

# Advanced in vitro exposure systems

VITROCELL® Precision Pump System



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For dosing of very small liquid quantities (5 – 180 µl)

## Introduction

The VITROCELL® CF modules feature the option for culture medium exchange: fresh medium can be pumped in at – if desired – very low flow rates and forwarded out at the same speed. The medium which has been pumped out of the compartment can be further analyzed. This procedure is also recommended for long exposure times.

## VITROCELL® Precision Pump System

The VITROCELL® Precision Pump System was specifically developed and engineered for the time-based dosing of miniscule quantities (5-180 µl).

This stepper motor controlled diaphragm dosing pump system has been specifically designed to accurately dose

small quantities of liquid over long periods of time.

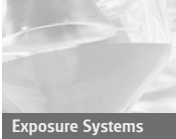
It has two distinctive features - its scalability and durability (pump and electronics).

The VITROCELL® CF modules feature a medium exchange option.

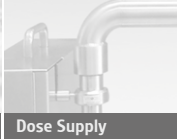


## Advantages

- Simple and precise pump control (interval and volume)
- Flexibility of the control process
- Modular concept: various pump controllers can be interconnected



Exposure Systems



Dose Supply



Dilution



Racks &amp; Carts



Dose Monitoring



Skin Exposure



Auxiliary Equipment

## Features

- Excellent repeatability
- High stability in the long term
- High chemical resistance
- Fast priming and purging mode
- Self priming
- Run-dry ability
- Prolonged operating life
- Maintenance-free (>10'000 h)

## Content of delivery

- Pump Controller with 3 pumps
- Power supply
- Laptop with control software

## Technical Data

Dispense mode:	5 – 180 µl
Priming mode (max.):	20 ml/min
Max. suction height:	4 mWg
Max. back pressure :	6 bar
Accuracy:	±2%
Repeatability:	±1%
Allowed ambient temperature:	+5 – +40 °C
Allowed liquid temperature:	+5 – +80 °C
Max. viscosity liquid:	150 cST
Dimensions Power Supply and Pump Controller:	240 x 200 x 88 mm (W x D x H)
Voltage:	100-240 V, 50/60 Hz

## 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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