

Automatically calculate metabolic rate through simultaneous measurement of respiratory gas concentrations and airflow.

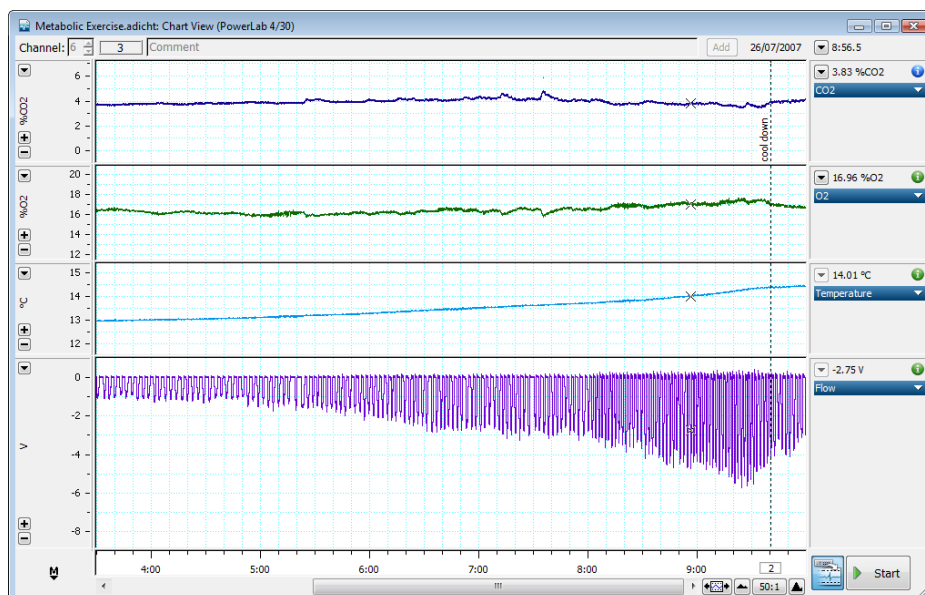
The Metabolic Module for LabChart is ideal for determining cardiorespiratory function and exercise physiology measurements.

Use in conjunction with the Exercise Physiology System to record inspiration or expiration of airflow from a pneumotach, and CO₂ and O₂ concentrations from expired air in a gas mixing chamber. Take advantage of simultaneous measurement to calculate and display metabolic variables instantaneously.

Automatically calculate expired minute volume (L/min), oxygen consumption (L/min), carbon dioxide production (L/min), and respiratory gas ratio. Compile graphs and data into a shareable report.

Applications

- Cardiorespiratory Function
- Exercise Physiology
- Metabolic Studies
- Respiratory Gas Analysis
- Pulmonary Function Analysis
- Indirect Calorimetry
- Anaerobic Threshold
- Biopotential Measurements
- Spirometry



Left: Chart View showing %CO₂, %O₂, and airflow.



The Metabolic Analysis module allows you to:

- Set averaging time (data logging) and recording time (duration of experiment)
- Enter subject details (e.g. name, age, weight, height, and gender)
- Specify environmental factors (e.g. atmosphere or air conditions)
- Calibrate your data: settings for automated first and second gas calibrations
- Customize the reports generated by the Metabolic Module

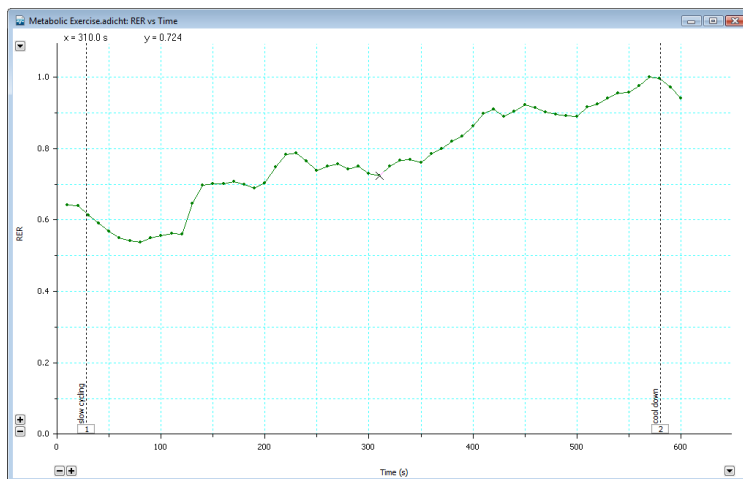
Analysis plots

There are eight options for viewing results of the metabolic calculations:

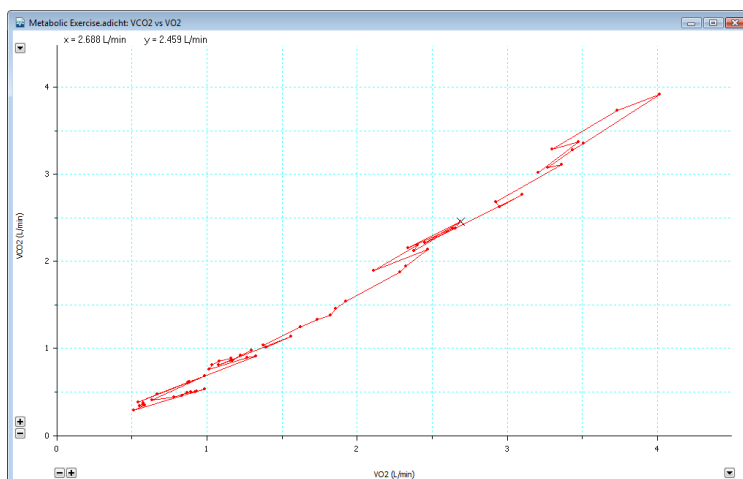
- **VE(BTPS) versus VO₂**: Expired Minute Volume (BTPS) versus Oxygen Consumption
- **VE(BTPS) versus VCO₂**: Expired Minute Volume (BTPS) versus Carbon Dioxide Production
- **VCO₂ versus VO₂**: Carbon Dioxide Production versus Oxygen Consumption
- **RER versus Time**: Respiratory Gas Ratio versus Time
- **VO₂ versus Time**: Oxygen Consumption versus Time
- **VE(BTPS) or VI(ATPS) versus Time**: Expired Minute Volume (BTPS) or Inspired Minute Volume (ATPS) versus Time
- **RER versus Time**: Respiratory Gas Ratio versus Time
- **Log Window**: A repository of real-time averaged ventilation and gas calculations

Time (s)	VE(BTPS) (L/min)	VO ₂ (L/min)	VCO ₂ (L/min)	RER
1	10.0	13.175	0.575	0.369
2	20.0	13.154	0.579	0.371
3	30.0	12.282	0.552	0.339
4	40.0	12.579	0.586	0.346
5	50.0	10.440	0.511	0.291
6	60.0	15.387	0.837	0.460
7	70.0	17.361	0.984	0.533
8	80.0	16.093	0.925	0.497
9	90.0	16.636	0.930	0.511
10	100.0	16.243	0.895	0.497
11	110.0	15.910	0.867	0.488
12	120.0	14.874	0.782	0.438

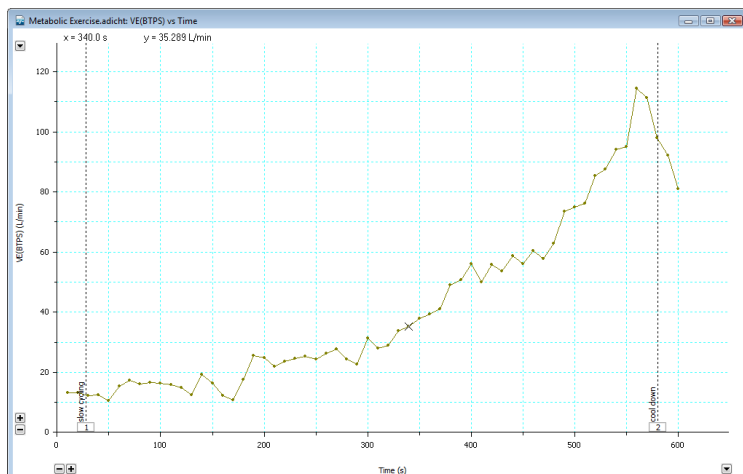
Above: The Log Window extracts real-time averaged ventilation and gas calculations.



Above: Metabolic Window showing a plot of RER versus Time.



Above: Metabolic Window showing a plot of VCO₂ versus VO₂.



Above: Metabolic Window showing a plot of VE versus Time.

Ordering Information

The Metabolic Module for LabChart can be purchased individually as an Add-On for LabChart 8 (MLS240/8 Windows only), or as part of LabChart Pro (MLS260/8).

LabChart Pro includes LabChart software and all LabChart Modules, providing powerful data acquisition and analysis capabilities.

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