Medical Equipment

C.B.M. SRL A Socio Unico
Via Castello 10/A
26038 Torre dé Picenardi (Cremona) - Italy
T: +39 0375 394 095 – F: +39 0375 394098
info@cbm-srl.com – www.cbm-srl.com

WARMERS 2430/WA - 2431/WA

4 DIFFERENT POSSIBLE USES

1. **MEDICAL FLUID HEATER**
2. **PHYSIOLOGICAL SOLUTION HEATER FOR SURGICAL IRRIGATION**
3. **SURGICAL DRAPES / BLANKETS / WIPES / GEL POSITIONERS HEATER**
4. **UNIVERSAL DRYING CHAMBER**

ATTENTION:

The Warmer is not intended for heating blood products, human tissue and nutritional products.
If the heater temperature is set above 40°C ±2°C, it is necessary to check that the material is not too hot when it comes into contact with the patient.
If the heater temperature is set above 40°C ±2°C, the operator must be extremely careful when removing material from the heating chamber.

Technical features:

- Compact and lightweight benchtop model
- External structure completely made of AISI304 stainless steel
- Heating chamber completely made in AISI304 stainless steel with thermal insulation
- The stainless steel allows easy and rapid sanitization of the equipment with commonly used neutral detergents and disinfectants
- Automatic fan for forced circulation of hot air inside the chamber in order to obtain a homogeneous and uniform temperature of use
- Front control panel for setting, displaying and controlling the usage parameters
- Door with handle and key lock (2 keys supplied), made of tempered glass in order to allow a complete internal view
- No. 2 side fireplaces for the evacuation of residual humidity (when used as a drying chamber)
- Removable internal tray and shelf made of AISI304 stainless steel.

(The tray is to be placed on the bottom of the heating chamber to support the material to be treated. The shelf can possibly be used to divide the heating chamber into two compartments)
- Digital visualization on the display of temperature and cycle time
- Electronic temperature control with PID algorithm (proportional, integral, derivative)
- Microprocessor control system for checking the set parameters
- Visual and audible alarms: overtemperature, heat drop, probe failure, blackout, open door and malfunction (resistors, thermoregulator and fan)
- Equipped with a maximum thermostat and a temperature probe with microprocessor control. The maximum thermostat (safety thermostat) is independent of the electronic board and switches off the appliance in the event of a malfunction of the main temperature regulator
- Cable with schuko socket
- Supply voltage: 230 VAC ± 10% single phase
- Frequency: 50/60Hz2430/WA

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Art.	Inner size (mm)	Overal size (mm)	Capacity	Trays + bottom	Max Power	weight
2430/WA	500x360x320h	700x500x470h	58 lit. 20 bottles 500 ml	1 + 1	535 W	24 kg
2431/WA	385x235x218h	560x380x380h	20 litri 8 bottles 500 ml	1 + 1	385 W	13 kg

Temperature:

- Settable range from 30°C to 70°C in steps of ±0.1°C (preset at 37°C) (ambient operating temperature from 15°C to 30°C)
- *Tolerance/Accuracy ± 1°C*
- *Display temperature reading resolution 0.1°C*
- The accuracy of the set temperature is controlled and kept constant thanks to a double safety system and a closed loop regulation system

Settable cycle time:

- *0 a 600 min*
- *Infinite time cycle (preset to infinite time)*

Internal ventilation:

- Forced circulation of hot air with automatic fan

Performance:

The times for reaching the set temperature monitored by microprocessor are rather short since heat dispersion is contained thanks to the thermal insulation of the heating chamber.
(The data below are indicative and related to art. 2431/WA)

	TEMPERATURe °C	TIME min.
The table highlights how long it takes for the heating chamber to reach the temperature indicated by room temperature (ambient 23°C, chamber empty and temperature set at 70°C)	37	4
	40	5
	50	7
	60	11
	65	14
	70	18

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1. MEDICAL FLUID HEATER

The ventilated hot air thermostatic heater efficiently heats and maintains the medical fluids at a temperature (e.g. 37°C ±2°C) in their original container (glass/plastic bottles), for subsequent use, reducing the risks associated with hypothermia of the patient. The temperature regulation from 30°C to 70°C makes it possible to heat the medical fluids according to the different irrigation, infusion and contrast systems and according to the instructions for use of the various manufacturers.

2. PHYSIOLOGICAL SOLUTION HEATER FOR SURGICAL IRRIGATION

The ventilated hot air thermostatic heater efficiently heats physiological solution in its original container (glass/plastic bottles and bags), before using them, preventing the containers from getting wet from the heating equipment. The saline solution is commonly used in various surgical specialties for irrigation/washing during the phases of surgery, in order to eliminate blood and tissue residues. For example in Neurosurgery it is possible to set the temperature at 40°C, in Robotic Surgery at 50°C and in other specialties such as General Surgery, Urology and Gynecology at higher temperatures. The temperature regulation from 30°C to 70°C allows to heat the solution in accordance with the instructions for use of the various manufacturers.

3. SURGICAL DRAPES / BLANKETS / WIPES / GEL POSITIONERS HEATER

The ventilated hot air thermostatic heater effectively heats surgical drapes and small blankets used for passive external heating of the patient in the preoperative and intraoperative phases in order to reduce the heat loss of the patient by increasing the insulation and comfort. It can also be used for heating cloths for labor rooms in gynecology and obstetrics, for heating wipes for patient cleansing (chamber capacity art. 2430/WA: 10 dispensers with internal support art. MWA-10D) and gel positioners.

4. UNIVERSAL DRYING CHAMBER

IThe ventilated hot air thermostatic heater can effectively be used as a drying chamber for surgical instruments. For correct sterilization and for the protection of the packaging system, it is absolutely necessary that the surgical instruments are completely dry. Often the drying of manually washed instruments is performed with the use of compressed air. This operation involves, in addition to a high expenditure of time on the part of the operator, important risks for the health and safety of the operator himself. The use of the universal drying chamber guarantees the protection of the operator and at the same time ensures the repeatability of the drying operation. The forced circulation of air inside the chamber allows the drying of very delicate instruments (e.g. ophthalmic surgery instruments) avoiding damaging their geometry with the force of the jet of compressed air or with the drying cloths. For drying surgical instruments, it is recommended to keep the two side fireplaces open in order to facilitate the escape of any residual steam/moisture. Normally for drying, the heater is used at a temperature of 60/65°C and for an infinite time (the correct drying temperature must be studied according to the indications given in the reprocessing instructions of the surgical instruments to be treated).