for the heat recovery mode is integrated into the ECOLITE controller and is user-friendly due to the prepared piping. Flexible use of heat recovery according to system demands.

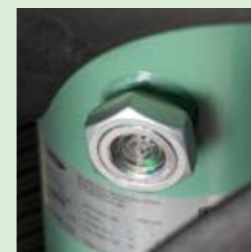
- // Optional accessory for LHL5E only
- // Shut-off valve inside the unit for manually closing and opening the heat recovery piping



OIL SEPARATOR WITH CHECK VALVE DEMANDING APPLICATIONS ARE NO PROBLEM

No matter if there is a long pipe run or multiple evaporators, the right oil supply is provided to the compressor at all times.

- // Optional accessory for LHL3E and LHL5E (no retrofit possible)



RECEIVER WITH SIGHT GLASSES, PRESSURE RELIEF VALVE CONNECTION AND CHECK VALVE FOR THE HIGHEST FLEXIBILITY

- // Optional accessory for LHL3E/LHL5E
- // Check valve in liquid line
- // Max. allowable pressure 32 bar



ADJUSTABLE HP/LP SWITCH

The standard cartridge pressure switches can be replaced with adjustable HP/LP switches.

- // Optional accessory for LHL3E/LHL5E
- // Retrofit kit available

Images are for illustration purposes only

LHF

RELIABLE, EFFICIENT, MODULAR!

WHETHER FOR LOW OR MEDIUM TEMPERATURE APPLICATIONS OR HIGH AMBIENT TEMPERATURES – THE BITZER LHF SERIES WITH ITS MODULAR SYSTEM GUARANTEES HIGH FLEXIBILITY. THIS SERIES IS SPECIALLY DESIGNED AND MANUFACTURED BY BITZER ONLY FOR SOME MARKETS OUTSIDE THE EU.

- HFO BLEND READY
- COMMERCIAL REFRIGERATION
- CONDENSING UNITS

VERSATILE APPLICATION POSSIBILITIES

- // Modular construction in several extension levels
- // Fully customisable to meet customer demands
- // Wide variety of refrigerants – including low GWP refrigerants

MADE BY BITZER

The modular system of the LHF series manufactured by BITZER guarantees the highest level of quality and a clear warranty cover of the whole unit. The easy selection by the BITZER Software ensures the best product selection according to system requirements.



THE RIGHT CHOICE FOR YOUR APPLICATION

The LHF air-cooled condensing unit is the perfect choice for markets outside the EU, where a fully customised unit is required. The series convinces with its reliable ECOLINE semi-hermetic compressor technology and the highly efficient, well-known and proven BITZER components. It's the ideal solution for customers who are looking for a flexible, reliable and easy-to-install product made by BITZER.

FOOD PROCESSING



Fresh food like fish, meat or vegetables are delicious: the perfect storage temperature is easily ensured with the LHF series. With the flexible use of refrigerants like low GWP refrigerants, an even more healthy and sustainable lifestyle is easily maintained.

PROCESS COOLING



The well-proven and robust LHF series offers reliability. Downtimes are reduced to a minimum. These are important factors for a safe and stable process.

SCALABLE PERFORMANCE ACCORDING TO YOUR NEEDS

COLD CHAIN



You can rely on BITZER products throughout the whole cold chain.

RETAIL



The LHF series is ideal for systems with cold rooms and cabinets, even with multi-evaporators. The wide range of types allows perfect adaptation to system needs.

HOSPITALITY



The LHF is the perfect fit for this segment with a wide variety of installation and system demands due to its high flexibility and adaptability.

MADE BY BITZER

APPROVED WORDLWIDE

+ EASY HANDLING

THANKS TO A HUGE OFFER OF
FACTORY-FITTED OPTIONAL EQUIPMENT

+ SOLID AND ROBUST PLATFORM

PROVEN AND WELL KNOWN
IN THE MARKET

+ FLEXIBLE SOLUTIONS

CONFIGURATION ACCORDING
TO SYSTEM NEEDS

+ HIGHLY RELIABLE WITH LOW OPERATING COSTS

SEMI-HERMETIC ECOLINE
COMPRESSOR OFFERS THE HIGHEST
EFFICIENCY AND RELIABILITY



Designed and made by BITZER only in specific BITZER factories, the LHF combines a classic, robust and proven design with the latest BITZER technologies and the flexibility to add a full spectrum of accessories including the control panel. This makes the LHF the perfect plug-and-play solution for specific markets and contractor needs.



Due to its versatility combined with a durable and proved design and the latest BITZER technology, this line of condensing units is future-proof and affordable.

RELIABLE BITZER COMPONENTS

The combination of the proven semi-hermetic ECOLINE compressor, BITZER liquid receiver and further high quality parts offers a high degree of reliability and performance.

SUSTAINABLE

The semi-hermetic design of the ECOLINE compressor enables maintenance and repairs, which increases the sustainability of the LHF condensing unit and the circular economy. Furthermore, all components are easily accessible for convenient commissioning and quick maintenance.

FULLY CUSTOMISABLE

The LHF condensing unit platform can be fully individualised by the customer. This also includes all the latest energy-efficient technologies from BITZER, which makes the LHF one of the most flexible solutions on the market. All components are factory-fitted and fully tested in the factory.

LHF: THE AIR-COOLED CONDENSING UNIT

CONTROL PANEL – PROVISION FOR ELECTRICAL COMPONENTS

- // Mounted
- // Including all necessary electrical components and electrical control

CAPACITY REGULATION

- // Highly efficient BITZER ECOLINE compressor
- // VARISTEP: CRII capacity control (10% only with CM-RC-01) 50%-100% (details on request)
- // BITZER VARIPACK frequency inverter

GAUGES – HIGH + LOW PRESSURE

- // Mounted with shut off valves

ADJUSTABLE HIGH AND LOW PRESSURE SWITCH

- // Mounted

VIBRATION ELIMINATOR

- // Integrated in discharge line

SUCTION ACCUMULATOR

- // Mounted ex-factory

OIL FILTER AND RETURN SIGHT GLASS

- // Integrated in oil return line

BITZER ECOLINE COMPRESSOR

- // Semi-hermetic reciprocating compressor
- // Highly efficient
- // Well proven and reliable
- // Crankcase heater
- // Discharge gas temperature sensor
- // Oil (pressure/level) control
- // OLC-K1 / MP54

ALL UNITS

- // With protection charge
- // Mounted on base plate
- // Compressor mounted
- // Condenser + fan mounted

FOR 2-STAGE UNITS

- // Liquid subcooler
- // Mounted complete with TXV and solenoid valve

JUNCTION BOX (not shown)

- // Wiring of all electrical components (exception: main power to compressor)
- // IP65
- // Mounted

CONDENSER

- // Approved design: copper tubes Ø 10mm* and aluminium fins
- // Best heat exchange
- // Optional: special coated condenser or special condenser fins and tubes
- // Best quality fans for highest reliability

AC FAN(S)

- // With protection guard

OIL SEPARATOR

- // With check valve in discharge line (mounted)
- // With oil return line
- // With oil filter and shut off valve

COMPLETE PIPING

- // Discharge line
- // Liquid line
- // Suction line (isolated)

BITZER LIQUID RECEIVER

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

OPTIONAL VALVES

- // Shut-off valve mounted in liquid line
- // Solenoid valve mounted in liquid line

LIQUID LINE

- With filter, sight glass and moisture indicator



RECIPROCATING COMPRESSORS



HFO BLEND READY



MECHATRONIC CAPACITY CONTROL

The product picture shows a fully equipped LHF unit. For the standard extent of delivery and optionally available equipment, please see the following pages.

* Except LH265F – Ø 7mm copper tubes

BITZER LHF CONDENSING UNIT: HIGH AMBIENT TEMPERATURE

RELIABLE OPERATION

// At high ambient temperatures

HIGH REFRIGERATION CAPACITY

// 39 types with up to 126.8 m³/h
// LH33F .. LH265F

HIGHLY EFFICIENT ECOLINE COMPRESSORS

// Well-known and proven
BITZER technology

SYSTEM-OPTIMISED CONDENSER

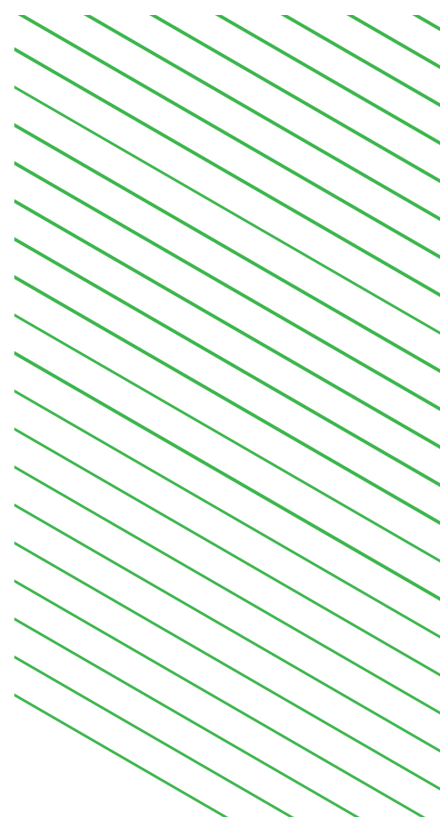
// For best heat exchange

ROBUST DESIGN AND COMPACT DIMENSIONS

// Small installation dimension
at place of use

EASY HANDLING AND COMMISSIONING

// Easy service thanks to directly
accessible system components



LHF WITH 2-STAGE COMPRESSORS: FOR LOW TEMPERATURE APPLICATIONS

The air-cooled condensing units with 2-stage compressors from BITZER are convincing thanks to a compressor design layout, made especially for low temperature applications. They are well combined with components like efficient condensers and fans. Furthermore, low GWP refrigerants are approved for increased sustainability.

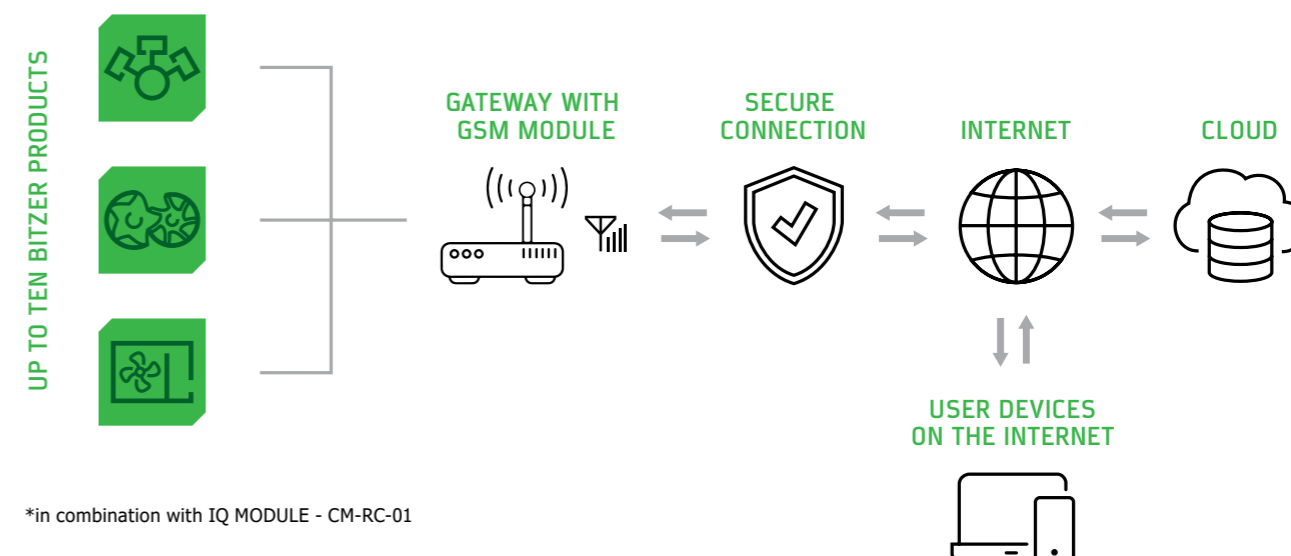
Eight types with displacement LP/HP up to 19.70 / 12.60 m³/h ... 101.10 / 50.50 m³/h 50 Hz

Type	Q ₀ @ t ₀ -45°C/ t _{amb} +32 °C 50 Hz in kW	
	R404A	
LH104F/S4T-5.2Y	4,04	
LH104F/S4N-8.2Y	5,71	
LH124F/S4G-12.2Y	9,26	
LH135F/S6J-16.2Y	13,24	
LH135F/S6H-20.2Y	15,23	
LH135F/S6G-25.2Y	17,33	
LH265F/S6G-25.2Y	17,55	
LH265F/S6F-30.2Y	20,8	

Tentative data

BITZER DIGITAL NETWORK: ALL ROUND VIEW OF THE HEART OF REFRIGERATION AND A/C SYSTEMS.

This provides you with important product and application-related information on all the BITZER products, including, among others, data analyses and compressor operation reports.*



*in combination with IQ MODULE - CM-RC-01

EXTENT OF DELIVERY

LHF – AIR COOLED CONDENSING UNIT (INCLUDING HIGH AMBIENT TEMPERATURE TYPES)	LH33F/.. - LH84F/..	LH104F/.. - LH124F/..	LH135F/..	LH265F/..
	Semi-hermetic reciprocating compressor			
		- ECOLINE compressors - 2-stage compressors		
Air cooled condenser	with 1 AC Fan (1 Phase Supply)	S		
	with 2 AC Fans (1 Phase Supply)		S	
	with 2 AC Fans (3 Phase Supply)			S
Crankcase heater	S	S	S	S
Receiver with outlet isolation	S	S	S	S
		with shut-off valve		
Condensing coil	S	S	S	S
Fan assembly with protection guard	S	S	S	S
Compressor mount	S	S	S	S
Discharge line	S	S	S	S
Liquid and suction line	S	S	S	S
Mounted on base plate	S	S	S	S
Provision for electrical components	S	S	S	S
Protection charge	S	S	S	S

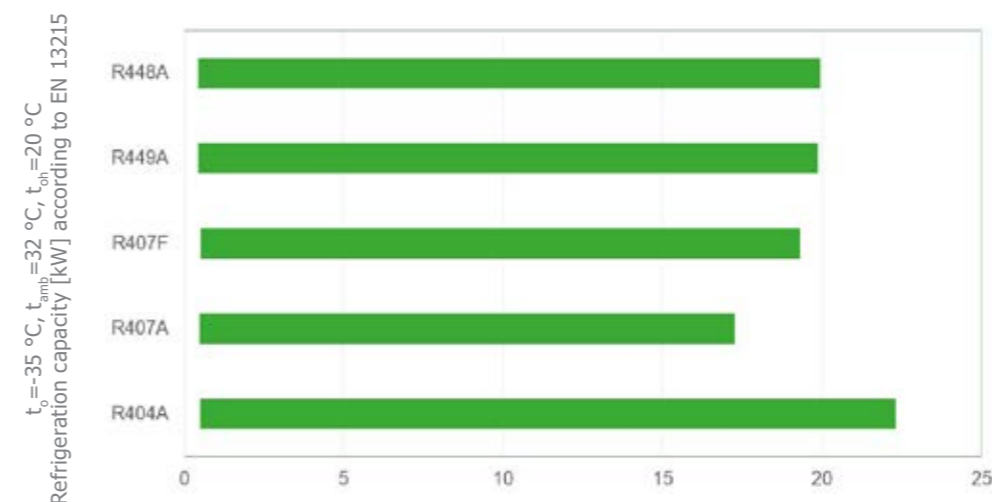
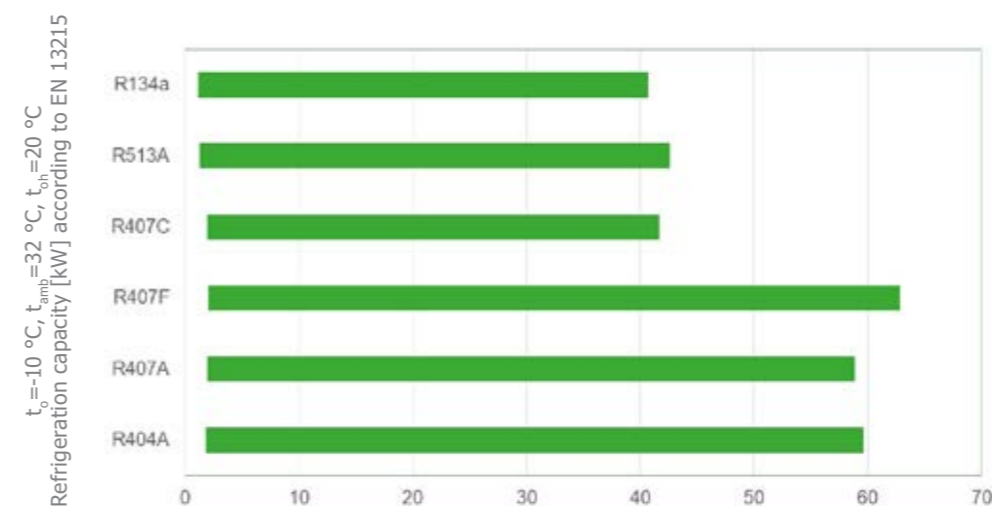
●= option available, S= extent of delivery (Subject to change without notice)

EXTRAORDINARY OPTIONAL EQUIPMENT TO FULFIL YOUR DEMANDS

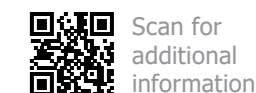
LHF – AIR COOLED CONDENSING UNIT (INCLUDING HIGH AMBIENT TEMPERATURE TYPES)		2KES	2EES	4FES	4TES	4JE	6JE	S4T	S4G	S6J
		2FES	2CES	4CES	4NES	4GE	6HE	S4N		S6G
		LH32F/.. - LH44F/..	LH44F/.. - LH84F/..	LH64F/.. - LH114F/..	LH104F/.. - LH135F/..	LH135F/.. LH265F/..	LH135F/.. LH265F/..	LH104F/..	LH124F/..	LH135F/.. LH265F/..
Capacity regulator kit	with coil			•	•	•	•			
Oil level monitoring OLC-K1 · opto-electronic	mounted			•	•					
Differential oil pressure switch MP54	mounted					•	•	•	•	•
Oil separator	mounted internal float, oil charge return line	•	•	•	•	•	•	•	•	•
Check valve	integrated in discharge line	•	•	•	•	•	•	•	•	•
Oil filter and return sight glass	integrated in oil return line	•	•	•	•	•	•	•	•	•
Vibration eliminator	integrated in discharge line	•	•	•	•	•	•	•	•	•
Suction accumulator	mounted	•	•	•	•	•	•	•	•	•
Gauges - High & Low Pressure, adjustable	mounted with shut offs	•	•	•	•	•	•	•	•	•
High and low pressure switch	mounted	•	•	•	•	•	•	•	•	•
Liquid line filter (demountable on request), sight glass, moisture indicator	mounted	•	•	•	•	•	•	•	•	•
Solenoid valve	mounted on liquid line	•	•	•	•	•	•	•	•	•
Shut off valve additio- nal, after liquid filter	mounted on liquid line	•	•	•	•	•	•	•	•	•
Terminal junction box	IP65	•	•	•	•	•	•	•	•	•
Control panel	mounted inclusive all necessary elec- trical components and electrical control	•	•	•	•	•	•	•	•	•
VARIPACK frequency inverter		Available upon request								
CM-RC-01	integration with CRII (VARISTEP)									Available upon request*
Liquid subcooler	mounted complete with TXV and solenoid valve							•	•	•

• = option available, S = extent of delivery, *except types with CE1 .. CE2 compressor
(Subject to change without notice)

APPLICATION RANGE

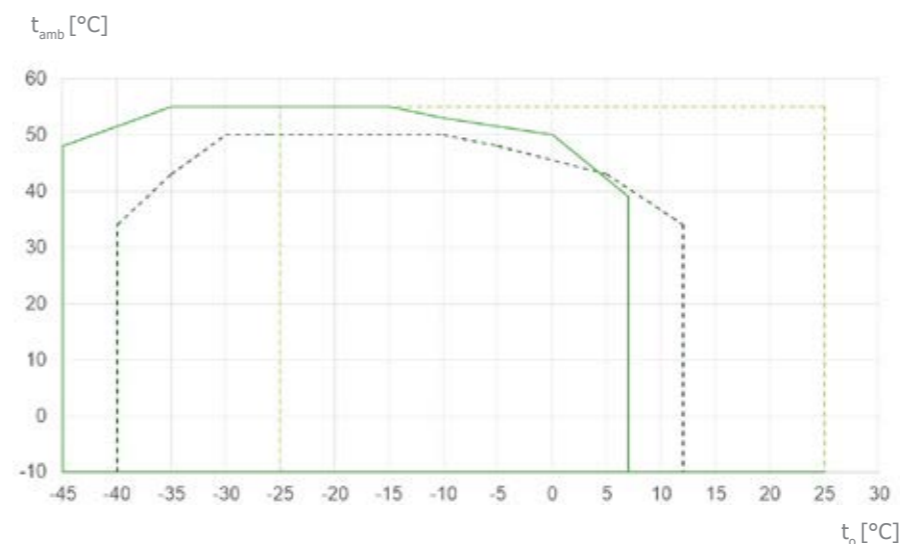


For further details
please refer to
BITZER Software



Scan for
additional
information

APPLICATION LIMITS



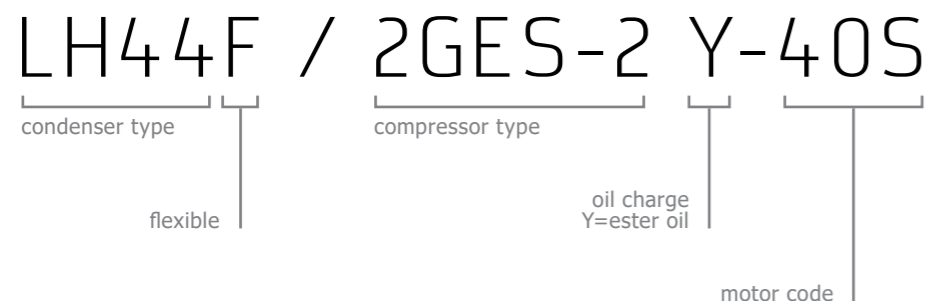
LH135F/4PES-15Y 50Hz R407A $t_{oh} = 20^{\circ}\text{C}$
 LH135F/4PES-15Y 50Hz R404A $t_{oh} = 20^{\circ}\text{C}$
 LH84F/FES-5Y 50Hz R134a/R513A $t_{oh} = 20^{\circ}\text{C}$

t_o Evaporating temperature [°C]
 t_{amb} Ambient temperature [°C]
 t_{oh} Suction gas temperature [°C]

PERFORMANCE DATA

Type (standard)	refrigeration capacity Q _o MT t _o -10/t _{amb} 32 °C R513A	refrigeration capacity Q _o LT t _o -35/t _{amb} 32 °C mid point R448A
LH32F/2KES-05Y	1,13	0,51
LH32F/2JES-07Y	1,39	0,73
LH33F/2HES-1Y	1,98	0,98
LH33F/2HES-2Y	1,98	1
LH33F/2GES-2Y	2,3	1,18
LH44F/2GES-2Y	2,39	1,23
LH44F/2FES-2Y	2,83	1,47
LH44F/2FES-3Y	2,91	1,46
LH44F/2EES-2Y	3,49	1,86
LH53F/2DES-2Y	4,21	2,22
LH64F/2EES-3Y	3,8	2,02
LH64F/2DES-3Y	4,49	2,36
LH64F/2CES-3Y	5,45	3,03
LH64F/4FES-3Y	5,62	3,24
LH64F/4EES-4Y	7,18	3,99
LH84F/2CES-4Y	5,61	3,12
LH84F/4FES-5Y	5,81	3,34
LH84F/4EES-6Y	7,5	4,03
LH84F/4DES-5Y	8,52	4,73
LH84F/4CES-6Y	10,26	5,62
LH104F/4DES-7Y	8,75	4,85
LH104F/4TES-9Y	13,05	6,82
LH114F/4CES-9Y	10,76	5,88
LH114F/4TES-12Y	13,05	6,93
LH114F/4PES-12Y	14,75	7,44
LH124F/4NES-14Y	17,75	9,37
LH135F/4PES-15Y	15,64	7,9
LH135F/4NES-20Y	18,5	9,83
LH135F/4JE-15Y	21,3	11,61
LH135F/4JE-22Y	20,8	10,92
LH135F/4HE-18Y	24,7	13,68
LH135F/4HE-25Y	24,3	13,15
LH135F/4GE-23Y	27,3	15,97
LH135F/6JE-25Y	29,4	16,44
LH135F/6HE-28Y	34	19,16
LH265F/4JE-15Y	23,3	10,41
LH265F/4JE-22Y	22,9	8,89
LH265F/4HE-18Y	27,2	12,63
LH265F/4GE-23Y	30,2	15,1
LH265F/4GE-30Y	30,7	14,11
LH265F/4FE-28Y	36,1	17,77
LH265F/4FE-35Y	35,3	17,37
LH265F/6JE-25Y	32,8	15,5
LH265F/6HE-28Y	37,9	18,16
LH265F/6HE-35Y	37,3	17,29
LH265F/6GE-34Y	42,7	22,3

EXPLANATION OF TYPE DESIGNATION



Tentative data

TECHNICAL DATA



STANDARD TYPES FOR MEDIUM AMBIENT TEMPERATURE						
Type	weight in kg (standard extent of delivery)	max fan power in W at 50/60 Hz	max condenser air flow in m ³ /h at 50/60 Hz	receiver volume in dm ³	max. operating current in A	sound pressure level at -10/32 °C 50 Hz at 1 m in dB(A)
LH32F/2KES-05Y	70	120/158	1710/1835	3	3,4	65,5
LH32F/2JES-07Y	70	120/158	1710/1835	3	4,3	65,5
LH33F/2HES-1Y	71	120/158	1710/1835	3	4,4	65
LH33F/2HES-2Y	73	120/158	1710/1835	3	5,1	65
LH33F/2GES-2Y	73	120/158	1710/1835	3	5,6	65
LH44F/2GES-2Y	81	125/175	1840/2070	5,6	5,6	65,5
LH44F/2FES-2Y	80	125/175	1840/2070	5,6	5,9	65,5
LH44F/2FES-3Y	81	125/175	1840/2070	5,6	6,7	65,5
LH44F/2EES-2Y	98	125/175	1840/2070	5,6	6,6	66
LH53F/2DES-2Y	114	194/303	2528/2880	5,6	8,4	68,5
LH64F/2EES-3Y	130	301/451	3884/4401	7,8	9	71,5
LH64F/2DES-3Y	130	301/451	3884/4401	7,8	10,1	71,5
LH64F/2CES-3Y	129	301/451	3884/4401	7,8	10,6	71,5
LH64F/4FES-3Y	140	301/451	3884/4401	7,8	11	71,5
LH64F/4EES-4Y	142	301/451	3884/4401	7,8	13,7	71,5
LH84F/2CES-4Y	136	485/603	9100/10494	13	13,1	73
LH84F/4FES-5Y	152	485/603	9100/10494	13	13,9	73
LH84F/4EES-6Y	151	485/603	9100/10494	13	16,7	73
LH84F/4DES-5Y	153	485/603	9100/10494	13	17,6	73,5
LH84F/4CES-6Y	177	485/603	9100/10494	13	20,8	73,5
LH104F/4DES-7Y	200	2 x 316/469	7248/8212	15	18	74
LH104F/4TES-9Y	248	2 x 316/469	7248/8212	15	21,4	74,5
LH114F/4CES-9Y	217	2 x 301/445	7804/8904	15	21,7	73,4
LH114F/4TES-12Y	270	2 x 301/445	7804/8904	15	26,6	74
LH114F/4PES-12Y	268	2 x 301/445	7804/8904	15	24,2	74,5
LH124F/4NES-14Y	307	2 x 483/593	9100/10494	30	29,7	76,5
LH135F/4PES-15Y	331	2 x 750/1050	12650/13900	30	31,5	81
LH135F/4NES-20Y	334	2 x 750/1050	12650/13900	30	36,5	81
LH135F/4JE-15Y	360	2 x 750/1050	12650/13900	30	34,1	81
LH135F/4JE-22Y	371	2 x 750/1050	12650/13900	30	40,5	81
LH135F/4HE-18Y	364	2 x 750/1050	12650/13900	30	40	81
LH135F/4HE-25Y	384	2 x 750/1050	12650/13900	30	47,3	81
LH135F/4GE-23Y	373	2 x 750/1050	12650/13900	30	47,2	81,5
LH135F/6JE-25Y	394	2 x 750/1050	12650/13900	30	49,7	81,5
LH135F/6HE-28Y	405	2 x 750/1050	12650/13900	30	56,5	81,5

Tentative data

TECHNICAL DATA

HIGH AMBIENT TEMPERATURE						
Technical data	weight in kg (standard extent of delivery)	max fan power in W at 50/60 Hz	max condenser air flow in m ³ /h at 50/60 Hz	receiver volume in dm ³	max. operating current in A	sound pressure level at -10/32°C 50 Hz at 1 m in dB(A)
LH33F/2KES-05Y	71	120/158	1710/1835	3	3,4	65
LH33F/2JES-07Y	71	120/158	1710/1835	3	4,3	65
LH44F/2HES-1Y	80	125/175	1840/2070	5,6	4,4	65,5
LH44F/2HES-2Y	81	125/175	1840/2070	5,6	5,1	65,5
LH53F/2GES-2Y	92	194/303	2528/2880	5,6	5,8	68,5
LH64F/2FES-2Y	104	301/451	3884/4401	7,8	7,1	71,5
LH64F/2EES-2Y	127	301/451	3884/4401	7,8	7,8	71,5
LH64F/2DES-2Y	127	301/451	3884/4401	7,8	9,3	71,5
LH84F/2CES-3Y	136	485/603	9100/10494	13	12,4	73
LH84F/4FES-3Y	148	485/603	9100/10494	13	12,8	73
LH104F/2DES-3Y	182,5	2 x 316/469	7248/8212	15	10,4	73,5
LH104F/2CES-4Y	182	2 x 316/469	7248/8212	15	11,8	73,5
LH104F/4EES-4Y	196	2 x 316/469	7248/8212	15	14	74
LH104F/4EES-6Y	198	2 x 316/469	7248/8212	15	15,4	74
LH114F/4FES-5Y	212	2 x 301/445	7804/8904	15	12,6	73,5
LH114F/4DES-5Y	212	2 x 301/445	7804/8904	15	16,3	74
LH114F/4DES-7Y	215	2 x 301/445	7804/8904	15	18,3	74
LH124F/4CES-6Y	254	2 x 483/593	9100/10494	30	21,1	75,5
LH124F/4CES-9Y	254	2 x 483/593	9100/10494	30	23,6	75,5
LH124F/4TES-9Y	300	2 x 483/593	9100/10494	30	23,3	75,5
LH124F/4TES-12Y	307	2 x 483/593	9100/10494	30	28,5	75,5
LH135F/4PES-12Y	323	2 x 750/1050	12650/13900	30	26,4	81
LH135F/4NES-14Y	325	2 x 750/1050	12650/13900	30	30,3	81
LH265F/4JE-15Y	551	2 x 760	26000	39	33	on request
LH265F/4JE-22Y	582	2 x 760	26000	39	39,5	on request
LH265F/4HE-18Y	555	2 x 760	26000	39	39	on request
LH265F/4HE-25Y	575	2 x 760	26000	39	46,2	on request
LH265F/4GE-23Y	564	2 x 760	26000	39	46,2	on request
LH265F/4GE-30Y	578	2 x 760	26000	39	53,5	on request
LH265F/4FE-28Y	579	2 x 760	26000	39	55	on request
LH265F/4FE-35Y	579	2 x 760	26000	39	64,4	on request
LH265F/6JE-25Y	585	2 x 760	26000	39	48,7	on request
LH265F/6JE-33Y	603	2 x 760	26000	39	55,5	on request
LH265F/6HE-28Y	596	2 x 760	26000	39	55,5	on request
LH265F/6HE-35Y	607	2 x 760	26000	39	66,7	on request
LH265F/6GE-34Y	600	2 x 760	26000	39	67,8	on request
LH265F/6GE-40Y	610	2 x 760	26000	39	76,2	on request
LH265F/S6G-25.2Y	605	2 x 760	26000	39	43	on request
LH265F/S6F-30.2Y	606	2 x 760	26000	39	51	on request

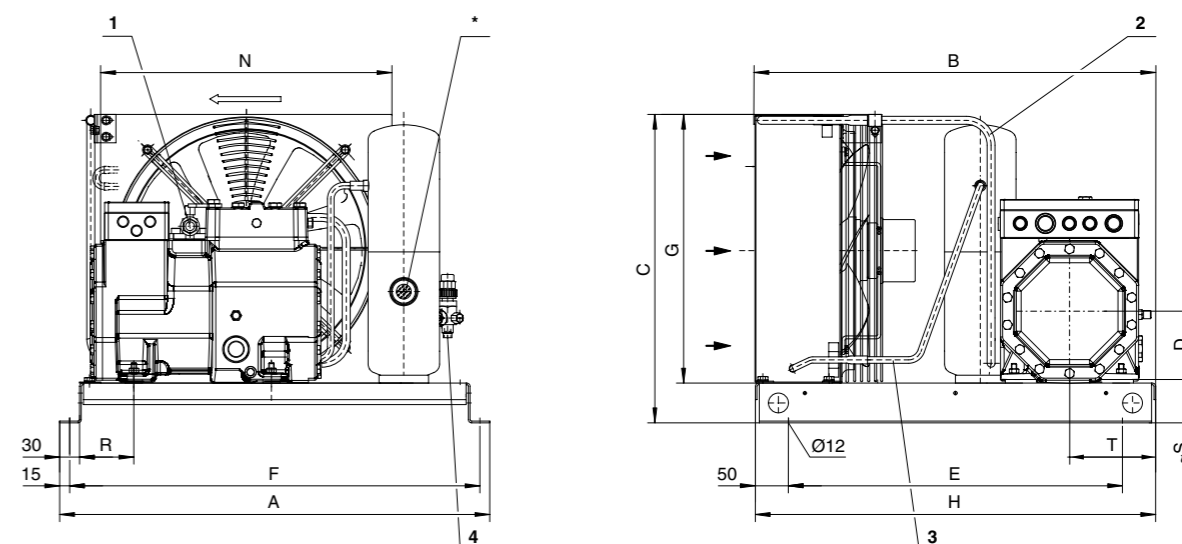
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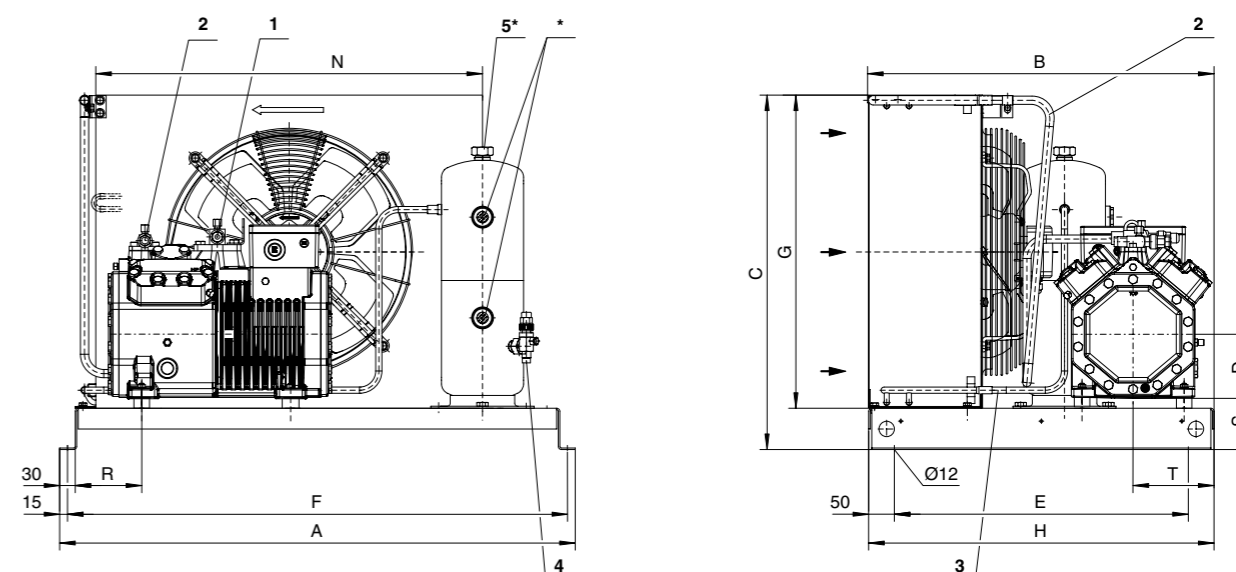
DIMENSIONS

The dimensions shown relate to the basic versions. Customised versions differ according to the chosen options. Please contact your local representative for details. Weather protection housing on request.

STANDARD UNIT (high ambient units on request) LH32F/2KES-05(Y) .. LH84F/2CES-4(Y)



STANDARD UNIT (high ambient units on request) LH64F/4FES-3(Y) .. LH84F/4DES-5(Y) / LH84F/4CES-6(Y)



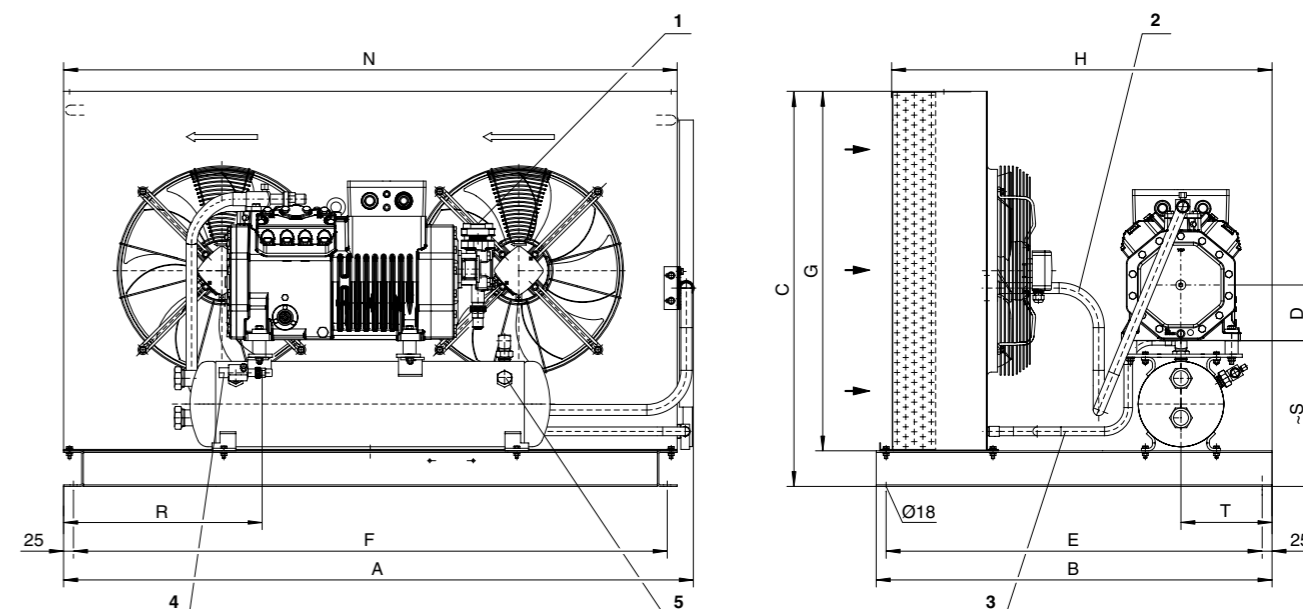
Connection positions:

- 1 Suction valve
 - 2 Discharge line
 - 3 Condensate line
 - 4 Refrigerant outlet
 - 5 Connection for pressure relief valve
internal thread: 3/8-18 NPTF
external thread: 1 1/4-12 UNF
- * Option set

DIMENSIONS

Type	Dimensions in mm													Connections			
	A	B	C	D	E	F	G	H	L	N	R	S	T	Suction valve		Refrigerant outlet	
														mm	inch	mm	inch
L32F/2KES-05(Y)	650	607	466	102	505	620	406	605	62	440	82	66	133	12	1/2	10	3/8
LH32F/2JES-07(Y)	650	607	466	102	505	620	406	605	62	440	82	66	133	12	1/2	10	3/8
LH33F/2HES-1(Y)	650	607	466	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH33F/2HES-2(Y)	650	607	466	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH33F/2GES-2(Y)	650	607	466	102	505	620	406	605	62	440	82	66	133	16	5/8	10	3/8
LH44F/2GES-2(Y)	650	607	516	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44F/2FES-2(Y)	650	607	516	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44F/2FES-3(Y)	650	607	516	102	505	620	456	605	62	490	82	66	133	16	5/8	10	3/8
LH44F/2EES-2(Y)	650	702	516	121	600	620	456	700	62	490	146	82	174	22	7/8	10	3/8
LH64F/2EES-3(Y)	1000	672	687	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH53F/2DES-2(Y)	1000	671	536	121	570	970	456	670	72	750	160	102	157	22	7/8	10	3/8
LH64F/2DES-3(Y)	1000	672	687	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH64F/2CES-3(Y)	1000	672	687	121	570	970	607	670	72	750	160	102	157	22	7/8	12	1/2
LH84F/2CES-4(Y)	1000	672	837	121	570	970	757	670	72	850	160	102	157	22	7/8	12	1/2
LH64F/4FES-3(Y)	1000	672	687	125	570	970	607	670	72	750	129	99	157	22	7/8	12	1/2
LH84F/4FES-5(Y)	1000	672	837	125	570	970	757	670	72	850	129	99	157	22	7/8	12	1/2
LH64F/4EES-4(Y)	1000	672	687	125	570	970	607	670	72	750	129	99	157	28	1 1/8	12	1/2
LH84F/4EES-6(Y)	1000	672	837	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2
LH84F/4DES-5(Y)	1000	672	837	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2
LH84F/4CES-6(Y)	1000	672	837	125	570	970	757	670	72	850	129	99	157	28	1 1/8	12	1/2

STANDARD UNIT (high ambient units on request) LH104F/4DES-7(Y) .. LH135F/6HE-28(Y)



Connection positions

- 1 Suction valve
 - 2 Discharge line
 - 3 Condensate line
 - 4 Refrigerant outlet
 - 5 Connection for pressure relief valve
internal thread: 3/8-18 NPTF
external thread: 1 1/4-12 UNF
- * Option set

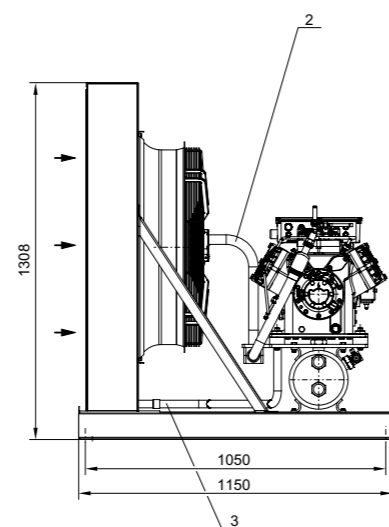
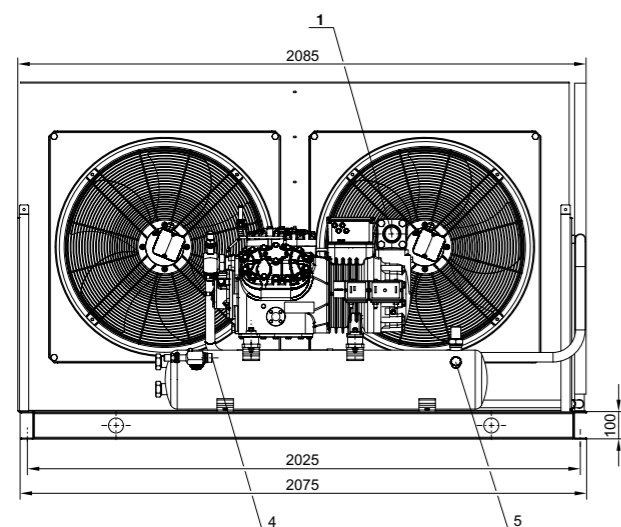
Type	Dimensions in mm													Connections			
	A	B	C	D	E	F	G	H	N	R	S	T	Suction valve		Refrigerant outlet		
													mm	inch	mm	inch	
LH104F/4DES-7(Y)	1140	920	723	125	870	1060	658	886	1100	326	282	215	28	1 1/8	16	5/8	
LH114F/4CES-9(Y)	1356	920	773	125	870	1270	708	886	1310	431	282	215	28	1 1/8	16	5/8	
LH104F/4TES-9(Y)	1140	920	773	142	870	1060	658	886	1100	289	297	215	35	1 3/8	16	5/8	
LH114F/4TES-12(Y)	1356	920	773	142	870	1270	708	886	1310	394	297	215	35	1 3/8	16	5/8	
LH114F/4PES-12(Y)	1356	920	773	142	870	1270	708	886	1310	394	297	215	35	1 3/8	16	5/8	
LH135F/4PES-15(Y)	1591	1000	998	142	950	1500	908	961	1550	502	368	230	42	1 5/8	22	7/8	
LH124F/4NES-14(Y)	1591	1000	848	142	950	1500	758	961	1550	502	368	230	35	1 3/8	22	7/8	
LH135F/4NES-20(Y)	1591	1000	998	142	950	1500	908	961	1550	502	368	230	42	1 5/8	22	7/8	
LH135F/4JE-15(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8	
LH135F/4JE-22(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8	
LH135F/4HE-18(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	42	1 5/8	22	7/8	
LH135F/4HE-25(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8	
LH135F/4GE-23(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8	
LH135F/6JE-25(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8	
LH135F/6HE-28(Y)	1591	1000	998	158	950	1500	908	961	1550	495	373	230	54	2 1/8	22	7/8	

Tentative data

Tentative data

DIMENSIONS

LH265F-6JE .. LH265F-6GE

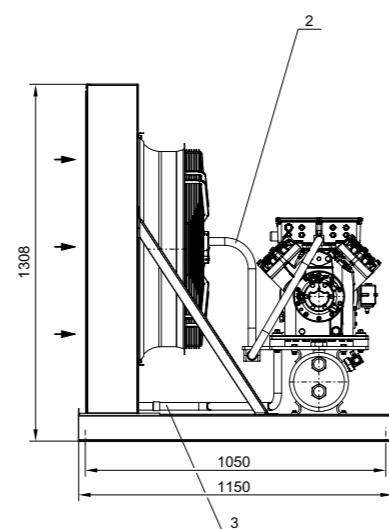
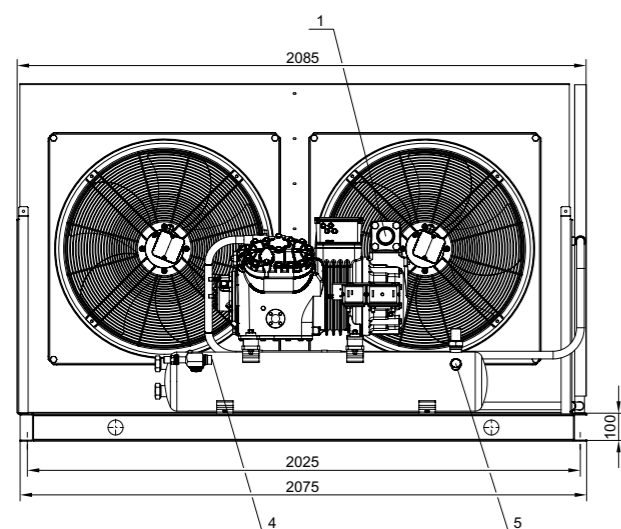


Connection positions
 1 Suction valve
 2 Discharge line
 3 Condensate line
 4 Refrigerant outlet

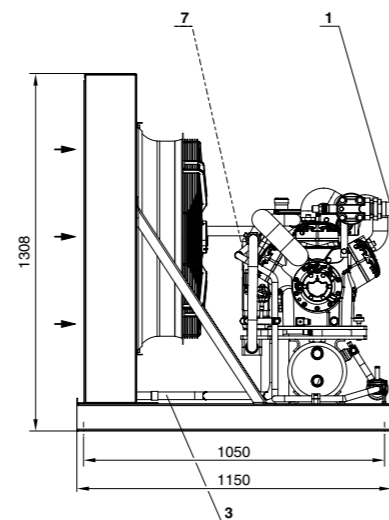
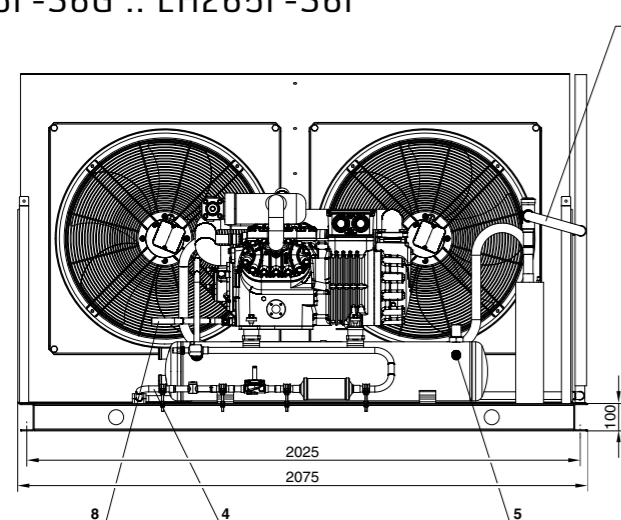
5 Connection for pressure relief valve
 internal thread: 3/8-18 NPTF
 external thread: 1 1/4-12 UNF
 7 Refrigerant inlet at liquid subcooler
 8 Refrigerant outlet at liquid subcooler

* Option set

LH265F-4JE .. LH265F-4FE

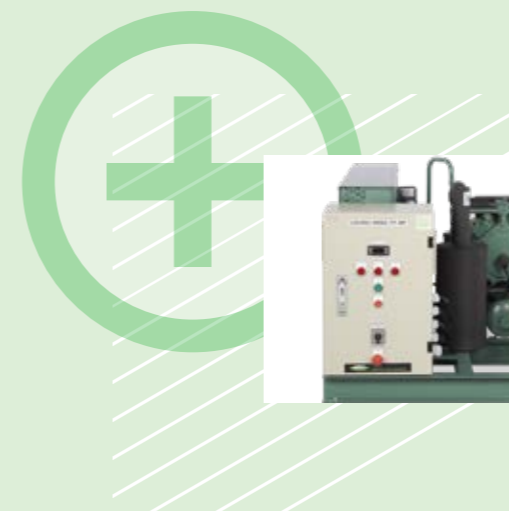


LH265F-S6G .. LH265F-S6F



Tentative data

ACCESSORIES



CONTROL PANEL FULLY TESTED AND PREWIRED FROM THE FACTORY



Complete switch cabinet, including compressor and condenser fan contactors with overload safety switch, phase failure relay, line lights, delay timer and thermostat.

Further information available on request.

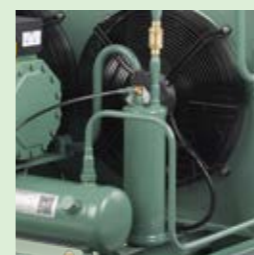
VARISTEP – MECHANICAL CAPACITY CONTROL ADAPTION ACCORDING TO SYSTEM REQUIRMENTS.



With the mechanical capacity control VARISTEP, changing cooling demands are no problem. It prevents high switching frequencies of the compressor and ensures efficient operation of the compressor. It is based on the principle of blocked suction.

// Refrigeration capacity range from 10%-100%
 (details see KT-101) or with CM-RC-01

OIL SEPARATOR WITH CHECK VALVE KEEPS THE COMPRESSOR LUBRICATED – NO MATTER THE APPLICATION



The right oil supply to the compressor at any time is no problem with the optional oil separator with check valve in the discharge line.

// Available for the whole LHF series

HP/LP PRESSURE SWITCHES AND PRESSURE GAUGES



With HP safety pressure cut-out.

// With LP setpoint cut-out
 // Adjustable

Images are for illustration purposes only

K-SERIES

WATER-COOLED SOLUTION AT ITS BEST!

FOR ALL COMMERCIAL REFRIGERATION APPLICATIONS, FROM 0.3 KW UP TO 89 KW, EITHER LOW TEMPERATURE OR MEDIUM TEMPERATURE APPLICATIONS, THE K-SERIES GUARANTEES THE BEST EFFICIENCY WHILE ENSURING HIGH RELIABILITY AND SAFE SYSTEM OPERATION

- COMMERCIAL REFRIGERATION
- ECODSIGN CONFORM
- HFO BLEND READY
- HFO READY
- EUROPEAN STANDARD

MEETING MARKET DEMANDS

- // The K-series water-cooled condensing units can be operated with water from a tower, the city or the sea
- // Optimised for applications with limited space
- // Perfect combination of highly efficient BITZER ECOLINE compressor and BITZER water-cooled condenser for proven reliability in all conditions
- // Approved for common refrigerants as well as HFO and HFC/HFO blends
- // Condenser: approval according to the EU Pressure Equipment Directive 2014/68/EU

LARGE APPLICATION POSSIBILITIES

The modular system of the K-series, with its several accessory extension levels, guarantees the highest flexibility. Main parts such as the semi-hermetic reciprocating compressor and shell-and-tube condenser are manufactured by BITZER and therefore meet the highest level of quality. Matching the ECOLINE compressor and K-series condenser is easy thanks to the BITZER selection software.

AN OPTIMUM MATCHING UNIT PROGRAMME

Commercial refrigeration and A/C applications, such as low and medium temperatures, are feasible. It's a perfect fit for cold storage rooms, city grocery stores and convenience stores. The K-series water-cooled condensing unit is the perfect answer to system needs and connects efficiency and durability.

GROCERY STORE + SUPERMARKET



The K-series is ideal for systems with cold rooms and cabinets, even multi-evaporators and areas with limited space.

PHARMA/LABS



In processes where reliability, quality and precision are indispensable the K-Series is the right choice. Additionally you can rely on the global BITZER network.

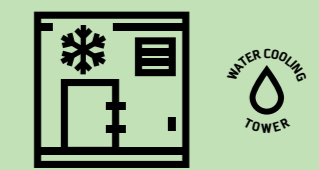
SCALABLE PERFORMANCE ACCORDING TO YOUR NEEDS

HORECA



Worldwide use is possible due to the flexibility with regard to the choice of cooling medium. Furthermore varying cooling loads are no problem thanks to the optional VARISTEP mechanical capacity control.

WAREHOUSE/ COLD STORAGE



Even demanding applications are no problem for the K-Series. We combine low and medium temperature applications in one condensing unit with a wide range of refrigerants.

K-SERIES: THE COMPACT SOLUTION

+ COMPACT UNIT DESIGN

SMALL SPACE REQUIREMENTS
ALLOW EASY AND FLEXIBLE
PLACEMENT OF THE UNIT

+ WIDE RANGE OF REFRIGERATION CAPACITY

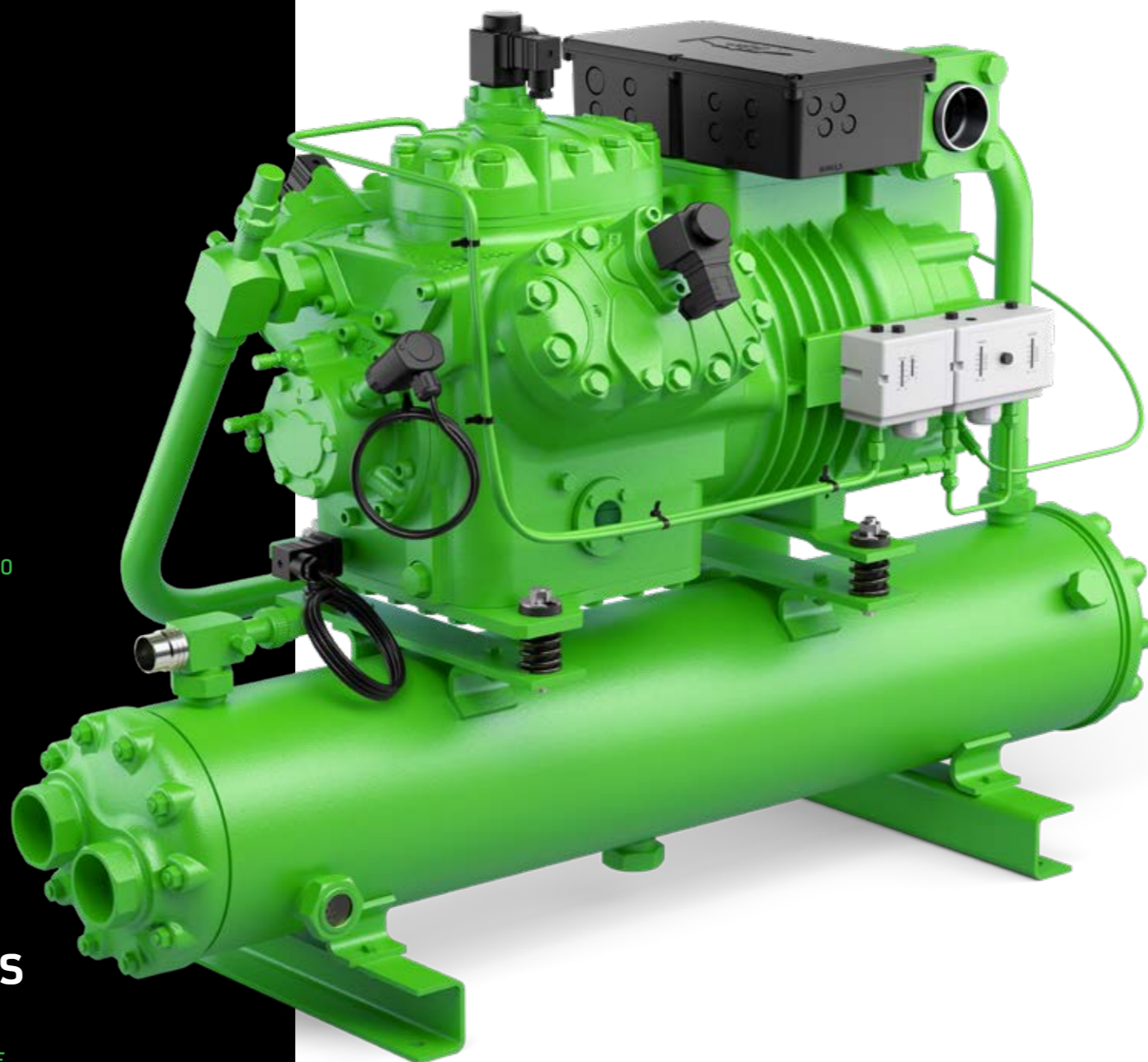
EASY SELECTION DUE TO
EXTENSIVE PRODUCT PORTFOLIO

+ ROBUST AND SOLID DESIGN

LONG-STANDING EXPERIENCE
IN COMPRESSOR AND
CONDENSER TECHNOLOGY

+ VARIETY OF COOLING AGENTS

RANGING FROM SEAWATER, TO
FRESH WATER AND MANY MORE



The water-cooled condensing unit is equipped with the BITZER ECOLINE semi-hermetic compressor and combined with the proven shell and tube K-condensers from BITZER, thereby ensuring the best performance, efficiency, robustness and reliability.



Perfectly designed for indoor or even outdoor commercial refrigeration installations, K-series condensing units are the answer for your system requirements and possible space restrictions.

PERFORMANCE

With a large range of cooling capacities from 0.3 kW up to 28 kW for low temperatures and from 0.8 kW up to 89 kW for medium temperatures, the ECOLINE compressor ensures the best efficiency over the entire operating envelope. The optional VARISTEP mechanical capacity modulation offers additional flexibility.

COMPACT DESIGN

Horizontal shell and tube condenser, equipped with compressor and several unit options, enables a very compact design with limited footprint for easy integration into any machine room or basement location.

SUSTAINABLE AND ROBUST DESIGN

The K-series is approved for the most common and new HFO and HFC/HFO blends and is therefore future-proof. The semi-hermetic design of the ECOLINE compressor enables easy maintenance on-site or through BITZER Green Point service centres, which not only increases the lifetime but also sustainability.

K-SERIES: THE STANDARD WATER-COOLED CONDENSING UNIT

BITZER ECOLINE COMPRESSOR

- // Semi-hermetic reciprocating compressor
- // Highly efficient
- // Well proven and reliable
- // Crankcase heater
- // Discharge gas temperature sensor
- // Oil (pressure/level) monitoring
 - Oil level monitoring OLC-K1
 - Differential oil pressure switch MP54
 - Differential oil pressure switch Delta-PII

VARISTEP – MECHANICAL CAPACITY CONTROL

- // Highly efficient BITZER ECOLINE compressor with VARISTEP capacity control from 10%-100% (details on request)

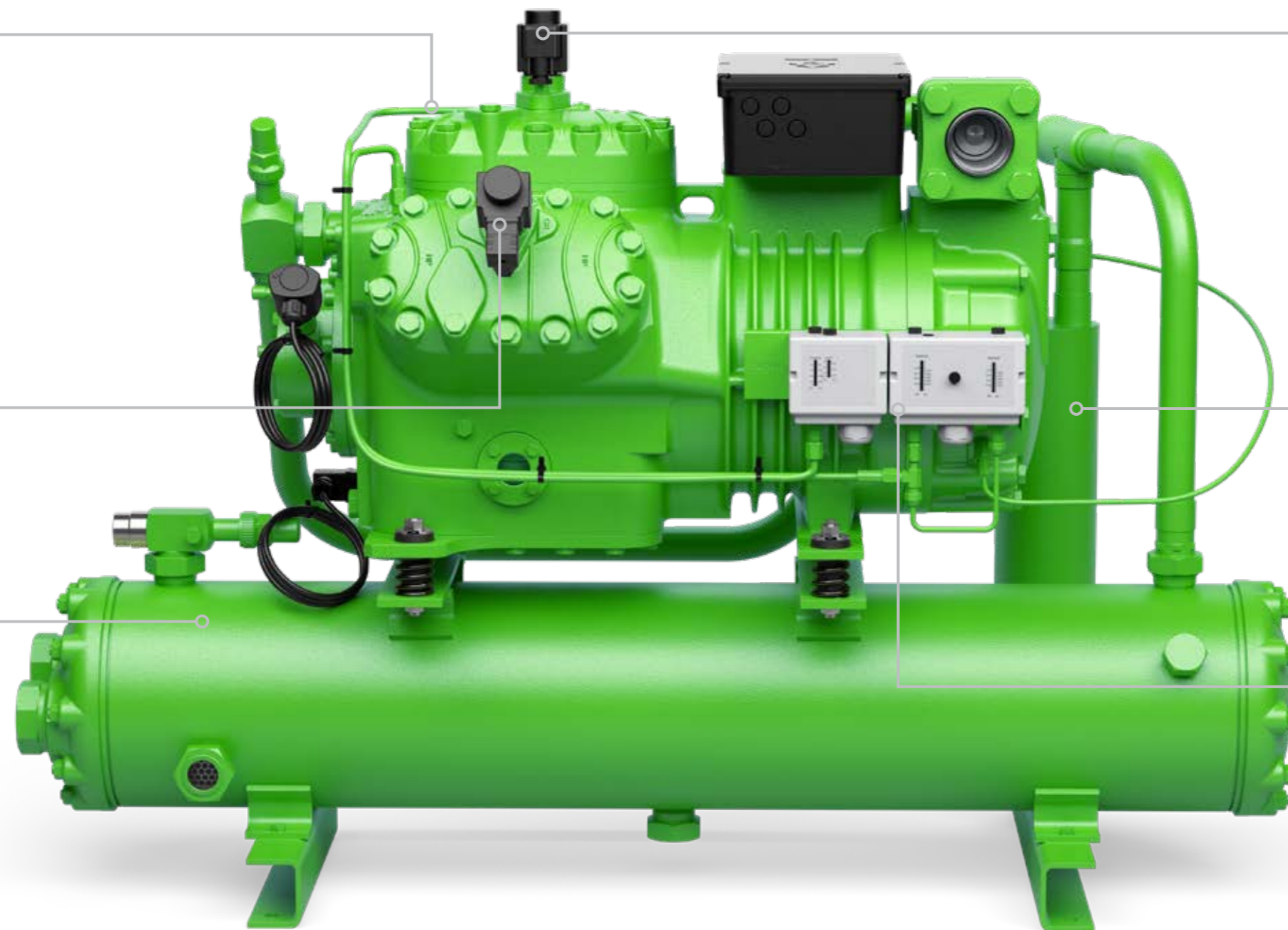
BITZER SHELL AND TUBE CONDENSER

- // With connection for pressure relief valve
- // With various cooling agents
- // Maximum allowable pressure:
 - Refrigerant side 33 bar
 - Coolant side 10 bar
- // Seawater condenser version

RECIPROCATING COMPRESSORS

HFO READY

MECHATRONIC CAPACITY CONTROL



START UNLOADER

- // Compressor family CE4 .. BE6
- // Cylinder head with PTC sensor (mounted)
- // Control valve, enclosed

OIL SEPARATOR

- with check valve in discharge line

HP/LP SWITCH (ADJUSTABLE)

- // Mounted
- // With HP safety pressure cut-out, mounted (from compressor type 4NES-14(Y))

The product picture shows a fully equipped K-series. For the standard extent of delivery and optionally available equipment, please see the following pages.

BITZER KB-SERIES: SEAWATER-RESISTANT

RELIABLE OPERATION

// Even with seawater

HIGH REFRIGERATION CAPACITY

// 41 types with up to 151.6 m³/h 50 Hz

// K073HB .. K1353TB

HIGHLY EFFICIENT ECOLINE COMPRESSORS

// Well-known and proven BITZER technology

SYSTEM-OPTIMISED WATER-COOLED CONDENSER

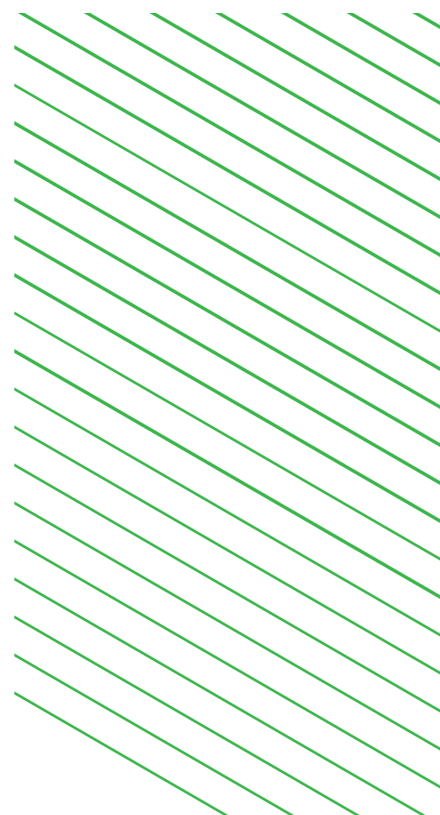
// For best heat exchange and low refrigerant charge

ROBUST DESIGN AND COMPACT DIMENSIONS

// Small installation dimension at place of use

EASY HANDLING AND COMMISSIONING

// Easy service thanks to directly accessible system components



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

The water-cooled condensing units with 2-stage compressors from BITZER are convincing thanks to a compressor design layout, made especially for low temperature applications. They are well combined with the K-condenser. Furthermore, low GWP refrigerants are approved for increased sustainability.

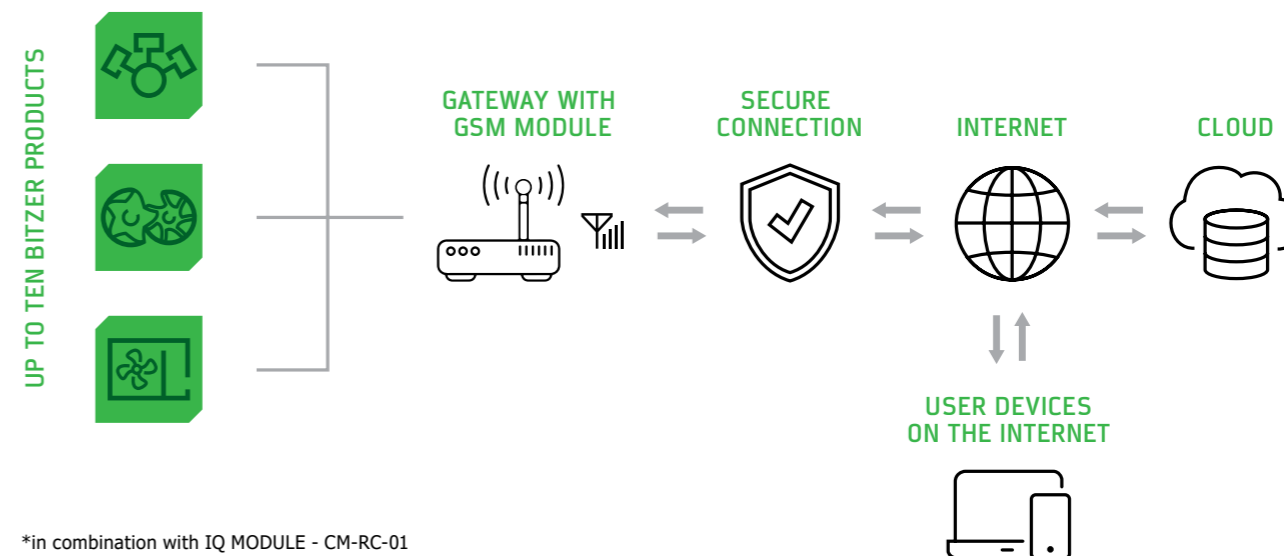
Seven types with displacement LP/HP from 19.70 / 12.60 m³/h .. 101.10 / 50.50 m³/h @ 1450 RPM 50Hz

Type	Q ₀ @ t ₀ -35°C/t _c +40 °C 50 Hz in kW
	R448A, mid-point
K373H(B)/S4T-5.2(Y)	5,27
K373H(B)/S4N-8.2(Y)	7,49
K573H(B)/S4G-12.2(Y)	11,31
K573H(B)/S6J-16.2(Y)	16,98
K573H(B)/S6H-20.2(Y)	19,68
K813H(B)/S6G-25.2(Y)	22,60
K813H(B)/S6F-30.2(Y)	27,00

Tentative data

BITZER DIGITAL NETWORK: ALL ROUND VIEW OF THE HEART OF REFRIGERATION AND A/C SYSTEMS.

This provides you with important product and application-related information on all the BITZER products, including, among others, data analyses and compressor operation reports.*



*in combination with IQ MODULE - CM-RC-01

EXTENT OF DELIVERY

WATER-COOLED UNIT WITH ECOLINE SEA-WATER COOLED UNIT WITH ECOLINE WATER-COOLED UNIT WITH 2-STAGE COMPRESSOR	KE		
	K../..	K..B*/..	
Semi-hermetic reciprocating compressor	- ECOLINE compressors - 2-stage compressors	S	S
Shell and tube condenser		S	S
Connection for pressure relief valve	condenser	S	S
Discharge line	-	S	S
Oil charge	BSE32 (ester oil) for HFC and HFC/HFO refrigerants t _c < 70 °C	S	S

S = extent of delivery, * = sea-water resistant

(Subject to change without notice)

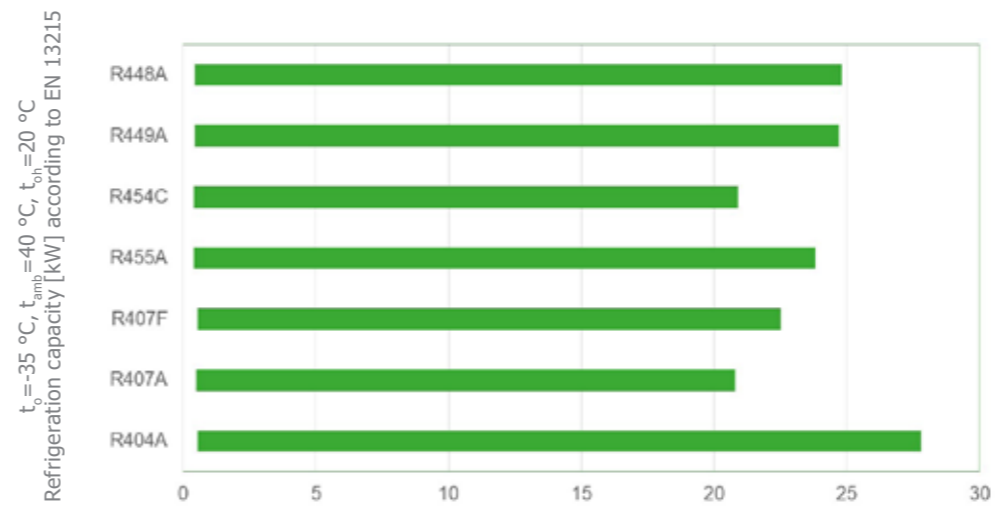
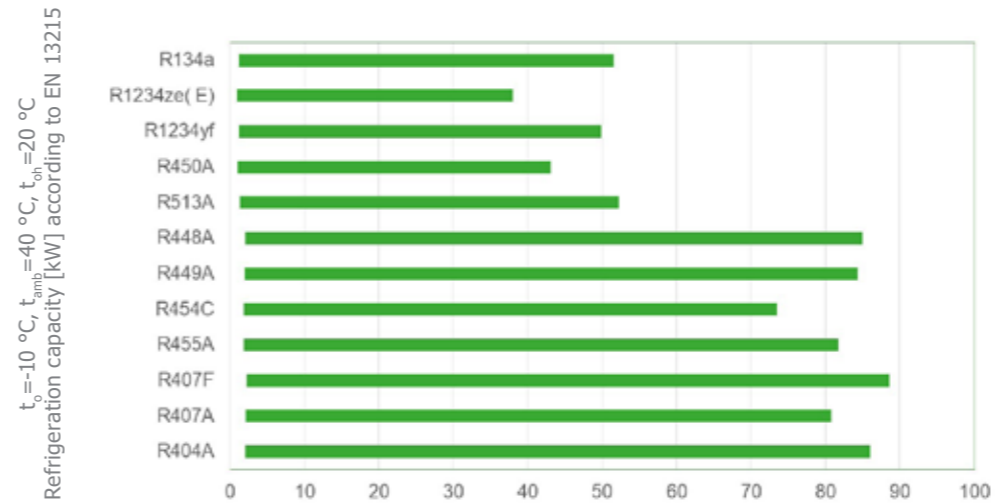
EXTRAORDINARY OPTIONAL EQUIPMENT TO FULFIL YOUR DEMANDS



WATER-COOLED UNIT WITH ECOLINE SEA-WATER COOLED UNIT WITH ECOLINE WATER-COOLED UNIT WITH 2-STAGE COMPRESSOR		KE K../.. // K..B/..								
		ECOLINE						2-STAGE		
		2KES .. 2FES	2EES .. 2CES	4FES .. 4CES	4TES .. 4NES	4JE .. 4GE	6JE .. 6FE	S4T .. S4N	S4G	S6J .. S6F
Warranty extension up to 5 years	details see price list	•	•	•	•	•	•	•	•	•
Check valve*	in discharge line				•	•	•			
Oil separator*	with check valve in discharge 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 - at high condensing temperatures $t_c > 70\text{ °C}$ - for R1234ze(E) $t_c < 70\text{ °C}/t_0 < 15\text{ °C}$ ¹⁾	○	○	○	○	○	○	○*		
	B5.2: "Y" in compressor designation omitted	○	○	○	○	○	○	○	○	○
Oil level monitoring OLC-K1 - opto-electronic	mounted			•	•					
Differential oil pressure switch MP54	mounted					•	•	•	•	•
Differential oil pressure switch Delta-PII	mounted					•	•	•	•	•
Oil heater		•	•	•	•	•		•	•	•
Discharge gas temperature sensor	PTC 140 (included in SU)			•	•	•		•	•	•
Start unloader (SU)	cylinder head with PTC sensor, mounted control valve, enclosed check valve required				•	•	•			
Capacity regulator CRII (1x)	Cylinder head, mounted control valve, enclosed possible equipment see KT-101		•	•	•	•	•			
Oil service valve					•	•	•	•	•	•
Additional fan		•	•	•	•					
Liquid subcooler - mounted	- liquid injection valve sized for operation with subcooler - complete with piping - components assembled and insulated							•	•	•
CM-RC-01 Compressor Module Add-on	details see price list			•	•	•	•			
BITZER Digital Network	only with CM-RC-01			•	•	•	•			

• = option available, ○ = option without extra charge, * = retrofitting not possible, 1) = K373H(B)/4NES-14Y / K573H(B)/4NES-20Y, 1 = for R1234ze(E) $t_c > 70\text{ °C}/t_0 > 15\text{ °C}$ on request, *) Exception: K1053H(B)/6FE-44(Y), K1353T(B)/6FE-50(Y) on request for A2L refrigerants (Subject to change without notice)

APPLICATION RANGE



PERFORMANCE DATA

SINGLE STAGE COMPRESSORS

All performance data are based on the European Standard EN 13215: suction gas temperature 20°C with no liquid subcooling

2-STAGE COMPRESSORS

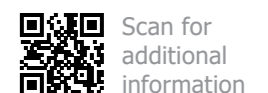
All performance data are based on 20°C suction gas temperature according to EN 12900 at 50 Hz, including system inherently liquid subcooling based on optional liquid subcooler.

CONDENSING UNITS

The standard performance data for water cooled condensing units according to EN 13215 are determined at 40°C condensing temperature. With the BITZER SOFTWARE the data are easily calculated for many refrigerants as compressor data at the same condensing temperature using the above mentioned values for suction gas temperature and liquid subcooling.

Performance data for individual operating conditions and 60 Hz operation see BITZER SOFTWARE.

For further details please refer to BITZER Software



PERFORMANCE DATA

Type	Capacity at MT t ₀ -10 °C/ t _c 40 °C R134a in kW	Capacity at LT t ₀ -35 °C/ t _c 40 °C R448A mid- point in kW
K073H(B)/2KES-05(Y)	1,14	0,36
K073H(B)/2JES-07(Y)	1,46	0,55
K073H(B)/2HES-1(Y)	2,06	0,74
K073H(B)/2HES-2(Y)	2,06	0,74
K073H(B)/2GES-2(Y)	2,43	0,9
K073H(B)/2FES-2(Y)	3,06	1,15
K123H(B)/2FES-3(Y)	3,04	1,15
K123H(B)/2EES-2(Y)	3,75	1,5
K123H(B)/2EES-3(Y)	3,75	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)	5,57	2,4
K203H(B)/2CES-4(Y)	5,57	2,4
K203H(B)/4FES-3(Y)	5,78	2,58
K203H(B)/4FES-5(Y)	5,77	2,58
K203H(B)/4EES-4(Y)	7,65	3,2
K203H(B)/4EES-6(Y)	7,65	3,2
K203H(B)/4DES-5(Y)	8,85	3,62
K203H(B)/4CES-6(Y)	10,97	4,82
K283H(B)/4DES-7(Y)	8,85	3,62
K283H(B)/4TES-9(Y)	14,04	5,68
K373H(B)/4CES-9(Y)	10,97	4,82
K373H(B)/4TES-12(Y)	13,68	5,67
K373H(B)/4PES-12(Y)	15,87	6,01
K373H(B)/4NES-14(Y)	18,89	7,72
K573H(B)/4PES-15(Y)	15,49	5,93
K573H(B)/4NES-20(Y)	18,67	7,81
K573H(B)/4JE-15(Y)	21,8	9,39
K573H(B)/4JE-22(Y)	21,3	8,58
K573H(B)/4HE-18(Y)	25,9	11,46
K573H(B)/4GE-23(Y)	29,2	13,86
K573H(B)/6JE-25(Y)	32	14,08
K813H(B)/4HE-25(Y)	25,4	10,84
K813H(B)/4GE-30(Y)	29,6	12,78
K813H(B)/6JE-33(Y)	32,2	12,63
K813H(B)/6HE-28(Y)	38	16,91
K813H(B)/6GE-34(Y)	43,7	21,3
K1053H(B)/6HE-35(Y)	37,2	15,97
K1053H(B)/6FE-44(Y)	52,9	24,8
K1353H(B)/6GE-40(Y)	43,5	18,85
K1353H(B)/6FE-50(Y)	51,6	23,1

EXPLANATION OF TYPE DESIGNATION



Tentative data

TECHNICAL DATA

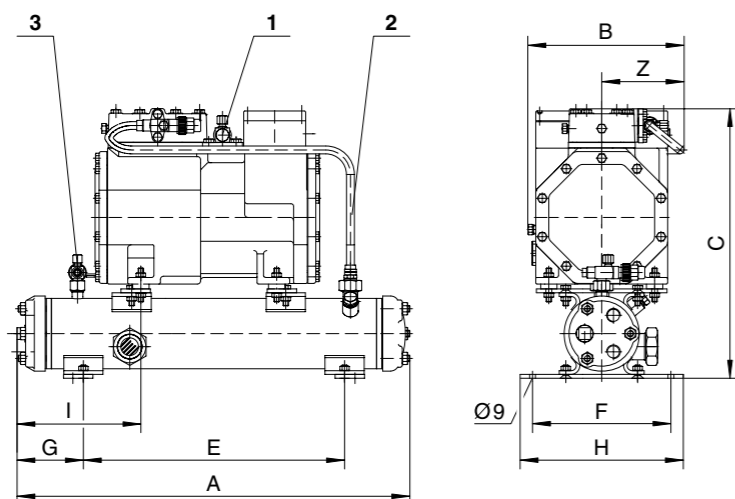


Type	Condenser volume in dm ³	weight in kg (standard extent of delivery)	max. operating current in A
K073H(B)/2KES-05(Y)	3,4	54	2,8
K073H(B)/2JES-07(Y)	3,4	54	3,7
K073H(B)/2HES-1(Y)	3,4	55	3,8
K073H(B)/2HES-2(Y)	3,4	56	4,5
K073H(B)/2GES-2(Y)	3,4	56	5
K073H(B)/2FES-2(Y)	3,4	56	5,3
K123H(B)/2FES-3(Y)	5,1	61	6,1
K123H(B)/2EES-2(Y)	5,1	82	6
K123H(B)/2EES-3(Y)	5,1	85	7,5
K123H(B)/2DES-2(Y)	5,1	82	7,5
K123H(B)/2DES-3(Y)	5,1	85	8,6
K123H(B)/2CES-3(Y)	5,1	84	9,1
K203H(B)/2CES-4(Y)	11,8	95	10
K203H(B)/4FES-3(Y)	11,8	107	9,5
K203H(B)/4FES-5(Y)	11,8	111	10,8
K203H(B)/4EES-4(Y)	11,8	109	12,2
K203H(B)/4EES-6(Y)	11,8	111	13,6
K203H(B)/4DES-5(Y)	11,8	111	14,5
K203H(B)/4CES-6(Y)	11,8	116	17,7
K283H(B)/4DES-7(Y)	11,3	116	16,5
K283H(B)/4TES-9(Y)	11,3	161	19,9
K373H(B)/4CES-9(Y)	14,5	126	20,2
K373H(B)/4TES-12(Y)	14,5	176	25,1
K373H(B)/4PES-12(Y)	14,5	174	22,7
K373H(B)/4NES-14(Y)	14,5	176	26,6
K573H(B)/4PES-15(Y)	29,4	206	28,2
K573H(B)/4NES-20(Y)	29,4	209	33,2
K573H(B)/4JE-15(Y)	29,4	249	30,8
K573H(B)/4JE-22(Y)	29,4	249	37,2
K573H(B)/4HE-18(Y)	29,4	249	36,7
K573H(B)/4GE-23(Y)	29,4	251	43,9
K573H(B)/6JE-25(Y)	29,4	287	46,4
K813H(B)/4HE-25(Y)	27,7	256	44
K813H(B)/4GE-30(Y)	27,7	268	51,2
K813H(B)/6JE-33(Y)	27,7	293	53,2
K813H(B)/6HE-28(Y)	27,7	290	53,2
K813H(B)/6GE-34(Y)	27,7	290	65,5
K1053H(B)/6HE-35(Y)	40	320	64,4
K1053H(B)/6FE-44(Y)	40	326	83,2
K1353H(B)/6GE-40(Y)	37	333	73,9
K1353H(B)/6FE-50(Y)	37	336	96,2
2-STAGE			
K373H(B)/S4T-5.2(Y)	14,5	171	14
K373H(B)/S4N-8.2(Y)	14,5	176	17
K573H(B)/S4G-12.2(Y)	29,4	239	24
K573H(B)/S6J-16.2(Y)	29,4	268	31
K573H(B)/S6H-20.2(Y)	29,4	279	37
K813H(B)/S6G-25.2(Y)	27,7	295	43
K813H(B)/S6F-30.2(Y)	27,7	296	51

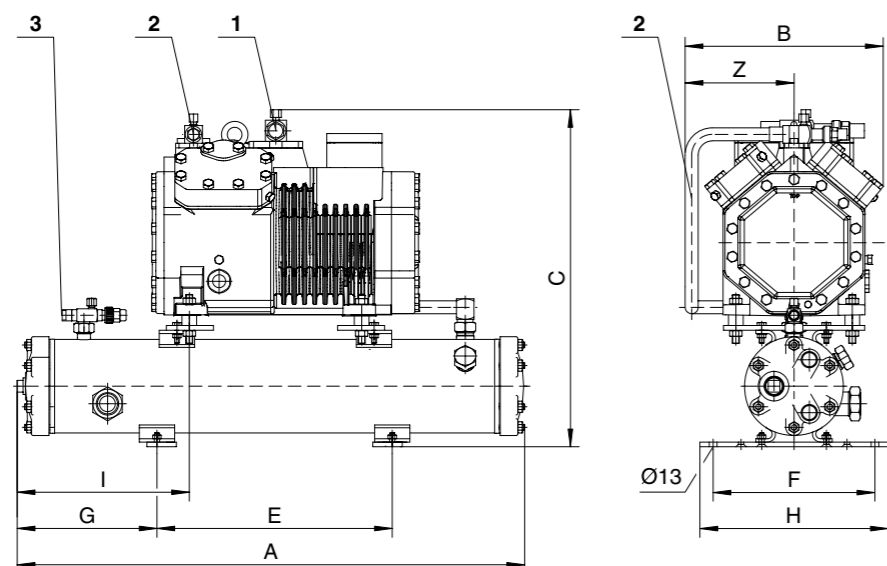
Tentative data

DIMENSIONS

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



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



Connection positions:
1 Suction gas line
4 Refrigerant outlet
10 Sight glass

Tentative data

DIMENSIONS

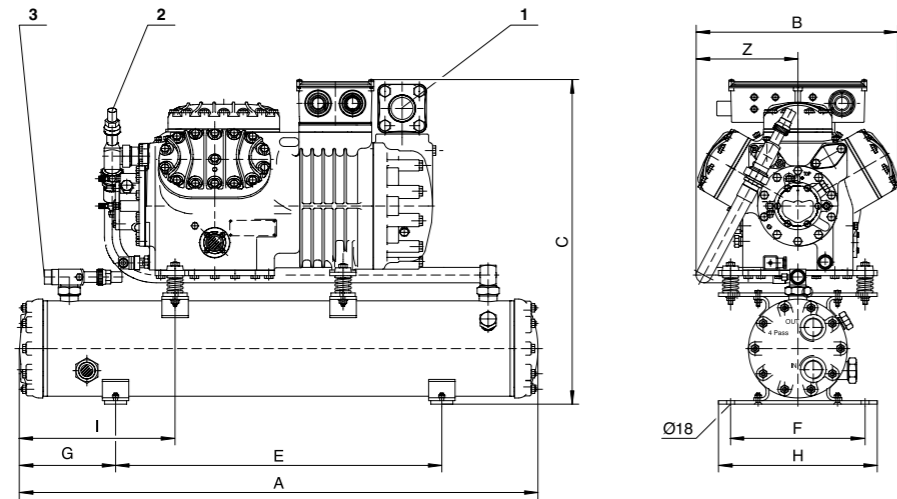
Type	Dimensions in mm									
	A	B	C	E	F	Ø	G	H	I	Z
K073H/2KES-05(Y)	602	251	413	400	212	9	102	250	190	126
K073H/2JES-07(Y)	602	251	413	400	212	9	102	250	190	126
K073H/2HES-1(Y)	602	251	413	400	212	9	102	250	190	126
K073H/2HES-2(Y)	602	251	413	400	212	9	102	250	190	126
K073H/2GES-2(Y)	602	251	413	400	212	9	102	250	190	126
K073H/2FES-2(Y)	602	251	413	400	212	9	102	250	190	126
K123H/2FES-3(Y)	852	251	435	400	275	13	227	320	348	112
K123H/2EES-2(Y)	852	323	463	400	275	13	227	320	341	163
K123H/2EES-3(Y)	852	323	463	400	275	13	227	320	341	163
K123H/2DES-2(Y)	852	323	463	400	275	13	227	320	341	163
K123H/2DES-3(Y)	852	323	463	400	275	13	227	320	341	163
K123H/2CES-3(Y)	852	323	463	400	275	13	227	320	341	163
K203H/2CES-4(Y)	863	323	528	400	275	13	238	320	308	163
K203H/4FES-3(Y)	863	345	573	400	275	13	238	320	293	185
K203H/4FES-5(Y)	863	345	573	400	275	13	238	320	293	185
K203H/4EES-4(Y)	863	345	573	400	275	13	238	320	293	185
K203H/4EES-6(Y)	863	345	573	400	275	13	238	320	293	185
K203H/4DES-5(Y)	863	345	573	400	275	13	238	320	293	185
K283H/4DES-7(Y)	863	345	573	400	275	13	238	320	293	185
K203H/4CES-6(Y)	863	345	573	400	275	13	238	320	293	185
K373H/4CES-9(Y)	1113	345	573	740	275	13	193	320	382	185
K283H/4TES-9(Y)	863	363	626	400	275	13	238	320	256	204
K373H/4TES-12(Y)	1113	363	626	740	275	13	193	320	382	204
K373H/4PES-12(Y)	1113	363	626	740	275	13	193	320	382	204
K573H/4PES-15(Y)	1176	363	672	740	305	18	218	360	360	204
K373H/4NES-14(Y)	1113	363	626	740	275	13	193	320	382	204
K573H/4NES-20(Y)	1176	363	672	740	305	18	218	360	360	204
K573H/4JE-15(Y)	1176	439	743	740	305	18	218	360	353	230
K573H/4JE-22(Y)	1176	439	743	740	305	18	218	360	353	230
K573H/4HE-18(Y)	1176	439	743	740	305	18	218	360	353	230
K813H/4HE-25(Y)	1176	439	743	740	305	18	218	360	353	230
K573H/4GE-23(Y)	1176	439	743	740	305	18	218	360	353	230
K813H/4GE-30(Y)	1176	439	743	740	305	18	218	360	353	230

Dimension for seawater resistant condenser design and information to fixing plates and fixing rails see DP-200

Tentative data

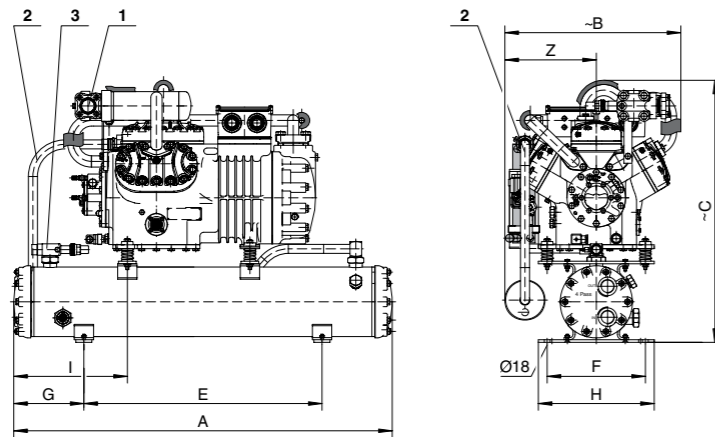
DIMENSIONS

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



Connection positions:
 1 Suction valve
 2 Discharge line
 3 Refrigerant outlet

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



Type	Dimensions in mm									
	A	B	C	E	F	Ø	G	H	I	Z
K573H/6JE-25(Y)	1176	458	736	740	305	18	218	360	353	231
K813H/6JE-33(Y)	1176	458	736	740	305	18	218	360	353	231
K813H/6HE-28(Y)	1176	458	736	740	305	18	218	360	353	231
K1053H/6HE-35(Y)	1634	517	735	900	305	18	367	360	551	291
K813H/6GE-34(Y)	1176	458	736	740	305	18	218	360	353	291
K1353T/6GE-40(Y)	1634	517	797	900	305	18	367	360	551	291
K1053H/6FE-44(Y)	1634	517	735	900	305	18	367	360	551	291
K1353T/6FE-50(Y)	1634	517	797	900	305	18	367	360	551	291

Water cooled condensing units with 2-stage compressors										
Type	A	B	C	E	F	Ø	G	H	I	Z
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

*With K1353T refrigerant outlet below

Dimension for seawater resistant condenser design and information to fixing plates and fixing rails see DP-200

Tentative data

ACCESSORIES



OIL SEPARATOR WITH CHECK VALVE KEEPS THE COMPRESSOR LUBRICATED – NO MATTER THE APPLICATION

The right oil supply to the compressor at any time is no problem with the optional oil separator with check valve in the discharge line.

// Available for the whole K-series



HP/LP PRESSURE SWITCHES

The adjustable HP/LP switches are fully factory-fitted.

// Optional accessory for the whole K-series



VARISTEP – MECHANICAL CAPACITY CONTROL ADAPTATION ACCORDING TO SYSTEM REQUIREMENTS

With the mechanical capacity control VARISTEP, changing cooling demands are no problem. It prevents high switching frequencies of the compressor and ensures efficient operation of the compressor. It is based on the principle of blocked suction.

// Refrigeration capacity range from 10%-100%
(details see KT-101) or with CM-RC-01

Images are for illustration purposes only



BITZER DIGITAL NETWORK

CONNECTED TO YOUR BITZER PRODUCTS

BITZER Digital Network (BDN) offers you easy access to valuable digital services relating to BITZER products for refrigeration and air conditioning. This provides you with important product and application-related information on all the BITZER products you're using, including, among others, data analyses and compressor operation reports. And with it, usable findings with which you can optimise the most important aspects of the cooling systems.



- // 360° product information
- // Tracking of service activities
- // Operation report
- // Real-time data
- // Notification
- // Flexible access rights



BITZER ON-SITE SERVICES

WE OFFER SOLUTIONS BEYOND THE ORDINARY



- // Warranty extension for up to five years
- // Free one-year warranty extension for BITZER IQ products
- // Commissioning assistance for excellent results



- // Assessment services for extended lifetimes
- // Retrofitting solutions for secure investments
- // Refrigerant compliance and strategy consulting

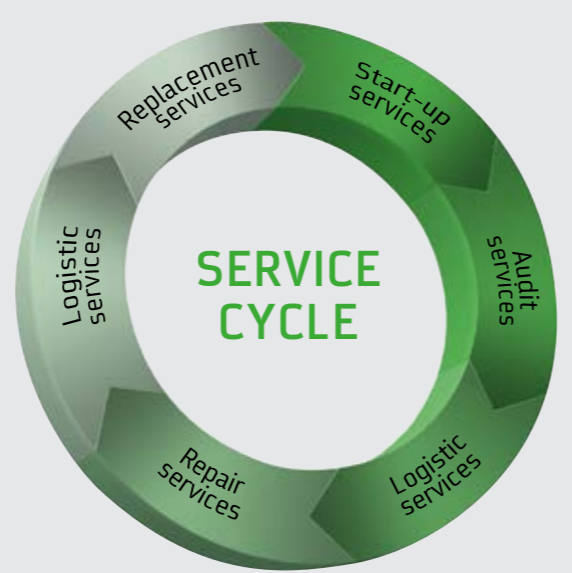


A SERVICE BY BITZER GROUP

ALWAYS THERE FOR YOU

The global service network comprises more than 50 locations. Everywhere, our specialists maintain, overhaul and repair BITZER compressors, replace wear and safety-relevant parts and stock BITZER ORIGINAL SPARE PARTS AND OIL. Highly committed engineers ensure that the service cycle is always precisely and perfectly executed.

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THE SCHAUFLER ACADEMY

PRACTICABLE SOLUTIONS FOR A CHALLENGING INDUSTRY

At the SCHAUFLER Academy, the international seminar and training centre of BITZER, you will find German and English seminars and training courses regarding the handling of refrigeration and air conditioning components and alternative refrigerants. Not only service and installation specialists can rely on our training courses but also project engineers, planners and technical engineers.



The SCHAUFLER Academy offers you training courses in small groups with theoretical contents and practical exercises on real training systems. Motivated and experienced teaching staff are available to answer questions and respond to your needs. This and the pleasant and professional environment lead to fast learning success. We are looking forward to your visit.



Standing for education and knowledge transfer, we consider it as our responsibility to provide information about our products, applications, tools and basics. In cases where in-person training is not possible, we can still provide you with some content to learn from home or in the office with our e-learning seminars.



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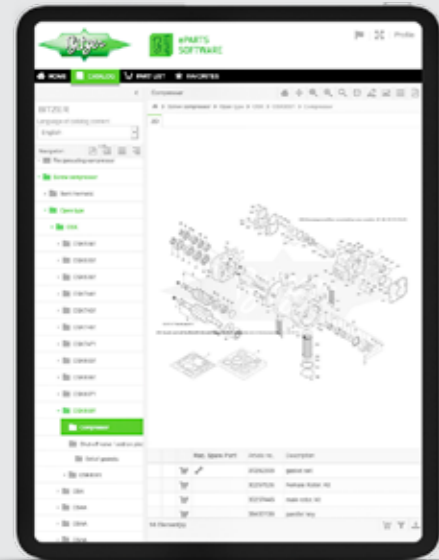
A PLUS FOR YOU



BITZER SOFTWARE

CHOOSE THE RIGHT PRODUCTS AND FIND MORE DETAILED TECHNICAL DATA

Available online and as a downloadable version, BITZER SOFTWARE will help you select the appropriate BITZER product from our extensive and flexible product range.



ePARTS SOFTWARE

FIND SUITABLE SPARE PARTS EASILY

Our free-of-charge tool makes finding the appropriate spare parts for our products fast and easy. The parts are listed according to the type range and appear as a simple zoomable exploded-view drawing.



BEST APP AND BEST SOFTWARE

OPERATE YOUR BITZER IQ PRODUCTS WITH ONLY ONE SOFTWARE TOOL

BEST provides comprehensive access to all operating data and parameters. The intuitive user interface provides a complete overview of the operating status and a data log for easy maintenance and service.

FIND YOUR PLUS:

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



BITZER Software



BITZER Apps

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