TECHNICAL INFORMATION

GENERAL SPECIFICATIONS

- **Dimensions with pads:**
  - 30,0 cm (11.81 in) length.
  - 21,5 cm (8.46 in) depth.
  - 28,0 cm (11.02 in) height.
- **Weight:**
  - Device - 5.15 kg (11.35 lbs).
  - NiMH battery - 1.10 kg (2.43 lbs).
  - Li-Ion battery - 0.60 kg (1.32 lbs).
  - External pads - 0.85 kg (1.87 lbs).
  - Complete set (NiMH battery) - 7.10 kg (15.66 lbs) (except NIBP).
  - Complete set (Li-Ion battery) - 6.60 Kg (15.66 lbs) (except NIBP).
- **Electrical:**
  - AC: 100 to 265 VAC, 50/60 Hz (automatic selection).
  - DC external: 11 to 16 VDC.
- **Removable rechargeable battery:**
  - Type: NiMH, 14.4 VDC 4.5 A/h.
  - Duration: Battery with full charge - 3 hours in monitor mode, without printer, or a minimum of 140 shocks at 360 joules or a minimum of 200 shocks at 200 joules.
  - Battery full-charge time (when fully unloaded): 8 hours.
  - OPTIONAL BATTERY**:
  - Type: Li-Ion, 14.8 VDC 4.4 A/h.
  - Duration: Battery with full charge - 3 hours in monitor mode, without printer, or a minimum of 140 shocks at 360 Joules or a minimum of 200 shocks at 200 joules.
  - Battery full-charge time (when fully unloaded): 8 hours.
  - **Consult availability.
- **Memory:**
  - Type: Nand Flash.
  - Capacity: 2 Mbytes.
  - Patients stored >150 patients.
  - Storage: 15 seconds of ECG when in shock, physiological alarm and panel events.
  - ECG: 2 continuous hours of ECG curve recording, when in AED mode.
- **RTC – Real Time Check (available when equipped with Li-Ion optional battery):**
  - Defibrillation self-test, battery level, connected pads, power source connection check. Check is performed 3 times which are set in advance. This information is wirelessly transmitted to a PC with RTC System software installed and within range of the network.

ENVIRONMENTAL SPECIFICATIONS

- **Temperature:**
  - Operational: 0 to 50°C.
  - Storage: -20 to 50°C.
- **Humidity:**
  - Operational: 10 to 95% RH, without condensation.
  - Storage: 10 to 95% RH, without condensation.
- **IP Rating: IPX1.**

DEFIBRILLATOR

- **Waveform:**
  - Biphasic truncated exponential. Waveform parameters adjusted in terms of patient's impedance.
- **Shock application:**
  - By means of multifunctional pads (adhesive) or defibrillation pads.
- **Adult/external defibrillation:**
  - Scales: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 50, 80, 100, 150, 200, 250, 300 and 360 Joules. Maximum power limited to 50 J with internal or children's pads.
  - Controls: On/Off button, charge, shock, synchronism.
  - Power selection: Therapy button on the front panel.
  - Charge control: Button on the front panel, button on the external pads.
  - Shock control: Button on the front panel, buttons on the external pads.
  - Synchronized control: SYNC button on the front panel.
- **Charge Auto-Sequencing:**
  - When enabled, it charges power previously set by the user for the first, second and third shocks, with no need to manually adjust the selector.
- **Charge indicators:**
  - Sound signal of equipment being charged.
  - Sound signal of completed charge.
  - LED on external pads and charge level indicated on the display.
- **Maximum charging time:**
  - (200J): mains supply and battery < 4s.
  - (360J): mains supply and battery < 6s.
- **Electrode size:**
  - Adult: 10.3 cm (4.05 in) x 8.5 cm (3.34 in). Contact area: 81.9 cm^2 (12.69 in^2)
  - Children: 4.5 cm (1.77 in) x 4.0 cm (1.57 in). Contact area: 18 cm^2 (2.79 in^2)
- **Cardioversion:**
  - < 60 ms.
- **Pads (options):**
  - Adult and child external (included).
  - Adult and child internal (optional).
  - Multifunctional for pacemaker, monitoring and defibrillation (optional).
  - Multifunctional extension (optional).

AED MODULE

- **Functional characteristics:**
  - Voice instructions, visual indications, CPR instructions, USB 2.0. Multilanguage, Sudden Death Prevention Technology (SDP).
- **USB:**
  - USB 2.0 for transfer of the electrocardiogram stored in AED mode to a compatible PC.
- **SoftDEA:**
  - Software for viewing the data transferred to the PC.

EXTERNAL PACEMAKER (OPTIONAL)

- **Modes:**
  - Demand or fixed
- **Amplitude:**
  - From 5 mA to 200 mA (resolution of 5 mA), accuracy 10%.
- **Pulse width:**
  - 20 ms (± 1 ms).
- **Frequency:**
  - From 30 ppm to 180 ppm (increments of 5 ppm), accuracy ± 2%.
- **Refractory period:**
  - 340 ms (from 30 to 80 ppm).
  - 240 ms (from 90 to 180 ppm).

NIBP (OPTIONAL)

- **Operating principle:**
  - Oscillometric.
- **Automatic measurement mode:**
  - 1, 2, 3, 4, 5, 10, 15, 30, 60 and 90 minutes.
- **Manual:**
  - One measurement.
- **Measurement interval:**
- **Adult:**
  - Systolic: 40 - 260 mmHg.
  - MAP: 26 - 220 mmHg.
  - Diastolic: 20 - 200 mmHg.
- **Pediatric:**
  - Systolic: 40 - 160 mmHg.
  - MAP: 26 - 133 mmHg.
  - Diastolic: 20 - 120 mmHg.
- **Neonate:**
  - Systolic: 40 - 130 mmHg.
  - MAP: 26 - 110 mmHg.
  - Diastolic: 20 - 100 mmHg.
- **Overpressure limit by software:**
  - Adult: 290 mmHg max.
  - Neonate: 145 mmHg max.
- **Overpressure protection by hardware:**
  - Adult: 300 ± mmHg.
  - Neonate: 150 ± mmHg.
- **Resolution:**
  - 1 mmHg.

DISPLAY

- **Battery level indicator:**
  - Yes.
- **Size:**
  - 128.2 mm x 170.9 mm.
- **Diagonal:**
  - 8.4".
- **Type:**
  - Color LCD TFT.
- **Resolution:**
  - 640 x 480 pixels (VGA).
- **Scan speed:**
  - 12.5; 25 and 50 mm/s.

ECG (supports up to 12 simultaneous derivations when equipped with optional cable)

- **Inputs:**
  - 3 or 5 lead ECG cable.
  - 10 lead ECG cable (optional).
  - External pads.
  - Multifunctional pads.
- **Range:**
  - 15 to 350 BPM.
- **Precision:**
  - ± 1 BPM from 15 to 350 BPM.
- **Rejection in common mode:**
  - Greater than 90 dB, measured according to AAMI standards for heart monitors (EC 13).
- **Sensitivity:**
  - 5, 10, 15, 20, 30 and 40 mm/mV.
- **AC line filter:**
  - 60 Hz or 50 Hz.
- **ECG response frequency:**
  - Diagnostic mode - (0.05 -100 Hz).
  - Monitor Mode - (1-40 Hz).
- **Patient insulation:**
  - Defibrillation proof.
  - ECG: CF Type.
  - SpO_2: CF Type.
- **Loose Electrode:**
  - Identified and shown with low level alarm.
- **Time to restore ECG baseline after defibrillation:**
  - ≤ 3 seconds.

SpO_2 (OPTIONAL)

- **SpO_2 range:**
  - 0 to 100 %.
- **Pulse range:**
  - 30 to 250 BPM.
- **SpO_2 precision:**
  - ± 2 % from 70 to 100%.
  - ± 3 % from 50 to 69%.
- **Pulse precision:**
  - ± 2 BPM.
- **Scan speed:**
  - 12.5; 25 e 50 mm/s.

CAPNOGRAPHY (OPTIONAL)

- **Measurement range CO_2:**
  - 0 – 99 mmHg.
- **Precision:**
  - ± 2 mmHg (0 - 38 mmHg).
  - ± 5% + 0.08% for each 1mmHg above 38 mmHg (39 – 99mmHg).
- **Consumption:**
  - 1.5 W.
- **Compensation:**
  - BTPS, N_2O, O_2.

PRINTER (OPTIONAL)

- Prints up to three simultaneous derivations.
- **Type:**
  - Thermal.
- **Weight:**
  - 0.4 kg.
- **Speed:**
  - 12.5; 25 or 50 mm/s with precision of ± 5%.
- **Paper size:**
  - 48 mm (width) x 30 m (maximum length).

STANDARDS:

- EN 60601-1:1990 (A1:1993, A2:1995, A13:1996)
- NBR IEC 60601-1:1994 + amendment 1997
- EN 60601-1-2:2007
- NBR IEC 60601-1-2:2006
- EN 60601-2-4:2003
- NBR IEC 60601-2-4:2005
- EN 60601-2-25:1995 (A1:1999)
- EN 60601-2-27:2006
- NBR IEC 60601-2-27:1997
- EN 60601-2-49:2001
- NBR IEC 60601-2-49:2003

Folder CardioMax Eng R2.5 - 2016

Instramed Ltda.
Beco José Paris, 339
Pavilhão 19
CEP 91140-310
Porto Alegre RS Brazil
Phone: +55 (51) 3073 8200

WWW.INSTRAMED.COM.BR

European Representative:

Obelis S.A.
Bd. Général Wahis 53, 1030
Brussels Belgium
Phone: + 32.2.732.59.54
Fax: + 32.2.732.60.03
E-mail: mail@obelis.net

ANVISA 10242950009

INSTRAMED

CARDIO MAX

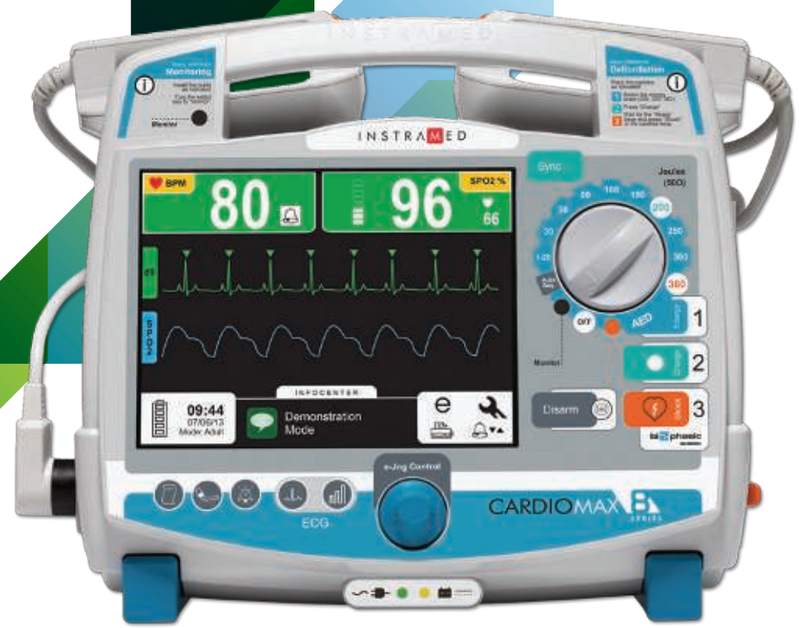
INSTRAMED

CARDIOMAX 8 SERIES

Cardioversor
Monitor
Biphasic Defibrillator

NEW!

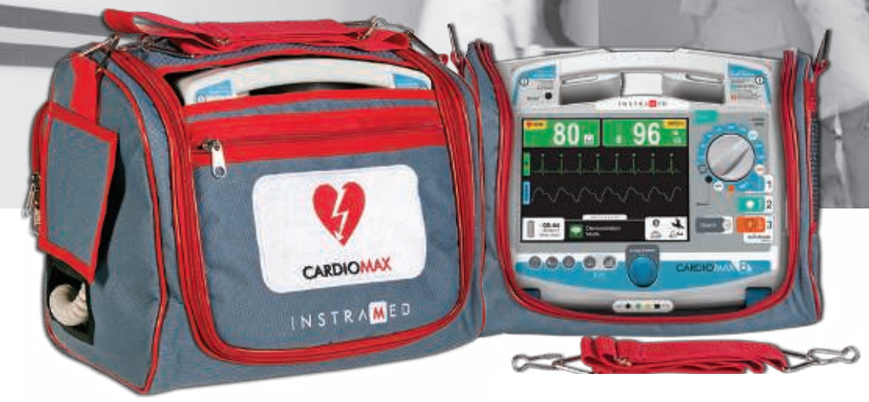
Same compact size, now with an 8.4" screen



- Real Time Check Technology (RTC)**
- Automated External Defibrillator Mode (AED)
- Sudden Death Prevention Mode (SDP)
- Electrocardiogram (ECG) up to 12 derivations
- Oximetry (SpO_2)
- Non invasive pacemaker
- Non-invasive pressure (NIBP)
- Capnography ($EtCO_2$)
- Printer
- Removable rechargeable battery

RTC Real Time Check

Reliability is the most important aspect for equipment designed to save lives. With the new RTC (Real Time Check) technology, CardioMax performs constant self-diagnosis and reports, in advance, if there is any maintenance action to be done, guaranteeing that it will **always be available for immediate use.****



CARDIOMAX 8 - WHAT ALL EMERGENCY EQUIPMENT SHOULD BE: COMPLETE, ADVANCED, RELIABLE AND EASY TO USE.

PRACTICAL:

Light.

Strong, comfortable strap.

Ready to use in less than 6 seconds.

Designed without sharp edges, ideal for emergency transport

Biphase power delivery of up to 360 Joules.

The battery, which is easy to replace, allows more than 100 shocks.

EASY TO USE:

All operations are concentrated in only two buttons.

Easy operation - 1, 2, 3 standard.

Quick access to main functions.

SMART:

Interface that automatically adjusts to the number of parameters, presenting the important information in a clearer and more organized way.

New Auto Sequencing Charge function - When enabled, applies charges pre-configured by the user for the first, second and third shocks without the need to change the selector manually.

Smart monitoring alarms.

ADVANCED:

Equipped with the AED (Automated External Defibrillator) Mode, CardioMax becomes even more complete and appropriate, being ideal for accompaniment of high risk patients because it has Sudden Death Prevention (SDP) technology. This characteristic allows CardioMax to monitor the patient continually and identify the beginning of a Ventricular Fibrillation or Rapid Ventricular Tachycardia episode.

In this situation, the equipment activates a visual and sound alarm, allowing the patient to be treated with shock in a much shorter time, significantly increasing the chances of reversing cardiorespiratory arrest.

SIP Sudden Death Prevention

biphasic SHOCK

Auto CAS Sequencing

*Some items are optional

**Pre-release product.
Please verify availability.