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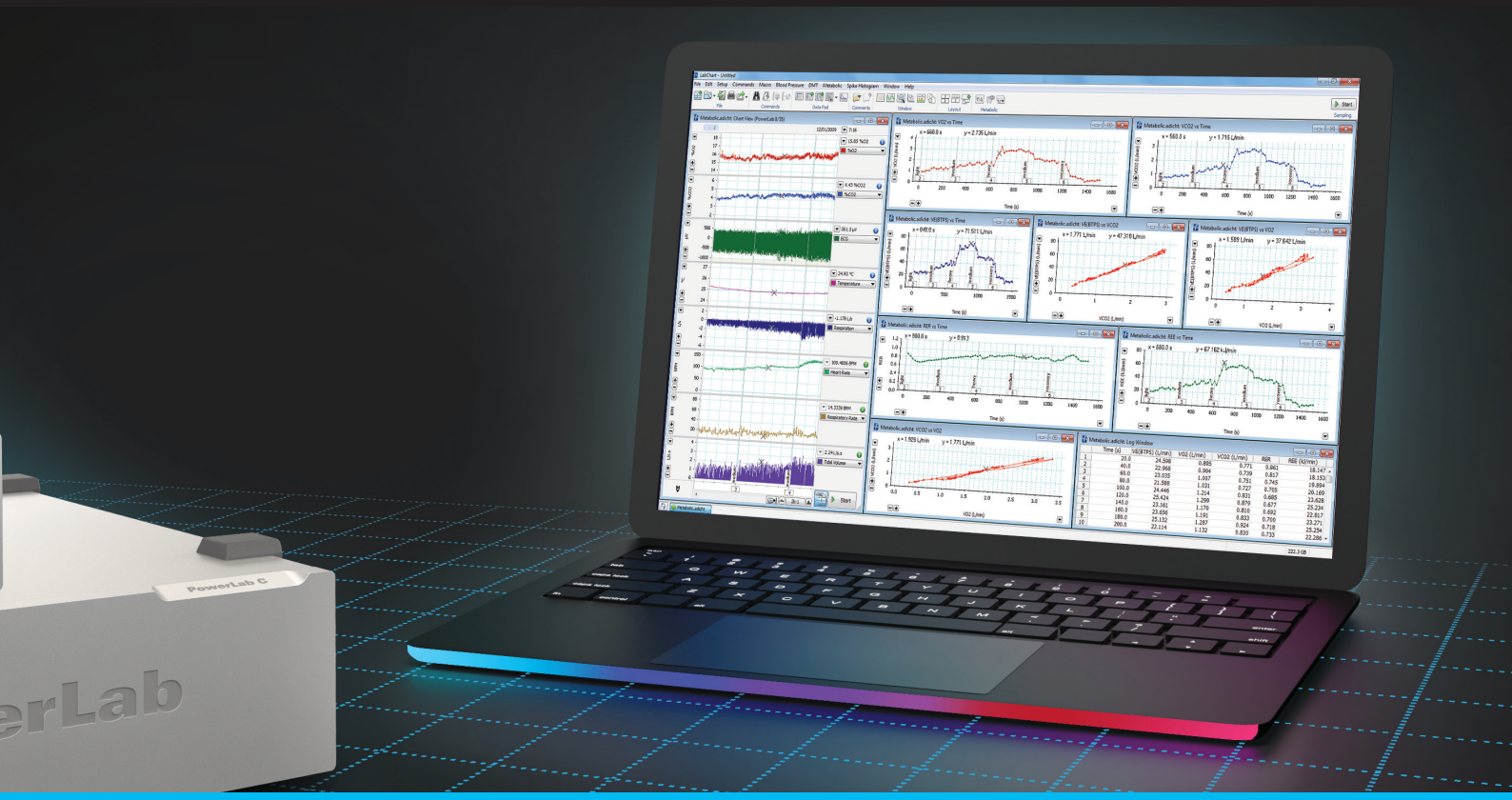
Metabolic

Module for LabChart and PowerLab

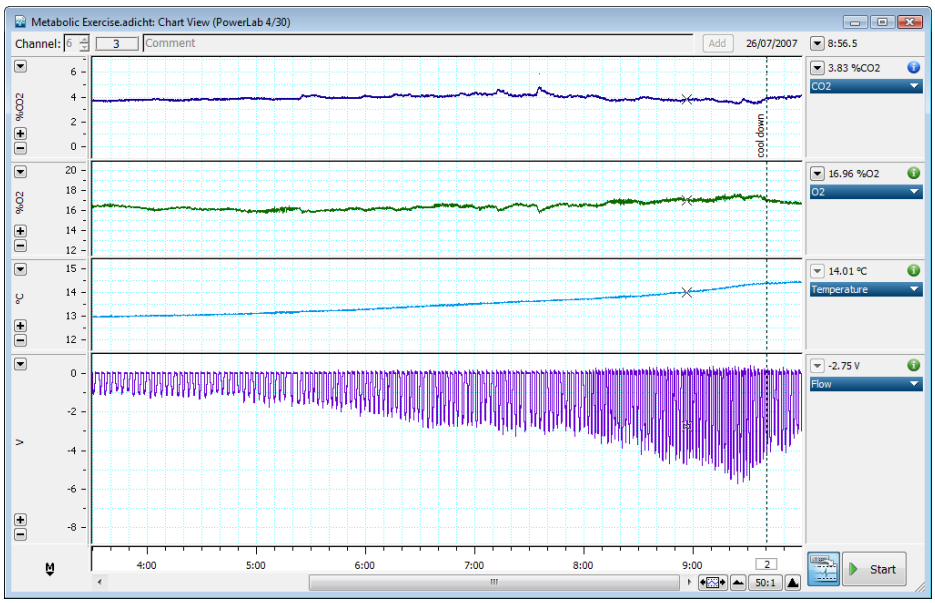


Automatically calculate metabolic rate through simultaneous measurement of respiratory gas concentrations and airflow.

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 CO_2 and O_2 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.



Left: Chart View showing %CO_2, %O_2, and airflow.

Applications

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

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

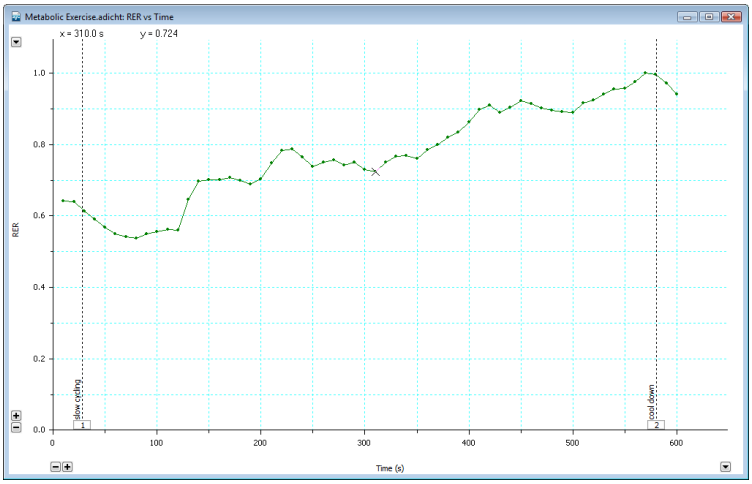
There are eight options for viewing results of the metabolic calculations:

- **VE(BTPS) versus VO_2:** Expired Minute Volume (BTPS) versus Oxygen Consumption
- **VE(BTPS) versus VCO_2:** Expired Minute Volume (BTPS) versus Carbon Dioxide Production
- **VCO_2 versus VO_2:** Carbon Dioxide Production versus Oxygen Consumption
- **RER versus Time:** Respiratory Gas Ratio versus Time
- **VO_2 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

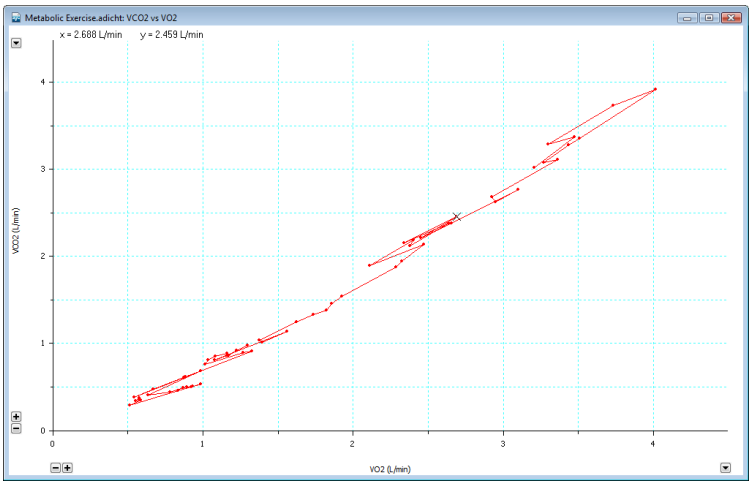
Metabolic Exercise.adicht: Log Window

	Time (s)	VE(BTPS) (L/min)	VO2 (L/min)	VCO2 (L/min)	RER
1	10.0	13.175	0.575	0.369	0.641
2	20.0	13.154	0.579	0.371	0.640
3	30.0	12.282	0.552	0.339	0.614
4	40.0	12.579	0.586	0.346	0.590
5	50.0	10.440	0.511	0.291	0.569
6	60.0	15.387	0.837	0.460	0.550
7	70.0	17.361	0.984	0.533	0.542
8	80.0	16.093	0.925	0.497	0.537
9	90.0	16.636	0.930	0.511	0.549
10	100.0	16.243	0.895	0.497	0.556
11	110.0	15.910	0.867	0.488	0.563
12	120.0	14.874	0.782	0.438	0.560

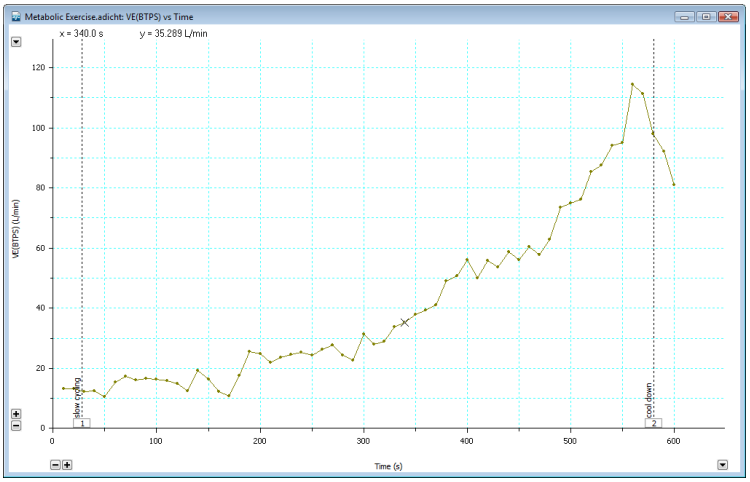
Above: The Log Window extracts real-time averaged ventilation and gas calculations.



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



Above: Metabolic Window showing a plot of VCO_2 versus VO.



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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