OROBOROS INSTRUMENTS
high-resolution respirometry

O2k-Info

Mitochondrial Physiology Network 19.17: 1-2 (2014)
Updates: http://wiki.oroboros.at/index.php/MiPNet19.17_Series_G

Version 01: 2015-04-09

Oxygraph-2k Series G: innovations

Fleischmann S, Fasching M, Gradl P, Schwaninger H, Gnaiger E

OROBOROS INSTRUMENTS Corp.
high-resolution respirometry
Schöpfstr. 18, A-6020 Innsbruck, Austria
instruments@oroboros.at; www.oroboros.at

The current version of the O2k-Core (OROBOROS Oxygraph-2k Core) - the experimental system for basic HRR - is the Oxygraph-2k Series G. The O2k-Series G sets a new standard in merging high-end technology and Corporate Social Responsibility.

The added features include:

- Increased energy efficiency thanks to the new O2k-electronics design: lower running costs (24 W compared to 41 W in Series E-F and 136 W in Series D at 37 °C) following our general concept for sustainable technology. The max. power input is 120 W.
- O2k net weight is reduced to 13.45 kg in comparison to 14.2 kg in Series E-F and 21 kg in Series D.
- DatLab 6 is the new software version for the Oxygraph-2k Series G.
- Ambient temperature: An internal thermistor is implemented for continuous monitoring of ambient room temperature, as an additional element of quality control. This sets a new standard in high-resolution respirometry, (i) at the level of automatic feedback-control elements in the firmware and (ii) by allowing the experimenter to evaluate any possible influence of external temperature fluctuations on signal stability.
- External temperature port (TEMP ext; Pt1000): An external thermistor can be connected, e.g. for monitoring the temperature in the aqueous medium of the O2k-Chamber. This is a relevant objective when designing respiratory measurements in response to dynamic temperature changes. The additional temperature channels can be continuously recorded by DatLab 6.
- Faster connection time to DatLab.

- USB hub 2.0 Hi-Speed (4 Port external): Four additional USB-devices can be connected to the Oxygraph-2k (e.g. USB flash drive, mouse, keyboard…), and fewer ports are necessary on your Laptop.

- Higher A-D converter (ADC) resolution: The new 24 bit ADCs provide a higher precision in measurement of O2, Amp (fluorometric and NO measurements), and pX (potentiometric measurements). The standard gain setting for the oxygen channel is 1, which does not have to be adjusted for any standard measurements.

- Extensions via RS485: This enables experimental extensions in the future, e.g. related to current supply and data communication.

For updates and detailed information on the O2k-Core: go to wiki.oroboros

O2k-Publications
http://wiki.oroboros.at/index.php/O2k-Publications

Top 10 Reasons
www.oroboros.at/?HRR-10Reasons

O2k
www.oroboros.at/?Oxygraph

WorldWide MiPNet
http://wiki.oroboros.at/index.php/MiPNet_Reference_Laboratories

O2k-Protocols
http://wiki.oroboros.at/index.php/O2k-Protocols

MitoPedia: High-resolution terminology
www.bioblast.at/index.php/MitoPedia: Respirometry
www.bioblast.at/index.php/MitoPedia: Fluorometry