Strathkelvin Instruments precision dissolved oxygen measurement systems and accessories are successfully operating in teaching and research laboratories worldwide.

Combined with Strathkelvin Respirometry software, dissolved oxygen meters and respiration chambers are providing accurate and rapid measurement of dissolved oxygen and respiration rates across a wide number of Life Science fields.

Dissolved Oxygen Measurement Systems Brochure

SINGLE/DUAL CHANNEL OXYGEN MEASUREMENT

SI782 Oxygen Meter

The 782 single/dual channel Oxygen meter operates with 1 or 2 microcathode oxygen electrodes for precision dissolved oxygen measurement. The meter has facilities for off-line data recording and storage or alternatively can interface with a PC for operation with dedicated Strathkelvin Respirometry software.

FEATURES

- May be used with the complete range of Strathkelvin Respiration chambers.
- Range of dissolved oxygen & respiration units selectable.
- Sophisticated software enables automatic calculation and reporting of respiration rates.

The 929 six-channel Oxygen meter operates with up to 6 microcathode oxygen electrodes. Using Strathkelvin Respirometry software, the 929 System allows replicate dissolved oxygen measurements together with automatic data recording and analysis.

FEATURES

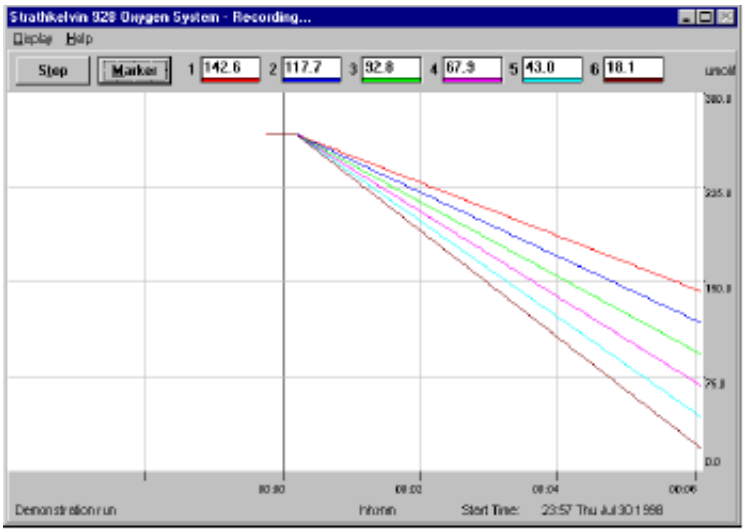
- May be used with the complete range of Strathkelvin Respiration chambers.
- Range of dissolved oxygen & respiration units selectable.
- Considerable time is saved when replicate experiments are required.

SIX CHANNEL OXYGEN MEASUREMENT

SI929 Oxygen Meter

OXYGEN MEASUREMENT AND ANALYSIS SOFTWARE

Both the 782 and 929 meters operate with sophisticated yet user-friendly software for accurate recording and analysis of dissolved oxygen measurements and respirometry experiments.



As the experiment progresses, oxygen concentration is plotted against time and is viewed scrolling across the screen. Annotated event markers can be incorporated to highlight any experimental manipulations during the recording.

The software allows complete control of the experiment on screen. The program takes you easily from electrode calibration and dissolved oxygen measurement through to automatic analysis of results with tabulated test reports.

A comprehensive manual is provided which guides the user through every aspect of the program and is accompanied by Windows on-screen help to ensure ease of use.

The Clark type electrode consists of a platinum cathode and silver/silver chloride anode connected by a buffered potassium chloride electrolyte solution.

The electrode operates with a choice of membrane jacket which include:

Polypropylene – has a relatively low permeability allowing the electrode to be used in unstirred or minimally stirred solutions. Relatively slow response time.

FEP – Very thin membrane, with a fast response time. Ideal for monitoring rapidly, respiring enzyme preparations. Requires solutions to be rapidly stirred.

FEATURES

- Extremely stable output.
- Very low rate of oxygen consumption [0.5 – 3 x 10^{-10}mg/O_2/min].
- Response time at 37^{oC} :
  Polypropylene c 18sec for 90% change
  FEP c 6sec for 90% change
- Compatible with all Strathkelvin accessories

1302 MICROCATHODE OXYGEN ELECTRODE

MT200 and MT200A MITOCELL RESPIROMETERS

Micro volume respirometer for medical researchers measuring oxygen uptake of mitochondrial, enzyme and cell preparations.

The Mitocell respirometer is the latest design in precision respirometry chamber measurement.
The interchangeable glass chambers enable measurement of dissolved oxygen and study of respiration rates from micro volume mitochondrial and isolated cell preparations.
Uniquely designed plunger, permitting injection of respiratory substrates and inhibitors directly

FEATURES

- When used with the 782 meter and Mitocell software, the system automatically calculates State 3 & 4 respiration rates, ADP/O ratios and RCR.
- Adjustable and interchangeable glass chamber volumes MT200 : 50ul and 100ul MT200A : 0.3, 0.5 and 1.0ml
- Integral Magnetic stirrer

FEATURES

- Adjustable sample volumes
  RC300: 0.3 - 1.0ml
  RC350: 1.0 - 3.0ml
- High visibility of chamber contents
- Easily cleaned following an experiment

The RC300 and RC350 cells consist of a glass water jacket housing the sample chamber and electrode parking tube. When fitted to a temperature controlled water circulator the RC300 and RC350 chambers allow dissolved oxygen and respiration measurements of solutions such as microbial, mitochondrial and enzyme suspensions.
The RC300 and RC350 electrode holders are specifically designed to permit substrate addition directly into the respiring solution as a respiratory run progresses.

RC300 AND RC350 RESPIRATION CELLS

For small volume measurements of oxygen uptake by microbial and cell suspensions and mitochondrial or enzyme preparations.

RC400 RESPIRATION CHAMBER

For Marine Biologists wishing to measure respiration rates of larger aquatic animals including mussels and fry.

FEATURES

- Chamber volume of 730ml
- Design of chamber ensures minimal distress placed of animal during the experiment
- Minimal stirring required for measurement of respiration rates. No stirring required if the animal is mobile.

The RC400 is a clear Perspex respiration chamber with screw on lid. The electrode fits securely through this lid to record dissolved oxygen levels within the sealed chamber.
The perforated false floor of the chamber allows respiratory measurements of immobile animals such as mussels, this avoids disturbance of the animal by the spin bar on the bottom of the chamber. Substrates may easily be added to the chamber during an experiment.

When operated with the 929 Oxygen meter this complete 6 cell respirometry system enables replicate measurement of dissolved oxygen and respiration rates. The system comprises a sealed water bath containing 6 respirometry chambers located above a magnetic stirrer. The specially designed electrode holders of the RC650 enable adjustable sample volume and direct injection of substrates and inhibitor to the respiring sample during the course of the experiment.

FEATURES

- Replicate respirometry experiments offer time saving option and broader scope for experimentation.
- Adjustable cell volume of 1-3ml.
- Parking tubes for electrodes when not in use or between experiments when samples are being added to the respirometry cells.

RC650 MULTI-CELL RESPIROMETER

For small volume replicate measurements of oxygen uptake by microbial and cell suspensions and mitochondrial or enzyme preparations.

MC100
MICROCELL RESPIROMETER

For flow through or spot measurements of PO2 measurement of blood and other fluids

The Microcell is a dual purpose respirometer which can be used for flow through respirometry or alternatively for respiratory analysis of individually injected samples.

Flow through respirometry is made possible through attachment of the Microcell to the outflow of a vessel containing the respiring preparation. The chamber is drained through a glass Luer fitting located on top of the respirometer. Alternatively samples can be injected directly into the chamber for on the spot respirometry determinations.

FEATURES

- Chamber of volume 70_{ul}
- Easily mountable to the level of the vessel containing the respiring preparation.
- Exceptional visibility of sample within the chamber and the flow through channels.

The versatile Flowcell can be used for continuous in-line oxygen measurement or alternatively can be connected to a custom flow through chamber for oxygen monitoring.
When utilised with the 782 meters Flow Through application automatic calculation of respiration rates are determined from the rate of water flow and the difference in concentration from the inlet and outlet of the respirometer.
The Flowcell can also be used with the Oxygen monitoring application of the 782.

FEATURES

- Uniquely designed electrode holder immerses electrode tip directly into sample flow.
- Excellent visibility of the flow line.
- Easily mountable to the level of the flow line or for immersion.
- Easily dismantled for cleaning.

FC100 FLOWCELL

For continuous in-line oxygen monitoring

EH100
ELECTRODE HOLDER

For use with custom designed respiration chambers

The EH 100 is for use with the 1302 electrode when customised respirometry chambers are being used.
The acrylic collar is cemented into the wall of the custom chamber. The electrode is inserted into the EH 100 holder, which then projects through the collar and into the respiring sample.

The Tucker Cell is used for measuring the oxygen content of haemoglobin and haemocyanin containing blood by the method of Tucker (1967).

TC500
TUCKER CELL

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Strathkelvin has established a worldwide reputation for its laboratory precision dissolved oxygen instruments. Our expert technical advisors are always available to provide help and advice with selection of respirometer and accessories for your particular application. Similarly, after sales back up can be readily obtained from our experts by means of telephone and email.

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