



Specifications

For Aurora Scientific Model: 615A

Model #	615A
Software Specifications	
Operating System	Windows XP/Vista/7/8/10
Platform	LabVIEW
Included Software	610A – Dynamic Muscle Control LabBook (DMC) 611A – Dynamic Muscle Analysis (DMA) 612A – Dynamic Muscle Analysis – High Throughput (DMA-HT)
610A DMC LabBook Specifications	
Data Channels Recorded	Length, Force, Stimulation Timing, Auxiliary 1-6 ¹
Main Window	Controls: Change Study, Change Animal, Sample, Prepare Experiment, Run Experiment, Analyze Results, Edit Sample Params, View, Prev, Next, Readout 1 Select, Readout 2 Select, Reset Timer Readouts: 1 and 2 ² , Elapsed Time, Time since Last Test, Experiment Run Counter Dropdown menus: File, Setup and Help
Study Window	Used to define a study. Text Entry Fields: Name of Study, Description of Study, Animal Parameter definition and selection, Sample Parameter definition and selection, Muscles in Study definition and Selection, Experiments in Study definition and selection
Select Experiment Window	Select experiments to use in a study and create new experiments. Existing Experiment list and selection button. Create New Experiment: 6 wizards to create the following experiments: Twitch, Tetanus, Fatigue, Force-Frequency, Eccentric, Injury. Custom Experiment button: opens protocol editor to allow creation of a custom experiment.
Live Data Monitor	Real-time data output of chosen channels. Displays up to 30 minutes of data – zoom function, time base control, graph scales, freeze display
Prepare Experiment Window	Used to prepare the muscle for the test. Instant Stim control, Display of Twitch Force, Overlay of successive twitches, Calculation of Baseline Force and Max Force.
Analysis ³	Load last data or saved data Display: Length, Force, Stimulation Plot Zoom Controls: Time Displayed and Offset sliders, Unzoom Calculated Values: Max Force, Time of Max Force, Min Force, Time of Min Force, Force at Time Zero, Max Length, Time of Max Length, Min Length, Time of Min Length, Length at Time Zero
611A/612A DMA/DMA-HT Specifications	
Main Window	Display: graph of test results with zoom function

¹ Auxiliary Channels: can be configured to suit, common usages are: Temperature, pH, O₂, etc.

² Configured using Readout Select 1 and 2, normally displays Force In and Length In

³ Limited analysis available in 610A program, complete Analysis available in 611A and 612A programs



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	<p>Plot Controls: Unfiltered/Filtered Force, Unfiltered/Filtered Length, Force Units, Length Units</p> <p>Buttons for: Invert Force Data, Open Data File, Filter Setup, Normalization, Muscle Analysis, Work Loop, Time Derivative, Line Fitting, Export Data</p> <p>Dropdown menus: File, High Throughput and Help</p>
Analysis	<p>Filter Setup: set cutoff frequency and order of Butterworth low-pass filter</p> <p>Normalization: set reference values for calculating L/L_{ref}, F/F_{ref}, Stress, Strain</p> <p>Muscle Analysis: provides statistics of displayed data</p> <p>Work Loop: calculates work loop data from sinusoidal tests</p> <p>Time Derivative: calculates velocity and dF/dt</p> <p>Line Fitting: fits linear or exponential functions to Force and Length data</p>
High Throughput Analysis	<p>Provides high speed analysis of a group of data files, data is output in tabular form and can be exported</p> <p>Analysis Types: Force-Frequency, Force-Time, Position-Time, Fatigue</p> <p>Calculated Values: Maximum, Minimum, Time to % Contraction, Time to % Relaxation, Integration, Max Rate of Contraction, Time to % of Max Rate of Contraction, Max Rate of Relaxation, Time to % of Max Rate of Relaxation, Starting Baseline, Ending Baseline, Average Rate of Contraction, Average Rate of Relaxation</p>
Export Analysis	Exports analysis to: Excel, MATLAB, Maple, SAS, other software packages