

Device part number

VOL-V2002b

Device name

VoITRAX V2b

Short description

VoITRAX™ V2b is a small USB-powered device that automates DNA library preparation. VoITRAX is designed to reduce hands-on library preparation time and improve reproducibility of results. Predefined or custom protocols will be made available in future, enabling complete optimisation of sample preparation and the development of novel methods.

Product overview

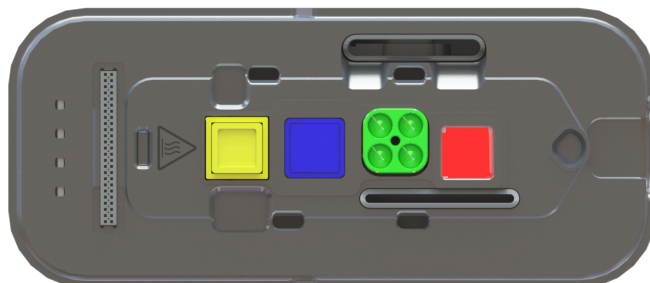
VoITRAX V2b is an automated, multi-purpose, and portable library preparation device. It improves laboratory efficiency, through advantages over human-made nucleic acid library preparations:

1. Automation of mixing and separation between reagents;
2. High levels of reproducibility for nanopore library preparations;
3. Portability, due to its small size and its lightweight, robust structure;
4. Providing a controlled environment for incubations and extractions

The above features improve the efficiency of DNA library preparation. Furthermore, it facilitates the biochemical steps required for nanopore sequencing to a new user. Finally, it extends the environmental remit in which a user can prepare a library and/or extract nucleic acid from a biological or environmental sample.

The VoITRAX V2b device

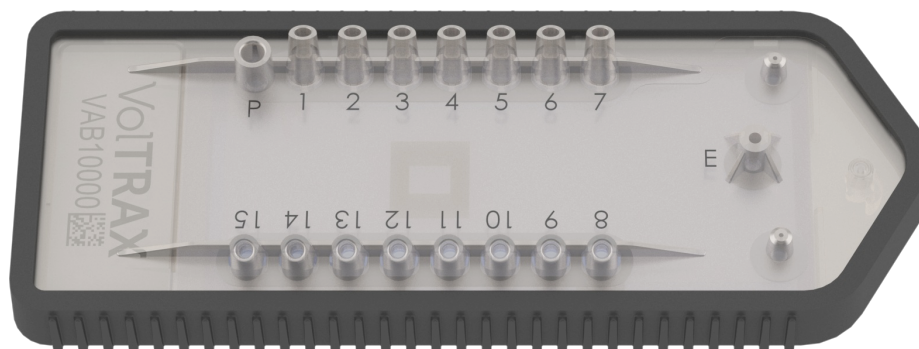
VoITRAX V2b has a metal chassis, containing a heater, peltier, optical fluorescent detector and magnets (the latter four are coloured below).



- **The heater and peltier:** (yellow and blue) - These heat the reagents for reactions and incubation stages of the library preparation. The peltier and heater will warm the reagents, while the former can cool the solution temperature too. These enable dual incubations and/or rapid changes between thermal environments.

- **The magnets:** (green) - These enable responsive, accurate and contamination-free separation of nucleic acids using magnetic beads.
- **The fluorescent light:** (red) - This will enable quantification and quality control checks of nucleic acids. DNA and RNA have a characteristic UV absorption profile at 260 and 280 nm, which is affected by the quality and concentration of the nucleic acids. Appropriate quantities and good quality DNA or RNA are fundamental to a successful sequencing experiment. This feature will directly enable the user to measure the concentration of nucleic acid and assess the quality directly.

The cartridge is supported by a metal chassis, with contact to the four active components shown in the image above. The cartridge has 15 ports and can hold up to 10 different samples for multiplexing. The cartridge is primed by a solution that enables efficient movement and mixing of the loaded libraries and reagents.



The device also comes with a resin-based lid, which will enable fluorescent detection of nucleic acids.

The samples are loaded into a disposable cartridge that interfaces with a reusable core. On the top surface of the core lies the physical analysis tools for manipulation of the reagents in the cartridge. The tools include a thermal cycler, nucleic acid quantifier (optical fluorescent detector), magnetic bead separator and independent, multi-sample mixing technology.

The cartridge contains an array of individually-addressable pixels. By applying a charge, reagent and sample droplets are moved in a path programmed by software, allowing droplets to be moved, mixed and separated.

The VoITRAX V2b device controls a number of physical/analysis tools such as:

- A heater and heat pump for thermal incubations and PCR
- Optical fluorescent light for nucleic acid quantification (this feature will be enabled in future versions of the device software)
- Magnetic control for nucleic acid-associated magnetic bead separation

Liquid droplets can be held by the carefully configured cartridges and the VoITRAX V2b electronics to enable the use of these tools for library preparation processes. The VoITRAX V2b device-cartridge interface provides the functions. The VoITRAX V2b interfaces lie on the top face shown below.



Technical specifications

Component	Specifications
Size and weight	65 mm x 58 mm x 134 mm, 450 g
Power	15 W
Ports	1x USB Type-C
Pre-loaded software	Customer driver
Environmental conditions	Designed to prepare a library in environmental temperatures of +18°C to +25°C Do not cover vents on the top or sides of the device.

Shipping and logistics

The Oxford Nanopore Technologies VolTRAX V2b device is stored and shipped at ambient temperature (15-25°C).

Please note that the VolTRAX V2b is shipped separately to the kits and flow cells.

The delivery charges are calculated when a quote is raised or during checkout. Once an order is made, the delivery ID and delivery information can be tracked in the Store.

IT requirements

VolTRAX V2b is driven by the VolTRAX software. This is responsible for the control of the device and consumable cartridge array.

VolTRAX V2b is less demanding than MinION™. If you are currently running a MinION on a Windows system, or you plan to use a MinION with VolTRAX V2b, the computer requirements for MinION should be all you need to drive VolTRAX V2b.

If you plan to purchase a system dedicated to VolTRAX V2b, the minimum requirements are:

Component	Minimum specification
Operating system	Windows 10 Mac OS X and Linux are in development.
Memory/RAM	2 GB RAM
CPU	64 bit dual core processor
Storage/hard drive	>128 GB SSD
User account privilege level	Local administrator
Ports	USB TYPE C, 5 V, 3 A †
Antivirus software	Installation highly recommended
Internet connection	An internet connection and appropriate firewall settings are required for downloading and running the VolTRAX V2b software.

† Only the USB TYPE C – Gen 3.1 (I or II) or higher – 5 V, 3 A can provide the full range of functionalities on VolTRAX V2b.

Safety and legal info

Intended use of the VolTRAX V2b device

Oxford Nanopore Technologies® VolTRAX V2b device is an electronic preparation and analysis system for use in scientific research.

This product is for research use only

The safety information below provides the user with the details needed to install and use the system safely.

Electrical information

Supply voltage	5 VDC, 3 A via USB Type-C – Gen 3.1 (I or II) <i>Only the USB Type-C – Gen 3.1 (I or II) or higher – 5 V, 3 A can provide the full range of functionalities on VolTRAX V2b</i>
Operating current	Up to 3 A (dependent on PCR functionality load)
Maximum power	15 W

Labels on the instrument

Oxford Nanopore Technologies

VolTRAX V2B Device

Model: VOL-V2002B

For research use only

5V $\overleftrightarrow{=}$ 3A

www.nanoporetech.com

CE

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VB01000

ONT-08-00779-00 - 1

VB01000

Product Code: VOL-V2002B

Description: VolTRAX V2B Device

Store at room temperature

4201000001

ONT-08-00324-02

Emergency procedures

In case of emergency, switch the VolTRAX V2b off at the power source by unplugging the USB power cable from the device.

Declaration of conformity

The VolTRAX V2b conforms to the EMC and Electrical Safety directives as outlined in the EC Declaration of Conformity.

EC DECLARATION OF CONFORMITY

(1) Product

Model name(s): VolTRAX V2 Device
VolTRAX V2B Device

Model part number(s): VOL-V2002 / ONT-00-00073-00
VOL-V2002B / ONT-00-00165-00

Equipment type: Laboratory Equipment

(2) Manufacturer

Name: Oxford Nanopore Technologies plc

Address: Gosling Building, Edmund Halley Road,
Oxford Science Park, Oxford,
OX4 4DQ
United Kingdom

(3) We, Oxford Nanopore Technologies plc, hereby declare under our sole responsibility that the above specified products conform to the following European Directives and applied harmonised standards:

EMC 2014/30/EU Electromagnetic Compatibility

(4) Harmonised standards applied:

EMC EN 61326-2-1:2013 using the common technical requirements
of EN 61326-1:2013

(5) Signed for and on behalf of Oxford Nanopore Technologies plc.

Signature:



Date: 08 August 2023

Full Name:

Rajeev Uppal

Position:

Director Quality Assurance

Place of Issue:

Oxford, United Kingdom

Document: D-0307
Revision: 3

Software license and device warranty

The software licence and device warranty contract ensures your instrument is performing optimally by providing the latest up-to-date hardware and software. The contract guarantees that Oxford Nanopore Technologies support obligations are delivered during the contract period as laid out in sections 4 and 7 of the [Nanopore Product Terms and Conditions](#).

This includes:

- Software updates upon release
- Hardware updates on release
- Return and Replace policy

The service contract extends our warranty to cover the instrument after your initial purchase contract has expired.

What’s in the box

The VoITRAX V2b Starter Pack includes:

- 1 VoITRAX V2b device
- 1 Configuration Kit (2 cartridges and blue dye)
- 4 VoITRAX Cartridge Pack (each pack contains 3 cartridges)
- 4 VoITRAX Sequencing Kits (each kit contains 3 reactions)
- 6 MinION Flow Cells
- 1 USB3.1 / USBC cable

Product cross-compatibility

The VoITRAX V2b can be used together with:

Cartridges

- Cartridge Pack (VCT-V2002D)

Kits

- VoITRAX Configuration Kit (VCK-V2003b)
- VoITRAX Sequencing Kit (VSK-VSK004)
- VoITRAX PCR Tiling 1-12 COVID-19 Kit (VSK-PTC001)

Change log

Date	Version	Changes made
24th April 2024	V4	- Corrected values in "Technical specifications" - Added a Declaration of Conformity
28 July 2022	V3	Updated kit compatibilities
01 December 2021	V2	- Updated the device name to VoITRAX V2b - Updated the "Short description" to say "VoITRAX™ V2b is a small USB-powered device that automates DNA library preparation." - Updated the cartridge and kit compatibilities - USB compatibility statement now says "Only the USB TYPE C – Gen 3.1 (I or II) or higher – 5 V, 3 A can provide the full range of functionalities on VoITRAX V2b" - Updated the device labels, and removed the image of the label on the SpotON flow cell. - Environmental conditions have been updated to "Tested to function at 5°C to +40°C."