

GENERAL SPECIFICATIONS

- Alarms:**
 - Priorities: 2 types (medium and high).
 - Notification: audible and visual.
- Volume:**
 - 10 adjust levels (multiple tones).
- Alarm silence:**
 - 60 seconds.
- Alarms auto set (modes):**
 - Neonate, pediatric and adult.
- NIBP automatic measurement**
- Weight:**
 - Device: 5.15 kg (11.35 lbs).
 - Li-Ion battery: 0.60 kg (1.32 lbs).
 - External pads: 0.85 kg (1.87 lbs).
 - Complete set (Li-Ion battery): 6.60 Kg (15.66 lbs) (except NIBP, IP, EtCO2, printer and accessories).
- Dimension with pads:**
 - 31 cm (W).
 - 24 cm (H).
 - 30 cm (D).
- Memory:**
 - Type: SD card.
 - Capacity: 4 Gb.
 - Stored patients: 100 patients.
 - Storage: 24 seconds of ECG when the event is generated. ECG: 2 continuous hours recording of ECG curve when in AED mode.
- Protection index:**
 - IP55.
- Bluetooth****
- Audio recording****
- Power:**
 - AC: 100 to 240 VAC, 50/60 Hz.
- DC external:**
 - 11 to 16 VDC.
- Maximum consumption:**
 - AC: 400 W.
 - Battery 15 A.
- Removable rechargeable battery:**
 - Type: Li-Ion, 14.8 VDC 4.4 A/h.
- Life (new fully charged battery):**
 - 7 hours in monitor mode, without the printer or a minimum of 280 shocks at 360 J or a minimum of 400 shocks at 200 J.
- Time to fully charge the battery (when fully depleted):**
 - 4 hours.
- RTC - Real Time Check:**
 - 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.

DISPLAY

- Battery level indication:**
 - Yes.
- Screen type:**
 - 1024 x 768 pixel (XGA) TFT color (active matrix) LCD with touch screen.
- Backlight:**
 - LED.
- Diagonal:**
 - 10.4".
- Leads:**
 - Allows up to 12 simultaneous leads.

- Screen visualization:**
 - Intelligent interface that automatically adjusts to the number of parameters, always providing optimal visualization.
- Scan speed:**
 - 6.25, 12.5, 25 and 50 mm/s (varies according to the parameter presented).
- Touch screen:**
 - Allows the user to interface with the product by touching directly on the device's screen.

DEFIBRILLATOR

- Waveform:**
 - Biphasic truncated exponential. Wave shaped parameters adjusted according to the patient's impedance.
- Shock application:**
 - By means of multifunction pads or external adult/child pads.
- Scales for adult/external defibrillation:**
 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 50, 80, 100, 150, 200, 250, 300 and 360 J.
 - Energy option delivered limited to 200 J.
 - Maximum energy limited to 50 J with child pads.
- 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.
- SDP (Sudden Death Prevention) technology.**
- Energy selection:**
 - Selector switch in front panel.**Optional: energy selection in the external pads (consult availability).
- Charge command:**
 - Button in front panel, buttons in external pads.
- Shock command:**
 - Button in front panel, buttons in external pads.
- Synchronized command:**
 - Sync key in front panel.
- Charge indicators:**
 - Audio indication of equipment being charged.
 - Audio indication of charge completed.
 - LED on external pads and charge level indicated on display.
- External pads size:**
 - Adult = 10.3 cm x 8.5 cm (contact area = 81.9 cm²).
 - Children = 4.5 cm x 4 cm (contact area = 18 cm²).
- Pads cable length:**
 - 2 meters.
- Cardioversion:**
 - < 60 ms.
- Maximum output electric current:**
 - 70 A (25 Ω).

AUTOMATIC EXTERNAL DEFIBRILLATOR - AED (optional)

- Functional characteristics:**
 - Voice commands, visual indications, CPR instructions, USB 2.0 for PC connection, multi-languages, SDP (Sudden Death Prevention) technology.

- Defibrillation scales:**
 - Adult: 150 and 200 J.
 - Child: 50 J.
- USB:**
 - USB 2.0 for transferring electrocardiogram stored in AED mode to a compatible PC.
- SoftDEA:**
 - Software for viewing data transferred to PC.
- Waveform:**
 - Truncated exponential biphasic pulse. Waveform parameters adjusted according to the patient's impedance.
- Shock delivery:**
 - By means of multifunctional pads (adhesive) or defibrillation pads.
- Adult/children's selection:**
 - Automatic due to the size of the pads.
- Charge command:**
 - Automatic after identifying an arrhythmia.
- Shock command:**
 - Frontal panel button, "shock".
- Maximum charge time (with 100% of the minimum specified voltage):**
 - 200 J: < 6 s.
 - 150 J: < 4 s.
 - 50 J: < 2 s.
- Maximum time from rhythm analysis beginning to discharge readiness:**
 - 20 seconds.
- Maximum time from beginning of defibrillator operation to discharge readiness in maximum energy:**
 - 30 seconds.
- Size of adhesive pads:**
 - Adult = area: 82 cm².
 - Child = area: 30 cm².

CPR Maestro (optional)

- Accessory for cardiac massage feedback, it presents visual and audible messages guiding the rescuer in relation to the speed and depth of the massage, providing a cardiac massage with greater efficiency.
- CPR Maestro precision:**
 - Depth: ± 2%.
 - Frequency: ± 16%.
- Minimum number of uses:**
 - 100 uses.

EXTERNAL PACEMAKER (optional)

- Waveform:**
 - Single-phase rectangular pulse.
- Modes:**
 - Demand or fixed.
- Amplitude:**
 - Between 5 mA to 200 mA (resolution of 5 mA), precision 10%.
- Pulse width:**
 - 20 ms (± 1 ms).
- Frequency:**
 - Between 30 ppm to 180 ppm (increments of 5 ppm), precision ± 2%.
- Refractory period:**
 - 340 ms (between 30 to 80 ppm).
 - 240 ms (between 90 to 180 ppm).

- Maximum output voltage:**
 - 350 V.
- ECG**
 - Supports up to 12 simultaneous derivations when equipped with the ECG optional of 12 derivations.
- Input:**
 - ECG patient cable and the corresponding derivations:
 - 03 leads (optional): DI, DII and DIII.
 - 05 leads: DI, DII, DIII, aVL, aVR, aVF and C.
 - 10 leads (optional): DI, DII, DIII, aVL, aVR, aVF, C1, C2, C3, C4, C5, C6.
 - External defibrillation pads.
 - Multifunctional adhesive pads.
- Sensitivity:**
 - 5, 10, 15, 20, 30 and 40 mm/mV.
- Filter:**
 - 35 Hz or 60 Hz.
- Range:**
 - 15 to 350 BPM.
- Precision:**
 - ± 1 BPM of 15 to 350 BPM.
- Indication of loose electrode or pads disconnection.**
- Indication of ECG signal low amplitude or saturation.**
- Rejection of pacemaker stimuli with widths between 0.1 and 2 ms and amplitude between ± 2 and 700 mV.**
- ECG response frequency:**
 - Diagnostic mode: 0.05 - 100 Hz.
 - Monitor mode: 1 - 40 Hz.
- Physiological alarm:**
 - Alarm not locked.
 - Minimum level: 30-100.
 - Maximum level: 100-250.
 - Visual indication.
 - Sound indication.
- Technical alarm:**
 - Alarm not locked.
 - Visual indication.
 - Sound indication.
- Time to re-establish the ECG baseline after defibrillation:**
 - ≤ 3 seconds.
- Tachycardia alarm time:**
 - 206 BPM (0.5 mV): 5 seconds.
 - 206 BPM (1 mV): 5 seconds.
 - 206 BPM (2 mV): 5 seconds.
 - 195 BPM (2 mV): 5 seconds.
 - 195 BPM (1 mV): 5 seconds.
 - 195 BPM (4 mV): 5 seconds.
- Heart rate response time:**
 - 80 to 120 BPM: maximum of 7 seconds.
 - 80 to 40 BPM: maximum of 9 seconds.
- ST segment analysis:**
 - Performs the ST elevation measurement.
- Input dynamic range and offset differential voltage:**
 - The equipment complies with 50.102.2 standard IEC 60601-2-27.

RESPIRATION

- Technique:**
 - Transthoracic impedance.
- Range:**
 - 3 to 150 breaths per minute.
- Precision:**
 - ± 3 breaths per minute.
- Sensitivity:**
 - 1, 2, 3, 4, 5 and 6.

- Electrodes:**
 - RA-LA.
- Scan speed:**
 - 6.25, 12.5 and 25 mm/s.
- OXIMETRY - SpO₂ BCI (optional)**
- SpO₂ range:**
 - 0 to 100%.
- Pulse range:**
 - 30 to 250 BPM.
- SpO₂'s precision:**
 - ± 2% (70 to 100%).
 - ± 3% (50 to 69%).
- Pulse precision:**
 - ± 2 BPM.
- NON-INVASIVE ARTERIAL PRESSURE - NIBP (optional)**
- Technique:**
 - Oscillometric.
- Automatic mode:**
 - 1, 2, 3, 4, 5, 10, 15, 30, 60 and 90 minutes.
- Manual mode:**
 - One measurement.
- Measurement ranges**
- Adult range:**
 - Systolic: 40 to 260 mmHg.
 - Mean: 26 to 220 mmHg.
 - Diastolic: 20 to 200 mmHg.
- Pediatric range:**
 - Systolic: 40 a 160 mmHg.
 - Mean: 26 a 133 mmHg.
 - Diastolic: 20 a 120 mmHg.
- Neonatal range:**
 - Systolic: 40 to 130 mmHg.
 - Mean: 26 to 110 mmHg.
 - Diastolic: 20 a 100 mmHg.
- Resolution:**
 - 1 mmHg.
- INVASIVE PRESSURE - IBP (optional)**
- Filter:**
 - 50 and 60 Hz.
- Measurement range:**
 - 99 mmHg to 310 mmHg.
- Clearing interval:**
 - ± 70 mmHg.
- Precision:**
 - ± 1%, ± 1 digit, whatever is bigger.
- Transducer:**
 - 5 µV/V/mmHg, disposable or reusable.

CAPNOGRAPHY - EtCO₂ (optional)

- CO₂ measurement range:**
 - 0 - 99 mmHg.
- Precision:**
 - ± 2 mmHg (0 - 38 mmHg).
 - ± 5% + 0.08%. For each 1 mmHg above 38 mmHg (39 - 99 mmHg).
- Calibration:**
 - 02 points.
- Start:**
 - 10 seconds to start the CO₂ curve.
 - Less than a minute for full functioning.
- Compensation:**
 - BTPS, N2O, O2.

TEMPERATURE

- Range:**
 - 0 to 50°C (32 to 122°F).
- Precision:**

- ± 0,1°C (0,18°F).
- Compatible with the YSI 400 series for temperature sensors.**
- PRINTER (optional)**
- Type:**
 - Thermal.
- Weight:**
 - 0.2 Kg.
- Speed:**
 - 12.5, 25 or 50 mm/s with precision of ± 5%.
- Paper size:**
 - White thermo sensitive paper 58 mm x 15 m x 40 mm of external diameter.

INCLUDED ITEMS

- Default:**
 - 01 mains supply power cable (3 pins)*.
 - 02 removable battery.
 - 01 CD of Instramed's manuals and softwares.
 - 01 pads set for adult and child external defibrillation paddles.
 - 01 quick guide.
- When pacemaker or AED is present:**
 - 01 Dualmax pacemaker cable.
 - 01 Pair of adult multifunctional adhesive pads.
- When 7 derivations ECG is present:**
 - 01 5-lead shielded ECG cable.
- When 12 derivations ECG is present:**
 - 01 10-lead shielded ECG cable.
- When Oximetry (SpO₂) of BCI is present:**
 - 01 BCI oximetry sensor.
 - 01 Oximetry sensor extensor.
- When Non-Invasive Blood Pressure (NIBP) is present:**
 - 01 adult armband (cuff).
 - 01 armband (cuff) extensor.
- When Invasive Blood Pressure is present:**
 - 01 Utah Medical invasive blood pressure accessories kit:
 - 01 organizer.
 - 01 clamp.
 - 01 electrical cable.
 - 01 sampling line.
 - 01 transducer.
- When Capnography (EtCO₂) is present:**
 - 01 Orionid capnography accessories kit:
 - 01 adult tracheal sampling line.
 - 01 child tracheal sampling line.
 - 01 adult nasal sampling line.

OPTIONAL ITEMS

Consult one of our representatives.

STANDARDS:

- NBR IEC 60601-1
- NBR IEC 60601-1-2
- NBR IEC 60601-1-4
- NBR IEC 60601-1-6
- NBR IEC 60601-1-9
- NBR IEC 60601-2-4
- NBR IEC 60601-2-27
- NBR IEC 60601-2-30
- NBR IEC 60601-2-49 or equivalent IEC's.



- DEFIBRILLATOR •
- AED •
- PACEMAKER •
- ECG •
- RESPIRATION •
- OXIMETRY •
- NIBP •
- IBP •
- CAPNOGRAPHY •
- TEMPERATURE •
- PRINTER •
- CPR MAESTRO •

DUALMAX

Cardioverter
Biphasic
Defibrillator
Monitor



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CE 2460 Applicable to specific settings.
ANVISA 10242950015
Folder DualMax R5.1 Eng 2019

** Some items are optional. Please, check availability.

RTC
Real Time Check

Auto **CAS** Sequencing

SIP Sudden Death Prevention

biphasic SHOCK

AVAILABLE STANDARDS

*** Some items are optional. Please, check availability.*

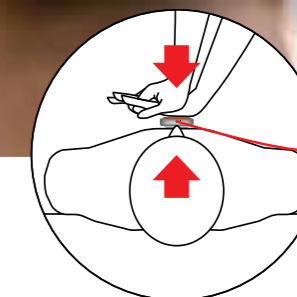
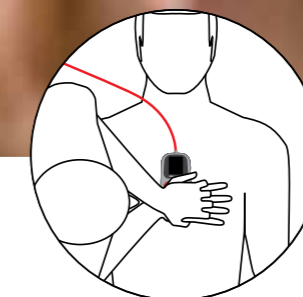
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|---------------------------------------|---------------------------------------|---|---|--|
| • Biphasic Defibrillator (DEF). | cardiac frequency monitoring. | value monitoring. | • Pressure monitoring (Non-Invasive method - NIBP). | • Charge Auto-Sequencing mode (CAS). |
| • Automatic defibrillator mode (AED). | • Respiratory rate monitoring (RESP). | • Temperature (TEMP) monitoring. | • Invasive pressure monitoring (IP). | • Real Time Check (RTC). |
| • Non-Invasive Pacemaker (NIP). | • Sudden Death Prevention Mode (SDP). | • Functional artery oxygen saturation monitoring (SpO ₂). | • Exhaled carbon dioxide monitoring (EtCO ₂). | • Printer. |
| • ECG and | • ST segment | | | • O ₂ removable and rechargeable batteries. |

THE IDEAL PARTNER FOR YOUR DUALMAX

Positioned on the patient's chest, the CPR Maestro provides real-time feedback on the rescuer's performance by guiding him through voice, LCD display and indications on the DualMax screen about the procedure's optimal frequency, strength and interval.

The result is a much more effective and consistent performance of CPR, resulting not only in increased chances of patient survival, but reducing the occurrence of severe sequelae due to lack of oxygenation.

CPR Maestro



The DualMax offers, in a single equipment, advanced resources and the most complete range of monitoring parameters.



DUALMAX

PRACTICAL

- Compact and lightweight.
- Magnetized blades with quick coupler.
- IP55 protection.
- Ready to use in less than 6 seconds.
- Biphasic energy delivered up to 360 J.
- CPR Maestro - assists in performing cardiopulmonary resuscitation by measuring the frequency and depth of applied chest compressions (optional).
- Dual battery with charge indicator, easy to replace, allows more than 100 shocks.
- Monitors up to 10 parameters.

EASY TO USE

- Clear and intuitive commands based on pattern 1, 2, 3.
- Quick access to key functions via touch screen.
- An all-new user interface automatically adjusts itself to the number of active parameters. Also, it can be operated directly via the equipment touchscreen display.
- Charge indication LEDs on pads.
- AED Mode - Automated External Defibrillator.
- Transport bag that allows you to use the device without removing it.

INTELLIGENT

- Auto-Charge Sequence Function - charges preset energies for the first, second and third shocks without the need for manual change of the selector.
- Intelligent monitoring alarms.
- Sudden Death Prevention Technology (SDP) - continuous patient monitoring for identification of Ventricular Fibrillation or Rapid Ventricular Tachycardia episodes.
- Marking of personalized events.

RELIABLE

- Reliability - Instramed is a brand present in hundreds of medical organizations on more than 60 countries.
- Dependable products developed for the reality of emergency care.
- A wide network of dealers providing sales and parts, along with the factory-certified technical assistance, provides excellent post-sales service.
- With more than 30 years in the business, Instramed is a manufacturer that maintains stock parts and components even for discontinued products.

LEARN MORE ABOUT THIS PRODUCT AT WWW.INSTRAMED.COM.BR