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Rigel Uni-Therm

The quickest and most accurate way to test all leading electrosurgical devices.

The Rigel Uni-Therm electrosurgical analyzer hosts a series of innovative features to enable a quick and accurate all-in-one solution for testing electrosurgical devices.

With a color screen and intuitive menu system, the Uni-Therm takes the complexity out of testing. 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

- **Three self-contained resistive load banks (CQM, HF Leakage, Power)**
- **Tests all ESU's including those with high current vessel-sealing technology**
- **Meets all modern CQM test requirements and eliminates additional test equipment**
- **Be an expert in minutes with easy-to-follow on-screen instructions**
- **Speed up your testing by allowing the Uni-Therm to execute test sequences**
- **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
- Peak-to-peak voltage
- Power Distribution
- Patient return plate alarm testing (CQM)

Uni-Therm Applications

- Routine testing of ESU generators
- Recalibration of ESU generators
- 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 biomeds offering training on quality control procedures of ESU devices

Download your **FREE** guide to electrosurgery at **www.rigelmedical.com/guides**

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www.rigelmedical.com/uni-therm
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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 load bank and the lowest possible inductance, 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 color screen

Cut testing times by following the easy navigation and step-by-step, on-screen color 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.

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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, small in price

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. Perfomance value is unequaled.

Meet the standards

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

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Technical Specifications

Power measurement	True RMS value of applied waveform
Power rating	0 - 500W (RMS)
Accuracy	±(1W + 5% of reading)
Duty cycle	100% up to 60 seconds
Load bank	0 - 5115Ω
Resolution	5Ω
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	±(2% of reading + 10mA)
Crest factor	1.4 - 20 (Vpeak / V RMS) 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 5 - 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 Fixed 2 x 200Ω
Accuracy	±1%, +0.5, -0.0 Ω

Contact Quality Monitoring (CQM)

Range	0 - 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
Oscilloscope output	0.5V/A, 100mA RF current minimum input, un-calibrated, Indication only

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	370mm x 300mm x 204 mm / 14.6" x 11.8" x 8"
Weight	10kg / 22 lbs
Operating temperature	10˚C – 40˚C / 50˚F – 104˚F
Storage temperature	0˚C – 50˚C / 32˚F – 122˚F
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
USB lead
Calibration certificate

Optional Accessories
Med-eBase asset management software
CUT / COAG control interface cables
Bluetooth barcode scanner
Test lead set
Protective travel case (pelican 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)

Part Number
398A914 100V AC
398A912 120V AC
398A910 230V AC

Rev 4