



- Dual Syringes independently controlled
- Flow rates from 0.1  $\mu\text{L}/\text{min}$  to 20  $\mu\text{L}/\text{min}$
- Flow directions individual infuse or withdraw
- Microdialysis CAD software included

## CMA 402 Syringe Pump

The CMA 402 Syringe Pump is a compact, flexible dual syringe pump designed for low pulse-free flow rates, suitable for microdialysis and other low flow experiments. Start/stop and flow rate can be set independently for each syringe. The flow direction can be easily reversed individually for the syringes.

The pump is pre-calibrated for 1, 2.5 or 5 mL syringes with flow rates between 0.1  $\mu\text{L}/\text{min}$  and 20  $\mu\text{L}/\text{min}$ . The flow rates are shown on the LED displays. The flush feature is used for preparatory work to fast feed the syringe.

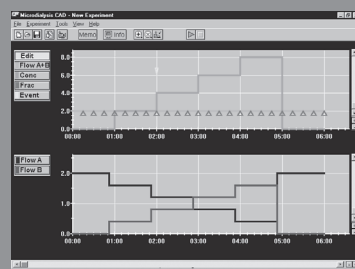
The CMA 402 Syringe Pump is even more flexible when controlled by a computer interface. With Microdialysis CAD software, included with the CMA 402 Syringe Pump, experiments can be planned and controlled in endless variations. For example it is possible to make injections, control start and stop of the syringes, change flow rates and also control changes of fraction volume collection on a CMA 142 Fraction Collector. A Micro T can be used to change or mix perfusion fluid from two syringes during a run.

The pump is available in two different versions, one of which includes all the accessories to enable easy and safe work with the microdialysis probes: two syringes, two probe clips, two vial holders, bracket for easy attachment to the pump and a Micro T. The pump can also be ordered without the accessories. The Microdialysis CAD Software is included in both versions.





Detail from the Accessory Kit



Microdialysis CAD  
- a software to plan and control your experiment

## Technical information

Number of syringes:	2, independently controlled
Syringe sizes:	1, 2.5 and 5 mL, piston stroke 60 mm
Flow rate range:	0.1 µL/min - 20 µL/min
Calibration:	Precalibrated for 1, 2.5 and 5 mL syringes
Accuracy:	±1.5 %
Speed variation:	±1.5 %
Piston carriage speed:	2.4 µm/min - 1.2 mm/min
Fast Feed:	Approx. 20 µL/min (with 1 mL syringe)
Working temperature:	10 – 35 ° C
Display:	2-digit LED display showing flow rate or syringe size
Motor:	High resolution step motor system
Voltage:	Input 100 - 240 VAC, 50 – 60 Hz, output 12 VDC (adapter included)
Power consumption:	External adapter max 10 W
Computer connection:	RS 232 and USB interface
Syringe size with Microdialysis CAD software:	Variable
Dimensions:	207 x 135 x 48 mm (W x D x H)
Weight:	Approx. 1.4 kg

**Intended use:** Designed for research and industrial applications, the CMA 470 Refrigerated Fraction Collector is not approved for clinical use.

## Ordering information

	Ref.No.
<b>CMA 402 Syringe Pump with Accessory Kit</b>	<b>8003100</b>
Including:	
Microsyringes 1 mL, 2 pcs	
Vial holders 2 pcs	
CMA 11-12 Clip	
CMA 10 Probe Shaft Clip	
Eppendorf tubes 1.5 mL, 10 pcs	
Microdialysis CAD Software	
Micro T	
<b>CMA 402 Syringe Pump</b>	<b>8003110</b>
Including:	
Microdialysis CAD software	

## Accessories

	Ref.No.
Microsyringe 1 mL, glass	8309020
Microsyringe 2.5 mL, glass	8309021
Microsyringe 5 mL, glass	8309022
Syringe Clip, medium 1 mL - 2.5 mL Syringe	3408310
Syringe Clip, large 5 mL Syringe	3408320
Syringe Needle, 5/pkg	7431083
Micro T	P000043
FEP Tubing 1 m	3409501
FEP Tubing 10 x 1 m	8409501
Tubing Adapters	3409500