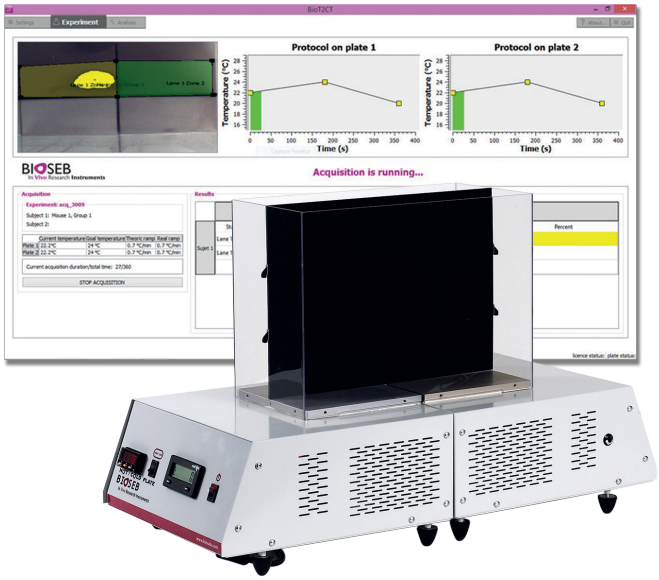
BIOSEB
In Vivo Research Instruments

AN OPERATOR INDEPENDENT TEST TO STUDY PAIN THRESHOLDS IN RODENTS BY ASSESSING TEMPERATURE PREFERENCE



BIO-T2CT:
Thermal Place Preference

INSTRUMENT OVERVIEW

Combining Bioseb's wide-range, precision Cold Hot Plates with our robust video tracking, the Thermal Preference Test (or 2 Temperatures Choice Nociception Test) allows for **objective and automated investigation of the thermal sensitivity** of rodents.

This **operator-independent** test monitors the locomotor activity of an animal presented with a choice of two temperatures. Two cold hot plates are independently controlled to maintain constant temperature or to ramp, enabling a variety of temperature preference inquiries.

Provided with a **dedicated software** to manage and synchronize plate temperatures and video tracking, the Thermal Preference Test is a complete solution for pain studies, drug screening and phenotyping.

HOW DOES IT WORK?

The software is **easy to use**. The operator defines protocols of constant or ramping temperatures to setup the temperature of each zone during the test. Once the temperatures are achieved, animals (2 mice or rats) are placed inside the arena and the acquisition is launched.

The **analysis is fully automatic** and results are displayed in tabular and graphic formats. Data can be exported to Excel or text file. Full arena and zone-specific total time, mobility time, distance travelled and transition counts are among the results reported. Individual subject runs or groups of animals can be analysed in one step for rapid identification of trends.

DOMAINS OF APPLICATION

- Neuropathic & Chronic pain
- Allodynia/Hyperalgesia
- Phenotyping
- Neurodegeneration & Nerve injury
- Mood disorders

KEY FEATURES

- Combines 2 standard Bioseb Cold Hot Plates
- Both plates can also be used as stand alone devices
- Each plate independently managed from -2 to 55 °C
- Video tracking: display & record position & zone transitions
- Software management of temperature and protocols
- Fast temperature transitions
- Two mice or one rat per acquisition
- Data can be analysed in groups or by individual subject

TECHNICAL SPECIFICATIONS

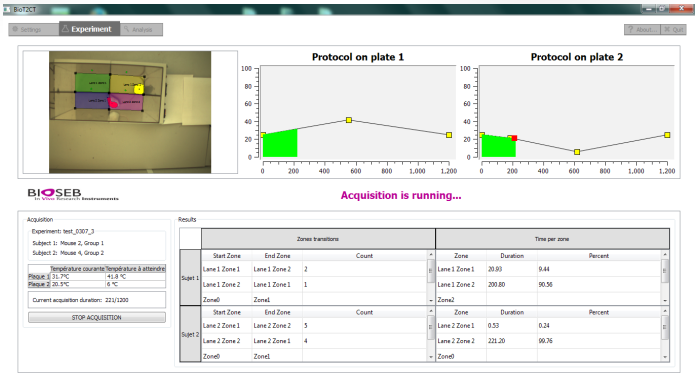
Dimensions - Enclosure	330 x 165 x 300 mm (Standard version)
Dimensions - Total (incl. enclosure)	320 x 570 x 455 mm, 14 kg. (Standard version)
Temperature range	-2 °C. to 55 °C (in 20 to 25 °C ambient environment, 50% RH)
Temp. accuracy / Max. overshoot	Accuracy: +/- 0.5 °C. ; Max. overshoot: 0.5 °C
Time & Position measurement	1 second accuracy, video analysis
Electrical power	150 watts

Phone: North America +1 727 521 1808 - Europe & other Areas +33 442 344 360 - Email: info@bioseb.com WWW.BIOSEB.COM

BIO-T2CT: Thermal Place Preference

DEDICATED SOFTWARE

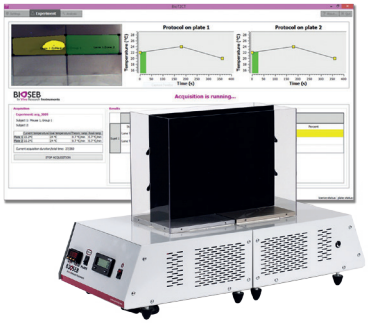
The software was designed for an intuitive user experience. Our integrated solution manages programming of both cold hot plates & video tracking. **Three Tabs Organization** provides easy navigation through Settings, Experiment & Analysis modules and the optimized screen layout displays the acquisition in real time. Acquisitions can be analysed by subject or in groups and results are displayed in colorful graphics for **quick identification of phenotypes**.



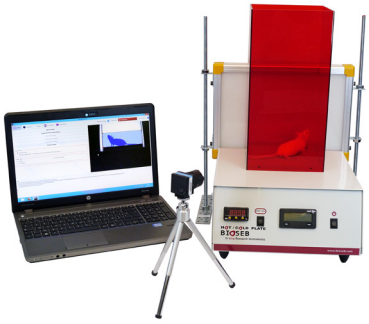
Using accurate video tracking algorithms, automated analysis is Excel compatible and includes:

- Time spent in each temperature zone (time and %)
- Time of each zone trespassing
- Temperature of each zone during the test
- Activity time of the animal (total or by zone)
- Distance travelled by the animal (total or by zone)
- Transition Counts

A SUIT OF THERMAL PREFERENCE & EVOKED PAIN EVALUATION TOOLS



Two Temperature Choice Test
Track animal position while experiencing two temperature paradigm.



Jump Test
Evaluate the escaping behaviour of mice experimenting a ramp of cold and hot temperatures over a plate.

Thermal Gradient Test
Automatically track the position of a rodent exposed to a gradient of temperature.

HIGHLIGHTHED BIBLIOGRAPHY Exhaustive list on our website

Blocking substance P signaling reduces musculotendinous and dermal fibrosis and sensorimotor declines in a rat model of overuse injury, Connect Tissue Res. (2019), Barbe M.F. et al., DOI: 10.1080/03008207.2019.1653289.

Comparing effects of rest with or without a NK1RA on fibrosis and sensorimotor declines induced by a voluntary moderate demand task, J Musculoskelet Neuronal Interact. (2019), Barbe M.F. et al., DOI: 19(4):396-411.

Conditional knockout of NaV1.6 in adult mice ameliorates neuropathic pain, Sci Rep. (2018), Chen L. et al., DOI: 10.1038/s41598-018-22216-w.

Differential Spinal and Supraspinal Activation of Glia in a Rat Model of Morphine Tolerance, Neuroscience (2018), Jokinen V. et al., DOI: 10.1016/j.neuroscience.2018.01.048.

ORDERING INFORMATION

Reference	Description
BIO-**T2CT**	Thermal Place Preference – Standard setup, 2 plates
BIO-**T2CT-ECO**	Thermal Place Preference – Compact setup, 1 plate, smaller dimensions

FOR MORE INFORMATION, VISIT OUR WEBSITE: WWW.BIOSEB.COM/WHEELS

ACTIVITY, MOTOR CONTROL & COORDINATION • PAIN - SPONTANEOUS PAIN - POSTURAL DEFICIT • PAIN - MECHANICAL ALLODYNIA / HYPERALGESIA • **PAIN - THERMALALLODYNIA / HYPERALGESIA** • ANXIETY & DEPRESSION DISORDER • LEARNING - MEMORY - ATTENTION - ADDICTION • PHARMACOLOGY & PHYSIOLOGICAL PARAMETERS • SURGERY & STEREOTAXY EQUIPMENT • METABOLISM

Phone: North America +1 727 521 1808 - Europe & other Areas +33 442 344 360 - Email: info@bioseb.com WWW.BIOSEB.COM