



Heat Transfer: A Tale of Two Technologies

Latent Heat is sensible!

*When it comes to heat sources, not all cabinets are created equal. Most manufacturers use **Sensible** heat - heat produced by raising the air temperature inside the cabinet. CVap® foodservice equipment, on the other hand, uses **Latent** heat - heat produced by the addition of water vapor into the heated air of the cabinet. Latent heat's moist air carries much more energy than Sensible heat's dry air. Because of this greater energy, most foods may be safely heated using much lower temperatures. Latent heat has an inherent Vapor Thermostat; food temperature will equalize to the vapor's temperature and rise no higher. In this state of equilibrium, food neither gives up nor absorbs additional moisture. As a result, food is cooked uniformly to the desired temperature and texture. In contrast, Sensible heat acts like a sponge. As the air temperature inside a Sensible heat cabinet rises, it draws moisture from the food. This evaporation not only dries out the food, but also draws away heat. Food quality swiftly diminishes.*

When you take all this into consideration, isn't it sensible to use CVap equipment, with latent heat?

The Basics of BTUs

The BTU (British Thermal Unit) is the fundamental unit of measure for heat. One BTU is the amount of energy needed to raise a pound of water one degree Fahrenheit. The difference between the *latent* heat utilized in CVap® equipment and the *sensible* heat used in competitor's cabinets can be accurately measured in BTUs – the more BTUs required to attain a particular temperature, the less efficient the equipment. We conducted a test in which identical frozen lasagnas were cooked to 165°F

in a CVap therm & hold and a competitor's rethermalizer cabinet, using the manufacturer's recommended cooking guidelines. The CVap therm & hold used **35,208 fewer** BTUs than the competitor. But the most notable difference was in food quality. Upon reaching 165°F, the pans were removed from the cabinets. As you can see below, the lasagna from the CVap cabinet was nicely browned and appetizing. Lasagna from the competitor's cabinet was burned. Which would you rather serve?



Lasagna cooked to 165°F in a CVap therm & hold cabinet

*Cook time: 1.25 hours
Total BTU usage: 11,075.1*



Lasagna cooked to 165°F in a competitor's retherm cabinet

*Cook time: 1.31 hours
Total BTU usage: 46,481.5*



Cook & Holds • Steamers • VLP/T Fryers • Holding Cabinets
Hold & Serve Drawers • Therm & Holds • Display Cabinets

Energy efficiency

Due to the efficiencies of using Latent heat, the CVap® therm & hold uses less energy (kw) and therefore a lower amperage circuit (30a) than any competitive model.

Food texture and temperature control

CVap equipment utilizes a dual heat system that controls food texture and food temperature by precisely controlling the evaporation of food moisture.

Product consistency

CVap therm & holds deliver consistent food quality, without burning or over-cooking. It meets USDA guideline 3-403.11 for the re-heating of food.

Ease of use

The simple controls allow you to input food temperature, food texture, and cook time, or to select pre-programmed popular foods with the touch of a button.

Just-cooked food quality

Reheat and hold food hot and fresh for extended time periods, while still complying with USDA guideline 3-501.16 for Hot Food Holding. Because CVap equipment controls the evaporation of moisture from food, shrinkage is minimal, and the food's natural juices, nutrients, and flavor remain inside the food.

Retherm faster

CVap technology's latent heat allows some foods to be rethermed as much as 50 percent faster, with higher yields, than in a cabinet using dry air alone.

Versatility

The CVap therm & hold is very versatile. You can retherm all your favorite foods, whether in individual meals in wire baskets, à la carte in bun pans, or bulk foods in hotel pans, and even in vacuum-sealed bags.

Better food safety

The CVap therm & hold helps you serve safer food. Its precise relative humidity control minimizes bacteria growth. Precise temperature control ensures that food temperatures will be maintained as recommended in FDA guidelines.

Greater operational efficiency

Improve kitchen efficiency by staying ahead of the rush. Prepare food in advance and keep it hot and fresh until lunchtime, with the touch of a button. No need for added labor to monitor food doneness or transfer to a holding cabinet. Use the time you would have spent rushing to take care of other tasks!

Student satisfaction

CVap therm & holds make a big difference in food quality. Students who may have previously passed on cafeteria food will find themselves coming back again and again.



Pea held 2 hours in competitor's holding cabinet



Pea held 2 hours in a CVap holding cabinet

CVap[®]

Summary of Benefits

Energy efficiency

Food texture and temperature control

Product consistency

Easy of use

Just-cooked food quality

Retherm faster

Versatility

Better food safety

Greater operational efficiency

Student satisfaction



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