



## Cellar Construction and Installation

In order to operate effectively, CellarPro cooling units must be used in accordance with the following guidelines.

- **Cooling Capacity (Cubic Feet)**

The cooling capacity for each of our products is shown in the table below. These capacities are estimates and are based on certain assumptions, including sufficient insulation, adequate clearance and airflow, and proper ambient temperatures in and around the cellar.

Model	Dimensions (inches) W x D x H	Operating Amps	Cellar Capacity (cubic feet)
1800QT	18 x 16.5 x 10.5	3	200
1800XT	18 x 16.5 x 10.5	3	300

- **Ambient Environment**

CellarPro cooling units are designed to operate in ambient temperatures between 50°F and 85°F. They are designed for internal use only, and are not designed for exposure to the exterior.

CellarPro cooling units are designed to maintain temperatures inside the cellar up to 30°F below the ambient temperature of the condenser air intake. For example, if the ambient temperature of the condenser air intake is 85°F, the cooling unit should be able to maintain temperatures of 55°F inside the cellar. Similarly, CellarPro cooling units do not have heating elements, so if temperatures inside the cellar drop below proper wine storage temperatures, the cooling unit cannot create heat inside the cellar.

Proper temperatures are maintained by transferring heat from inside wine cellars and exhausting heat through the top (top-vent) or rear (rear-vent) of the cooling units.



- **Insulation and Moisture Barrier**

CellarPro cooling units are designed to be installed inside wine cellars that have proper insulation, moisture barriers and an airtight seal from the environment outside the cellar.

Interior walls and floor should have a minimum of R-11 insulation, and a vapor barrier on the warm side of the insulation. The ceiling should have a minimum of R-19 insulation and a vapor barrier on the warm side of the insulation. Doors also should be insulated and tightly sealed with weather stripping around the perimeter of the door. Surface-mounted fixtures are recommended over recessed lighting, which can allow air to leak into the cellar.



It is critical that all walls, joints, doors and windows, electrical outlets and/or switches, pipes, vents and light fixtures be sealed to prevent air and moisture from entering the cellar. If there is a leak in the cellar, the cooling unit will build up excess condensation that eventually may damage the internal components and shorten the life of the cooling unit, and may cause water to leak from the cooling unit.

We offer a **Wine Cellar Modification** for cooling units that will be installed in wine cellars (as opposed to wine cabinets.) The Wine Cellar Modification provides a fitting and condensate tube at the back of the cooling unit to relieve excess moisture that may condense inside the cooling unit. For installations in warm environments and/or cellars without airtight seals, we strongly recommend this modification. However, the modification does not replace the requirement for a cellar to have proper insulation, moisture barriers and airtight seals from the environment outside the cellar.





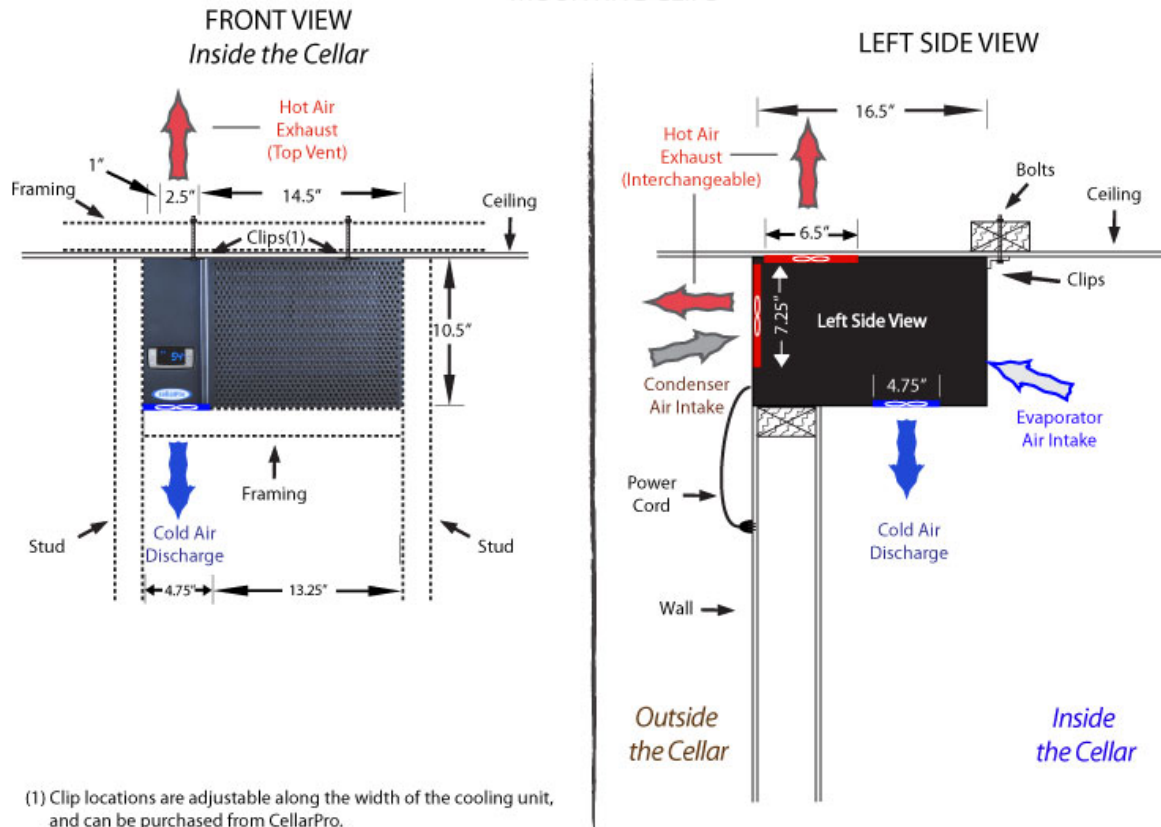
- Installation

CellarPro cooling units are designed to be installed **THROUGH THE WALL**. A hole should be cut 1/4 inch larger than the dimensions (W x H) of the cooling unit. Horizontal 2 x 4 inch braces should be installed between the studs below and above the cooling unit. If the studs in the wall must be cut to accommodate the width of the cooling unit, vertical braces also should be installed on either side of the cooling unit.

CellarPro cooling units must always be mounted in the upright position and located as close to the ceiling as possible inside the cellar. As warm air rises to the top of the cellar, the cooling unit pulls the warm air through the evaporator coils and removes the heat from the warm air. Once cooled, the cold air is discharged from the bottom of the cooling unit and circulates downward through the cellar.

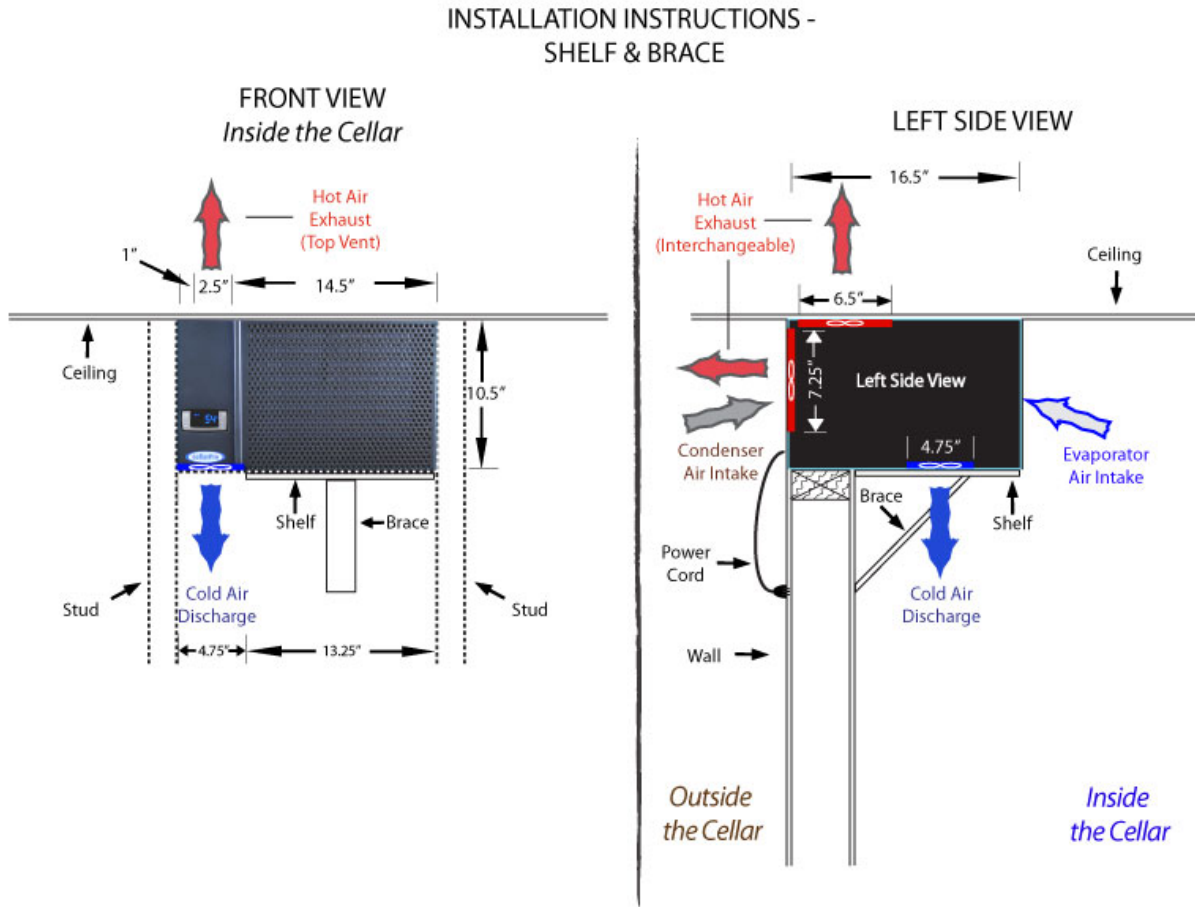
The rear of the cooling unit should be supported by the wall through which it is installed, and should be flush with the wall. Assuming 4 1/2 inch interior wall thickness, the front 12 inches will be inside the cellar. The front of the cooling unit can be mounted using optional mounting clips (available for purchase from CellarPro), as follows:

### INSTALLATION INSTRUCTIONS - MOUNTING CLIPS





Alternatively, the front of the cooling unit can be supported by a shelf and a diagonal brace. The shelf can be up to 13.25" inches wide, and should be positioned on the right side of the cooling unit so that it doesn't restrict the exhaust vent below the cooling unit, as follows:



Once the cooling unit is installed, all cracks and gaps between the cooling unit and the cellar should be sealed. We provide butyl tape (shipped in the cavity of the exhaust vent) for sealing these gaps. The butyl tape becomes pliable by rolling it in your hands. Pay particular attention to the seams on the back of the cellar (top and rear vent configurations) and the seams at the top of the cellar (top-vent configuration).



- Ventilation

## OUTSIDE THE CELLAR

Proper ventilation is critically important for the proper operation of your CellarPro cooling unit. The CellarPro cooling unit creates a significant amount of hot air, which must be exhausted into an appropriately-sized space in order for the heat to dissipate. If the space is constrained and/or too small, the heat will not dissipate and the cooling unit will end up recirculating hot air. If this happens, the cooling unit's ability to create cold air inside the cellar will be compromised.

**1. Condenser Air Intake.** The condenser coils are located at the rear of the cooling unit. These coils require access to cool air in order for the cooling unit to produce cool air. In general, the cooling unit will be able to produce cold air that is 30°F below the temperature of the condenser air intake. The cooling unit must be installed so that, after its installation, there is access to the condenser coils at the rear of the cooling unit for periodic cleaning of the coils.

**2. Condenser Air Exhaust.** Condenser air can be exhausted either through the top or the rear of the cooling unit. CellarPro units have interchangeable vent panels that can be swapped between the top and the rear of the cooling unit to match the configuration of your cellar and exhaust space. ***The hot air exhaust cannot be ducted without an inline fan to augment the airflow inside the duct.***

- **Rear vent configuration (most common):** in this configuration, the panel is attached to the top of the cooling unit and hot air is freely exhausted from the rear of the cooling unit into the exhaust space, which should have the same space capacity as the wine cellar. (eg, if the cellar is 300 cubic feet, the exhaust space also should be 300 cubic feet.)In addition, this configuration should have 4-6" of unobstructed clearance directly behind the cellar.
- **Top-vent configuration (less common):** in this configuration, the panel is attached to the rear of the cooling unit and hot air is freely exhausted from the top of the cooling unit into the exhaust space. If the exhaust space is shared with the rear of the cooling unit, it should have the same space capacity as the wine cellar (eg, if the cellar is 300 cubic feet, the exhaust space also should be 300 cubic feet.).

## INSIDE THE CELLAR

CellarPro cooling units are designed to turn on when the temperature near the ceiling inside the cellar exceeds the **Minimum Set Point** plus the **Temperature Differential**, and turn off when the temperature inside the cellar drops below the Minimum Set Point. The Minimum Set Point and Temperature Differential can be set according to instructions in the following Chapter. For example, if the Minimum Set Point is 58°F and the Temperature Differential is 4°F, the cooling unit will turn on when the temperature inside the cellar rises above 62°F, and turn off when the temperature



falls below 58°F. In this example, the average temperature inside the cellar will be 60°F.

**1. Evaporator Air Intake.** The evaporator coils are located on the face of the cooling unit behind the grill. CellarPro cooling units are designed to be mounted at the highest point inside wine cellars, so that warm air – which rises – will be the first to pass over the evaporator coils, which will remove the heat from the air. To ensure proper airflow, a minimum of 3” clearance is required in front of the cooling unit.

**2. Evaporator Air Exhaust.** Cold air is exhausted through the bottom of the cooling unit. Because CellarPro cooling units are located at the highest point inside wine cellars, the cold air will fall to the bottom of the cellar. To ensure proper airflow and reduce temperature stratification inside the cellar, the space below the cold air discharge should be clear of any obstructions, including wine bottles, wine racks, etc.

- **Power Requirements**

CellarPro cooling systems should be plugged into an outlet connected to a 15-amp circuit. The cooling unit uses approximately 3 amps during its “on” cycle. The cooling unit also offers a grounded 115V AC outlet, which is rated for 3 amps.

A number of variables, including the minimum set point, the temperature in the ambient environment, the insulation of the cellar, and the thermal mass inside the cellar, will affect the cooling unit’s runtime. It is normal for the cooling unit to run up to 75 percent of the time in order to maintain proper conditions inside the cellar.

### **Summary**

Keep in mind the following guidelines before purchasing a wine cooling unit from CellarPro.

- If the cellar is too large for the cooling unit, the cooling unit will be unable to maintain proper, even temperatures throughout the cellar.
- Without proper insulation and an airtight environment, the cooling unit effectively will become a de-humidifier and potentially will produce buckets of water.
- Without access to cool air, either because of improper ventilation or environments that are too hot, the cooling unit will be unable to maintain proper temperatures inside the cellar.

Under these conditions, the unit’s internal components may become damaged, the expected useful life of the wine cooling unit may be adversely affected, and the product’s warranty may become null and void. Please call us at 877.726.8496 if you have any questions about the proper use of a CellarPro wine cooling unit.