

Advanced in vitro exposure systems

VITROCELL® Shisha Testing Device



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Testing of water pipe tobacco according to ISO 22486

The new device is designed for machine smoking of water pipe tobacco. It is used in combination with the renowned VC 1 Smoking Machine featuring an increased puff volume.

Emissions of water pipe tobacco may be used for chemical analysis or in vitro exposure. The device can be combined with any VITROCELL® Exposure System. All parameters such as puff volume, frequency, puff duration and puff profiles are set according to ISO. The water pipe head is made of ceramics and can be operated either with charcoal or electrical heating.



Integrated electrical heating device



Heating via charcoal



Useful tools for charcoal operation

Features

- Puff duration: $2.6 \text{ s} \pm 0.1 \text{ s}$
- Puff volume: $530 \text{ ml} \pm 10 \text{ ml}$
- Puff frequency: $20 \text{ s} \pm 0.5 \text{ s}$
- Square puff profile
- Electrical heating: $280 \text{ }^\circ\text{C} \pm 10 \text{ }^\circ\text{C}$
- User-friendly temperature control unit



Exposure Systems



Dose Supply



Dilution



Racks & Carts



Dose Monitoring



Skin Exposure



Auxiliary Equipment



The manual smoking machine VC 1 is specifically designed to fulfill the requirements of *in vitro* experiments and analytical testing. The machine is suitable for conventional and

electronic cigarettes as well as for testing of water pipes (shishas). For higher puff volumes it is possible to equip the machine with different cylinder sizes (200, 300 and 600 ml) without compromising the accuracy of the puff profile. The essential requirement for the “Shisha smoking” application is a significant larger puff volume of up to 600 ml.

The conversion procedure to the higher/smaller cylinder size is possible within less than 10 minutes. The Shisha option is designed for an easy upgrade of an already existing VC 1 smoking machine.



Controller for electrical heating with touchscreen display



Ceramic head with tobacco holder and tamper



VITROCELL® VC 1 Smoking Machine with increased puff volume

Technical Data

Dimensions without racks:	565 x 225 x 902 mm (L x W x H)
Voltage:	110–120 V, 140 W, 5 A

About VITROCELL®

VITROCELL® exclusively concentrates on the developing, producing, installing, training and servicing of advanced *in vitro* exposure systems.

The VITROCELL® Systems' team is driven by their vision for new in-vitro standards through state-of-the-art technology, highly qualified workmanship and absolute client dedication. VITROCELL® has successfully collaborated with clients from leading research institutes, contract research organizations, regulatory authorities or industrial laboratories across the world. Working with our team experts, all modules have been tailored to create durable and complete turnkey-systems for *in vitro* inhalation toxicology. Gases, environmental atmospheres, nano particles and complex mixtures are analyzed on lung cells at the air/liquid interface using these systems. VITROCELL® technologies are also applicable to solutions for skin research.

Over a decade of devotion to research in this specific field has given our team of design & precision manufacturing specialists the opportunity to mentor highly diversified and complex projects **from conception to completion**. We strive to become a constructive member of each research team, providing support when it is needed, advice when it is required and modules of the highest quality, which are even polished by hand before leaving here to be integrated into your workspace. Every piece of our German engineered equipment is manufactured to the highest of standards – yours.

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