

TECHNICAL INFORMATION

GENERAL SPECIFICATIONS

- **Dimensions with pads:**
 - 30 cm (11.81 in) length.
 - 21.5 cm (8.46 in) depth.
 - 28.0 cm (11.02 in) height.
- **Weight:**
 - Device – 4.90 Kg (10.80 lbs).
 - Battery – 1.15 Kg (2.53 lbs).
 - External pads – 0.85 Kg (1.87 lbs).
 - Complete equipment (except for NIBP) – 6.90 Kg (15,21 lbs).

- **Electrical:**
 - AC: 100 to 265 VAC, 50/60 Hz (automatic selection).
 - DC external: 10 to 16 VDC.

- **Removable battery:**
 - Type: NiMH, 14.4 VDC 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.

- **Memory:**
 - Type: Nand Flash.
 - Capacity: 2 Mbytes.
 - Patients stored > 150 patients.
 - Storage: 15 seconds of ECG when in shock, physiological alarm and panel events.

ENVIRONMENTAL SPECIFICATIONS

- **Temperature:**
 - Operational: 0 to 50 °C.
 - Storage: 0 to 70 °C.
- **Humidity:**
 - Operational: 10 to 95% RH, without condensation.
 - Storage: 10 to 100% RH, without condensation.

DEFIBRILLATOR

- **Waveform:** Biphasic truncated exponential. Waveform parameters adjusted in terms of patient's impedance.
- **Adult / external defibrillation:**
 - Scales: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 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 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:** Network and battery < 6s.
- **Electrode size:**
 - Adult: 10,3 cm x 8,5 cm. Contact area: 81,9 cm²

- Children: 4,5 cm x 4,0 cm. Contact area: 18 cm²

- **Cardioversion:** < 60ms.
- **Pads (options):**
 - Adult and child external (included).
 - Adult and child internal: (optional).
 - Multifunctional for pacemaker, monitoring and defibrillation (optional).
 - Multifunctional extension (optional).

AED MODULE (OPTIONAL)

- **Functional characteristics:** voice command, visual indications, CPR instructions, USB 2.0 for synchronism with PC. 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 (+/- 1ms).
- **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/pediatric:**
 - Systolic: 30 - 255 mmHg.
 - Mean: 20 - 235 mmHg.
 - Diastolic: 15 - 110 mmHg.
 - Pulse: 40 - 240 BPM.

- **Neonatal:**
 - Systolic: 30 - 135 mmHg.
 - Mean: 20 - 125 mmHg.
 - Diastolic: 15 - 110 mmHg.
 - Pulse: 40 - 240 BPM.

- **Overpressure limit by software:**
 - Adult: 290 ± mmHg.
 - Neonatal: 145 mmHg max.

- **Overpressure protection by hardware:**
 - Adult: 300 ± mmHg.
 - Neonatal: 150 ± mmHg.

- **Resolution:** 1 mmHg.

DISPLAY

- **Battery level indicator:** Yes.
- **Size:** 99.36 mm x 132.48 mm.
- **Diagonal:** 6,5".
- **Type:** Color LCD TFT.
- **Resolution:** 640 x 480 pixels (VGA).
- **Scan speed:** 12.5; 25 and 50 mm/s.

ECG

- **Inputs:**
 - 3 or 5 lead ECG cable.
 - External pads
 - Multifunctional pads.
- **Range:** 15 to 300 bpm.
- **Precision:** +/- 1 bpm from 15 to 300 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.
 - SpO₂: CF Type.

- **Loose Electrode:** Identified and shown with low level alarm.
- **Defibrillator discharge:** < 5 seconds.

SpO₂ (OPTIONAL)

- **SpO₂ Range:** 0 to 100 %.
- **Pulse Range:** 30 to 250 bpm.
- **SpO₂ Precision:**
 - +/- 2 % from 70 to 100%.
 - +/- 2 % from 70 to 100%.
- **Pulse Precision:** +/- 2 bpm.
- **Scan speed:** 12.5; 25 and 50 mm/s.

PRINTER (OPTIONAL)

- **Type:** Thermal.
- **Weight:** 0.4 Kg.
- **Speed:** 12.5; 25 or 50 mm/s with precision of ±5%.
- **Paper size:** 50 mm (width) x 30 m (maximum length).

STANDARDS:

- EN 60601-1:1990 (A1:1993, A2:1995, A13:1996)
- NBR IEC 60601-1:1994 + emenda 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

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Cardioversor Monitor/Biphasic Defibrillator



CARDIO
MAX

CardioMax: the best set of advantages. Check it out.

- **Electrocardiogram (ECG)**
- **Oximetry (SpO₂)**
- **Non invasive pacemaker**
- **Non-invasive pressure (NIBP)**
- **Biphasic Defibrillator**
- **Automatic Defibrillator Mode (AED)**
- **Sudden Death Prevention Mode (SDP)**
- **Printer**
- **Removable battery**

VERSATILE:

Light. Strong, comfortable strap. Designed without sharp edges, ideal for emergency transport. The battery, which is easy to replace, allows more than 100 shocks.

EASY TO USE:

All operations are concentrated in only two buttons. Ready to use in less than 6 seconds. Biphasic power delivery of up to 360 Joules.

PRACTICAL:

Easy operation - 1, 2, 3 standard. Clear interface and quick access to main functions.

SMART:

Innovative interface that automatically adjusts to the number of parameters, presenting the important information in a clearer and more organized way. Smart monitoring alarms.

ADVANCED:

Equipped with the AED (Automatic 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 indentify 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.

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Some items are optional.