

# Rigel Uni-Therm

The quickest and easiest way to test all leading electrosurgical devices.

The Rigel Uni-Therm electrosurgical analyser hosts a series of innovative features to enable a quicker and easier all-in-one solution for testing electrosurgical devices.

With a colour screen and intuitive menu system, the Uni-Therm takes the complexity out of testing; whilst on-board memory, test automation and a compact product footprint make it fast and convenient to use.

The Uni-Therm is capable of testing all modern and legacy electrosurgical devices, and features contact quality monitoring (CQM) analysis, high current power measurement up to 8A and high frequency leakage measurements with on-screen instructional diagrams to simplify the process.



## Key Benefits

- No other test tools to carry around
- Tests all ESU's including those with high current vessel-sealing technology
- Meets all modern CQM test requirements and eliminates additional test tools
- Be an expert in minutes with easy-to-follow on-screen instructions
- Speed up your testing by allowing the Uni-Therm to execute test templates for you
- Eliminates the need to write down results, reducing errors and improving efficiencies
- Speed up testing, free up your time and improve safety

## Electrical Test Functions

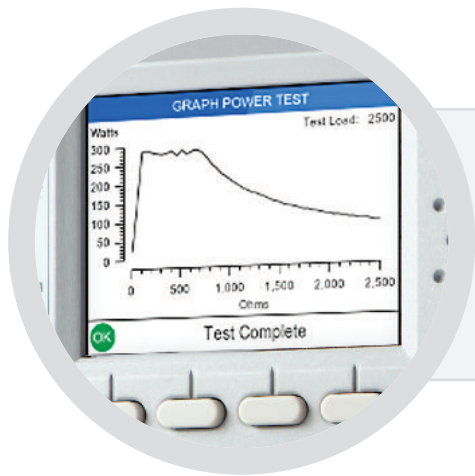
- High frequency/leakage
- High current load testing
- Power Distribution
- Patient return plate alarm testing (CQM)

## Uni-Therm Applications

- Routine testing of ESU generators
- Calibration of ESU generators
- End of production line testing
- Development tool for ESU R&D
- Type testing tool for ESU devices
- Evaluation tool for purchasing the correct ESU device
- Teaching tool for biomed's offering training on quality control procedures of ESU devices

► **High current power measurement**

Test all leading modern and legacy electrosurgical devices (ESU), with a maximum test current of 8A RMS for calibration of high current vessel sealing modes.



◀ **High resolution, low induction load bank**

With accurate high resolution and the lowest possible induction load bank, the Uni-Therm offers an all-in-one solution for reliable power distribution measurements, without the need for external loads. Suitable for all ESU devices, the load bank ranges from 0-5115Ω, in 5Ω increments, to represent various tissue types.

► **Simple user interface with detailed colour screen**

Cut testing times by following the easy navigation and step-by-step, on-screen colour instructions and connection diagrams - including the simplification of leakage and power measurement test protocols.



◀ **Integrated automatic test protocol**

Significantly reduce and simplify testing without the need for a PC or laptop connection. The Uni-Therm can also automate the activation of the ESU pedal or hand switch, from COAG to CUT, without the need to change resistors manually to simulate different tissue types.

► **Contact quality monitoring (CQM) analysis**

An all-in-one solution with built-in analysis to test all contact quality monitoring systems in modern and legacy ESU devices. Simulate a fault to within 1Ω resolution.



◀ **Small in size**

With a footprint that's 50% smaller than competitors, the Uni-Therm ensures testing can be done even when physical space is at a minimum, making it easier to use, transport and store.

► **Meet the standards**

Conducts all high frequency leakage tests, as per IEC 60601-2-2 requirements.



## Technical Specifications

Power measurement	True RMS value of applied waveform
Power rating	0 - 500W (RMS)
Duty cycle	100% up to 60 seconds
Load bank	0 - 5115Ω
Resolution	5Ω
Accuracy	±(1W + 5% of reading)
Voltage (peak)	0 - 10kV (Peak to Peak)- Closed load only
Accuracy	±(10% of reading + 15V) Measurement is taken between the active and dispersive electrodes with closed load only
Voltage	0 - 700V (RMS)
Accuracy	±(10% of reading + 5V)
Current (RMS)	0 - 6000mA with load bank 0 - 8000mA external load test
Accuracy	±10mA or 2% of value
Crest factor	1.4 - 20 (V <sub>peak</sub> / V <sub>RMS</sub> ) The higher of the two peak voltage measurements is used for calculation

### RMS Bandwidth

Instrumentation only	30 Hz to 10 MHz (-3 dB)
With loads	30 Hz to 2.5 MHz (-3 dB)
Variable loads	0 - 5115Ω, steps @ 5Ω (1023 steps)
Accuracy	±(1%, + 0.5, -0.0 Ω of set load)
Load array	Ceramic resistors (Non inductive)
Measurement delay	Foot switch delay selectable between 200 - 5000ms (10mSec resolution)

### RF Leakage (High Frequency Leakage)

Active	From active part to earth
Passive	From plate -receptacle -to earth
Load	Variable see power measurement
Accuracy	Fixed 2 x 200Ω ±1%, +0.5, -0.0 Ω

### Contact Quality Monitoring (CQM)

Range	1- 475Ω, steps @ 1Ω steps Motor driven potentiometer
Accuracy	±5% ± 2 Ω
Alarm register	High and low, manual confirmation
Ranging	Manual or automatic

### Output Connectors

Remote foot switch control (CUT)	2 x 4mm - yellow, single relay contact
Remote foot switch control (COAG)	2 x 4mm - blue, single relay contact
High Frequency leakage	Through 4mm sockets and power measurements
USB	PC download / Future PC software
Oscilloscope output	0.5V/A, 100mA RF current minimum input, un-calibrated, Indication only

Rev 3.2

### Isolation

10kV Isolation between measurement device and enclosure

### Low Frequency Filter

100 Hz filter to avoid low-frequency disturbance or interference

### General

Memory	Approx 5,000 records (4Mb)
Output	CSV and SSS format
Dimensions	370 X 300 X 204mm
Weight	10 kg
Operating temperature	10 °C to 40 °C
Storage temperature	0 °C to 50 °C
Mains power	115/230V AC +10%; 48 to 66 Hz, 35 VA
Fuses	2 x 1.6 A (T) ceramic

### Standard Accessories (supplied with Rigel Uni-Therm)

Mains lead  
Instruction manual  
Application disc  
Bluetooth USB adaptor  
Calibration certificate

### Optional Accessories

Med-eBase asset management software  
CUT / COAG control interface cables  
Bluetooth barcode scanner  
Test lead set  
Protective travel case (peeli case)  
'An Introduction to Electrosurgery' guidance booklet

### Service & Warranty

Uni-Therm comes with a free upgraded 24 month warranty (subject to terms and conditions, available at [www.rigelmedical.com/registerproduct](http://www.rigelmedical.com/registerproduct))  
A range of Med-eCare plans are also available

### Part Number

398A910



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