

# ENTHERMICS Medical Systems

## OVERVIEW: BLANKET and FLUID WARMERS

In 1995, ENTHERMICS MEDICAL SYSTEMS launched a new and different line of medical blanket warming cabinets. ENTHERMICS had investigated the market and evaluated current product offerings, and determined that substantial product improvement was possible. Based on this information, ENTHERMICS decided to offer blanket warmers superior in design that were more efficient, reliable, durable, mobile, and provided more warmth, quality, and choices. Indeed, *more* is what ENTHERMICS committed itself to provide in performance and features. It was also determined that brand image was weak in the marketplace, even for very large manufacturers. So, ENTHERMICS also decided to try to build strong brand recognition for a clearly superior product.

The EC-Series blanket warmers built by ENTHERMICS employ a patented warming technology....a special electro-thermal cable array encased in the bottom and two sides of the warmed chamber. Other manufacturers use inexpensive technology: a fan that blows air over a heated element. This method is inefficient since the chamber is full of blankets and airflow is restricted, and the fans can fail resulting in an inoperable warmer. ENTHERMICS warming technology is much more efficient since it is radiative, convective, and conductive, and has *no* moving parts.....no fan is required to warm the chamber. The EC-Series is also capable of warming blankets to 200 degrees F, 40-50 degrees warmer than competitive offerings. Obviously, warmer blankets stay warmer longer.

The EC-Series warmers are very robust in design, and manufactured for rugged long-term use using heavy-duty components. The warmers have thick stainless-steel exteriors, large chromed handles that are easy to grab, simple and very durable magnetic latches, and strong door hinges. The doors of the EC-Series units can be opened easily, and withstand being slammed shut all day long, every day. The insulated glass 'window' in each door allows across-the-room determination if the warmer needs to be loaded with more blankets....so they are warm when needed. All of the free-standing EC-Series warmers have casters making them extremely mobile, so they can be easily repositioned if necessary. They can also be easily transported from the loading dock to their final location. A perimeter bumper also protects warmer doors and stainless-steel exterior during transport.

The ENTHERMICS EC-Series warmers are available in *deluxe*, *standard*, and *compact* versions. The deluxe units feature a digital electronic control with special features, glass 'window' door with interior illumination, perimeter bumper, and completely welded stainless-steel interiors. The special electronic control included with the deluxe warmers offers digital temperature display, a convenient touchpad that easily adjusts the temperature from 90 to 200 degrees F, a temperature-locking feature that does not allow the temperature setting to be reset without following an unlocking procedure, and a 24-hour timer which provides automatic shut-down in off-hours for energy savings and preset start-up so blankets are warm when needed. The standard warmers include a simpler on/off switch with digital temperature display and adjustment buttons; the perimeter bumper is optional, and the glass door is optional or standard depending on the model. The deluxe and standard versions have subtle differences in overall appearance. The new, small EC230 is a *compact* blanket warmer. It is a countertop design with construction similar to the standard versions, but has the deluxe features of a glass door and digital electronic control.

Many sizes and shapes of warmers are available, providing much flexibility in meeting both space and cost requirements. Some of the EC-Series warmers have two *separately* warmed chambers which allows flexibility in choosing particular temperatures for warmed blankets.

In the year 2000, ENTHERMICS launched a new and different line of medical fluid warming cabinets for *irrigation* and *injection* fluids. As with the blanket warmers, the EC-Series fluid warmers are unique, offering performance and features surpassing competitive machines. In fact, with both the blanket and fluid warmers ENTHERMICS is pioneering our ***WarmRight Concept*** in medical warming. This means the *right* temperature is matched to the *right* product. The ENTHERMICS warmers allow temperature stabilization for blankets, irrigation fluids, and injection fluids at three different temperatures in three different chambers. Blankets can be warmed to 200 degrees F, irrigation fluids to 150 degrees F, and injection fluids to 110 degrees F. The two temperature ranges for the fluid warmers are based on the recommendations of the fluid manufacturers. The EC-Series fluid warmers have a digital electronic control that allows the machine to be set to warm injection *or* irrigation fluids, and once the choice is made, the corresponding temperature range is available automatically. To warm *both* types of fluids requires *two* warmers, each set appropriately. ENTHERMICS has FDA 510k clearance for *injection* warming, and this is generally not available in the marketplace.

Integral to the ***WarmRight Concept*** is temperature stabilization, particularly for the fluids. It may take several hours for fluids to uniformly warm to the set-point temperature, and at this point they are considered stabilized (to within +/- 3 degrees F). This is not always well understood. Sometimes fluids are placed in a warmed chamber that is *too warm*, and then removed when *thought* to be about the right temperature. This is not temperature stabilization at a determined set-point temperature, and is a very inaccurate warming technique. Fluids are also sometimes warmed in microwave ovens....this is also very inaccurate, and highly discouraged by the fluid manufacturers. Irrigation and injection fluids can be accurately warmed in ENTHERMICS warmers.

As previously mentioned, the fluid manufacturers recommend the warming temperatures and the maximum length of time the fluids can remain in the warmers. The EC-Series fluid warmers allow the proper temperatures to be set. The temperature is controlled with a digital electronic control, and to an accuracy of +/- 3 degrees F. When the machine (or chamber) is configured as an *irrigation* warmer, the available temperature range is 90-150 degrees F; when configured as an *injection* warmer, the temperature range is 90-110 degrees F. The appropriate panel indicator lights are illuminated in each mode: IRR for irrigation, and INJ for injection. The control features a selection lock that locks-in the mode, temperature set-point, and 'ON' position. Only through an unlocking sequence can these selections be changed. No timer is incorporated into the control because fluid warmers are designed to remain *on* continuously. If for some reason the interior temperature exceeds the set-point by more than 10 degrees F, an indicator light blinks and an alarm sounds. If electric power is lost, the electronic control will retain its programming once power is restored. The ENTHERMICS fluid warmers do utilize a fan in the chamber, but only for air-mixing to provide a very accurate chamber temperature. Unique to our fluid warmers are plastic-coated wire basket drawers for convenient fluid container storage.

With the many different sizes and shapes of EC-Series warmers, the customer can mix and match various units depending on capacity and space requirements to warm blankets and fluids. Our EC1540b/l combination unit can warm blankets in the upper chamber, and fluids in the bottom chamber. In both blanket and fluid warming configurations, the EC770 and EC340 units can be *stacked* one-on-top-of-the-other to provide two separate warming chambers in 'one' unit. This stacking feature also allows another unit to be purchased later, and stacked on an existing unit. Our stacking feature not only applies to units of the same type.....smaller units can also be stacked on larger ones. Another option available on some of our blanket warmers is a front door/back door feature which allows blankets to be loaded and retrieved from either the front or back of the unit. This feature also allows the blanket warmer to be installed *though* a wall with access on either side. Optionally, the door swing can also be reversed on all ENTHERMICS warmers.

So, whether warm blankets or fluids are needed, or ***both***, ENTHERMICS has the solution.