Uni-Pulse Defibrillator Analyser







Uni-Pulse Defibrillator Analyser

The Rigel Uni-Pulse is a portable and battery operated defibrillator analyser, designed to safely test the performance of all mono- and bi-phasic, standard and pulsating waveforms and AED applications. Control of the Rigel Uni-Pulse is through a menu driven colour GUI.

The Rigel Uni-Pulse is able to measure and display the following parameters;

- Energy (peak voltage, peak current, pulse duration)
- 2. Cardiac Synchronisation Time
- 3. Charge Time
- 4. Display the curve

In addition, the Rigel Uni-Pulse, can simulate a variety of ECG signals to help establish the analytical function of AED's and the performance of the waveform detection circuits.

The Rigel Uni-Pulse has internal memory to enable asset management data to be collected including but not limited to:

- Test Sequences
- Asset Details (Site / Location / Make / Model)
- Test results
- Discharge waveform

Computer communication is via Bluetooth and USB. This communication facility can be used to:

- Download test results
- Upload of Asset ID's and model numbers
- Future upgrades

Tests on Defibrillators

- Energy Discharge (including peak voltage, peak current and pulse duration)
- Cardiac Synchronisation Time
- Charge Time

Energy Discharge

This test measures the Energy output of the defibrillator. In doing so the Peak Voltage (upto 6000V) and peak Current (up to 100A) is recorded.

Energy is displayed in Joules. A typical discharge lasts for up to 10mSec and is the result of a discharge of a large capacitor. The discharge time is similar to the RC time (R= 50Ω load)

Cardiac Synchronisation

A defibrillator is required to discharge at the correct moment of the QRS complex in order to avoid the vulnerable period (T-Wave). When using the Uni-Pulse in Cardiac Synch mode, the Uni-Pulse will output an NSR waveform. The defibrillator will synchronise on the R wave in the QRS complex. The Uni-Pulse will measure the time between this point and the actual discharge. Time is displayed in mSec. Typical between 10 – 50mSec.



Key Features

- Compatible with mono-, bi-phasic and pulsed waveforms
- Reliable and non-inductive test load of 50Ω
- Variable load option as part of paddle adaptor box (25-200Ω)
- 12-lead patient simulator with ECG hi output
- Portable and rugged enclosure
- Colour graphic user interface
- Display of defib pulse
- Intuitive user interface
- Battery operation
- Future upgrade ready
- Data Upload / Download

Interfaces

Navigation

via dedicated fast keys and up / down navigation keys

Display

Full graphic Colour LCD, white backlit, 1/4 VGA resolution

External 2 x 4 mm

(Sternum / Apex – Paddle Adaptor Box) 1 x 2 mm sensing lead 10 x 4 mm patient simulator output Mains Charger inlet USB outlet ECG high level output

Power Source

- Universal power supply (230 / 110V +/-10%, 50/60Hz)
- Internal battery pack 12v/2400mAh Nickel Metal Hydride



Charge time

This test records the recovery time of battery operated defibrillators and is a requirement from IEC 60601-2-4. The standard requires the defib to be able to perform 10 full tests at maximum energy and measure the charge time at the 10th charge cycle. The battery should be such that its capability is the charge to maximum power within the set limit.

Product Features

Compatible with ALL defib output waveforms

The Uni-Pulse is able to accurately test all defib wave forms from older mono-phasic to more recent Bi-phasic wave forms and in particularly the pulsating and modulating waveforms.

Reliable and non-inductive test load of 50 $\!\Omega$

The Rigel Uni-Pulse utilises non-inductive load resistors which are rated to dissipate up to 10 x 360 Joules discharges within a 10 minute period. This test can be used in conjunction with the charge test, a requirement from IEC 60601-2-4.

External variable load box (optional accessory)

An external paddle adaptor box including variable load is available. A sense line determines the switch position / load to ensure that the recorded values match the set resistor settings. This reduces potential user errors of selecting the incorrect load (load to be displayed on screen and recorded with test results). The selectable loads are from $25-200\Omega$ in 25Ω steps.

Portable and rugged enclosure

The Rigel Uni-Pulse is in a elegant, ergonomic and portable enclosure. This provides the user with a highly portable and rugged design.

Graphic user interface.

The User-Interface of the Rigel Uni-Pulse consists of a full graphic, colour LCD display.

An intuitive GUI provides instant and clear overview of measurement data and navigate through the various screens. This ensures that the operation of the Uni-Pulse is easy to follow, reduces the requirement for training and aids the customer's ownership.

Intuitive User Interface

The operation of the Rigel Uni-Pulse requires the minimum of key presses to aid the reduction of test times and complexity.

Dedicated fast keys for immediate tests / simulations as well as download and view data are also included.

The colour GUI makes use of clear icons to help the user to navigate and operate the different functions.

Multi-lingual firmware is available to meet local requirements.

Rechargeable Battery operation

The Rigel Uni-Pulse is fitted with a rechargeable battery pack allowing the Uni-Pulse to operate without mains required during tests.

Download/Upload data

The Rigel Uni-Pulse is able to communicate to an external bluetooth printer and a PC / Laptop via BlueTooth and USB.

Download contains all stored test data including waveform, measured values. [energy, peak voltage / current, cardiac synch time, charge time].

Asset ID's can be scanned by barcode scanner or uploaded from Med-eBase prior to the tests. Customers can create and upload a list of Asset Trace Variables (ATV) which can be selected using the navigation keys.

It is possible to store any uploaded test programs in the tester for future reference. These are instructions on the energy output of the defib and require manual interaction from the user. The Uni-Pulse displays the required energy levels of the defibrillator.

Innovating Together

Supplied Accessories

- AC power supply (110/230 VAC)
- ECG Snap Adapters
- (set of 10)
- Instruction Manual
- Utility disc
 Carry case
- Carry caseBluetooth dongle
- Billetooth dongle

Optional Accessories

- Paddle adaptor box (Apex / Sternum)
- Paddle Adaptor box, including variable load 25-200 Ω
- AED Paddle Adapters
- Med-eBase
- Barcode scanner with embedded Blue Tooth
- Printer (BT)

Variations

The unit is available with a universal power supply including connectors for UK / Europe and USA. Firmware allows for multi lingual menu's.

Languages

- English (Default)
- French (Default)
- German (Default)
- Spanish (Default)
- Italian (Default)
- Chinese (Default)
- The Rigel Uni-Pulse is field upgradeable to any other additional language.



Also available

288 Electrical Safety Analyser

Features include:

- Light, hand-held, battery operation
- Conform IEC 62353 / 60601/ VDE 0751 / NFPA-99 / AS-NZS 3551
- Memory for up to 10,000 devices
- Bluetooth communication
- Full, semi automatic & manual tests





UNI-Sim Vital Signs Simulator

Features include:

- Light, hand-held, battery operationCombined NIBP, SpO2 and Patient
- Simulator in one unit
- User configurable simulations
- Full sychronised functionality
- Memory for up to 10,000 devices



SPECIFICATIONS

Serviceability

Warranty: Calibration internal:

Environmental

Operating Storage environment Environmental Protection

Safety

Electrical: Manufacturer's Certification EMC: BS EN61010-1:2010. CE BS EN61326-2006.

2 Years (when calibrated at Seaward)

1 Years

0' - 40'C

IP 40

-15' - +60'C

Test Specification

Energy Measurement

Load Resistance: Range (Low): Resolution: Accuracy: Range (High): Accuracy: Voltage: Maximum Current: Sampling rate 50 Ohms ± 1% non inductive 0 - 199.9 Joules. 0.1 Joules. ± 1% of Reading ± 0.1 Joule. 200- 600 Joules. ± 1% of the Reading ± 1 Joules. 0-6000 volts 0-120 Amp, 100kHz sample frequency

Cardio version (Sync.) Time

Measurement:

Range: Accuracy: From peak of the simulated ECG R-wave to the peak of the defibrillator output pulse. -250 to +250 ms. 1% of Full Scale ± 1 ms.

Discharge Waveform Output

Stored:

Waveform is captured on screen and stored in memory for download / print. Including peak voltage / peak current pulse duration.

Charge Time

Measurement is initiated by pressing the function key and simultaneously charging the defibrillator. Charge time recorded after the defibrillator has discharged across the 50Ω resistor.

ECG Arrhythmia Simulator

ECG full 12 lead simulation including high level output Wave forms Normal Sinus Rhythm (NSR), ST Elevation, ST Depression, Myocardial Infarction, Tall T Rate 20 – 300 BPM (1 BPM resolution)



Performance waveforms

Sine, Square, Triangle, and Pulse Pacer Waveforms Synchronous Atrial, Asynchronous Atrial Pacer Only Pacer Pulse rate 60 BPM, Ventricular Pacer rate 70 BPM, Atrial & Ventricular Pacer Heart rate 70 BPM, R Wave Detection

Arrhythmia Waveforms

Atrial

Sinus Arrhythmia (SA), Missing beat, Atrial Flutter (AFLT), Atrial Fibrillation (AFB), Paroxysmal Atrial Tachycardia (PAT), Junctional Premature Contraction

Atrial Conduction

First Degree AV Block, Second Degree AV Block - Mobitz I, Second Degree AV Block - Mobitz II, Third Degree AV Block, Right Bundle Branch Block (RBB), Left Bundle Branch Block (LBB), Left Anterior Hemiblock

Ventricular

Premature Ventricular Contraction - Intermittent Premature Ventricular Contraction – Continuous, Bigeminy, Trigeminy, Ventricular Flutter (VFLT), Ventricular Fibrillation (VFB), Ventricular Tachycardia (VTC), Right Focal PVC.

Waveform Output:

Low Level Hi Level 12 Lead ECG and on Paddles Output Jack

Accuracy:

Rate	±1%
Amplitude	± 2% (LA-LL), ± 10% (Paddles)

Blue Tooth / USB Output

A computer interface is available to print test results or to save them on a PC. The test results can be saved directly to a PC software (Med-eBase). The dataformat shall be in SSS format. A document describing this format is available upon request

All displayed values including wave form are stored in the internal memory (4MB or more)

Power Requirements

12v/2400mAh Nickel Metal Hydride battery pack. 110/230 VAC; 48 to 66 Hz, 35 VA power supply.



Also available

Uni-Therm Electrosurgical Analyser

Features include:

- IEC 60601-2-2 compliant
- Power distribution from 10-5100 Ω
- HF leakage test
- Return plate security test (Rem)
- Onboard data storage



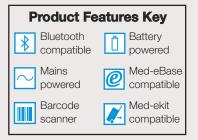


Infusion Pump Analyser Features include:

Multi-Flo

- IEC 60601-2-24 compliant
- Instant flow and pressure
- Compatible with all infusion devices
- On-screen trumpet curve
- Onboard data storage







Barcode Scanners Speed up your testing

Available accessories

Storage and Recall

Memory Output

Internal minim of 4MB or at least 1000 tests plus graphs CSV and SSS format

Temperature

Operating Storage

Display

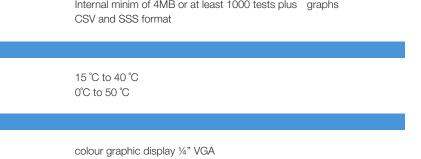
LCD

Dimensions

225 mm x 145 mm x 95 mm (L x W x H)

Weight

1.5 Kg



procedures and reduce

data entry errors with a dedicated range of barcode scanners. Simply "scan and test" with Rigel's range of barcode scanners. Compatible with all conventional barcode systems, the scanners are available in Bluetooth & battery operation or RS232 variants.

Test n Tag Elite



Rigel Medical offer a unique range of printers to increase traceability onsite. From dedicated barcode label and results printers to the popular Test 'n' Tag Elite printer which encompasses all. Available with durable and tamper-proof labels; you can choose from mains or battery and bluetooth operated printers. There is always a solution to meet your requirements.

Med-eBase Software

Rigel's Med-eBase is a universal software package that not only allows you to download and manage test results, it also allows for easy scheduling of workorders, configuration of test equipment, comparing of data, trend analyses and creation of customised test certificates to give you flexibility in the way you want to manage your assets.

For orders or enquiries call +44 (0) 191 587 8730

Rigel Medical, Bracken Hill, South West Industrial Estate, Peterlee, County Durham SR8 2SW United Kingdom

Fax: +44 (0) 191 586 0227 Email: sales@rigelmedical.com Web: www.rigelmedical.com