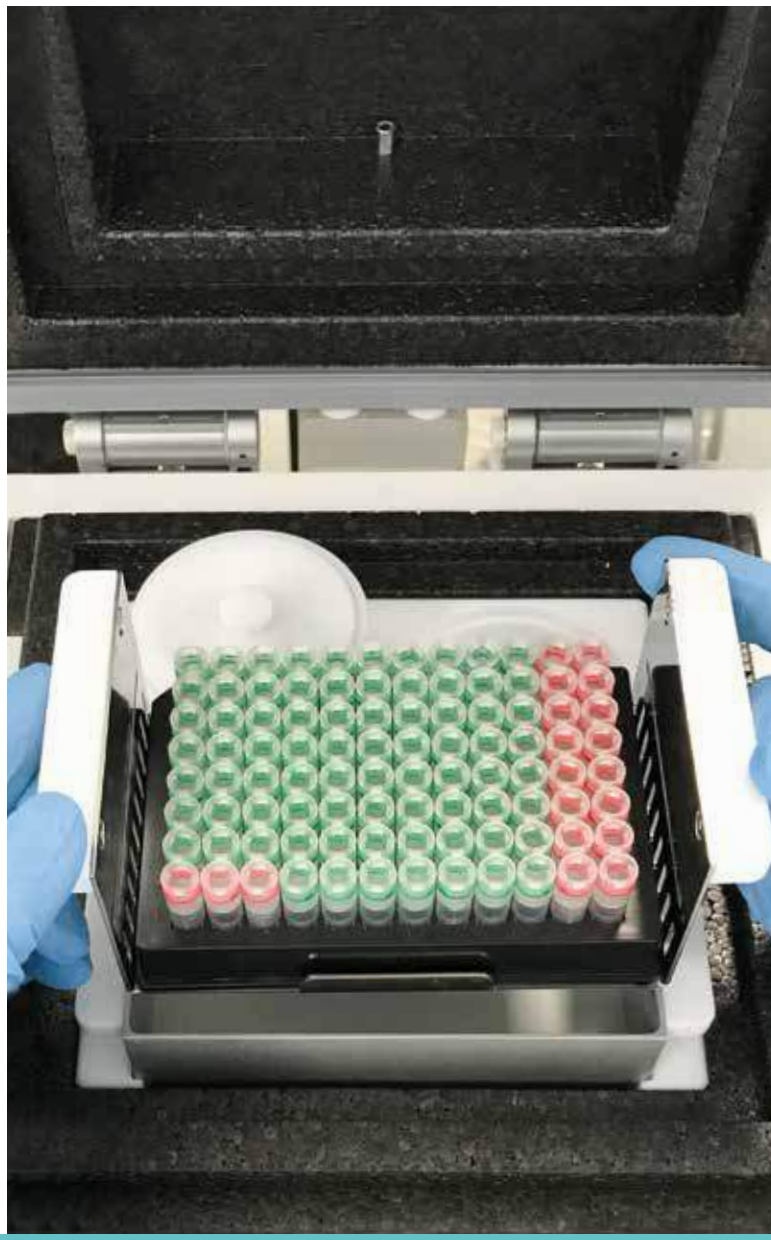
MILESTONE
HELPING
PATIENTS



# FlashFREEZE

## Standardized and documented pre-analytical protocols for enhanced tissue banking procedures

www.milestonemed.com

## NEED GOOD RESULTS? START WITH A GOOD PREPARATION

### THE PROBLEM

Human biospecimens have been collected and stored for over 100 years, and today, more than of 300 million biospecimens are warehoused in freezers or stored in other formats such as paraffin-embedded tissue blocks[1]. However, over the past decade or so it has become clear that the great majority of biospecimens stored in the world's biorepositories may not be suited for the state-of-the-art genomics, proteomics, metabolomics, and other bioanalytical technologies used today to search for cancer-related biomarkers.

The irreproducibility of many reported biomarkers is due at least in part to the fact that the biospecimens utilized are often procured using different collection, processing and storage techniques[2].

Such variability can lead to significant differences in the biospecimen's molecular integrity.

### THE SOLUTION

To overcome some of these difficulties, Milestone has developed the FlashFREEZE unit to standardize the flash freezing processing step of biospecimens. With FlashFREEZE, it is now possible to carry out evidence-based freezing protocols on biospecimens with the full documentation needed for QA purposes.

## FlashFREEZE. THIS IS HOW FLASH FREEZING SHOULD BE

### High safety standards

- No ~~liquid nitrogen~~, no ~~isopentane~~
- Histology grade ethanol is used as a heat transfer fluid and is suitable for non-contact freezing procedures of biospecimens or fluids

### High flexibility

- Suitable for freezing 24/48/96 well plates or random biospecimens
- Flash freeze vials with a volume of up to 50ml

### Full automation

- Programmable freezing temperatures down to -80°C
- Programmable length of the freezing step

### Fully documentable

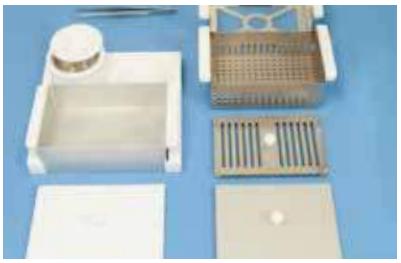
- Software upgrading and download of event logs through the USB port

[1] *Eiseman E, Haga S. A Handbook of Human Tissue Sources. Santa Monica, CA: RAND Corporation; 2000*

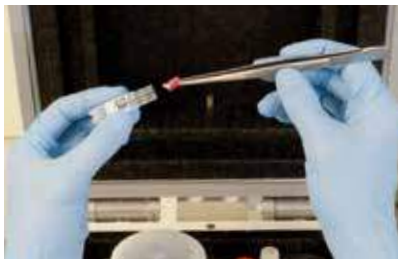
[2] *International Approaches to Advancing Biospecimen Science. Helen M. More et all. Cancer Epidemiol Biomarkers Prev. May 2011; 20(5): 729-732*

## STANDARDIZED AND INTUITIVE OPERATIONS...

### FLASH FREEZING OF RANDOM CRYOVIALS

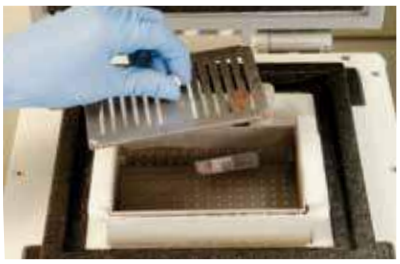


1 The FlashFREEZE kit included in the package.

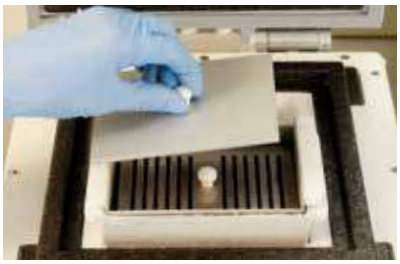


2 Place the biospecimen inside the properly identified cryovial.

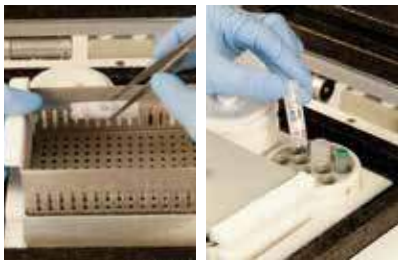
3 Set the cryovial in the random sieve-type holder and immerse it in the fluid tank.



4 Set the metal plate in the tank. Place the metal cover on top of the fluid tank.



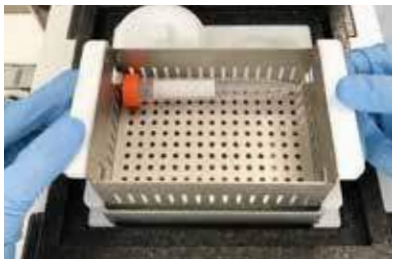
5 Close the cover and start the timer. After the set time (approximately 120 seconds), reverse the procedure.



6 Frozen biospecimens are stored in the 12 position cryovial storage holder. (optional)

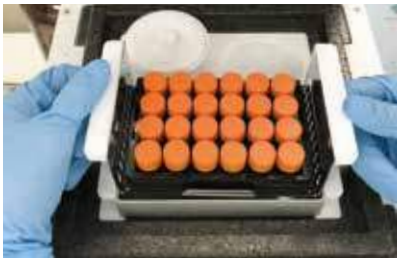
7 Up to 25 cryovials can be simultaneously frozen.

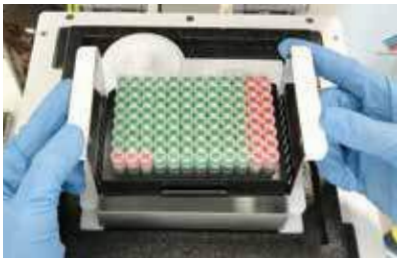
8 A metal plate is placed on top.

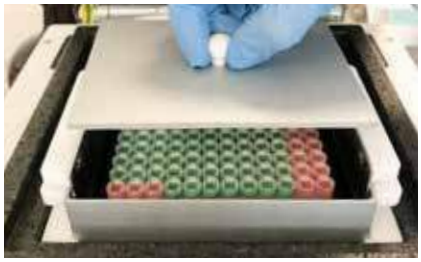


9 Vials of up to 50 ml are easily frozen.

### FLASH FREEZING OF MICROTITER PLATES







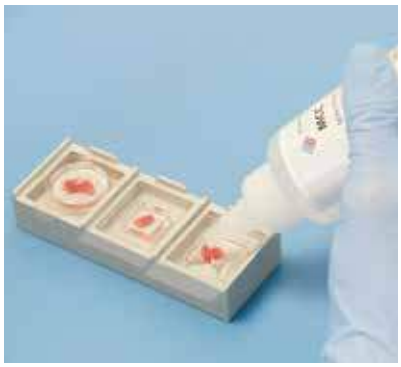
The rack holder accepts 24/48/96-well plates. The procedure is the same for random biospecimens.

## ...MAKE EVERYONE AN EXPERT

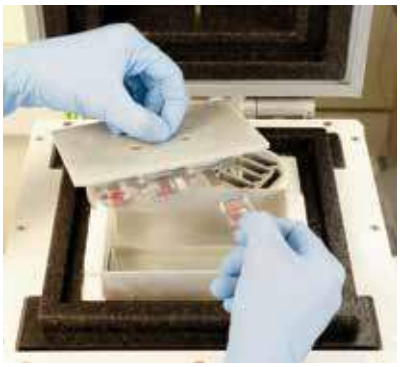
### FREEZING OF CRYOMOLDS™*

1 The cryomold kit (optional) allows to carry out standardized flash freezing.

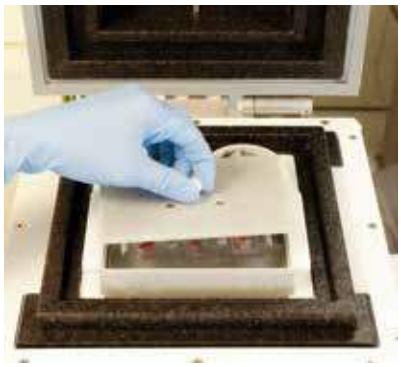
2 Set the cryomolds in the holder and place the specimens in each cryomold.



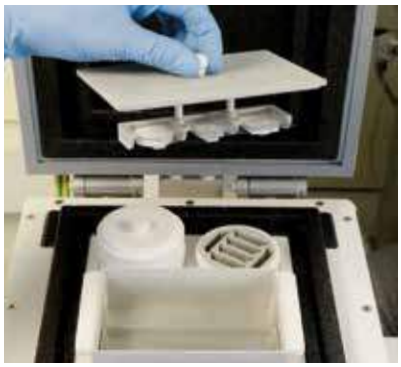
3 Fill the cryomold with the Milestone MCC compound.



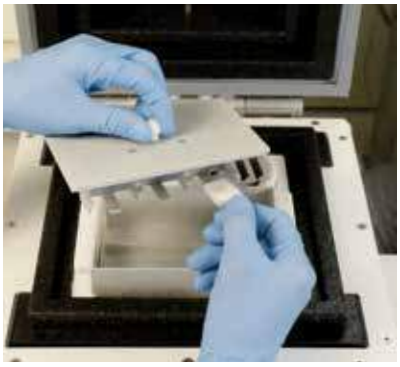
4 Position each cryomold in the slide-in holder.



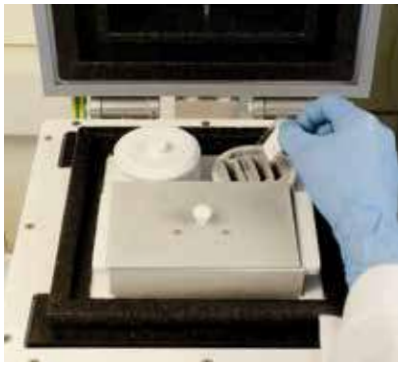
5 Place the slide-in holder on top of the tank. The fluid inside the set level tank freezes only the mold without contaminating the specimen.



6 After the freezing time has expired, take out the slide-in holder.



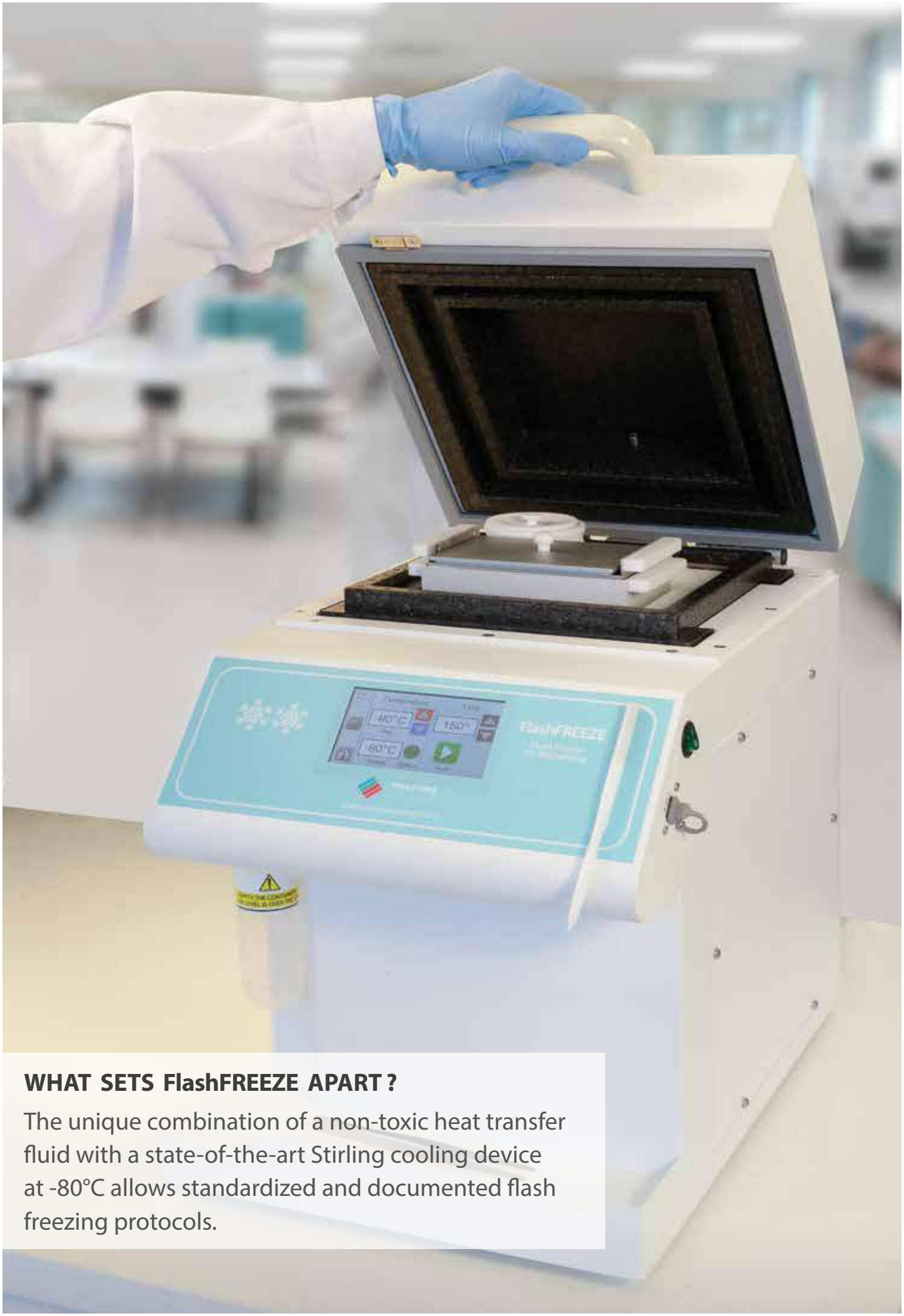
7 Slide the cryomolds from the holder.



8 Store the cryomolds in the 6 position holder.

FlashFREEZE has been designed, tested, and manufactured to operate without using isopentane or similar extremely toxic and dangerous fluids.

**Tissue-Tek® Cryomold® Molds/Adapters, are registered Trademarks of Sakura® Finetek*




**WHAT SETS FlashFREEZE APART ?**

The unique combination of a non-toxic heat transfer fluid with a state-of-the-art Stirling cooling device at -80°C allows standardized and documented flash freezing protocols.

## DEFROST FEATURE

To eliminate the potential formation of ice on the freezing platform, a manual defrost cycle is provided. It consists of a heater embedded in the freezing platform and a vacuum pump to extract water vapors from the chamber. Vapors are condensed and collected in a cold-trap placed in the front of the unit for easy handling.
A HEPA filter is provided on the exhaust side of the pump. The integrated software can set the defrost cycle to take place during off-hours and can set the cooling cycle to restart at a preset time to ensure the availability for the first case of the day.

## THE FlashFREEZE UNIQUE FEATURES

### HIGH FLEXIBILITY

- Standardized freezing at -80°C for all types of tissues.

### FAST

- It takes only 1 hour and 40 minutes to go from room temperature to the operating temperature of -80°C.
- Biospecimens are frozen in only 60-150 seconds.

### SAFE

- A HEPA cap filter is provided.

### ENVIRONMENTALLY FRIENDLY

- The Advanced Stirling Cooler technology uses Helium gas as a refrigerant in a sealed stainless steel chamber.
- There is no standard compressor, therefore, no CFC (Chlorofluorocarbon).

### FULL DOCUMENTATION

- The USB port enables to update the software and download event logs.

### SPACE SAVING

- Its small footprint is suitable for space restricted lab environments.

## TECHNICAL SPECIFICATIONS

- Stirling Cooler freezing module
- Anodized aluminum freezing platform
- 4.3" touchscreen terminal. 1 USB port
- Dimensions: h 45cm/17,7" (with cover open 73cm/28,7") - w 30cm/11,8" - d 54cm/21,3"
- Weight: 22Kg - 48.5lbs
- Power supply: 230V~ 50/60Hz or 115V~ 60Hz (250W)


### Headquarters

MILESTONE Srl
Via Fatebenefratelli, 1/5
24010 Sorisole (BG) - Italy
Tel: +39 035 4128264
Fax: +39 035 575498
email: marketing@milestonemedsrl.com

### US Office

MILESTONE MEDICAL TECHNOLOGIES, INC.
6475 Technology Avenue
Suite F, Kalamazoo, MI 49009 - USA
Tel: 269-488-4950 - Toll-free: 866-995-5300
Fax: 269-488-4949
email: info@milestonemed.com

www.milestonemed.com


UNI EN ISO 9001: 2008 / UNI EN ISO 13485:2004 CERTIFIED • CAT359EN-004