



Technical Note

Kima™ Pump

Kima Pump with Apple Application for iPod Touch / iPhone

Kima pump is a microfluidic pump designed to aid cell culture (e.g. endothelial cells) under physiological conditions (shear flow) in various biochips and flow chambers, including Cellix’s Vena8 Endothelial+ biochips where it is possible to culture 8 cell monolayers simultaneously over 24–48 hours. The Kima pump is controlled by the iKima application for use with the iPod touch and iPhone. The Kima pump is placed inside a standard incubator while the iPod touch or iPhone, as it’s controller, sits outside the incubator. The Kima pump connects easily to Cellix’s Vena8 Endothelial+ biochip and other manufacturer’s flow chambers via fully autoclavable tubing and delivers pulses of fresh media to cells seeded inside the microchannels of the biochip. The iKima app is available for download from Apple’s iTunes store.



Kima pump with iPod touch controller. Kima pump is connected via tubing to Vena8 Endothelial+ biochip

Performance and Technical Specifications:

Controller specifications via iPod touch / iPhone	
General specifications	2 modes of pumping: wash and perfusion
	4 sockets which can control 4 Kima pumps independently
	Universal dock station (power + communication) to use with iKima application (available for download on iTunes)
	Wi-Fi communication
	USB communication
	Tactile power switch
	LEDs for power / status information
Power requirements	Input: 100–240V AC / 47 – 63 Hz
	Output: 12V DC – 3.33A max
Dimensions	128 mm (W) x 81 mm (D) x 104 mm (H)
Weight	<550 g (including power supply)
Conditions of use	Temperature: 10°C–40°C
	Humidity: <90% RH
	Altitude: <2000 m

Pump specifications*	
Dead volume	< 300 µL
Working pressure	30 psi–2 bars maximum
Flow direction	Dispense only
	Two modes: wash and perfusion (controlled only by Kima controller via iPod touch / iPhone)
Additional features	Plug and play with Kima controller and iKima application (available for iPod touch / iPhone)
	Featured with a standard 100 mL bottle holder
Dimensions	190 mm (L) x 85 mm (W) x 90 mm (H)
Weight	< 800 g (bottle and tubing not included)
Conditions of use	Temperature: 10°C–60°C
	Humidity: <98% RH
	Altitude: <2000 m

***NOTE:** The Kima pump is not suitable for shear stressed based assays because the pump delivers liquid in pulses (not continuous flow).