

Reanibex

Serie 800

Monitor Defibrillator
Monitor Desfibrilador
Monitor Defibrillatore



reddot design award
product design 2013



FEATURES

- Manual and Automated Biphasic Defibrillator up to 360 Joules.
- Lightweight equipment with monitoring and diagnostic capabilities.
- Large colour display (8.4").
- Synchronized Cardioversion.
- 3, 5 and 10- lead patient cable.
- CPR Metronome with feedback.
- AED in Pediatric.
- High performance with ease of use and very intuitive.
- Modular. Easily upgradeable.
- Plug and play system to add new options.
- 12-lead ECG data transmission from the field to the Emergency Service.
- Masimo Rainbow SET technology that monitors SpO2, Carboxyhemoglobin and Methemoglobin (optional).
- Oridion capnography. Microstream technology (optional).
- Non-invasive Blood Pressure from SunTech Medical (optional).
- Invasive Blood Pressure from MEDLAB (two lines) (optional).
- Temperature from MEDLAB (two lines) (optional).
- 12-Lead Interpretive Algorithm (University of Glasgow) (optional).
- Operates from the mains (AC), from a vehicle battery (DC) and with its internal battery. 220VAC, 12VDC and with 1 or 2 batteries.

CARACTERÍSTICAS

- Desfibrilador Bifásico Manual y Automatizado hasta 360 Julios.
- Equipo ligero con capacidad de monitorización y diagnóstico.
- Amplia pantalla color (8,4").
- Cardioversión sincronizada.
- Cable de paciente de 3, 5 y 10 latiguillos.
- Metronomo RCP.
- DEA en modo pediátrico.
- Altas prestaciones con un uso fácil y muy intuitivo.
- Modular. Fácilmente ampliable.
- Sistema Plug and Play para añadir nuevas opciones.
- Transmisión de las 12 derivadas ECG del escenario de actuación a la central de Emergencias.
- Monitorización de SpO2, Carboxihemoglobina y Metahemoglobina con tecnología Masimo Rainbow SET (opcional).
- Capnografía de Oridion. Tecnología Microstream (opcional).
- Presión sanguínea no invasiva de SunTech Medical (opcional).
- Presión invasiva de MEDLAB (dos salidas) (opcional).
- Temperatura de MEDLAB (dos salidas) (opcional).
- Algoritmo de interpretación de 12 derivadas (Universidad de Glasgow) (opcional).
- Funcionamiento desde la red (CA), desde la batería de un vehículo (CC) y con su batería interna. Alimentación a 220VCA, 12VCC y con 1 o 2 baterías.

CARATTERISTICHE

- Defibrillatore bifasico manuale e seni automatico fino a 360 joule.
- Dispositivo leggero con funzionalità diagnostiche e di monitoraggio.
- Ampio display a colori (8,4").
- Cardioversione sincronizzata.
- Cavo paziente a 3, 5 e 10 derivazioni.
- Metronomo con feedback sulla RCP.
- AED pediatrico
- Performance elevate, facile da utilizzare e molto intuitivo.
- Modulare. Facilmente espandibile.
- Sistema plug and play per l'aggiunta di nuove opzioni.
- Trasmissione dell'ECG a 12 derivazioni.
- Tecnologia Masimo Rainbow SET per il monitoraggio di SpO2, carbossiemoglobina e metaemoglobina (opzionale).
- Capnografia Oridion. Tecnologia Microstream (opzionale).
- Tecnologia SunTech Medical per la misurazione non invasiva della pressione arteriosa (opzionale).
- Pressione invasiva (due canali) MEDLAB (opzionale).
- Temperatura (due canali) MEDLAB.
- Interpretazione dell'ecg a 12 derivazioni (Algoritmo dell'Università di Glasgow) (opzionale).
- Funzionamento con alimentazione da corrente di rete (CA), batteria auto (CC) e batteria interna. Alimentazione a 220V/CA - 12V/CC e con 1/2 batterie.



01 Therapy selector.
Selector de terapia.
Selettore terapia.



02 Status Indicator.
Indicador de estado.
Indicatore di stato.



03 Optional Modules. Plug & Play System.
Módulos opcionales. Sistema Plug&Play.
Moduli opzionali. Sistema Plug & Play.



04 Non invasive pacing (Optional).
Marcapasos no invasivo (Opcional).
Pacing non invasivo (Opzionale).



05 External reusable paddles with contact indicator on the APEX paddle.
Palas externas reutilizables con indicador de contacto en Pala APEX.
Piastre esterne riutilizzabili con indicatore di contatto sulla piastra APICALE.



06 Automated Defibrillator for Adult and pediatric.
Desfibrilador Automatizado para adulto y pediátrico.
nodalita AED per adulti e pediatrici.

07 Large Colour Screen organised by functional areas. Sun mode.
Amplia Pantalla en color organizada por zonas funcionales. Modo sol.

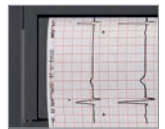
Ampio monitor a colori organizzato per aree funzionali nodalita. Sole mode.



08 Bluetooth transmission (Optional).
Transmisión Bluetooth (Opcional).
Trasmissione Bluetooth (Opzionale).



09 106 mm Printer (Optional).
Registrador de 106 mm (Opcional).
Stampante da 106 mm (Opziona).



10 "Compact Flash" memory card.
Tarjeta de memoria "Compact Flash".
Scheda di memoria "Compact Flash".



11 12 ECG acquisition key.
Tecla para la adquisición de 12 ECG.
Tasto dedicato per l'acquisizione di 12 ECG.



ACCESSORIES (OPTIONAL)
· Carrying case.
· Ambulance bracket (EN1789).
· 3/ 5/ 10- lead patient cable.
· REANIBEX Data Manager. PC Software for managing the information recorded by the device.
· Smartphone application (for Bluetooth option).
· Internal paddle.

ACCESORIOS (OPCIONAL)
· Bolsa de transporte.
· Soporte para ambulancia (EN1789).
· Cable de paciente de 3/ 5/ 10 latiguillos.
· REANIBEX Data Manager. Aplicación Software para gestión de todos los datos registrados por el equipo.
· Aplicación Smartphone (para la opción de Bluetooth).
· Palas internas.

ACCESSORI (OPZIONALE)
· Borsa per il trasporto.
· Supporto per ambulanza (EN1798).
· Cavo paziente a 3, 5 e 10 derivazioni.
· REANIBEX Data Manager. Software PC per la gestione delle informazioni registrate dal dispositivo.
· Applicazione Smartphone (per opzione Bluetooth).
· Piastre interne.

OPTIONS
01 Non invasive pacing.
02 Pulse oximeter. SpO2/ SpMet/ SpCO/ PVI/ SpHb/ SpOC.
03 Capnography. Microstream technology from Oridion Medical.
04 Non-invasive blood pressure from SunTech Medical.
05 Bluetooth data transmission to PDA or Computer and from the PDA to a web server.
06 Temperature module from MEDLAB.
07 Invasive Blood Pressure module from MEDLAB.
08 12-Lead Interpretive Algorithm. (University of Glasgow).

OPCIONES
01 Marcapasos no invasivo.
02 Pulsioxímetro. SpO2/ SpMet/ SpCO/ PVI/ SpHb/ SpOC.
03 Capnografía. Tecnología Microstream de Oridion Medical.
04 Presión sanguínea no invasiva de SunTech Medical.
05 Transmisión Bluetooth a PDA o PC y de la PDA al servidor web.
06 Módulo de Temperatura de MEDLAB.
07 Módulo de presión invasiva de MEDLAB.
08 Interpretación de 12 derivadas. (Universidad de Glasgow).

OPZIONI
01 Pacing non invasivo.
02 Pulsiossime SpO2/SpMet/SpCO/PVI/SpHb/SpOC
03 Capnografia. Tecnologia Microstream di Oridion Medical.
04 Tecnologia SunTech Medical per la pressione arteriosa non invasiva.
05 Trasmissione dati Bluetooth.
06 Modulo Temperatura MEDLAB (2 canali).
07 Modulo Pressione invasiva MEDLAB (2 canali).
08 Interpretazione dell'ecg a 12 derivazioni. (Università di Glasgow).

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Serie 800

Technical Specifications

GENERAL

Dimensions	300 mm (H) x 260 mm (D) x 350 mm (W)
Weight	Basic equipment with AC/DC module: 7,6 kg External paddles: 0,95 kg Battery: 0,8kg

DEFIBRILLATOR

Waveform	Biphasic truncated exponential adjusted to the impedance of the patient
Energy delivery	By means of reusable external paddles for adults (integrated pediatric paddles), internal paddles or multifunction disposable electrodes
Output energy accuracy	$\pm 15\%$ or ± 3 Joules, the highest, over the range
Charging Time	Less than 5 seconds at 200 Joules with a new fully charged battery Less than 7 seconds at 360 Joules with a new fully charged battery
Range of patient impedances	15 to 200 Ohms

MANUAL MODE

Selectable energy levels	1-10, 15, 20, 30, 50, 70, 100, 125, 150, 175, 200, 150, 300 and 360 Joules
Energy selection control	Therapy selector on the front panel
Charging control	Key on the front panel or key on the reusable external paddles
Synchronised cardioversion	SYNC key on the front panel
Indicators	Text and audible messages, audible alerts, status indicator, battery indicator, synchronisation mode, equipment connected to external power source indicator
Available energy indicators	Charging tone, available energy tone, flashing discharge button, indication of energy level on the screen

AED MODE

Selectable energy levels	Adult patient: from 150 to 360 Joules Pediatric patient: from 40 to 90 Joules
Audible and on screen messages	They guide the user through the operating protocol
Available energy indicators	Charging tone, available energy tone, flashing discharge button, message and icon on screen
Indicators	Text and audible messages, audible alerts, status indicator, battery indicator, equipment connected to external power source indicator
Defibrillable rhythms	Ventricular fibrillation and rapid ventricular tachycardia
Specificity and sensitivity of the detection algorithm	Fulfils AHA requirements
Resuscitation guidelines	Factory set Guidelines 2015 (ERC/AHA)

ECG MONITOR

Inputs	Up to 3 ECG waveforms can be viewed on the screen 3 - lead patient cable: Leads I, II or III 5 - lead patient cable: Leads I, II, III, aVF, aVL, aVR and V 10 - lead patient cable: Leads I, II, III, aVF, aVL, aVR and from V1 to V6 The ECG signal can be obtained through reusable external paddles, internal paddles or disposable multifunction electrodes
Sensitivity	2.5, 5, 10, 20, 40 mm/mV and auto-gain
Heart Rate	From 30 to 300 bpm (accuracy $\pm 10\%$)

Common mode rejection	More than 100 dBs (IEC 60601-2-27)
Frequency response	Mains filter: 50 Hz or 60 Hz On recorder: 0,67 – 40 Hz or 1 – 30 Hz or 0,05 – 150 Hz (diagnostic mode) On screen: 0,67 – 40 Hz or 1 – 30 Hz
Patient isolation	ECG: Type CF SpO2: Type CF NIBP: Type CF EtCO2: Type CF TEMP: Type CF IP: Type CF Defibrillator: Type CF

12 - LEAD ECG AND INTERPRETATION

Input	With a 10 -lead patient cable the signals obtained are: I, II, III, aVR, aVL, aVF and from V1 to V6. These signals can be printed on the recorder in 3 x 4, 3x4+1R or 3x4 + 3R format
Analysis algorithm	Glasgow University algorithm
12 – lead transmission	From the equipment to a PDA and from the PDA to a remote server

PACEMAKER

Waveform	Rectangular constant current
Pulse width	40 ms (accuracy: $\pm 10\%$)
Amplitude	From 0 to 200 mA (accuracy: $\pm 10\%$)
Frequency	From 30 to 180 ppm (accuracy: $\pm 10\%$)
Operating modes	Fixed and on demand
Refractory period	340 ms from 30 to 80 ppm 240 ms from 85 to 180 ppm

SpO2 PULSE OXIMETRY

Range	0 to 100 %
Accuracy	Without movement: $\leq 2\%$. With movement: $\leq 3\%$
Pulse rate	25 to 240 ppm
Pulse rate accuracy	Without movement: ≤ 3 ppm With movement: ≤ 5 ppm
Optional parameters	SpMet, SpCO, SpHb, PVI and SpOC

NON-INVASIVE BLOOD PRESSURE

Range	Systolic pressure: 40 - 260 mmHg. Diastolic pressure: 20 - 200 mmHg Mean arterial pressure: 26 - 220 mmHg
Accuracy	Fulfils the requirements of the ANSI/AAMI SP10:1992 and 2002 standards
Transducer accuracy	± 3 mmHg from 0 mmHg to 300 mmHg for an operating temperature between 0 and 50 °C
Initial pressure	160 mmHg (by default for adult patients) 120 mmHg (by default for pediatric patients)
Pulse rate range	30 to 220 ppm
Pulse rate accuracy	$\pm 2\%$ or 3 ppm, the greater
Automatic measurement interval	Configurable from 1 to 60 minutes
Measurement time	Average of 30 seconds, 130 seconds maximum
Calibration	Annually

END-TIDAL CARBON DIOXIDE

Range	From 0 to 99 mmHg
Resolution	1 mmHg (0,1 kPa)
Accuracy	Between 0 and 38 mmHg: ± 2 mmHg Between 39 and 99 mmHg: $\pm 5\%$ of the reading + 0,08% every 1 mmHg (above 4 mmHg)
Sample size	50 ml per minute
Calibration	Annually or after 4.000 hours of operation

AIRWAYS RESPIRATION RATE

Range	From 0 to 150 breaths/minute (bpm)
Resolution	1 bpm
Accuracy	From 0 to 70 bpm: ± 1 bpm From 71 to 120 bpm: ± 2 bpm From 121 to 150 bpm: ± 3 bpm

INVASIVE PRESSURE

Transducer sensitivity	5 uV/V mmHg
Sensitivity adjustment range	$\pm 10\%$
Frequency response	0-28 Hz (-3 dBs)
Range	From -99 to 310 mmHg
Measurement resolution	± 1 mmHg
Pulse rate range	From 30 to 250 bpm

TEMPERATURE

Range	From 20,0 °C to 44,0 °C
Measurement resolution	0,1°C
Measurement accuracy (excluding any adapter cable)	0,1 °C for an ambient temperature of 10 to 40 °C (temperature probe adds an additional $\pm 0,1$ °C for an ambient temperature of 32 to 42 °C).

SCREEN

Size	8,4 " (diagonal)
Type	TFT colour
Resolution	800 x 600 pixels
Sweep rate	25 mm/s for the ECG, SpO ₂ and pressure waveforms, and 6,25 or 12,5 mm/s for the CO ₂ waveform
Display time	5,4 seconds for the ECG signal (10,8 seconds in cascade mode)

PRINTER

Type	Thermal array
Paper width	50 mm (106 mm optional)
Speed	10, 25 and 50 mm/s (accuracy: $\pm 5\%$)
Operating modes	Manual: Start/stop the printer using the key on the front panel. The ECG trace is printed with all events and measurements. Automatic: The equipment can be configured so that it prints automatically when a marker is introduced, when a discharge is performed or when there is an alarm. Delay: Waveforms are printed with a delay of 8 seconds after the screen display.
Reports	Operating reports, trends, 12 - leads reports, configuration parameters, last tests results, equipment information and information of the events stored in the memory card.

DATA STORAGE

Internal memory	Stores the operation report and all the parameters monitors up to a maximum of 24 hours from switching on
Compact Flash memory card	Stores the continuous ECG signal with all the events and the audio (optional and only in AED mode). Stores the last 100 along with their associated ECG signal.

BATTERY

Type	NiMH rechargeable 3 A/h 12 V
Capacity	More than 150 shocks at 360 Joules with a new fully charged battery at 25°C More than 190 minutes of ECG monitoring. More than 140 minutes of monitoring with ECG, SpO2, CO2 and NIBP measurement every 15 minutes.
Recharging time	Approximately 3 hours
Battery indicators	Capacity and battery status indicator on the screen. Low battery indicator, absence of battery and battery charging on the status indicator

ENVIRONMENT

Operating temperature	From 0 to 45 °C
Storage temperature	From -20 to 60 °C
Humidity	10 to 95 % non-condensing
Altitude	0 to 4000 m
Shocks	EN 1789
Vibrations	EN 1789
Resistance to solids/water	IP44. Test performed without cables connected to the equipment
EMC	Complies with IEC 60601-1-2:2007
Safety	Complies with IEC 60601-1
Other aspects	The equipment is not suitable to be used in the presence of concentrated oxygen
Operating mode	Continuous
AC Supply	Input: 100 - 240 VAC, 50/60 Hz, 2,5 A Output: 15 V, 9,3 A, max 140 W
Battery	12 V rechargeable NiMH battery
DC Supply	10-16 VDC, 10 A