ADINSTRUMENTS
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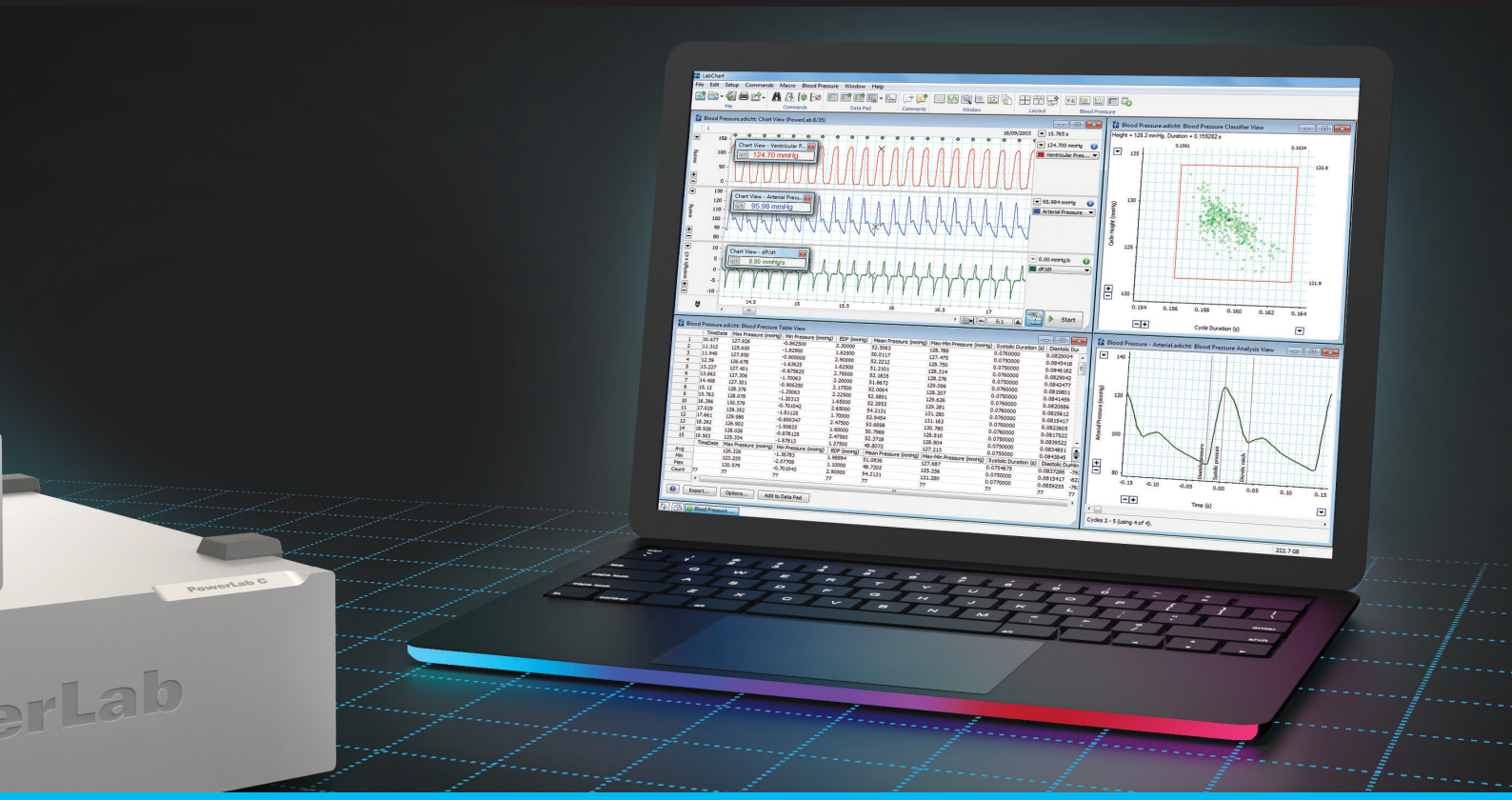
# Blood Pressure Analysis

## Module for LabChart and PowerLab

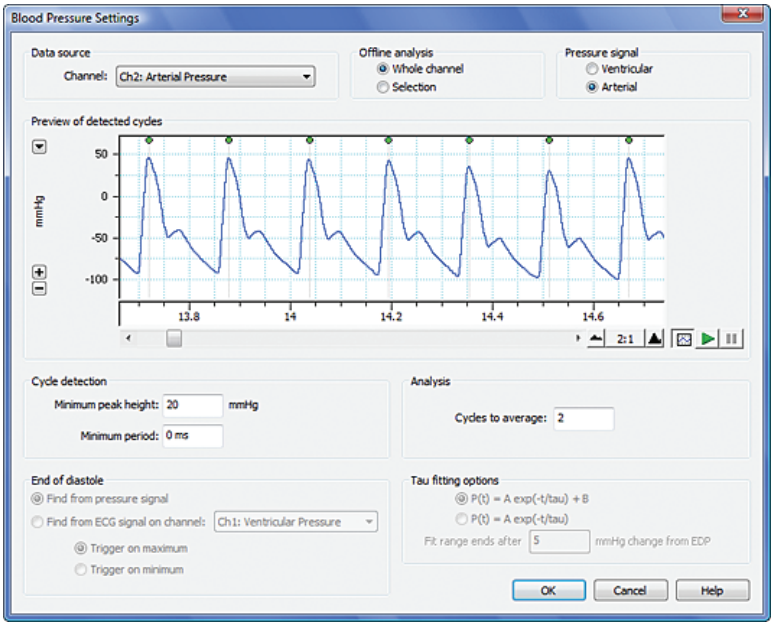


## Automatically detect and analyse cardiovascular pressure from humans, large animals, and small animals.

The Blood Pressure Module for LabChart automatically detects, analyses, and derives cardiovascular parameters from arterial or ventricular pressure signals, in real-time or post acquisition.

### Detection & Analysis Settings

Easily configure the detection and analysis parameters for ventricular and arterial pressure recordings using the Settings dialog. This includes averaging, cycle detection, analysis, end of diastole options, and isovolumetric relaxation (Tau).




*Left:* Detect and analyse parameters using the Settings dialog.

### Applications

- Baroreflex Sensitivity
- Hypertension
- Vascular Resistance
- Exercise Physiology
- Orthostatic Hypotension
- Cardiovascular Dysfunction
- Intracranial Studies
- Autonomic Function
- Arrhythmia
- Pulse transit time
- Systemic or ventricular studies
- Pulmonary hypertension
- Tumor research

## Classifier View

Easily select specific pressure waveforms for analysis based on height and duration. Exclude pressure cycles that are contaminated by artifacts or include abnormal cycle features. Drag the edges of the selection box to include or exclude detected cycles in any analysis.

## Analysis View

The analysis view displays every beat, with any averaged waveform displayed in black. Vertical markers indicate arterial or ventricular cycle parameters. View each beat, or an average of successive beats, using the horizontal scrolling bar.

The software automatically labels key parameters depending on the type of signal under investigation (ventricular or arterial). These include peak systolic and end diastolic pressure, dP/dt, and many more.

## Table View

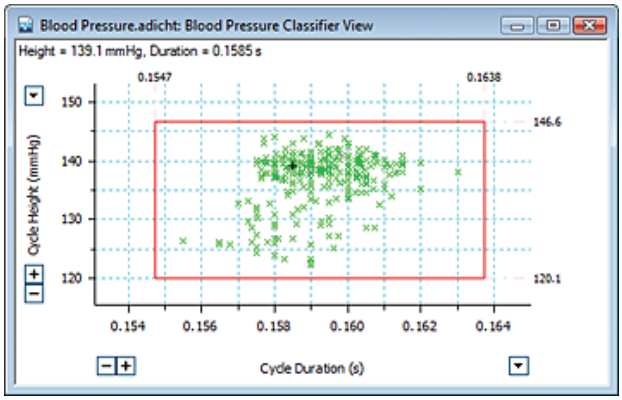
The Blood Pressure Module logs all measurements and calculated parameters in the Table View. Table rows are linked to the various LabChart windows. Highlighting a row will automatically show the corresponding beat in the Analysis View as well as the data in the Chart View.

### Some of the calculated ventricular parameters:

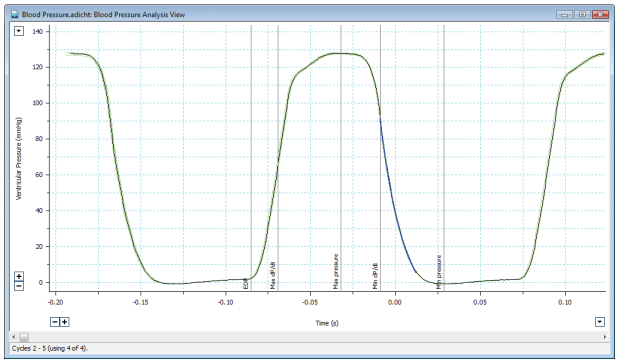
- Maximum Pressure
- Minimum Pressure
- Mean Pressure
- Maximum-Minimum Pressure
- Maximum dP/dt
- Minimum dP/dt
- End Diastolic Pressure (EDP)
- Contractility Index
- Isovolumic Relaxation

### Some of the calculated arterial parameters:

- Systolic Pressure
- Diastolic Pressure
- Mean Pressure
- Pulse Pressure
- Ejection Time
- Pressure at Dicrotic Notch




*Above:* Select specific pressure waveforms in the Classifier View.




*Above:* Analysis View displaying the averaged left ventricular pressure waveform with key parameters. The average pressure waveform is shown in black, and the individual cycles that constitute the average are shown in green.

*Below:* Table View is automatically populated by all measured and calculated parameters.

Blood Pressure.adicht: Blood Pressure Table View

| | TimeDate | Max Pressure (mmHg) | Min Pressure (mmHg) | EDP (mmHg) | Mean Pressure (mmHg) | Max-Min Pressure (mmHg) | Systolic Duration (s) | Diastolic Duration (s) | Cycle Duration (s) | Heart Rate (BPM) | Max dP/dt (mmHg/s) | Contractility Index (1/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10.677 | 127.926 | -0.862500 | 2.30000 | 52.5063 | 128.788 | 0.0760000 | 0.0829004 | 0.158900 | 377.595 | 6475.00 | 97.4417 |
| 2 | 11.312 | 125.650 | -1.82500 | 1.62500 | 50.0117 | 127.475 | 0.0750000 | 0.0845418 | 0.159542 | 376.077 | 6337.50 | 96.0956 |
| 3 | 11.949 | 127.850 | -0.900000 | 2.90000 | 52.2212 | 128.750 | 0.0750000 | 0.0846182 | 0.159618 | 375.897 | 6525.00 | 89.8141 |
| 4 | 12.59 | 126.678 | -1.63625 | 1.62500 | 51.2101 | 128.314 | 0.0760000 | 0.0829042 | 0.158904 | 377.586 | 6400.00 | 89.9824 |
| 5 | 13.227 | 127.401 | -0.875625 | 2.75000 | 52.1835 | 128.276 | 0.0750000 | 0.0842477 | 0.159248 | 376.772 | 6450.00 | 82.9849 |
| 6 | 13.862 | 127.306 | -1.70063 | 2.20000 | 51.8672 | 129.006 | 0.0760000 | 0.0819801 | 0.157980 | 379.795 | 6375.00 | 81.6000 |
| 7 | 14.498 | 127.301 | -0.906250 | 2.17500 | 52.0064 | 128.207 | 0.0750000 | 0.0841459 | 0.159146 | 377.013 | 6450.00 | 91.7497 |
| 8 | 15.13 | 128.376 | -1.25063 | 2.22500 | 52.5891 | 129.626 | 0.0760000 | 0.0820686 | 0.158069 | 379.582 | 6450.00 | 81.9048 |
| 9 | 15.763 | 128.078 | -1.20313 | 1.65000 | 52.2953 | 129.281 | 0.0760000 | 0.0825612 | 0.158561 | 378.403 | 6475.01 | 90.4962 |
| 10 | 16.396 | 130.579 | -0.701042 | 2.65000 | 54.2131 | 131.280 | 0.0760000 | 0.0815417 | 0.157542 | 380.852 | 6550.00 | 93.3714 |
| 11 | 17.029 | 129.352 | -1.81125 | 1.70000 | 52.9454 | 131.163 | 0.0760000 | 0.0823605 | 0.158360 | 378.882 | 6587.50 | 100.842 |
| 12 | 17.661 | 129.980 | -0.800347 | 2.47500 | 53.6698 | 130.780 | 0.0760000 | 0.0817522 | 0.157752 | 380.343 | 6625.00 | 80.8913 |
| 13 | 18.292 | 126.902 | -1.90833 | 1.60000 | 50.7969 | 128.810 | 0.0750000 | 0.0839522 | 0.158952 | 377.472 | 6462.50 | 89.5703 |
| 14 | 18.928 | 128.026 | -0.878125 | 2.47500 | 52.3718 | 128.904 | 0.0750000 | 0.0834851 | 0.158485 | 378.584 | 6537.50 | 93.9296 |
| 15 | 19.563 | 125.334 | -1.87813 | 1.27500 | 49.8072 | 127.213 | 0.0750000 | 0.0843845 | 0.159385 | 376.448 | 6387.50 | 92.0721 |
| | TimeDate | Max Pressure (mmHg) | Min Pressure (mmHg) | EDP (mmHg) | Mean Pressure (mmHg) | Max-Min Pressure (mmHg) | Systolic Duration (s) | Diastolic Duration (s) | Cycle Duration (s) | Heart Rate (BPM) | Max dP/dt (mmHg/s) | Contractility Index (1/s) |
| Avg | | 126.320 | -1.36783 | 1.98994 | 51.0836 | 127.687 | 0.0754675 | 0.0837286 | 0.159196 | 376.907 | 6382.14 | 87.4727 |
| Min | | 123.255 | -2.07708 | 1.10000 | 48.7202 | 125.256 | 0.0750000 | 0.0815417 | 0.157542 | 371.760 | 6137.50 | 77.7089 |
| Max | | 130.579 | -0.701042 | 2.90000 | 54.2131 | 131.280 | 0.0770000 | 0.0859255 | 0.161395 | 380.852 | 6625.00 | 100.842 |
| Count | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |

Export... Options... Add to Data Pad

## Ordering Information

The Blood Pressure Module for LabChart can be purchased individually as an Add-On for LabChart 8 (MLS370/8, Windows), or as part of LabChart Pro (MLS260/8).

LabChart Pro includes LabChart software and all LabChart Modules, providing powerful data acquisition and analysis capabilities (available for Windows or Mac).