

Confocal Wire Myograph System - 120CW

tissue organ bath systems — myograph systems —
smooth muscles skeletal muscles

The confocal wire myograph is specially designed to provide very close optical access to the mounted artery or tissue segment. High resolution images of fluorescent dyes or markers within the living tissues such as those by laser scanning microscopy (LSM) become possible. Combining LSM with artery myography allows simultaneous measurement of isometric force and e.g. intracellular Ca^{2+} or pH in cells in the wall of living isolated blood vessels and ring mounted tissues.

The unique design of the myograph combines precision and stability of conventional wire myographs with the added feature of precise Z-axis movement by a micrometer. This optimizes the use with different LSM's, various high magnification and high NA objective lenses.

The bath design allows easy access for the high numerical aperture immersion lenses used on inverted microscopes and also direct immersion lenses used on standard upright microscopes. Also, by using special mounting supports designed specifically to allow vertical positioning, an isolated blood vessel or ring mounted tissues can be positioned directly above or on the chamber window. This permits use of lenses with working distances smaller than $250\mu\text{m}$ on an inverted LSM. This may be advantageous for simultaneous electrophysiological measurements from the top. The chambers are supplied with custom covers for inverted or upright microscope systems with connections for suction, gassing or measurement electrodes (pH, NO, O_2 tension).

During the experiment, the circumference of the vessel is kept constant, i.e. the vessel is examined under isometric conditions. Compounds are added directly to the chamber, and vessel force/tension is measured reflecting the contractile or relaxing effects of the compound.

While on the LSM, data acquired from the myograph such as force and temperature can be done continuously, either by using the user defined analogue outputs or querying the serial interface.



Mounting jaws - reverse

The myograph are supplied with jaws for inverted scopes but can be used with normal stainless steel jaws to mount small vessels on an upright system. For experimental work requiring electrical field stimulation a set of plastic jaws with attached platinum electrodes is available.



Chamber cover

Cover with suction/draining, refilling and oxygen supply

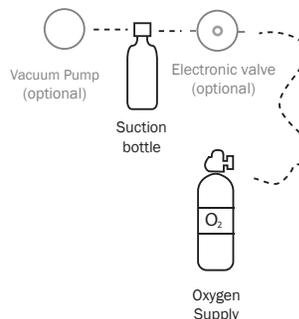


Technical Specifications

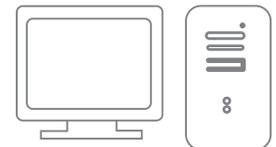
Vessel size:	>60 μm
Vessel alignment:	Manually / X, Y & Z
Chamber:	Single bath/conical shape
Chamber material:	Acid-resistant stainless steel
Chamber volume:	Max. 10ml
Chamber suction:	No
Chamber cover:	With connection for suction and gassing
Chamber gassing:	
Force range:	-100 - /+200mN
Force resolution:	0.01mN
Micropositioners:	Manually operated precision micrometer
Weight calibration:	Manual
Heating:	Built into chamber, independent of
superfusion	
Temp. range:	Ambient temp. - 50°C
Temp. resolution:	0.1°C
Temp. probe:	External
Output reading:	Force (mN)
Analogue output:	Up to four output, 1.0V full scale for all acquired signals, user defined
Serial output:	Serial interface - RS232/RS485
Voltage:	100 to 240 VAC (auto) 50/60Hz
Ambient temp.	15-30°C
Optional accessories:	
Enable pH-meter on the interface	
- range	pH 0 - 14
- temp. correction	0 - 50°C

Set-up example

----- Tubing
——— Electrical cord



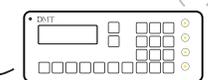
PC Data Acquisition and Analysis Software (optional)



PowerLab Data Acquisition System (optional)



Myo Interface



DMT CS200 Pulse/Train Stimulator (optional)

