

EloTrace is an automatic measurement system for continuous electrooptical analysis of bacterial cultures *in vivo*. The electrooptical monitoring uses high-precision optical sensors which quantify induced polarized charges at cellular membranes. The level of this polarizability is closely linked to the actual physiological state of the cell, so that dynamic changes in cell activity and regulatory processes can be determined during cultivation processes in real time. No expensive chemical are needed. Intelligent software makes it easy to use.

Areas of application

- Production of recombinant proteins and other biosubstances
- Production of vaccines
- Production of starter cultures, probiotic and competent cells
- High density fermentation
- Quality assurance and process validation of fermentations
- Many other fermentation strategies



Advantages

- Automatic determination of
 - Cell activity
 - Stress levels
 - Cell size
 - Morphological changes
- Using high number of cell for statistically firm information
- Observation of division frequency and prediction of culture development
- Prediction of time points with higher cell vitality
- Selection of optimal time points of
 - Inoculation
 - Induction
 - Harvest
- High precision data recording
- Automatic report generator

Electrical fields

- Frequencies: 1 kHz – 39.96 MHz
- Field strength: 0.5 – 100 V / cm
- Application time: 1 – 32 s
- Measurement chamber: approx. 0.6 ml
- Minimal cell concentration: 0.2 – 2 x 10⁸ cells / ml

Probe preparation


- Typical volume of suspension: 2 – 5 ml culture*
- Time for automatic probe preparation: 3 – 6 min*

*dependent on concentration of cells and remaining ions

Software

- Real-time data monitor
- Direct comparison between actual and archived data
- Report function
- Data Export to ASCII (MS Excel, Origin, PlotIT, StarOffice, OpenOffice.org etc.)

Electrical characteristics

- External AC/DC adapter:
Input: 230 V ~ (other Voltages available)
50 Hz, max. 1.5 A
Output: 12 V =  , max. 300 mA
- EloTrace power usage: 12 V, max. 200 mA
- PC Interface: RS232 (optional USB)

Mechanical Parameters

- Dimensions (W × H × D): 452 × 355 × 385 mm
- Weight: 5.2 kg

Included in Delivery

- Electrooptical measurement unit
- Bypass-tubes (2x2 m)
- Controller software installation CD
- Interface cable (RS232)
- Instruction manual

Environment

- Operating temperature: 10...40 °C (50...104°F)
- Storage temperature: 10...50 °C (50...122°F)
- Humidity: max. 85%, not condensing

Optional Parts

- Vacuum pump
- Additional water vessel
- Additional waste vessel
- Vials for turret
- Vials for fluidic block

Contact

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