FOUR E'S
SCIENTIFIC

Operating Instructions

Mini Vortex Mixer

VM112B



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Safety Instructions

In order to be able to use the appliance properly and safely, every user must first read the operating instructions and observe the safety instructions contained therein. Take care of these operating instructions and keep them in a place where they can be accessed by everyone.

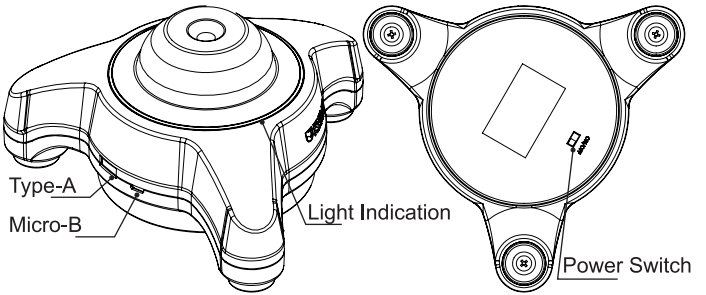
The mini vortex mixer is a laboratory instrument which conforms to the international safety regulations for laboratory instruments.

Caution: Overfilling with liquid may cause the medium to splash out.You should therefore always use covered test tubes.

- The unit is not suitable for manual operation. Observe all pertinent safety instructions and directives, as well as work-safety and accident-prevention regulations for laboratory use.
- The appliance must only be used on non-slip surface.
- When working with the shaker, the user must select and wear his personal protective equipment according to the mixing hazard category. Defective or inadequate protective equipment can expose the user to the risk of squirting liquids and projectile parts. For this reason, only closed test tubes should be used.
- The user may also be at risk if inflammable materials are used in the shaker, or if the trigger contact pressure is too great for glass equipment or the transmitted mechanical shaking power causes the glass to break.
- Furthermore, the shaker may only be used to shake materials or material mixtures that the user knows will not react dangerously to the extra energy produced by

the shaking. This also applies to extra energy generated by solar radiation during the shaking procedure.
- The appliance is maintenance-free and must not be opened.
- The mini vortex mixer was not designed for use in dangerous atmospheres, for mixing dangerous substances or for use under water.
- If the appliance begins to slide, wipe the soft stand feet with a damp cloth.
- The motor can't work continuously for a long time, otherwise it will overheat or even burn out.

Correct Use



- Power Switch: Turn on and turn off the instrument.
- LED light: The color of the LED light matches with the color of the silicon top (There're 3 colors of tops available - Blue, Orange and Green). When the motor is running, the lights are on.
- USB interface: Power on the instrument when the power adapter is plugged into a socket and connected with the Micro-B interface. When the instrument is powered on, the external devices (such as a mobile phone or tablet

PC) can also be charged by connecting with the Type-A interface via a USB cable.
- Vortex mixing: The Mini vortex mixer is designed for shaking test tubes. Gently push the test tube into the soft attachment to start shaking. Shaking stops as soon as you lift out the test tube.

Unpacking

Please unpack the device carefully and check it for damage. It is important that any transport damage is detected when the device is unpacked. If necessary, any inventory of the damage should be made immediately (postal service, railway, haulage company). As supplied, the package contains: The mini vortex mixer, a plug-in power supply unit and an instruction manual.

Commissioning

Connect the appliance to a socket. (Please refer to the information in the “Technical Data” section).

Maintenance and Cleaning

The mini vortex mixer is maintenance-free. It is subject only to the natural wear and tear of components and their statistical failure rate. Use only cleansing agents which have been approved by us to clean our devices.

To remove use:

Dyes	isopropyl alcohol
Constructions materials	water containing tenside / isopropyl alcohol
Cosmetics	water containing tenside / isopropyl alcohol
Foodstuffs	water containing tenside
Fuels	water containing tenside

For materials which are not listed, please request information from us. Wear the proper protective gloves during cleaning of the devices. Electrical devices may not be placed in the cleansing agent for the purpose of cleaning. Before using another then the recommended method for cleaning or decontamination, the user must ascertain with the manufacturer that this method does not destroy the instrument.

Guarantee

You have purchased an original laboratory machine which meets the highest engineering and quality standards.
In accordance with our guarantee conditions, the warranty period of the instrument is 24 months from our shipment. For claims under the guarantee please contact your local dealer. You may also send the machine directly to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

Technical Data

Model	VM112B
Rated voltage [VAC]	100-240
Rated frequency [Hz]	50-60
Output voltage [VDC] (Micro-B)	12
Output voltage [VDC] (Type-A)	5
Output power [W]	10
Speed [rpm]	5600
Operating time [%]	100
Protection class	II
Pollution degree	2
Overvoltage category	II
EN 60529 protection Class	IP 30
Ambient humidity (Relative) [%]	80
Ambient temperature [°C]	5 to 40 (in the operation)
Transport temperature [°C]	-5 to+45
Storage temperature [°C]	-5 to+25
Weight [kg]	1.2
Test tube size [mm]	Φ30
Dimensions [L x W x H, mm]	168x150x85
Type of movement	Orbital
Orbital diameter [mm]	6
Touch function	Yes
Discharging function	Yes
Max. External discharging current [mA]	800