

The background of the upper half of the page features a series of thin, light green, overlapping curved lines that create a sense of movement and depth. These lines vary in length and curvature, some starting from the left edge and sweeping across the page, while others are more vertical or horizontal. The overall effect is a modern, minimalist aesthetic.

klimatix

VLC

Variable Load Chiller

Inverter and Fixed Scroll Chiller
Air Condensation

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VLC | Klimatix

Chilled Water Plants

Scroll Chiller for Air Conditioning



VLC

- ④ Models
- EC Fan
- Scroll compressor
- R410a Coolant
- Air condensation
- Save Energy Inverter



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at: www.ahridirectory.org

Variable Load Chiller (VLC) is the ideal solution for the Air Conditioning sector. With its interconnection by scalable units, the VLC has the flexibility to adapt to different applications and capacities.

In addition, its state-of-the-art technology guarantees reliable, efficient operation and low noise levels, resulting in a long service life and low maintenance costs.

The integrated control management system allows constant optimization of cooling capacity to meet thermal demand.

The communication network between the units ensures operation without a master or slave, offering even greater simplicity in system management.

Benefits

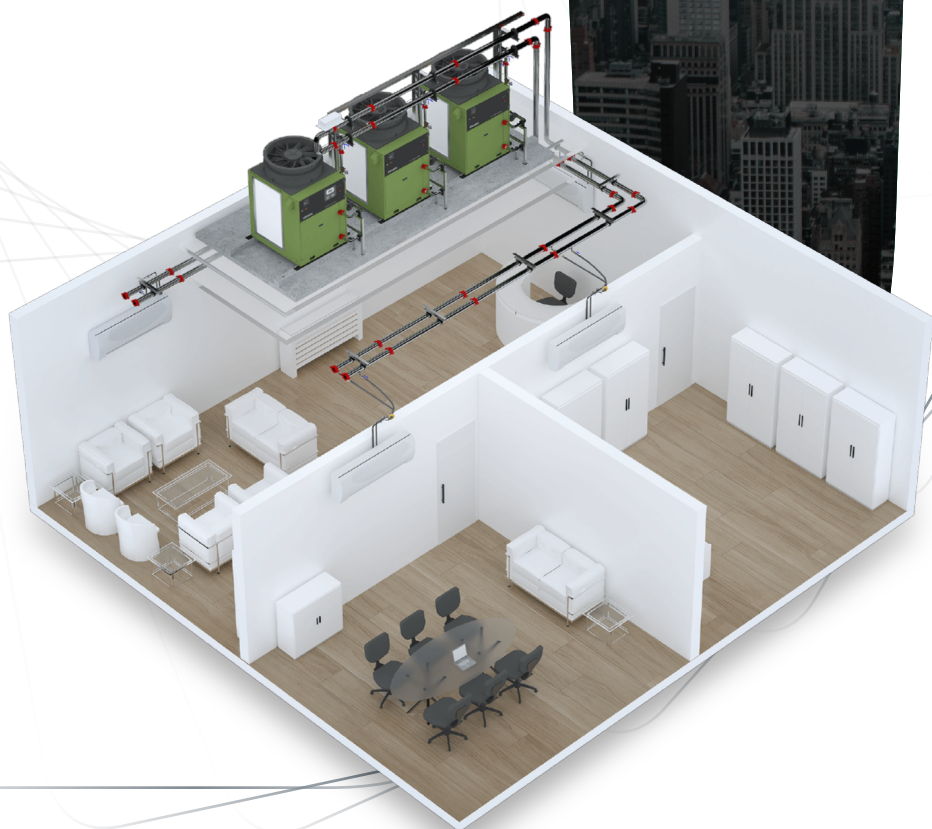
- Energy efficiency – according to AHRI 90.1
- Reliability – operating 24/7
- Refrigerant – low charge
- Flexibility – expansion up to 14 units
- Easy Maintenance – access through the front cover
- Easy installation – integrated Victaulic connection
- Flow sensor – no moving parts

Highlights

- Control structure – free master slave
- Automation – pumps and valves
- Web server – real-time data
- Low footprint – 1000x1175 mm
- Designed for elevator transportation



High Energy Efficiency
and Availability



Nomenclature – VLC

VLC – A – 15 – F – 220 / G / I / N

Variable load Chiller

A: Condensação de ar

15: 15 TR

18: 18 TR

F: fixed

I: Inverter

Special characters

/G: Air filter

/I: Service HMI

/M: Condenser

with e-coat paint

/N: Bacnet Protocol

Standard Voltage of the VLC

3-phase, 220 V, 60 Hz

3-phase, 380 V, 60 Hz

3-phase, 440 V, 60 Hz



Technical Description

Developed for chilled water plants with multiple units, it has integrated management to optimize capacity with thermal load demand.

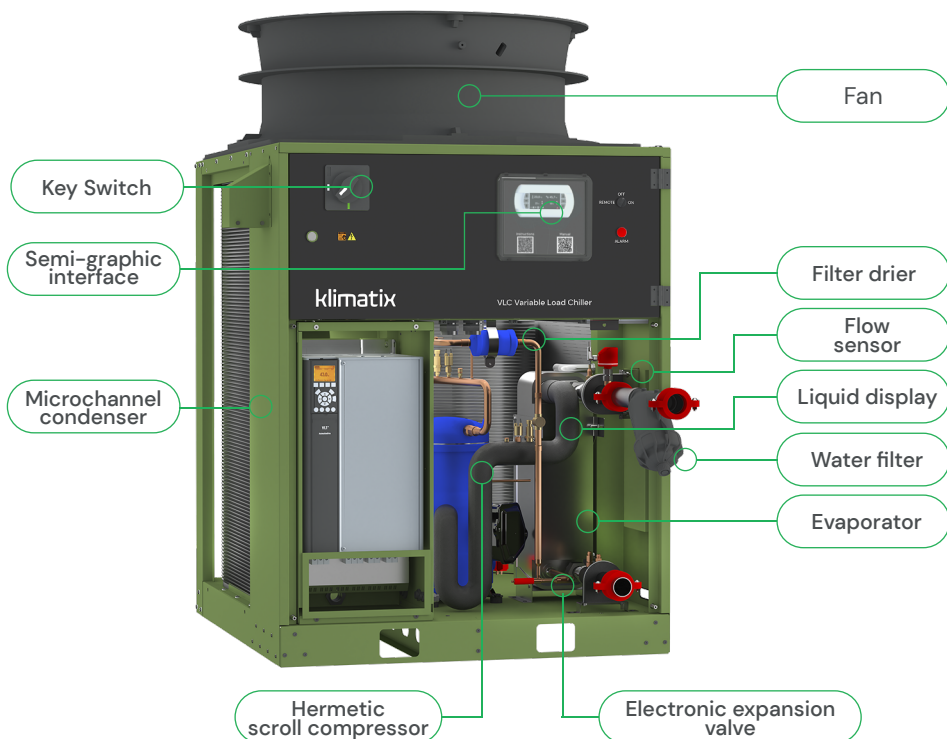
The line is distinguished by the presence of two versions: the first with an Inverter compressor and the second with two Fixed compressors.

The first unit in the system should always have an Inverter compressor, while the others should be as required by the installation (see table of combinations).

The integrated control management system is carried out through the network communication of the equipment, without the presence of master and slave units (free master slave).

The web server allows monitoring of the operating conditions of the system through a user-friendly interface.

The version with fixed compressors does not have a Human Machine Interface (HMI)



Characteristics

The VLC-A line consists of four units with nominal capacities of 15 and 18 TR, in fixed or inverter compressor versions.

Operating conditions:

Ambient temperature from 10°C to 45°C

Chilled water temperature from 5°C to 15°C

Efficiency according to AHRI 551/591:

IPLV from 4.802 to 5.626 kW/kW

COP from 2.933 to 3.270 kW/kW

Design and manufacture in compliance with NR-10 and NR-12 standards.

Cooling

Two scroll compressor options, the first with a high-efficiency inverter compressor and variable speed control from 30% to 100%; and the second with two fixed compressors mounted in tandem and with 50% and 100% capacity control.



Microchannel condenser (MCHE) manufactured with aluminum tubes and fins, ensuring greater protection against galvanic corrosion.



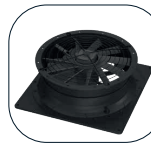
Electronic expansion valve for precise control of refrigerant flow.



Brazed plate evaporator (BPHE) made from AISI316 stainless steel with a temperature measuring well.



Axial fan with EC-type electric motor and proportional speed control mounted on an air diffuser that guarantees high efficiency and low noise levels.



Hydraulics

Filter with thermoplastic housing and disc-shaped filter element with high filtering capacity.



Flow sensor manufactured in stainless steel and calorimetric measuring principle incorporated into the equipment and with no moving parts.



Piping manufactured in AISI 304 stainless steel and Victaulic connections.

Electrical and control

Electrical components for switching off, protection, and activation of motors mounted in accordance with NBR5410 on a galvanized carbon steel plate.

Communication using Modbus TCP/IP and Modbus RTU protocols that allows remote access to operating conditions, activation, parameterization, and operating log verification.

Primary pumping system activation and control functions integrated into the PLC. Three-position rotary switch to turn the equipment on, off, and enable remote operation. Light signal for fault indication.

Inversion and phase failure relay.

Control panel with semi-graphic HMI that allows visualization of operating conditions and parameterization of control variables. Only supplied in the inverter version



The VLC-A -F version is not supplied with an HMI, which can be requested in the /I version as a service HMI provided inside the electrical panel. Monitoring of operating conditions and parameterization via the web.

Communication and management of the operation of up to 14 pieces of equipment in a network.

Cabinet

Manufactured in galvanized carbon steel and electrostatic paint finish in RAL 6005 green.

Stainless steel fastening elements (rivets and screws).



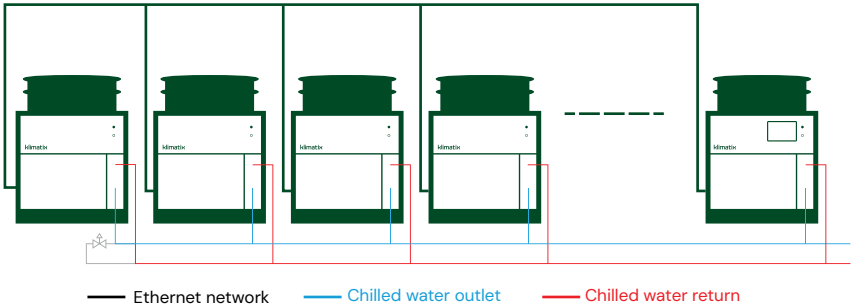
Installation

The integrated control system allows up to 14 pieces of equipment in a network, thus enabling greater modularity.

The main feature of the VLC line is the use of multiple modules installed in parallel.

Expansion of installed capacity is carried out as demand increases.

The chilled water plant must be designed using the first equipment with variable capacity in the Inverter version (VLC-A-I).



Combinations and capacities

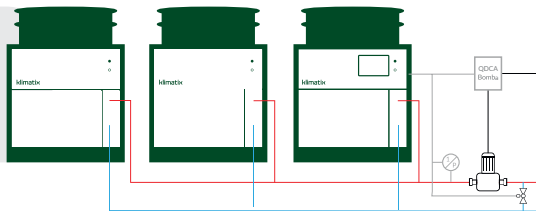
Inverter	Fixed	Qty.	Capacity (kW / TR)	
			VLC-A-15	VLC-A-18
		1	45 / 13	59 / 17
		2	95 / 27	124 / 35
		3	145 / 41	189 / 54
		4	195 / 56	255 / 72
		5	245 / 70	320 / 91
		6	295 / 84	386 / 110
		7	345 / 98	451 / 128
		8	395 / 112	516 / 147
		9	445 / 127	582 / 165
		10	495 / 141	647 / 184
		11	545 / 155	713 / 203
		12	595 / 169	778 / 221
		13	645 / 184	843 / 240
		14	695 / 198	909 / 258

*Combinations: First inverter unit and the others fixed or inverter

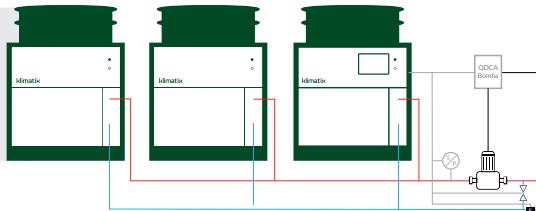
Automation

The control of the VLC-A line includes basic automation of the pumping, pressure control, and water flow components of the primary hydraulic circuit of the chilled water system, as described below. The flow control of the secondary circuit must be carried out by the installer.

Primary circuit with constant flow and pressure control by proportional valve.



Primary circuit with variable flow and pressure control by proportional valve.



Primary circuit with constant flow and secondary circuit with variable flow.



Primary and secondary circuit with variable flow.



Pump



Bypass



Pressure transducer



Flow meter

The examples above are for illustrative purposes. For more information, please contact Klimatix application engineering.

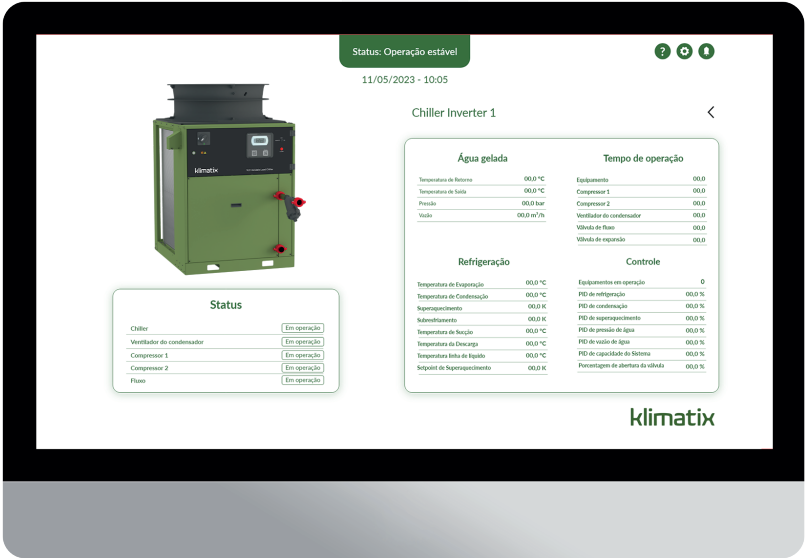
Web Server

The web server is available in all versions and allows real-time remote monitoring of operating conditions on two pages, one providing system data and the other the specific conditions of each piece of equipment.

Process temperature and setpoint

Capacity

Operating status



Optional Configurations

PARALLEL INTERCONNECTION KIT

- Interconnection kit with piping made from AISI304 stainless steel and Victaulic connections.
- 1 balancing valve
- 2 manual ball valves
- 1 solenoid valve for automatic water flow shut-off
- 1 proportional control valve and pressure transducer



SERVICE HMI

Available for non-variable version equipment.
Allows visualization of conditions, operation and settings.
The HMI is not integrated into the front cover.



AIR FILTER

Washable G0 filter with thermoplastic screen and aluminum frame



CONDENSER WITH E-COATING PAINT

Condenser with surface treatment against corrosion caused by salt spray or aggressive atmospheres.



COMMUNICATION

BACNET, others on request.



Technical data

	Description	Unit	Unit			
			15		18	
	VLC-A range		VLC-A- F	VLC-A- I	VLC-A- F	VLC-A- I
Basic Data	Capacity (1)	kW	50	45.3	65.4	58.5
		TR	14.2	12.9	18.6	16.6
	Total power consumed (1)	kW	15.5	15.1	21.6	19.9
	COP (1)	kW/kW	3.221	3.00	3.270	2.933
	IPLV (1)	kW/kW	5.069	5.626	4.802	5.52
	Capacity control	%	50 and 100	30 to 100	50 and 100	30 to 100
	Minimum capacity	kW	26.4	13.48	35.6	18.19
Cooling		TR	7.5	3.8	10.1	5.2
	Condensation	-	Ar			
	Cooling circuits	-	1			
	Cooling fluid	-	R410a			
	Refrigerant load	kg	4.6	4.6	5.8	5.8
	Compressors	-	Fixed Scroll	Scroll Inverter	Fixed Scroll	Scroll Inverter
	Number of compressors	-	2	1	2	1
Hydraulic circuit	Condensers	-	Microchannel Al/Al			
	Fan	-	Axial EC			
	Evaporator	-	Brazen Plates			
	Expansion valve	-	Electronic expansion valve			
	Flow (1)	m³/h	8.5	7.7	11.1	9.9
	Load loss	kPa	57	51	61	52
	Connection type	-	Victaulic			
Electrical	Inlet connections	inch	1 1/2	1 1/2	1 1/2	1 1/2
	Outlet connections	inch	1 1/2	1 1/2	1 1/2	1 1/2
	Electric power supply	-	3Ph/220V/60Hz - 3Ph/380V/60Hz - 3Ph/440V/60Hz			
	HMI	-	Semi graphic interface			
	Communication	-	Modbus RTU or TCP/IP			
	Key Switch	-	Yes			
	Activation	-	Three-position button (on, off, and remote activation)			
Temperature Sensor	Light signal	-	Fault summary			
	Sequence and phase failure	-	Yes			
	Water outlet	-	Yes			
	Water inlet	-	Yes			
	Evaporator anti-freeze	-	Yes			
	Room air	-	Yes			
	Evaporator refrigerant outlet	-	Yes			
Sensors	Condenser refrigerant outlet	-	Yes			
	Low pressure	-	Yes			
	High pressure	-	Yes			
	Low pressure switch	-	Yes			
	High-pressure switch	-	Yes			
	Water flow	-	Yes			
		-	Yes			
Construction details	Width	mm	1000			
	Depth	mm	1175			
	Height	mm	1615			
	Operating weight	kg	320	350	340	390

(1) Operating conditions according to AHRI 551/591; ambient temperature 35°C; water inlet temperature 12°C; water outlet temperature 7°; atmospheric pressure 101 kpa.

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Technical Support

Our goal is to simplify your everyday life

We serve
all of
Latin America!

Free lifetime support in the
service channels

Stock and supply of
original parts

Workshop car with high
quality tools

Punctuality in
scheduled visits

90% of calls resolved
over the phone

Own team

Monitoring of the visits
in real time

80% of calls resolved on the
first visit

Qualified technicians with more
than 15 years of experience

Customer satisfaction

We monitor the satisfaction of our customers from sale to the end of the equipment's useful life and take action whenever necessary, through our Active Listening Program.

We only rest when we deliver the best!



The information in this catalog is subject to change
without prior notice. Version: September 2023

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