



## EQUIPMENT SERIES



**LILICHRO**

SCALE IT UP



The rotation speed scaling can be calculated using the following formula:

$$n_{maxi} = n_{mini} \cdot \sqrt{\frac{r_{mini}}{r_{maxi}}}$$

$n$  – rotation speed  $\left[\frac{1}{min}\right]$

$r$  – radius of rotor [mm]

### Introduction

The midLiLi is a chromatography laboratory instrument specifically recommended for the preparation of laboratory preparations. It is more cost effective and a good alternative for those who have been working with flash columns or preparative silica gels.

**Solvent consumption: 240-1200**  $\left[\frac{ml}{h}\right]$ .  
**Injected sample: 25-500** [mg]

### Cell structure

The rotor of the device has a special z-cell design, which results in a higher plate number than the miniLiLi device and therefore a better separation capacity.

### Scale Up

Methods developed on miniLiLi/midLiLi devices can be applied to maxiLiLi or prepLiLi devices with simple scaling.

The scaling of the flow rate can be calculated from the following formula:

$$Q_{maxi} = Q_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$Q$  – flow rate  $\left[\frac{ml}{min}\right]$

$V$  – volume [mm<sup>3</sup>]

The injection volume can be calculated from the following formula:

$$m_{maxi} = m_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$m$  – mass [g]

### Speed Correlation Between Machines

	miniLiLi 600 [rpm]	miniLiLi 800 [rpm]	miniLiLi 1000 [rpm]	miniLiLi 1250 [rpm]
midLiLi [rpm]	600	800	1000	1250

### Area of use

- To learn about and introduce chromatography technology, enabling laboratories to use modern purification techniques.
- Purification of preparations for synthetic laboratories.
- For the preparation of standards and larger quantities of sample materials.
- To replace the flash chromatography method.

### Necessary Chromatography equipment:

- 2 HPLC pumps
- 1 injector (manual or injector pump)
- 1 detector (optional)
- Fraction collector (optional)

### Why midLiLi?

midLiLi is a compact preparative chromatography system with a wide range of variation possibilities.



## Introduction

The miniLiLi is a chromatography laboratory instrument designed for analytical applications, method development and experimental purposes. As it is optimized for laboratory use, it is also optimized for low solvent consumption.

**Solvent consumption: 100-200**  $\left[\frac{ml}{h}\right]$ .

**Injected sample: 1-200**  $[mg]$

## Cell structure

The rotor of the device has a helical cell design with a lower plate number than the Z cells used in midiLiLi, maxiLiLi or prepLiLi devices. However, it is more cost-effective in terms of method development.

## Scale Up

The methods developed on the miniLiLi device can be applied to midiLiLi, maxiLiLi or prepLiLi devices with simple scaling.

The rotation speed scaling can be calculated using the following formula:

$$n_{maxi} = n_{mini} \cdot \sqrt{\frac{r_{mini}}{r_{maxi}}}$$

$n$  – rotation speed  $\left[\frac{1}{min}\right]$

$r$  – radius of rotor  $[mm]$

The scaling of the flow rate can be calculated from the following formula:

$$Q_{maxi} = Q_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$Q$  – flow rate  $\left[\frac{ml}{min}\right]$

$V$  – volume  $[mm^3]$

The injection volume can be calculated from the following formula:

$$m_{maxi} = m_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$m$  – mass  $[g]$

## Area of use

- Use miniLiLi for method development.
- At the beginning of the development phase, there is usually a limited number of samples available, so that it is possible to develop the purification technology using material and sample saving solutions.
- To produce micro preparations and standards.
- Based on the results obtained on the device, the technological cost estimation can be performed with high accuracy (based on run time and material consumption).

## Necessary Chromatography equipment:

- 2 HPLC pumps
- 1 injector (manual or injector pump)
- 1 detector (optional)

## Why miniLiLi?

You can convert your existing HPLC system into an LLC system for the price of a few HPLC column.



The rotation speed scaling can be calculated using the following formula:

$$n_{maxi} = n_{mini} \cdot \sqrt{\frac{r_{mini}}{r_{maxi}}}$$

$$n - \text{rotation speed} \left[ \frac{1}{min} \right]$$

$$r - \text{radius of rotor} [mm]$$

## Introduction

The maxiLiLi is a chromatography instrument that can be adapted to scale-up plants and low-volume production lines. Its design makes it mobile, so it is easy to set up and move once the job is done.

**Solvent consumption:** 9-30  $\left[ \frac{l}{h} \right]$ .

**Injected sample:** 100-150  $[g]$

## Cell structure

The rotor of the device has a special z-cell design, which results in a higher plate number than the miniLiLi device and therefore a better separation capacity.

## Scale Up

Methods developed on miniLiLi/midiLiLi devices can be applied to maxiLiLi or prepLiLi devices with simple scaling.

The scaling of the flow rate can be calculated from the following formula:

$$Q_{maxi} = Q_{mini} \cdot \left( \frac{V_{maxi}}{V_{mini}} \right)$$

$$Q - \text{flow rate} \left[ \frac{ml}{min} \right]$$

$$V - \text{volume} [mm^3]$$

The injection volume can be calculated from the following formula:

$$m_{maxi} = m_{mini} \cdot \left( \frac{V_{maxi}}{V_{mini}} \right)$$

$$m - \text{mass} [g]$$

## Speed Correlation Between Machines

	miniLiLi 600 [rpm]	miniLiLi 800 [rpm]	miniLiLi 1000 [rpm]	miniLiLi 1250 [rpm]
maxiLiLi [rpm]	335	445	555	695

## Area of use

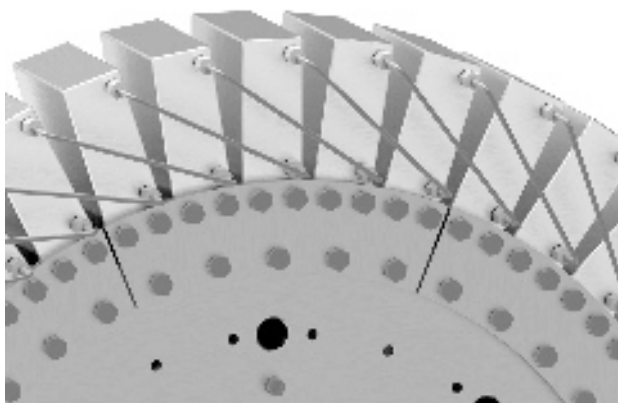
- In case of varying production volumes, maxiLiLi offers the possibility to build up chromatography capacity as needed.
- maxiLiLi is specifically recommended for pilot production and small pilot batches. It is designed for cases where the capacity of miniLiLi and midiLiLi is no longer sufficient.

## Necessary Chromatography equipment:

The maxiLiLi includes all the accessories required for production, including injector, eluent transfer pumps, detector and fraction change valve

## Why maxiLiLi?

maxiLiLi can provide you with an efficient chromatography system on a kilogram scale that can be set up in a short time.



## Introduction

The prepLiLi is designed for continuous, high-volume industrial chromatography applications. We provide individual support for each installation and industrial integration.

**Solvent consumption: 60-300**  $\left[\frac{l}{h}\right]$ .  
**Injected sample: 2-4**  $[kg]$

## Cell structure

The rotor of the device has a special z-cell design, which results in a higher plate number than the miniLiLi device and therefore a better separation capacity.

## Scale Up

Methods developed on miniLiLi/midiLiLi devices can be applied to maxiLiLi or prepLiLi devices with simple scaling.

The scaling of the flow rate can be calculated from the following formula:

$$Q_{maxi} = Q_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$$Q - \text{flow rate} \left[\frac{ml}{min}\right]$$

$$V - \text{volume} [mm^3]$$

The injection volume can be calculated from the following formula:

$$m_{maxi} = m_{mini} \cdot \left(\frac{V_{maxi}}{V_{mini}}\right)$$

$$m - \text{mass} [g]$$

The rotation speed scaling can be calculated using the following formula:

$$n_{maxi} = n_{mini} \cdot \sqrt{\frac{r_{mini}}{r_{maxi}}}$$

$$n - \text{rotation speed} \left[\frac{1}{min}\right]$$

$$r - \text{radius of rotor} [mm]$$

## Speed Correlation Between Machines

	miniLiLi 600 [rpm]	miniLiLi 800 [rpm]	miniLiLi 1000 [rpm]	miniLiLi 1250 [rpm]
prepLiLi [rpm]	220	295	365	455

## Area of use

- High volume industrial chromatography production.
- A tailor-made solution that provides the optimal environmental and professional conditions for a smooth set-up and operation.
- A preparative chromatograph designed for continuous, high-volume operation that can be directly integrated into an industrial environment.
- If higher chromatographic capacity is required, the instrument can be designed and tailored to the specific needs of the planned plant.

## What could you do with prepLiLi?

With prepLiLi you can start an industrial cooperation project with LiLiChro.



	miniLiLi LC00090		midiLiLi LC00190		maxiLiLi LC00200		prepLiLi LC01000	
	Europe	USA	Europe	USA	Europe	USA	Europe	USA
<b>Power supply</b>	220 [V] 50 [Hz] 5 [A]	110 [V] 60 [Hz] 10 [A]	220 [V] 50 [Hz] 5 [A]	110 [V] 60 [Hz] 10 [A]	220 [V] 50 [Hz] 10 [A]	110 [V] 60 [Hz] 15 [A]	400 [V] 50 [Hz] 30 [A]	400 [V] 50 [Hz] 30 [A]
<b>Utilized materials</b>	Steel - Stainless: 1.4404, AISI 316L PTFE, PEEK, FFKM							
<b>Flow rate</b>	1-5 [ml/min]		4-20 [ml/min]		50-300 [ml/min]		1-6 [l/min]	
<b>Column volume</b>	0.030-0.034 [l]		0.140 [l]		3.3-3.6 [l]		70 [l]	
<b>Loading</b>	1-200 [mg]		25-500 [mg]		100-150 [g]		2-3 [kg]	
<b>Cell type</b>	Helical		Z		Z		Custom design	
<b>Material of the inlet pipe</b>	Steel - Stainless: 1.4404, X2CrNiMo17-12-2, A4, AISI 316L							
<b>Material of the outlet pipe</b>	PTFE				Steel-Stainless: 1.4404, X2CrNiMo17-12-2, A4, AISI 316L			
<b>Inlet pipe diameter ID/OD</b>	ID=0.008"-0.020" (0.2-0.5 mm); OD=1/16" (1.59 mm)				ID=0.079"□0.087" (2-2.2 mm); OD=1/8" (3.2 mm)		Custom design	
<b>Outlet pipe diameter ID/OD</b>	ID=0.032"-0.043" (0.8-1.1 mm); OD=1/16" (1.59 mm)				ID=0.079"□0.087" (2-2.2 mm); OD=1/8" (3.2 mm)		Custom design	
<b>Standard inlet and outlet connectors</b>	10/32"				5/16"-24		1/4"	
<b>Stationary phase retention</b>	>80%		>80%		>80%		>80%	
<b>Rotor radius</b>	120mm		120 mm		390 mm		900 mm	
<b>Rotational speed</b>	0-2000 rpm				0-600 rpm		0-400 rpm	
<b>Recommended rotational speed</b>	800 rpm				150-450 rpm		100-200 rpm	
<b>Maximum operating pressure</b>	10 MPa (1450 psi)				2.5 MPa (725 psi)		2.5 MPa (725 psi)	
<b>Operating pressure</b>	1.5-3 MPa (217- 435 psi)				0.2-1 MPa (29-145 psi)		0.2-1 MPa (29-145 psi)	
<b>Dimensions (W × H × D)</b>	430 x 340 x 530 mm (16.93 x 13.39 x 20.87 inch)				790 x 1100 x 1200 mm (31.10 x 43.31 x 47.24 inch)		Custom design	
<b>Weight</b>	25 kg (55.1 lb)		32 kg (70.5 lb)		290 kg (639.3 lb)		2000 kg (2204.6 lb)	
<b>Solvent compatibility chart</b>	Organic solvents, Water, Compatible with organic acids up to 5%*, Compatible with organic bases up to 5%*, Sulfuric acid, Hydrochloric acid, Alkaline hydroxides, Not compatible with organometallic reagents							

\*After use, it is recommended to flush the column with water