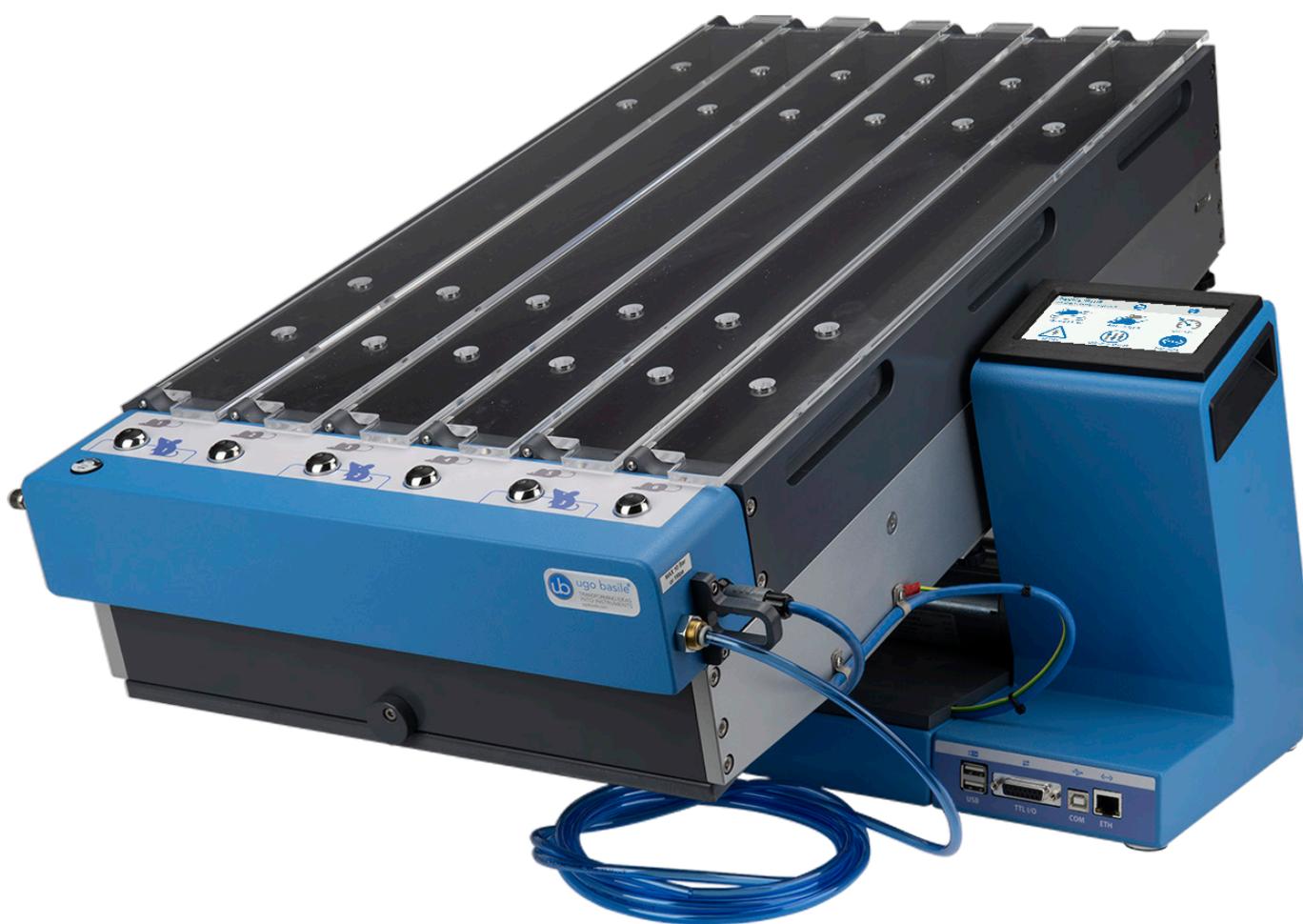


TREADMILL

*Interchangeable Lane Assembly
for Mice and Rats*



ugobasile.com



ugo basile®

YOUR COMPANION IN
DISCOVERY SINCE 1963

Treadmill

For studying behavioral, physiological, biochemical, and molecular responses to both acute exercise stress and chronic exercise training.

Easy set up and control using touch screen.

Automatic measurement of endurance, distance and speed.



Treadmill with 6-Lane partition assembly for Mice and AirPuff option and 3-lane partition assembly 47300-002 for rats.

Background

"Exercise is a multifactorial activity that affects virtually every organ and tissue in the body. Not only does exercise contribute many health benefits, but lack of exercise is implicated in many chronic health problems. As evidence continues to accumulate concerning the impressive range of health benefits that

exercise confers, biomedical researchers have increasingly become interested in conducting systematic studies of exercise to further define those benefits" (from Resource Book for the Design of Animal Exercise Protocols, APS, Feb 2006).

Product Description

Adaptable for use with rats or mice with [simple replacement of the lane assembly](#). Combination Rat/Mouse package available or easy upgrade to dual use at a later stage.

Incorporates a [shock grid at the back of the treadmill](#) to deliver an adjustable mild electric shock, when an aversive stimulus is required. Shock can be pre-set from 0 to 2mA (in 0.1mA steps), with a frequency of 1, 2 or 3 Hz. The grid also functions as [detection circuit](#).

Test settings & monitoring are managed on the [4" touch-screen](#) in the attached control unit.

The [running-lane assembly](#) can be manually tilted from

negative (downhill) or positive (uphill), [from -25° to +25°](#), in steps of 5°.

[Endurance](#), [distance](#) (absolute and relative) and [speed](#) are automatically measured and recorded.

[Speed](#) can be selected [from 3 to 100m/min, in steps of 1m/min](#), in [constant, accelerating or custom ramp modes](#).

A [special lane-assembly for tethered mice](#) is also available as an alternative to the standard model.

[X-PAD software](#) to set up the experiment and manage the results is included.

Typical device applications

Fatigue is a common and frequently poorly-understood symptom in many diseases and disorders. New preclinical assays of fatigue may help to improve current understanding of fatigue-like behavior in rodents and many other exercise paradigms and study future treatment of fatigue.

"Treadmill running has been used extensively over the past decades to study behavioral, physiological, biochemical, and, more recently, molecular responses to both acute exercise stress and chronic exercise training. Although investigators have used a wide variety of species (...) for treadmill running studies, they have used rodents in most of these studies.

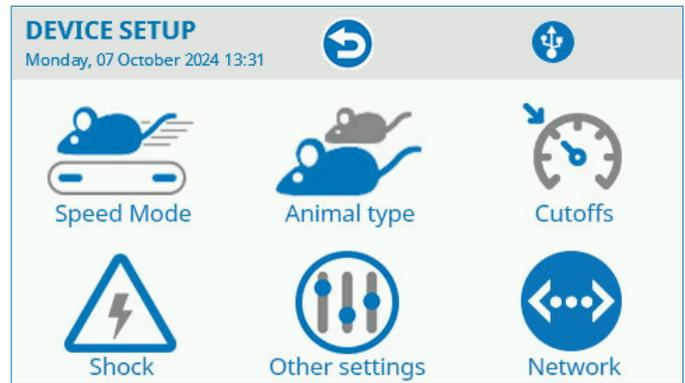
Treadmill running has the distinct advantage over other forms of exercise, including spontaneous wheel running and swimming, that the total amount of external work done by the rat can be easily calculated.

Treadmill running may be construed as a form of forced exercise in which the animal does not have a choice of participating in the activity. Because of this, noxious stimuli (e.g., electric shock and bursts of high-pressure air) may be needed to motivate the animals to exercise"

(from Resource Book for the Design of Animal Exercise Protocols, APS, Feb 2006)



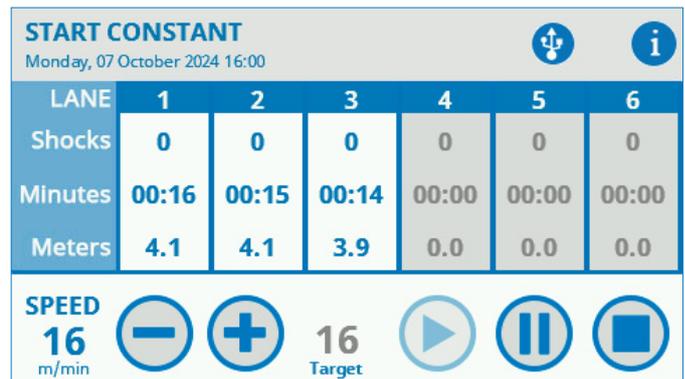
Main Menu to manage your experiment via the 4"3 touch-screen



The parameters that characterize an experiment are set in the "Device Setup" Menu



"Speed Mode" Menu: choose between Constant Speed Mode, Linear Ramp (increasing/decreasing speed) or Custom Ramp (upload a custom ramp directly via USB storage or LAN)



Example of how the experiment in "Constant Speed Mode" is displayed on the touch screen

Features	Benefits
One device for both rats and mice	A single device covers multiple experimental needs, reducing costs and saving lab space The lane assembly can be easily removed, just by lifting and holding it via the two recessed handles provided.
Speed control: adjustable from 3 to 100 m/min in 1 m/min steps	Fine control of exercise intensity for precise protocol tuning
Inclination settings: slope adjustable from -25° to +25°, in 5° steps	Simulates uphill or downhill walking, ideal for studies on fatigue, endurance and motor performance
Multiple running modes: constant, accelerating, or custom speed ramps	Flexibility to match different research paradigms
Shock grid: electric stimulus from 0 to 2 mA, adjustable in 0.1 mA steps	Controlled motivational stimulus with fine tuning for ethical compliance
Detection system: built-in electronics detect speed, distance (absolute and relative)	Automatically collects reliable and reproducible data during the test
Touch-screen control: 4.3-inch display to set and monitor all parameters	Easy and intuitive user interface directly on the device
X-PAD Software: user-friendly PC software to design, monitor, and analyze experiments	Full data management: from protocol setup to results export and reporting
Different possibilities to upload experiments and download results	Via USB Storage Menu or via the direct connection between the Treadmill and a PC is possible via a Local Area Network (LAN).

Main References

- Lee, S., et al. (2025), "[Exercise promotes peripheral glycolysis in skeletal muscle through miR-204 induction via the HIF-1α pathway](#)", *Scientific Reports*
- Chen, Y. et al., (2024), "[Prevention of Muscle Atrophy by Low-Molecular-Weight Fraction from *Hirsutella sinensis* Mycelium](#)", *Curr. Issues Mol. Biol.*
- Dubois, M., et al., (2024), "[Exercise training may reduce fragmented mitochondria in the ischemic-reperfused heart through DRP1](#)", *Journal of General Physiology*
- Wang, B. Y. et al. (2023), "[Mesenchymal stem cells alleviate dexamethasone-induced muscle atrophy in mice and the involvement of ERK1/2 signalling pathway](#)", *Stem Cell Research & Therapy*
- Su, L. et al., (2023), "[Effects of Resveratrol on Muscle Inflammation, Energy Utilisation, and Exercise Performance in an Eccentric Contraction Exercise Mouse Model](#)", *Nutrients*
- Alluri, K., et al., (2023), "[Plasmacytoid dendritic cells contribute to vascular endothelial dysfunction in type 2 diabetes](#)", *Frontiers in Cardiovascular Medicine*
- Leciejewska, N., et al., (2022), "[Spexin Promotes the Proliferation and Differentiation of C2C12 Cells In Vitro—The Effect of Exercise on SPX and SPX Receptor Expression in Skeletal Muscle In Vivo](#)", *Genes*.
- Bayat, M., et al., (2021), "[Aerobic Exercise-Assisted Cardiac Regeneration by Inhibiting Tryptase Release in Mast Cells after Myocardial Infarction](#)", *BioMed Research Inter*

Specifications - General

Commands	4,3 inches touch-scre
Read-out	Touch-screen and PC
Power requirement	Universal input 100-240 VAC, 50-60Hz, 150W max.
Sound Level	80 dB ca. at maximum speed

Specifications - Operation

Speed	Adjustable in the range 1 to 100m/min, in steps of 1m/min
Mode	Constant, Ramp (accelerating), Multi-step personalized ramp
Slope	Manual tilting, positive (uphill) or negative (downhill) from -25° to +25°, in steps of 5°
Shock	From 0 to 2mA (in 0.1mA steps), 3Hz
Start/Stop	From the touch-screen
Detection	When touching the shocker
Results	Time Elapsed, Speed, Distance (absolute and relative), Shocks number, Events.
TTL Output	Shock status, running status and speed
Data In	Experiment can be uploaded via USB Storage or directly on the PC via Ethernet connection or LAN Connection
Data Out	Results can then be downloaded via USB storage or directly on the PC via Ethernet connection or LAN Connection

Physical

Device dimension	56(w)x67(d)x35(h)cm
Total weight	27Kg

Ordering Information

47300	Combination Pack: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid/detection system, with 6-lane partition assembly 47300-003 for mice and with 3-lane partition assembly 47300-002 for rats. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz
47302	Rat Treadmill: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid/detection system, with 3-lane partition assembly 47300-002 for rats. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz
47303	Mouse Treadmill: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid/detection system, with 6-lane partition assembly 47300-003 for mice. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz
47350	Combination Pack: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid PLUS AIR-PUFF/detection system, with 6-lane partition assembly 47300-003 for mice and with 3-lane partition assembly 47300-002 for rats. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz
47352	Rat Treadmill: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid PLUS AIR-PUFF/detection system, with 3-lane partition assembly 47300-002 for rats. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz
47353	Mouse Treadmill: tapis roulant with touch screen,manual tilting (-25°/+25°) shocker, shock grid PLUS AIR-PUFF/detection system, with 6-lane partition assembly 47300-003 for mice. with USB output, USB flash drive. Universal input 85-264 VAC, 50-60 Hz

Optional

47003-013	6-lane assembly (each lane 45x5.5, height 15cm, without lid, for thered mice)
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Warranty (standard 12 months + 12 months with product registration)

Additional UB-Care can be added for other 12 or 24 months

47300-UBC12	UB Care 12 Additional hardware warranty extension 12 months for Treadmill (Valid for SKU 47303/47302/47300/47353/47352/47350)
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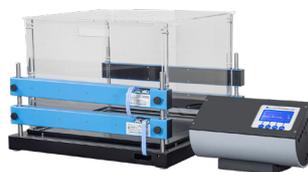
Related Products



Grip Strength Meter
Product Code: 47200



RotaRod for Mice and Rats
Product Code: 47650/47750



Activity Cage
Product Code: 47420/47420-NC



Running Wheel
Product Code: 1800/1850

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more than 40,000 citations in the main bibliographic search engines.

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