

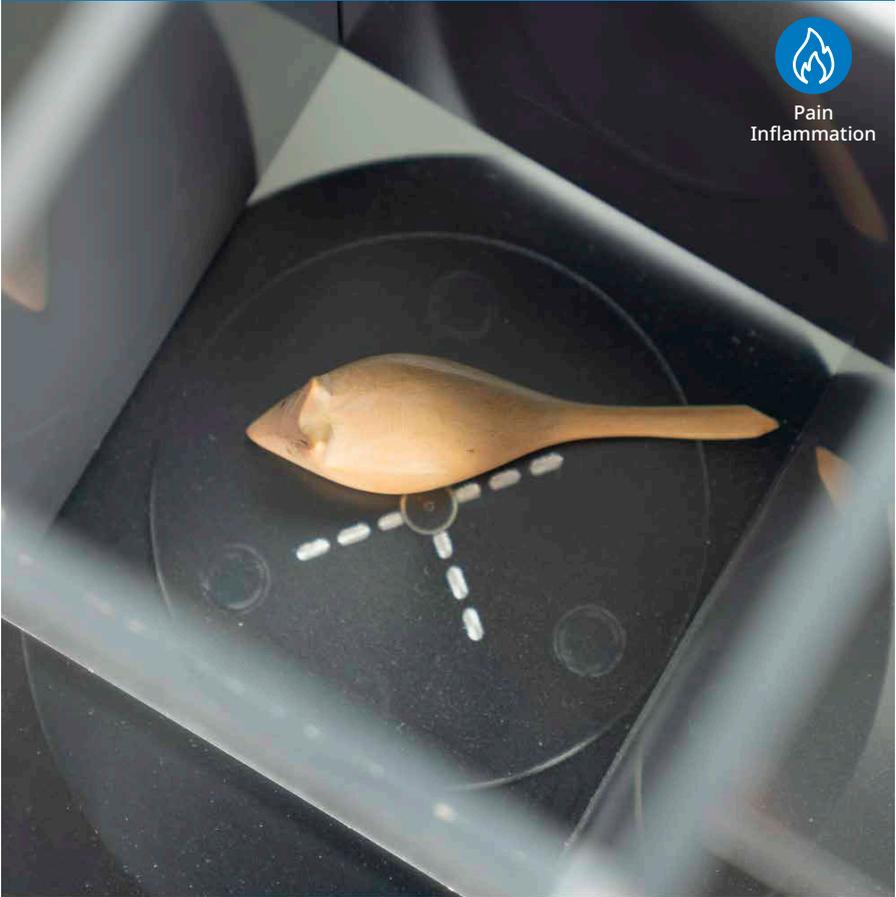
Instruction manual

# Plantar Test (Hargreaves method)

Revision 2.3 (July 2024)



Pain  
Inflammation



LAN

SKU: 37570



ugo basile®

TRANSFORMING IDEAS  
INTO INSTRUMENTS

# *SAFETY CONSIDERATIONS*

Although this instrument has been designed with international safety standards, it contains information, cautions and warnings which must be followed to ensure safe operation and to retain the instrument in safe conditions.

Service and adjustments should be carried out by qualified personnel, authorized by Ugo Basile organization.

Any adjustment, maintenance and repair of the powered instrument should be avoided as much as possible and, when inevitable, should be carried out by a skilled person who is aware of the hazard involved.

Capacitors inside the instrument may still be charged even if the instrument has been disconnected from its source of supply.



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## CE CONFORMITY STATEMENT

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***We hereby declare that***

Instrument. **PLANTAR TEST**  
Catalog number **37570**

***is manufactured in compliance with the following European Union Directives  
and relevant harmonized standards***

- *2014/35/UE relating to electrical equipment designed for use within certain voltage limits*
- *2014/30/UE relating to electromagnetic compatibility*
- *2011/65/UE and 2015/863/UE on the restriction of the use of certain hazardous substances in electrical and electronic equipment*

Account Manager

Mauro Uboldi

Nome / Name

October 2020

Date

  
Firma / Signature

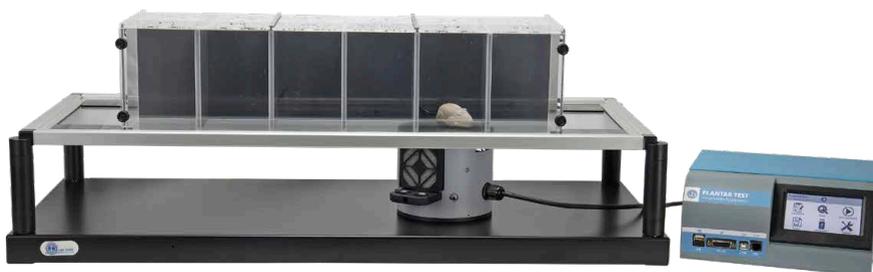
# Product features and general information

The 37570 Plantar Test (Hargreaves' Method) brings together tradition and innovation.

The highly cited and world-wide recognized thermal stimulator with automatic paw withdrawal latency measure, has now some key new features and benefits, helping the user to perform the experiment in a more efficient and accurate way.

## Main features:

- Automatic detection of the animal response
- Data export via USB pen-drive and with Ethernet cable connection
- Experimental data generated by X-Pad software can be loaded in the instrument via USB pen-drive and via Ethernet cable
- Adjustable I.R. Intensity
- Selectable automatic or manual detection mode
- Large touch screen display for calibration, set-up, testing and result review
- TTL input and output signals for synchronisation with other devices
- Firmware update via USB key



# What's in the box

**SKU: 37570**

1 Control unit

1 IR emitter

1 Metal base with 4 columns

1 Glass pane (to be positioned upon the base)

1 Sets of animal modular enclosures (up to 12 mice or 6 rats)

1 Power cord according to your country outlet

1 3 mt. Ethernet cable cat 6

1 USB storage containing:

This instruction manual

The quality control, the warranty certificate, the Ugo Basile catalogue a video of animal enclosure assembly.

**Optional items ordering informations:****SKU:37300**

Heat-Flux I.R. Radiometer

**SKU 37370-278**

Additional base assembly for thermal plantar stimulation, including support with columns, framed glass pane and multiple-configuration animal-enclosure, from 3 to 12 spaces.

**Available spare parts****SKU: E-HR 002**

Plantar test light source

**SKU: E-BT 008**

Battery type CR2032

**SKU: E-FT010-1**

2 X fuse T1.25A - 6X32 mm

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# 1 General

The device has been designed to perform screening of analgesic drugs and rodent phenotyping via heat stimulation on the rat/mouse paw, according to the method designed by

Prof. K. Hargreaves.

It basically consists of an I.R. source, whose radiant energy of adjustable intensity is focused on the rat/mouse paw, while it is freely moving on a glass pane, over which animal enclosures are positioned to limit its movements and eventually deliver the energy to the paws from underneath, when the animal is standing still.

The instrument measures the time latency of the paw withdrawal response when pain elicits it, given the radiant heat applied to the animal's paw.

## 1.1 Principle of Operation

The rat/mouse is normally placed into the animal enclosures from 15 minutes to 1-2 hours before the test starts (habituation) and the operator waits for the end of any sign of exploration or discomfort before starting the test itself. The amount of time varies with animal models and species.

At this point, using the cross centred around the IR emitter, the operator targets the animal paw and starts the stimulus by pressing the button on the emitter or tapping on the display.

The reaction time of the animal is scored and automatically recorded.

## 2 Instrument Description

The Plantar Test Unit consists of an I.R. source, whose radiant energy of adjustable intensity is focused by a parabolic mirror on the animal paw.

The instrument components are:

The I.R. source, the sensor, the micro-controller and the electronic circuit.

On the instrument front panel are located a touch screen display and several connection ports.

On the back of the device are located the power socket, the power fuse and switch, the emitter cable connector and the serial number label.

At the bottom of the IR emitter, is located a sticker with the factory calibration data.



## 2.1 Animal Welfare

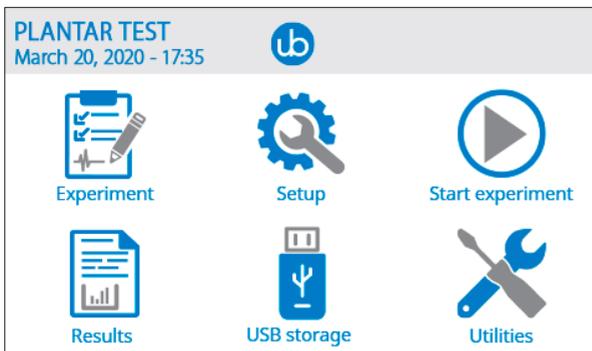
In any analgesia test, great care must be taken to prevent the animal from inadvertent harm.

When an investigator initially begins using the Plantar Test unit, and when first assessing a new strain of animals, care must be taken to identify the appropriate amount of stimulus that will produce the desired response and no/minimum harm.

An adjustable cut-off time (maximum stimulus time) can be set from 5" to 30" to prevent animal injury.

## 2.2 Touch-screen command/display

The Plantar Test incorporates a 4.3" touch-screen display, for basic settings and monitoring, via an intuitive Home menu.



Home menu

During the test (below figure), the touch-screen display, shows the numeric values of the set IR intensity (in %) and the elapsed time (in seconds).

In addition, at the bottom of the Time counter, the function mode is indicated (auto or manual detection).



Start experiment page

## 3 Installation

### 3.1 Unpacking & preliminary check

Check the content of the shipment for completeness and visually inspect the instrument as soon as you take it out of the packaging.

If the box looks damaged, inform the carrier and provide a conditional signature (not a full signature).

Once unpacking, if the instrument is damaged, notify our company, writing an email to [support@ugobasile.com](mailto:support@ugobasile.com)

If after a test, the instrument fails to meet the expected behaviour and performance, please contact our after sales service at [sales@ugobasile.com](mailto:sales@ugobasile.com).

Protect the environment: Dispose of packaging properly, according to existing and applicable waste management rules and regulation.

### 3.2 Notes on the Instruction Manual

This instruction manual included in the box is necessary for a correct installation of the instrument.

Please save this manual, keep it ready to be consulted by the qualified personnel using the instrument.

Our manuals are available as free download on our web site, [www.ugobasile.com](http://www.ugobasile.com)  
For any additional information and/or assistance, you are welcome to contact our service department, first of all by specifying the serial number of your instrument at [service@ugobasile.com](mailto:service@ugobasile.com)

Plantar Test support QR code:



## 3.3 Safety Instructions

The following guide lines must be followed to ensure safe operation.

- DO NOT attempt to open or perform any service work before having contacted Ugo Basile support team
- DO NOT use the device on humans

## 3.4 Assembling the instrument

Place the electronic unit on a stable and flat surface.

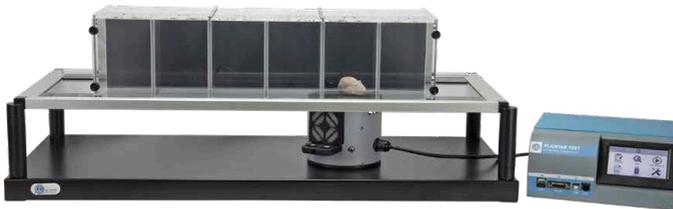
Then screw the 4 columns onto the metal base and position the glass frame pane onto the column themselves.

At this point you are ready to assemble the modular animal enclosures (see the video provided in the USB storage or from YouTube, [click here](#) or search in YouTube for “How to Assembly the NEW Ugo Basile Animal Enclosures”

Finally connect the I.R. emitter to the control unit and position it on the black metal base.

You are now ready to perform and experiment by irradiating the glass pane above the emitter itself.

Connect the Ethernet cable to your LAN or directly to a PC



*The Plantar test full system*

## 3.5 Before Applying Power

The Power Module (see figure below ) is positioned on the left of the back panel and incorporates, from left to right, the fuse holder, the ON/OFF switch, the inlet connection of the power cord.



*Power module*

The fuse compartment holds two fuses. Use (T1,25A 6X32mm) fuses for operation at both 100 or 240V, for fuse replacement, please refer to paragraph 7.1-Electrical at page 24 of this manual.

The power cord inlet fits a standard C13 cable, Cat. # E-WP008.

Make sure your power out-take is provided with a reliable ground connection.

## 3.6 Intended Use

**THE PLANTAR TEST IS INTENDED FOR INVESTIGATION USE ON LABORATORY ANIMAL ONLY. DO NOT USE ON HUMANS**

## 3.7 Additional Safety Consideration

1. Use original accessories and spare parts only
2. Immediately disconnect and replace damaged main cord
3. Do not obstruct access to the power module
4. Do not operate in hazardous environment or outside prescribed environmental limitations
5. Do not spray any liquid on the connectors, display, or other parts

**Ugo Basile cannot in any way and form be held responsible for damage caused to things and people and warranty will be void, due to:**

- Incorrect electrical supply
- Incorrect installation procedure
- Incorrect or improper use or, in any case, not in accordance with the purpose for which the instrument has been designed and the warnings stated in the instruction manual supplied with the instrument
- Replacement of original component, accessories or parts with others not approved by the manufacturer
- Servicing carried out by unauthorized personnel

## 3.8 Connections

Connect the mains cord between the power socket of the Plantar Test and the power outlet with a reliable earth connection.

Connect the emitter cable to the electronic unit and then the power cord. At this point you can turn the Plantar test on.



*Rear view Plantar Test control unit*

Connect the Ethernet cable to Your LAN socket or directly to Your PC

The connection module on the front panel (Figure below) encompasses the following connectors, from left to right:

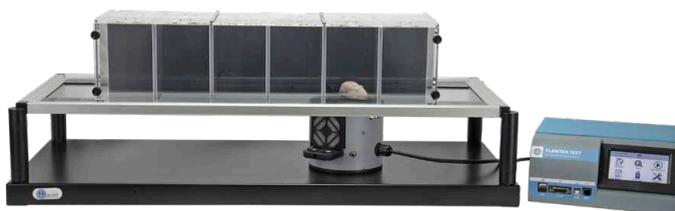
1. Upper USB port: enables data export to a PC and experiment data to the device (via a USB storage), and allows firmware upgrades
2. TTL I/O: 15pins D-SUB connector, provides TTL input and output for start/stop command and mode settings
3. COM: Reserved for maintenance and service purpose
4. Ethernet connector can be used for loading experiment data coming from a X-PAD software file, or to retrieve experiment result data from the device to a PC via web browser.



*Connection panel*

## 4 Operation

Position the Plantar Test electronic unit and base with the glass pane and the animal enclosures in a quiet and flat environment.



*The Plantar test device*

Avoid direct illumination, e.g., from a table lamp.

This will definitely upset the animals, as rodents dislike bright light, not to speak of the risk to raise their body temperature.

Moreover, intense light may cause the sensor to sometimes deliver inaccurate results, as a light source from above tends to mask the I.R. energy reflected back by the paw.

### 4.1 Main Menu

Getting familiar with the Plantar Test home page menu is very easy (see figure below).



*Main Menu*

From the home page, press the "UB logo" button for software and memory information. Press again the "UB logo" to roll back into main menu page.

## 4.2 Quick setup for first test

### Animal handling and habituation:

It is advisable to gather some experience in handling rats/mice and in developing the best habituation protocol before the test is started, so that the pointing and the delivery of energy to the paw will be more accurate.

You are now ready to configure and run your first experiment. The following steps will guide you to quickly configure the Plantar Test device and get the first results:

### Carrying out the test

Put the animal(s) in the cage(s) and wait until they are quiet, with little or no exploration, but not sleeping.

A trial is initiated by pressing start from the emitter buttons or from the touch screen.

When the animal feels pain and withdraws its paw, the I.R. source switches off and the reaction time counter stops. The withdrawal latency to the nearest 0.1 s is automatically detected and stored.

A MANUAL MODE can also be used in this new Plantar Test generation for those cases where the paw withdrawal is tricky to measure automatically. To measure latency manually, simply press the button once to start the test and press again to stop it, and the instrument will measure the latency time.



*The start page*

Initiating a test is very simple:

5. Press SETUP from the main page menu to adjust the IR intensity and the cut-off time
6. Go Back to the main menu pressing the back menu at the top
7. Press Start experiment to access the start menu page
8. Press START to initiate the test through the touch screen or through one of the two buttons located in the emitter (according to your preference)

## Looking at the results

The Plantar Test will save the IR intensity and time latency results, in addition to the descriptive data, if they have been input in the Experiment field (Treatment, Protocol, ID, Stage, Trial).

**RESULTS** 

Monday, 28, November 2022 14:28

RECORD 1/26

Session:	1
Time:	29/03/2022 10:36:45
Treatment:	UNTREATED
ID:	ABC110233
Protocol:	PROTOCOL1
Stage:	STAGE1
Trial:	TRIAL1
Latency:	0.0s
Reason:	Detection
IR Intensity:	44%
Scoring:	Auto


*Result page*

**EXPERIMENT** 

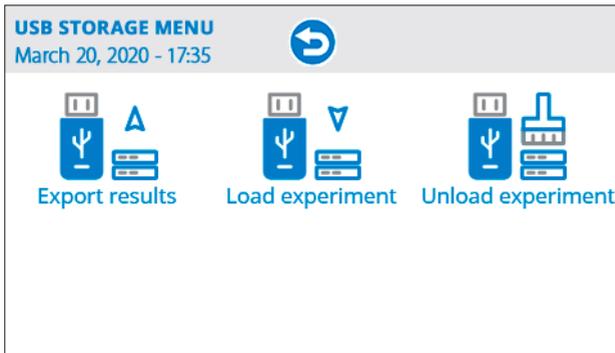
March 20, 2020 - 17:35

Treatment	<input type="text"/>
Protocol	<input type="text"/>
Stage	<input type="text"/>
Trial	<input type="text"/>
Animal ID	<input type="text"/>

*Experiment screen, where the descriptive data shown in the Results screen are input*

## Exporting the results

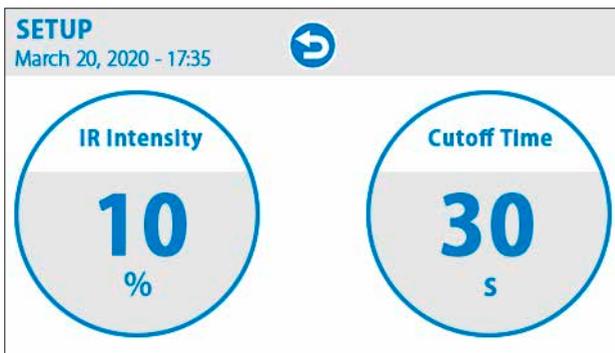
Once data have been saved into the Plantar Test internal memory, they can be transferred into a USB storage by simply plugging it into the front upper USB port and press USB STORAGE and SAVE DATA (result data can be also exported via web browser to a PC when Ethernet cable is connected)



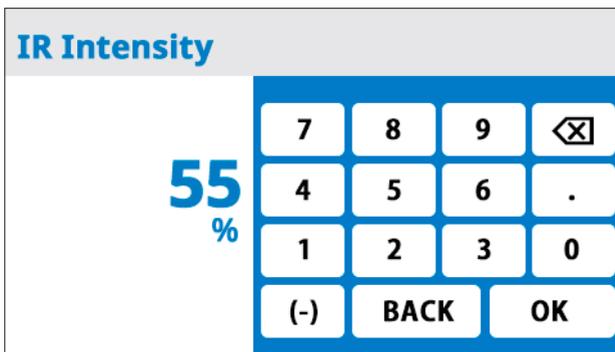
The export window

## 4.3 Set up and Utilities Icons

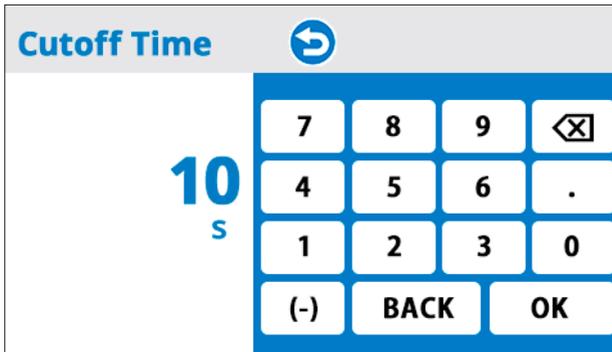
The “set up” icon from the home screen is intended to define the experiment parameters, i.e. IR intensity (level of energy delivered to the paw) and “cut off time”, i.e. the time after which the energy source will turn off even if there is no paw withdrawal (intended to avoid tissue damage).



The set-up page



The keyboard screen to input the IR intensity in percentage values



The keyboard screen to input the cut-off value in second

The **UTILITIES** icon, accessible from the MAIN menu, gives access to:

- **Update**, for the internal software (firmware) updates
- **Date-time**, to control the internal clock
- **Erase DB**, to delete the internal database (all data will be lost)
- **Device Setup**, to access the calibration and the diagnostic
- **Network**, to setup the network connection via Ethernet cable
- **Factory Reset**, to setup the device as it was at the factory, WARNING all data will be lost and network password reset to factory default (UgoBasile)  
(This function can be used if the password for the Ethernet connection via web browser has been lost)



The **UPDATE** menu requires to insert the USB pen drive and is necessary to update the device firmware. Contact the Ugo Basile Support team before updating the firmware, providing the device serial number.

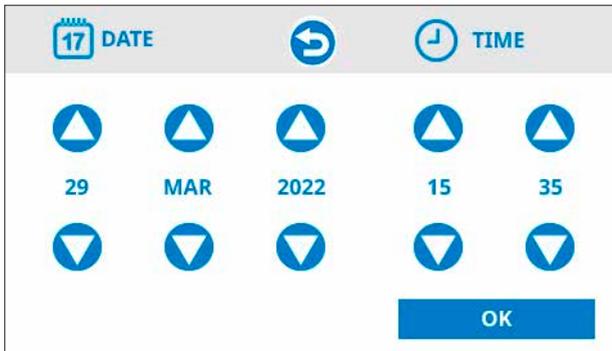


Please wait while the system is updating...

*The update page*

The **DATE-TIME** menu allows to adjust the date and time of the device, as shown in the screen shot below.

Date and time setting are important for result data correct population, please set the correct date and time of Your location.



*The date & time page*

### **ERASE DB function:**

The device memory can be fully erased, by tapping onto the ERASE DB button, this can be useful for support needs.

Perform this function **ONLY** when asked from the Ugo Basile support team.

**WARNING:** *all the device internal data will be lost including Experiment and result data.*

*Be sure to backup Your experiment/result data before erasing the internal database.*

The **DEVICE SETUP**, menu is dedicated to the device Calibration and to the Diagnostics procedure.

Calibration procedure is in-house performed during the final quality control production phase and needs to be done periodically to ensure a precise heat emission.

The device shows the IR intensity as a 0-100% value. However, these figures will correspond to a declining amount of energy as the instrument is used and the lamp energy source unavoidably decays

In order to ensure that the same amount of energy is delivered, a calibration procedure need to be performed and in order calibrate the device You need to use the Ugo Basile Radiometer which is designed for this purpose (SKU 37300).

With out the Ugo Basile Radiometer calibration CAN NOT be done, ensure to have the Radiometer available for periodical calibration.

We recommend to perform the Calibration on a regular basis.  
(See next paragraph for calibration procedure details)

Ugo Basile Radiometer (SKU 37300) is not provided with the Plantar test device but it is available as an option; please keep in touch with your Ugo Basile sales contact person for additional information about availability and price or contact us directly at [sales@ugobasile.com](mailto:sales@ugobasile.com) indicating your Plantar Test device serial number.

**DIAGNOSTICS** the results of this procedure are intended to be used **ONLY** by Ugo Basile technical team to assist you, troubleshoot and support you with any needs.

**Network** this menu page is for setting up the network parameter in order using a web browser from a PC/mobile device to load experiment data to the device and retrieve result data from the device, for example in case Your lab internal rules does not allows the use of USB pen.

***Refer to Your IT technician for this set-up if you are not familiar with IP configuration, or use IP assignment Auto (DHCP) that should work***

**IP assignment:**

Use Auto (DHCP) (Dynamic Host Configuration Protocol) to let the device ask for an IP address

If You connect the device to Your facility LAN, make sure with Your IT people a DHCP server is enable in the LAN.

If You connect the device directly to Your PC via the Ethernet cable, make sure Your PC Ethernet (LAN) card is set to use DHCP (Automatic IP assignment)

If You prefer to manually assign the device IP address, select Manual and use the following instruction to set the correct IP address.

**IP Address:** in DHCP mode shows the assigned IP Address, in Manual mode, pressing the number You can insert the desired IP address. (remember that IP address has the following syntax: xxx.xxx.xxx.xxx where every group of the 4 group numbers has a range from 0 to 255, you do not need to add zeros in front of the given number.

E.g. 192.168.10.2

**Subnet mask:** this number, having the same syntax of the IP address, it will be automatically populated when in DHCP mode; in manual mode need to be manually populate and the range for the group number need to be 0 or 255

**Gateway:** this data is not actually in use while the device does not communicate in Internet.

**Primary DNS:** in DHCP mode this data is automatically populated but it is not needed while the device does not communicate information via internet.

**Secondary DNS:** in DHCP mode this data is automatically populated but it is not needed while the device does not communicate information via internet.

## 4.4 Radiometer Calibration

***IMPORTANT consideration regarding the device calibration:***

When the emitter is calibrated during the quality control a specific control unit is assigned to it and the calibration values will be valid only for this specific pair of devices (the serial number identifies the pair)

Substituting only the electronic unit or the emitter will produce a set-up malfunction.

There are 3 calibration values indicated in the calibration page on the touch screen and clearly printed on the bottom of the emitter.

Moreover the restore of the factory value after a long time use of the set-up will produce a set-up malfunction due to the light source of the emitter change over time; thus we recommend for a correct functionality to perform the described calibration procedure on a regular basis.

Please note that You must have the Ugo Basile Radiometer to perform this calibration

(Radiometer can also be used for calibrating the Ugo Basile Tail-flick device).



*The Ugo Basile Radiometer*

### **CALIBRATION PROCEDURE:**

1. Remove the Plantar Test emitter from the black metal floor under the glass of the set-up and place it beside on a flat surface.
2. Unscrew the aluminium sensor cover from the red cylinder sensor of the radiometer.
3. Screw the appropriate aluminium adapter to the red cylinder sensor of the radiometer.  
Use the bigger adapter while the small one is dedicated for the Tail Flick device calibration.
4. Place the red Radiometer sensor with the adapter mounted, on the top of the Plantar test emitter.
5. Connect the Radiometer sensor to the electronic unit.
6. Switch on the Radiometer, the display will shows values.
7. From the main page of the Plantar Test electronic unit, press the Utilities button then Device Setup and then Calibration.
8. Starting from the top value, you need to read the Radiometer display value in order to reach the right value indicated on the touch screen (in this case 21). By pressing the - and + button on the touch screen you can adjust the energy emission  
Once the target value has been reached (21), press the second value and repeat the previous described procedure to reach the second value target of 190, then do the same for the third value 317 and at the end press OK.

Your Plantar test set-up is now calibrated and ready for the experiment.

## 4.5 Use with a PC (load and retrieve data)

Using the provided Ethernet cable, it is possible to load experiment data to the Plantar test machine as well as retrieve the experimental data results directly to a PC, without the need to use the USB pen-drive as a transfer data unit. This feature can be useful for example when Your lab rules does not permit the USB pen-drive use for security reasons.

### **Requirements:**

In order using this feature you need to ensure that:

- The provided Ethernet cable need to be plugged into the device RJ45 front connector and to the other cable end to either Your facility LAN socket or directly into a PC Ethernet LAN card.
- A Windows, Mac PC with a running web browser.
- The Network set-up into the plantar test device is correctly set.

*Note: If the Plantar test device is plugged into Your facility LAN and the facility provide a WiFi connection at the same LAN, You can also use a mobile device such a Pad or Smart Phone to browse the Plantar Test data.*

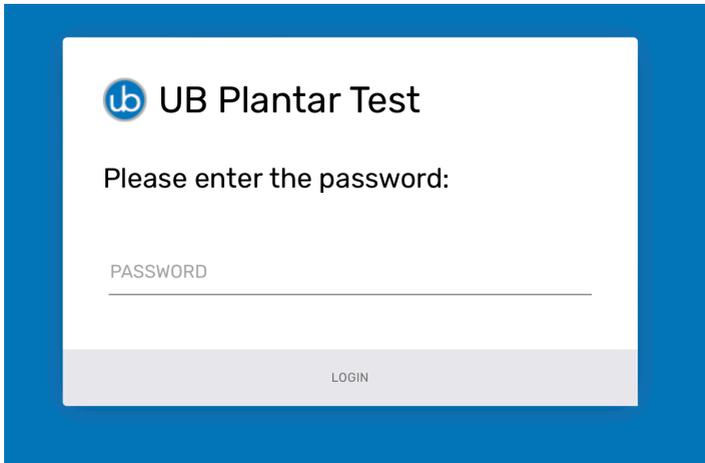
Connect Your Pc to the Plantar test device:

- Open a web browser on the PC and digit the Plantar test device IP address and press enter.

(Plantar test IP address can be seen on the device screen pressing the UB logo on the top of the main page, which take You to the info page, find the number after the text IP: on the screen and take note of it: e.g. 10.0.2.163)

*Note: if you find this number with zeroes values, review the network configuration of the Plantar test device, You must have some values.*

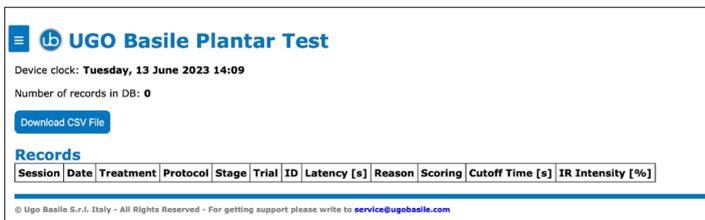
The login page should appears:



Default password is **UgoBasile**

- Digit the default password and press LOGIN

The following page will be displayed:



Session	Date	Treatment	Protocol	Stage	Trial	ID	Latency [s]	Reason	Scoring	Cutoff Time [s]	IR Intensity [%]
---------	------	-----------	----------	-------	-------	----	-------------	--------	---------	-----------------	------------------

You are now logged in.

- As a first operation please set a new password, using this icon  select the menu item Change Password.
  - Fill the "Current password" field with the default password (UgoBasile) then fill the next field "New Password" with Your chosen password and confirm it filling the "Repeat new password" field
- Note that Password length must be between 8 and 15 characters and should contain at least a lower-case letter, an upper-case letter, a digit and a symbol.*

- Press Change Password; You should see for 3 seconds a page confirming the password has been changed

**If password has been lost and there are no way to find it:**

On the Plantar test device main page, go to the Utility button and press Factory Reset, this operation will erase all the Plantar test data including the experiment result data.

**WARNING ALL PLANTART TEST DATA WILL BE LOST**

Provide a USB data export from the USB storage menu (Export result) before executing this Factory Reset function.

Your Plantar test now is having the default password UgoBasile, You can now set a new password as previously described

**Load Experiment data from a X-Pad file from a PC web browser:**

It is possible to populate the Experiment data of the Plantar test with out the use of the Plantar test touch display but via a Windows PC, using the provided Ugo Basile X-Pad windows application which is included into the Plantar Test provided USB pen-drive.

Please refer to the X-Pad instruction manual for installing and using the software application X-PAD.

Once You have the Experiment file on Your PC, open a Web browser and connect to the Plantar Test device, then log in.

From the menu go to "Experiment" and press "Choose File" (this text is depending of Your operative system language), point to the X-PAD file You have in Your PC and press "Send to device" button.

Your experiment data are now available into the Plantar test device and can not be modified; You can delete them from the Plantar test touch screen from the USB Storage menu with the button unload Experiment.

You are now ready to start the experiment.

**Retrieve Experiment result data from Plantar test to a PC web browser:**

When experiment if completed You can export all the experiment result data from the Plantar test to a PC using the Web browser communication.

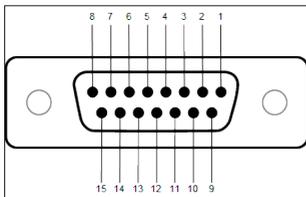
Log in into the Plantar test and go to the Result page from the menu.

Press the button "Download CSV File" and the csv (comma separated value) file will be saved into Your set download directory for further use.

## 5 Communication port connection

The Plantar Test device is provided with a D-sub (DA-15 Female) TTL I/O port. This port could be used to synchronize some events with external instruments or acquisition systems. TTL Output signal are electrical isolated in order to guarantee an electrical barrier between Librae Incapacitance Tester and any other external device.

TTL signals are referred to Power Ground (pin 14 and pin 15)



*D-sub connector pins*

DB-15 Pin#	Signal Name	Signal Type	Description
1	Start/Stop	TTL OUT	Start -> TTL High Level Stop -> TTL Low Level
2	Detection Manual/Automatic	TTL OUT	Manual -> TTL High Level Automatic -> TTL Low Level
3	Reserved	TTL OUT	Reserved
4	Reserved	TTL OUT	Reserved
5	Reserved	TTL OUT	Reserved
6	Reserved	TTL OUT	Reserved
7	Reserved	TTL OUT	Reserved
8	IR value	ANALOG OUT	Analog IR value
9	External start	TTL IN	Start -> TTL High Level Stop -> TTL Low Level
10	Reserved	TTL IN	Reserved
11	Reserved	TTL IN	Reserved
12	Reserved	TTL OUT	Reserved
13	Detection	TTL OUT	Detection -> TTL High Level No detection -> TTL Low Level

DB-15 Pin#	Signal Name	Signal Type	Description
14	GND	POWER	Power Ground
15	GND	POWER	Power Ground

### *D-sub connector pin-out table*

NOTE: TTL OUT is designed for connection with scientific instruments! DO NOT CONNECT ANY POWER DEVICE!

NOTE: DO NOT SINK a current more then 10mA from each TTL pin! DAMAGE WILL OCCURS.

## 6 Maintenance

While any service of the instrument ought to be carried out by Ugo Basile personnel or by qualified personnel authorized by UGO BASILE organization, this manual section describes normal maintenance procedures which can be carried out at your facility.

**UNPLUG THE MAIN CORD BEFORE CARRYING OUT ANY MAINTENANCE JOB**

### 6.1 Electrical

To inspect and/or replace the fuses, disconnect the mains cable first! Insert a miniature screwdriver in the slot indentation and snap out the slide which houses the fuses. Snap in the fuse slide: the mechanical "click" ensures that it is locked.

### 6.2 Cleaning/disinfection

The Plantar Test does not require any maintenance apart from normal cleaning.

Do not use organic solutions. Cotton wool and water can be used for cleaning purposes. For disinfection, use a non-alcoholic disinfectant, or H<sub>2</sub>O<sub>2</sub>.

### 6.3 Long Inactivity

The instrument does not require any particular maintenance after long inactivity, except cleaning

### 6.4 Customer Support

For any further information you may desire concerning the use and/or maintenance of the Plantar Test, please do not hesitate to contact our service department (or our local distributor) either directly or via our support page <http://www.ugobasile.com/support.html>:

Before sending any instrument to our factory for repair, please contact our logistics department to obtain a return authorization number (RMA) and shipping/packing instructions. We may not be held responsible for damages during transport due to poor packing; whenever possible, please use the original packing.

# 7 Specification

<b>General</b>	
Command Input	4.3" TFT touch-screen
Read-out	4.3" TFT touch-screen
Power Requirements	Universal input 100-240 VAC, 50-60Hz, 50W
Sound Level	< 54dB
Operating environment	10°C to 40°C; 5% to 95% RH (non-condensing)
<b>Operation</b>	
I.R. Intensity	Adjustable from 1 to 100 (in one digit steps)
Latency time	0.1s steps
Cut-off function	From 5 to 30 sec
Measurement Mode	Manual and automatic
Start Experiment	By Start button, push buttons or TTL input
Stop Experiment	By Stop button, push buttons, cut-off or TTL input
Data export	.csv format, from USB key (provided)
TTL I/O	Input and output TTL signal
<b>Physical weights</b>	
Total Weight	11.0 kg
Shipping Weight	14.0 kg
<b>Physical dimensions</b>	
Platform-base dimension (with cages)	90cm(w) x 38.5cm(d) x 37cm(h)
Electronic unit dimension	25cm(w) x 29cm(d) x 12cm(h)
Required space on table (all parts)	135cm(w) x 40cm(d) x 50cm(h)
Packaging dimensions	98(w) x 49(d) x 47(h)cm
<b>Warranty</b>	
<p>This device is covered by 12-month on-factory manufacturer warranty.            An additional 12 month on-factory warranty period (total 2 years) is available for free after device registration.</p>	

## 8 Bibliography

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For other Ugo Basile products related to this device visit [ugobasile.com](http://ugobasile.com) web site for details



**TGR - Thermal Gradient Ring (Zimmermann's method)**



**The original Plantar Test for thermal stimulation (Hargreaves Apparatus)**



**Dynamic Plantar Aesthesiometer (DPA) for mechanical stimulation**



**Thermal Place Preference (TPP Test) for Mice & Rats**



**Plethysmometer, the 1st and original device for measuring paw volume & oedema**



**Analgesy-Meter the 1st and original Randall-Selitto paw-pressure test**



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**Hot/Cold Plate NG for screening of thermal hyperalgesia/allodynia**



**e-VF Handheld Electronic Von Frey of original design**



**PAM Pressure Application Measurement (for joint pain)**



**Orofacial Stimulation Test (Fehrenbacher, Henry, Hargreaves method)**



**Tail-Flick Unit, thermal stimulation of the tail, according to D'Amour & Smith method**

**I.R. Heat-Flux Radiometer for Tail Flick and Plantar Test**



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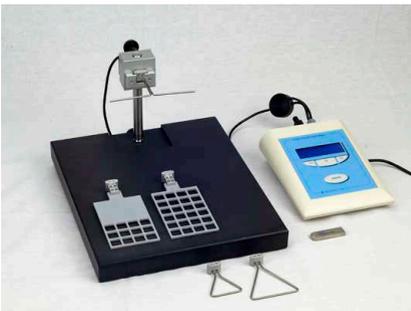
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**The Rota-Rod Family**



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