

CITSens Bio Sensor	
screen printed electrode with immobilised enzyme	
delivery	gamma sterilised, built into caps of standard disposable bioreactors
precision	± 1 mmol
resolution	glucose: 0.1mmol glutamate: 0.5 mmol lactate: 0.5 mmol
detection limit (glucose, glutamate, lactate)	1 mmol
longest cultivation time	200h
calibration	2 point calibration in situ
dimensions	thickness: app. 150 µm diameter at tip: 1 cm length: 10cm or 22 cm (different lengths on request)
service life in continuous use	14 days
shelf life	6 months at 5°C
Radio Transmitter CITSens Bio Beamer	
technology	active RFID
frequency	2.4-2.483 GHz
battery	rechargeable batteries
dimensions	LxWxH:85x46x16mm
Radio Receiver ZOMOFI	
technology	active RFID
frequency	2.4-2.483 GHz
dimensions	LxWxH:125x105x27mm
weight	204g
PC connection	RS232 Network connection with integrated Lantronix WLAN/LAN module
Software	21CFR11 compliant

CITSens Bio

glucose, glutamate, lactate

Adolf Kühner AG
Dinkelbergstrasse 1
CH-4127 Birsfelden (Basel)
Switzerland

Tel: +41 61 3199393
Fax: +41 61 3199394
www.kuhner.com
office@kuhner.com



CITSens Bio is a system for on-line, in situ measurement of glucose, glutamate and lactate in cell cultures.

Real time analysis of measurements relevant to the process, takes place in the disposable reactor. This eliminates costly and risky sample taking which disturbs the cell system and could lead to contamination. With CITSens Bio, cell culture sterility is guaranteed at all times.

The **CITSens Bio** sensor, a screen printed electrode, is very easy to handle. The gamma sterilised sensor is delivered ready for use.

CITSens Bio is suitable for the following applications:

- 3D-cell cultures
- cell cultures
- high throughput applications
- starter cultures
- monitoring the sterility of cell cultures and culture media



The sensor is connected to the **CITSens Bio Beamer** by a cable. The CITSens Bio Beamer is placed right next to the reactor system and incorporates a data acquisition unit as well as a transmitter for wireless transmission of the measured values of glucose, glutamate and lactate in g/l directly to a receiver.

ZOMOFI[®] receives measurement data from up to 1,000 sensors and transfers these to the PC (RS232 or LAN). The software enables the sensors to be calibrated, displays the status of the radio modules and can group individual sensors together. The measured data is illustrated in graphs and can be exported in CSV format.

CITSens Bio media sensor

on-line measurement
in a shake flask



- + on-line signal
- + sterility
- + optimised cultivation conditions
- + made for PAT

glucose
glutamate
lactate