

Contact our specialists to obtain
a quote or for any questions regarding
our products or services.



www.thewinesquare.com



CUBE^{LT}

COOLING SYSTEM

CUBE^{LT}
cooling system

Designed and Built in North America



TABLE OF CONTENTS

An Innovation in Wine Cooling	5
Elegant & Silent	7
Precise & Connected	8
Flexible & Ecological	10
 The Cooling System Components	13
Cooling Radiator	14
Water Circuit & Cable	15
Control Box	16
Water Chiller	17
 The Guide Lines for Insulation	18
Proper Insulation vs Poor Insulation	20

AN INNOVATION IN WINE COOLING

The Cube LT wine cellar cooling system stands as the pinnacle of compressor technology available today. Meticulously engineered for full-height glazed wine cellars, it is designed to ensure the optimal environment for wine conservation while providing tranquility and stability.

By utilizing a water loop cooling method, it effectively reduces thermal fluctuations and avoids drying the air, thus preserving the integrity of the wine. This modular tri-component system offers unparalleled installation flexibility, making it an ideal choice for both residential and commercial spaces.





ELEGANT & SILENT



The RC4LT is an elegantly designed, ceiling-mounted unit that stands as the only visible component in the wine cellar. Available in various colors, its sleek and stylish appearance blends seamlessly with any decor. With the compressor installed outside the wine cellar, there's no need for ceiling concealment, allowing for a maximum glass surface area and increased storage capacity.



The tri-component system design allows the compressor to be placed up to 100 feet away from the wine cellar, making it possible to showcase your wine collection in a living area while maintaining a quiet environment.

PRECISE & CONNECTED



Specifically designed for wine preservation, the Cube LT's water-loop system provides advanced thermal control, with a cooling loop capable of operating at higher temperatures, reaching up to 10°C (50°F), whereas traditional systems are limited to -4°C (25°F). This innovation significantly reduces thermal shocks and temperature fluctuations, while maintaining an optimal humidity level, ensuring the long-term preservation of the wine's quality and integrity.



The Cube LT system offers continuous connectivity, enabling real time monitoring of wine cellar conditions. It provides informed status updates via email or SMS alerts if any issues occur with the system.



ECOLOGICAL & FLEXIBLE

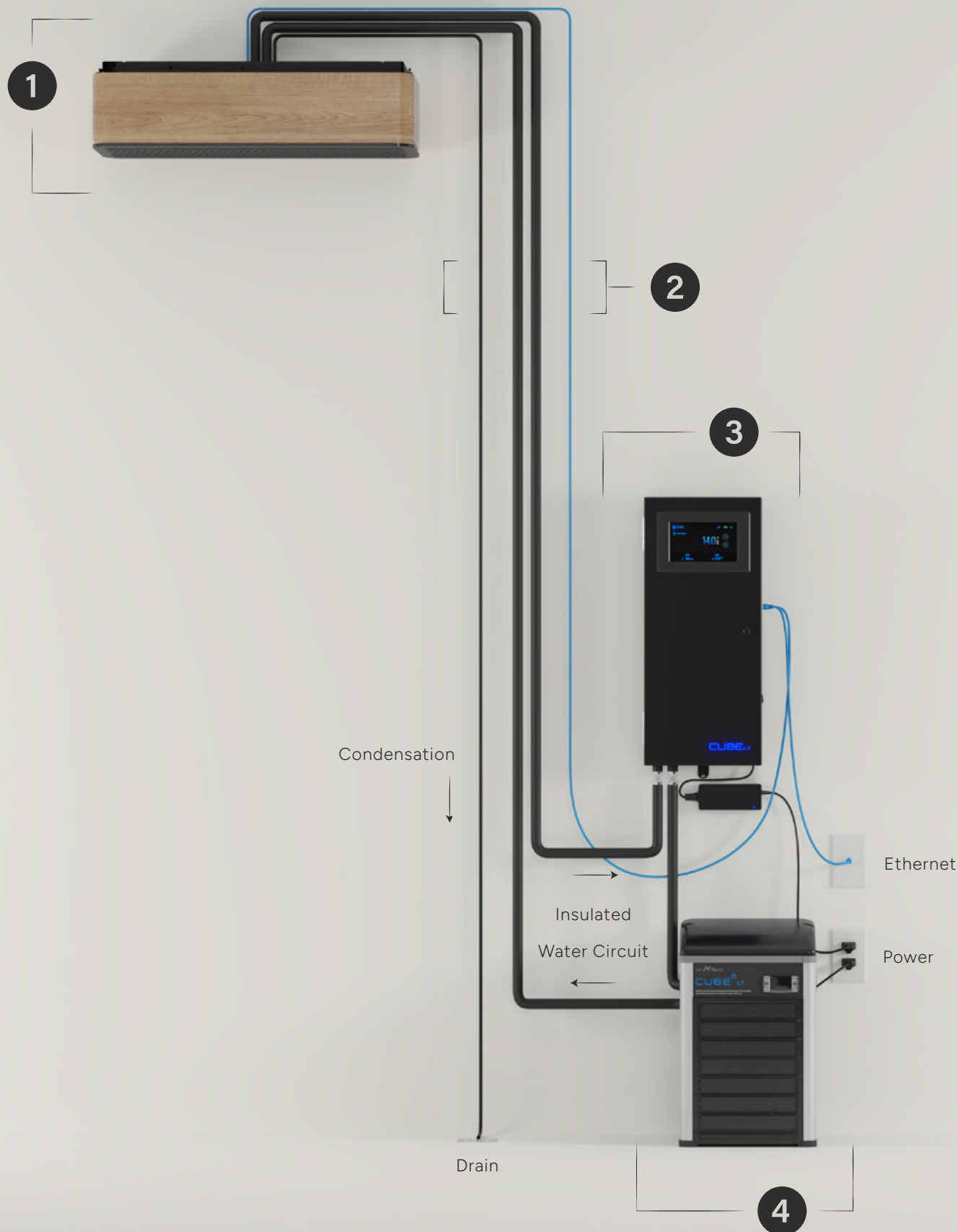


In the unlikely event of a leak, it's reassuring to know there are no toxic refrigerant gases in your walls that could jeopardize your health. Only a closed-loop water flow connects the different modules. The compressor unit employs self-contained R290, a nontoxic refrigerant gas with zero Ozone Depletion Potential (ODP) and an exceptionally low Global Warming Potential (GWP).



Installation is made easy since there is no need for a drain or power source within the wine cellar, making it flexible and straightforward. Three ½" PEX tubes and an Ethernet cable run through the walls to connect the units.





THE CUBE^{LT} COOLING SYSTEM COMPONENTS

1

COOLING RADIATOR

Located on the ceiling inside the wine cellar, the RC4LT extracts the heat using the water circuit, while also evacuating the condensation and relaying the temperature status to the control box.

2

WATER CIRCUIT & CABLE

Insulated PEX tubing and a Ethernet cable run through the walls, connecting the cooling radiator to the water chiller and the control box.

3

CONTROL BOX

Acting as the system's brain, the control box continuously monitors to ensure the wine cellar remains at the desired temperature.

4

WATER CHILLER

Installed beside the control box in a mechanical room or garage, the water chiller receives hot water and returns cold water to the cooling radiator.



COOLING RADIATOR

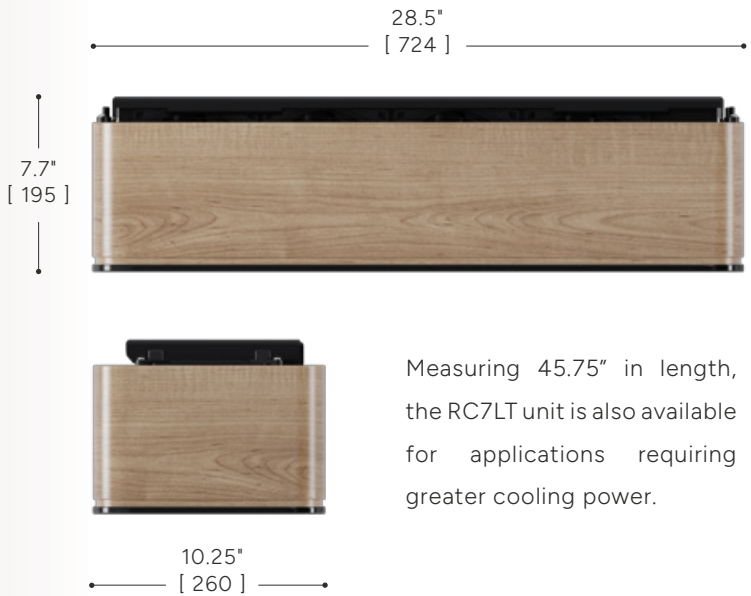
Wrapped in a refined wood casing, the cooling radiator, also known as RC4LT, stands as the only visible component in the wine cellar.

Positioned at the ceiling, the unit efficiently removes warm air using silent fans, circulating it through a radiator connected to a water circuit constantly cooled by the water chiller. Depending on the size, layout, and efficiency of your cellar's insulation, one or more RC4LT units can be installed and operated simultaneously to maintain optimal conditions, creating an environment conducive to the proper aging of wine bottles.

Also equipped with a pump to remove condensation water, the installation is simplified as there is no need for a drain in the wine cellar.

SPECIFICATIONS

Power/Communication	RJ45 23AWG Cat 6
Cooling power	400W
Drain connection	½" PEX
Inlet / Outlet Connection	½" PEX
Minimum clearance	
Front	1.75"
Sides	1"
Back	1"
Under the device	8"



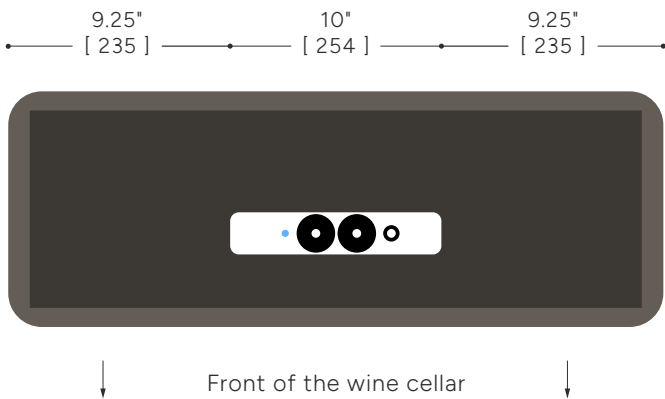
Measuring 45.75" in length, the RC7LT unit is also available for applications requiring greater cooling power.

WATER CIRCUIT & CABLE

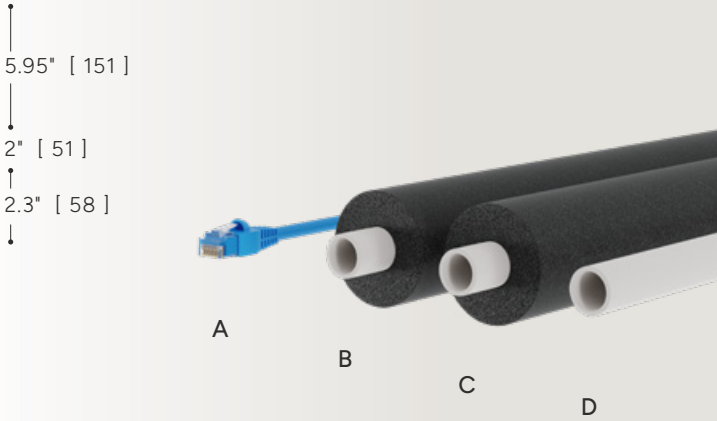
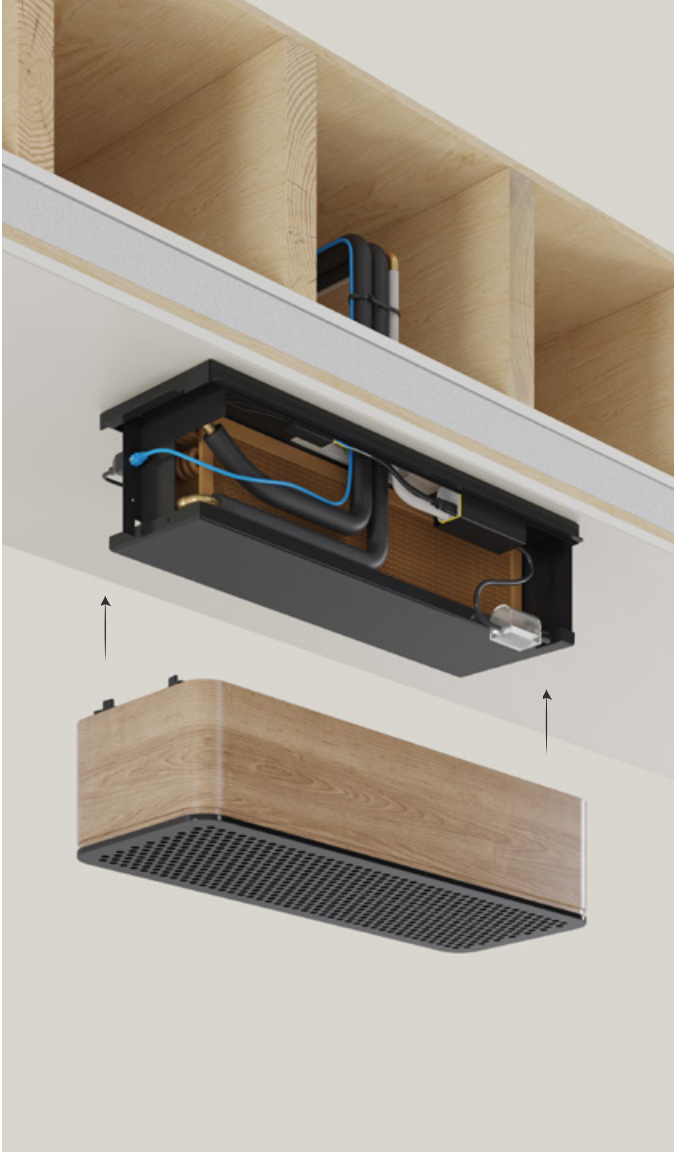
The CubeLT cooling system stands out by offering the possibility to place the noisy component, the water chiller, away from common living areas, whether in the garage or in a mechanical room.

To operate the cooling unit, four elements must pass through the ceiling and run through the walls:

- A. An Ethernet cable RJ45 23AWG Cat 6 connected to the control box.
- B. An insulated ½" PEX line inlet from the water chiller.
- C. An insulated ½" PEX line outlet leading to the control box.
- D. A condensation water outlet draining into a drain.



To connect these elements, a hole must be made in the ceiling aligned with the RC4LT's opening.





control box

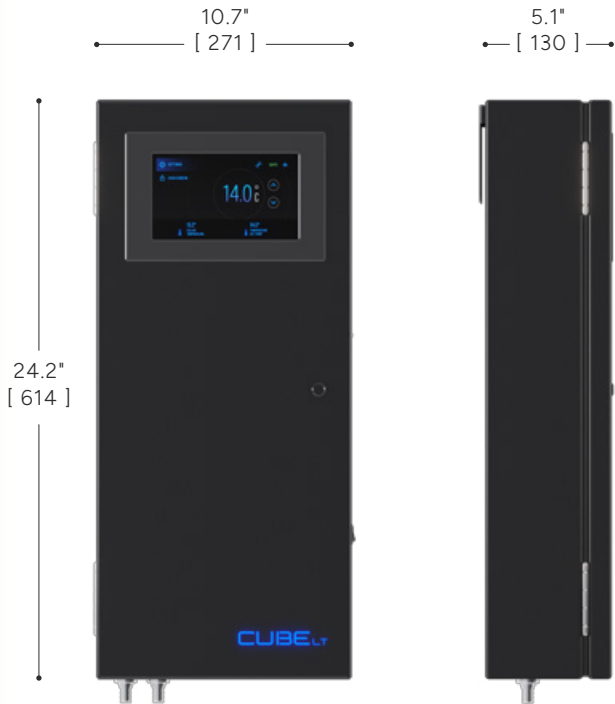
CONTROL BOX

The Control Box is the unit managing the entire high-end CubeLT cooling system. The conditions of the wine cellar can be set and adjusted by navigating on the high-resolution 7" screen or via a web portal.

It provides electrical power to the RC4LT while also transferring warm water from the RC4LT to the water chiller. Therefore, the Control Box must be installed close to the water chiller in a garage or mechanical room.

SPECIFICATIONS

Voltage	120V 60Hz
Amperage	0.75 A
Power	90W
Plug	NEMA 5-15P
Inlet / Outlet	½" PEX
Maximum Water T°	48°F (9°C)
Minimum Water T°	32°F (0°C)
Flow Rate	20 L/min
Internet Connection	RJ45 23AWG Cat 6



water chiller

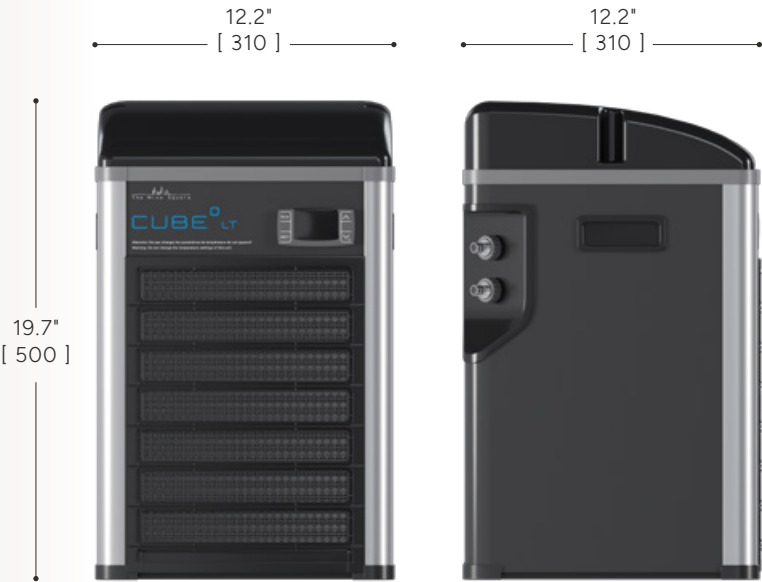
WATER CHILLER

The Water Chiller is responsible for efficiently cooling the water circuit. Italian designed, this compact, robust and eco-friendly unit uses R290 as refrigerant, a non-toxic gas with zero Ozone Depletion Potential (ODP) and very low Global Warning Potential (GWP).

Due to its higher sound level, similar to that of a dehumidifier, the unit should be installed near the Control Box in a mechanical room or garage. It is not recommended for use in an apartment or condo without a mechanical room.

SPECIFICATIONS

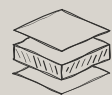
Voltage	120V 60Hz
Amperage	3.6 A
Power Consumption	330W
Cooling Power	400W
Plug	NEMA 5-15P
Inlet / Outlet	½" PEX
Weight	47 lb (21.4 kg)
Minimum Water T°	41°F (5°C)
Refrigerant	R290
Min Ambient Operating T°	50°F (10°C)
Max Ambient Operating T°	100°F (38°C)
Certification	UL / CE



THE GUIDE LINES FOR INSULATION

The key to maintaining a stable environment inside the wine cellar is an efficient cooling system combined with high-quality insulation.

Air infiltration resulting from poor insulation can put your wine bottle collection at risk by causing temperature fluctuations, excessive humidity, and the potential development of mold and undesirable odors. It can also lead to the overuse of the cooling system, which may result in premature wear of the water chiller. To maintain proper aging condition, it is important to follow the guidelines.



proper insulation PROPER INSULATION

- GENERAL
 - Vapor barrier or moisture barrier on all surfaces
 - Airtight
- WALLS
 - Minimum insulation of R15 or U0.06
- FLOOR & CEILING
 - Minimum insulation of R7.5 or U0.13
- GLASS
 - Minimum insulation of R4.5 or U0.22 with LOW-E protection

proper insulation

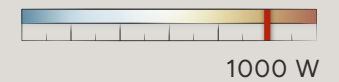
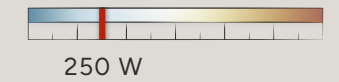
- + Allows a regular cooling system that fits the size and the shape of the wine cellar
- + Ensures a stable environment with controlled humidity
- + Prevents the overuse of the water chiller, also resulting in energy efficiency



poor insulation

- Require a more expensive cooling system to compensate the energy loss
- Air infiltration and leaks create temperature fluctuations and condensation, which can lead to mold growth
- Overuse of the compressor results in higher energy consumption, while also reducing the life expectancy of the water chiller

ENERGY CONSUMPTION



Two cooling radiators may be required.



CUBE^{LT}
cooling system



ISOCASE
GLAZED WITH CAVEA
enclosure system

To ensure your wine cellar meets the highest standards of storage conditions, discover our advanced insulation and glass solutions, both crafted to enhance preservation.




The Wine Square

www.thewinesquare.com