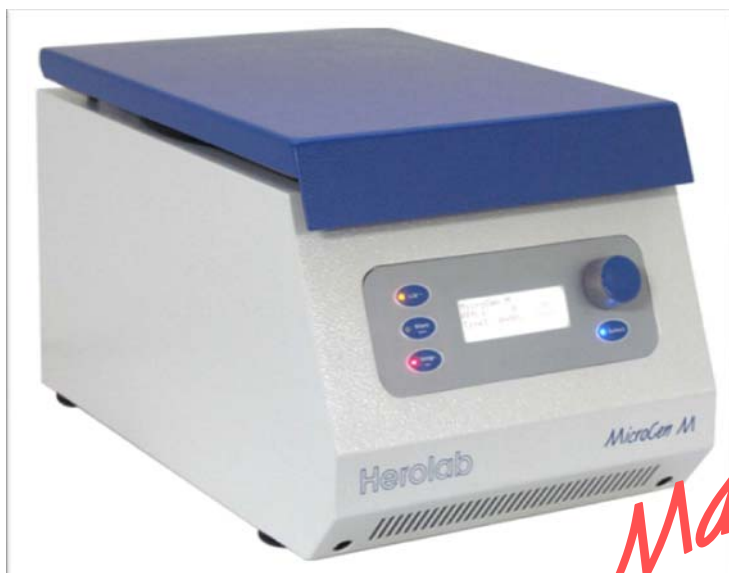


# Herolab

*Micro  
Gen<sup>®</sup>  
M+MR*



*Manufacturer  
of Life Science*



*MicroGen<sup>®</sup> M / MicroGen<sup>®</sup> MR*  
**Microliter Centrifuges**

**MICROLITER CENTRIFUGES**



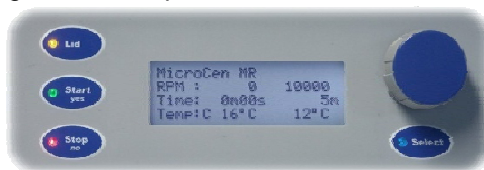
2009-02

For almost 30 years, Herolab has been a leading force in the technological development of centrifuges. Many centrifuges in the field today, although not sold under the name Herolab, are examples of this skilled engineering and electronic know-how. In 1993 the Herolab range of centrifuges was launched. The UniCen<sup>®</sup> Series was soon followed by MicroCen<sup>®</sup> 13, thus starting a story of success, leading to the development of high-speed centrifuges with a maximum capacity of up to 6 liters.

Customers all over the world appreciate the quality and reliability offered by our centrifuges „Made in Germany – Made by Herolab“. Advanced features like the APRI<sup>™</sup> (Automatic Positive Rotor Identification) system and the combination of a fully digital control combined with an analog entry makes them easy to operate.

## MicroCen<sup>®</sup> Centrifuges – Easy to Use

Both models of the *MicroCen<sup>®</sup>* series, as well as the larger *UniCen<sup>®</sup>* M + MR, have the same technical design: The robust, long lasting and maintenance-free brushless induction drive, the intelligent Herolab APRI<sup>™</sup>-System (Automatic Positive Rotor Identification) and the very high safety standard including the motor driven lid lock mechanism offer the user the comfortable benefits of the *HiCen<sup>®</sup>* series centrifuges from our production.



The operating panel, shown above from *MicroCen<sup>®</sup>* MR, is identical for all models of these series; only the units without refrigeration system do not have a temperature indication.

For both series a wide range of rotors is available.



MICROLITER CENTRIFUGES

<i>MicroCen<sup>®</sup></i> M	<i>MicroCen<sup>®</sup></i> MR	Model
21 14 000	21 14 010	Catalog No.
High-speed Microliter Tabletop Centrifuge Microprocessor controlled LCD display		Short Description
Especially for microliter tubes		Suitable for
30 x 2.2 ml		Max. Capacity
16,000 rpm	18,000 rpm	Max. Speed
20,865 x g	26,407 x g	Max. g-Force
NO	YES	Refrigeration



All products built by Herolab carry the CE sign. Herolab has its own Quality Management System which is conform to ISO 9001.  
All prices without VAT, ex works. – Herolab reserves the right to change technical specifications and prices without prior notice.

## Specification

*MicroGen® M    MicroGen® MR*

Catalog No. (230 V, 50/60 Hz, 1 phase)	21 14 000	21 14 010	
Maximum Speed (rpm)	16,000	18,000	
Max. g-Force (depending on rotor) in x g	20,865	26,407	
Maximum Capacity	30 x 2.2 ml	30 x 2.2 ml	
APRI™ System for Herolab Rotors	Automatic positive rotor identification of Herolab rotors		
Programmability	10 programs		
Information Display	Dot Matrix LCD display of both preset and actual values		
User Interface	Operating panel with 4 buttons and one rotary knob for all parameters		
Preset Time	From 1 to 60 min with increments of 1 min; on request up to 999 min possible "HOLD" for longer runs "PULSE" for short runs		
Preset Speed	From 500 rpm to max. speed with increments of 100 rpm		
Preset g-Force	With increments equivalent to 100 rpm		
Drive System	Direct self-centering drive system with brushless induction motor		
Speed Accuracy	± 2 rpm at 1,000 rpm / ± 20 rpm at max. speed		
Acceleration Time depending on rotor	30 sec. – 1.5 min.		
Deceleration Time depending on rotor	40 sec. – 2,5 min.		
Acceleration and Deceleration Rates	In 9 steps of 15 sec. from 0 to 120 sec. in the range of 0-1,000 rpm		
Braking System	Dynamic electric brake system		
Temperature Set Range	n. a.	-10°C to +40°C With increments of 1°C	
Cooling at standstill	n. a.	YES	
Temperature Control Accuracy	n. a.	±2°C on tested rotor	
Temperature Control System	n. a.	Bypass system	
Sample Protection	n. a.	n. a.	
Overtemperature Protection	n. a.	YES	
Refrigeration System	n. a.	CFC-free refrigerant	
Safety Features	Overspeed detection Imbalance detection and cut-off Four point lid fixing Automatic motor driven lid lock with emergency lid lock release Stainless steel chamber with additional inner guard ring		
Power consumption	0.9 kVA	0.9 kVA	
Dimensions (W x H x D): in cm (in inches)	33.4 x 30.0 x 48.8 (13.1 x 11.8 x 19.2)	53.5 x 30.0 x 48.8 (21.1 x 11.8 x 19.2)	
Shipping dimensions in cm (in inches)	80 x 59 x 65 (31.5 x 23.2 x 25.6)	80 x 59 x 65 (31.5 x 23.2 x 25.6)	
Net Weight in kg (lbs.)	32.0 (70.5)	56.0 (123.5)	
Gross Weight in kg (lbs.)	46.0 (101.4)	70.0 (154.3)	

The instruments are according to several international safety standards, incl. the German Standards EN 61010-1/-2-20 and BGV A3.

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## Angle Rotors: (for performance in respective centrifuges see rotor data sheet)

Cat. No.	Rotor Type	Image	Max. Capacity	Included Extras	Accessories (Tubes/Adapters)
21 14 750	TF 24 MH		24 capillaries, 50 µl Ø 1.5 mm x 75 mm	Hermetically sealing lid	---
21 14 200	TF 12.8		12 PCR strips with 8 x 0.2 ml each	Hermetically sealing lid	---
21 14 180	TF 18.2		18 x 1.5/2.2 ml	Hermetically sealing lid	see page 5
21 14 150	TF 24.2		24 x 1.5/2.2 ml	Hermetically sealing lid	see page 5
21 14 100	TF 30.2		30 x 1.5/2.2 ml	Hermetically sealing lid	see page 5



## Swing-out Rotor: (for performance in respective centrifuges see rotor data sheet)

Cat. No.	Rotor Type	Image	Max. Capacity	Included Extras	Adapters
21 14 700	TS 24.2		24 x 1.5/2.2 ml	Hermetically sealing lid, 6 carriers, each for 4 tubes 2.2 ml	see page 5

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## Rotor Data Sheet:

Rotor Type	r <sub>max</sub> (cm)	Weight (kg)	Angle	<i>MicroGen® M</i>		<i>MicroGen® MR</i>		k-factor
				Max. speed (rpm)	Max. g-force (x g)	Max. speed (rpm)	Max. g-force (x g)	
TF 18.2	7.3	1.64	45°	16,000	20,865	18,000	26,407	328
TF 24.2	8.2	1.98	45°	14,000	17,968	15,000	20,627	534
TS 24.2	7.4	1.46	--	12,500	12,927	14,000	16,215	930
TF 12.8	9.8		45°	12,000	15,777	14,000	21,475	345
TF 30.2	10.0	2.58	45°	12,000	16,099	12,000	16,099	592
TF 24 MH	9.0			12,000	14,489	12,000	14,489	3148

## Available Herolab tubes and adapters for these rotors:

For detailed information about the comprehensive range of tubes and bottles from our production as well as their possible use in centrifuges of other manufacturers please refer to our catalog "Centrifuge Labware".

The consumables also include the most common tubes and bottles for ultra centrifuges.



## Accessories for rotors TF 18.2, TF 24.2, TF 30.2 and TS 24.2:

Cat. No.	<b>Tubes</b>	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 20 50	1.5 ml PP with cap (conical, Eppendorf)	Ø 11 x 40 mm	20,000	36,000	1,000

Cat. No.	<b>Adapters</b>	For Tubes	Sizes	No. of places	Pieces per pack
20 16 211	for micro tubes	0.5 – 0.7 ml	Ø 8.1 mm	1	6
20 16 212	for micro tubes	0.25 – 0.4 ml	Ø 6.0 mm	1	6

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