

Herolab

UniGen[®]
M+MR

*Manufacturer
of Life Science*



UNIVERSAL CENTRIFUGES

UniGen[®] M / UniGen[®] MR
Universal Centrifuges

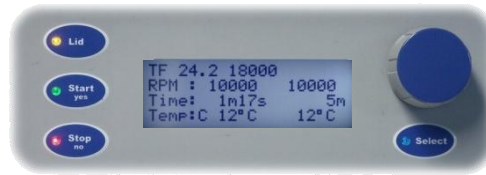


For almost 30 years, Herolab has been a leading force in the technological development of centrifuges. Many centrifuges in the field today, although not sold under the name Herolab, are examples of this skilled engineering and electronic know-how. In 1993 the Herolab range of centrifuges was launched. The UniCen[®] Series was soon followed by MicroCen[®] 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[™] (Automatic Positive Rotor Identification) system and the combination of a fully digital control combined with an analog entry makes them easy to operate.

UniCen[®] Centrifuges – Easy to Use

Both models of the UniCen[®] series, as well as the smaller MicroCen[®] M + MR, have the same technical design: The robust, long lasting and maintenance-free brushless induction drive, the intelligent Herolab APRI[™]-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[®] series centrifuges from our production.



The operating panel, shown above from UniCen[®] MR with rotor TF 24.2, 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.



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UniCen [®] M	UniCen [®] MR	Model
21 14 050	21 14 060	Catalog No.
Universal High-speed Tabletop Centrifuge Microprocessor controlled LCD display		Short Description
Centrifuge tubes and bottles, microtiter plates, tissue-culture tubes, microliter tubes, etc.		Suitable for
4 x 200 ml		Max. Capacity
16,000 rpm	18,000 rpm	Max. Speed
23,755 x g	30,065 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.
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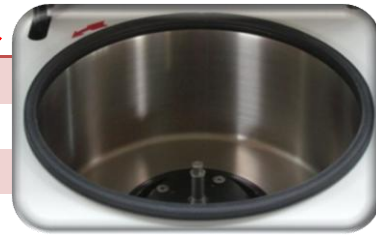
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Specification

	<i>UniGen® M</i>	<i>UniGen® MR</i>
Catalog No. (230 V, 50/60 Hz, 1 phase)	21 14 050	21 14 060
Maximum Speed (rpm)	16,000	18,000
Max. g-Force (depending on rotor) in x g	23,755	30,065
Maximum Capacity	4 x 200 ml	4 x 200 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 0 to 59 min with increments of 1 min "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	0.8 kVA	2.0 kVA
Dimensions (W x H x D): in cm (in inches)	41.2 x 35.0 x 55.0 (16.2 x 13.8 x 21.7)	64.0 x 35.0 x 55.0 (25.2 x 13.8 x 21.7)
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.)	45.0 (99.2)	82.0 (180.8)
Gross Weight in kg (lbs.)	59.0 (130.1)	96.0 (211.6)



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2008-10

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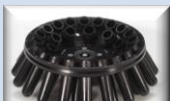
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Angle Rotors: (for performance in respective centrifuges see rotor data sheet)

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 7
21 14 150	TF 24.2		24 x 1.5/2.2 ml	Hermetically sealing lid	see page 7
21 14 100	TF 30.2		30 x 1.5/2.2 ml	Hermetically sealing lid	see page 7
21 14 251	TF 12.10		12 x 10 ml	Hermetically sealing lid	see page 7
21 14 450	TF 10.15 F		10 x 15 ml Falcon	Hermetically sealing lid	---
21 14 300	TF 20.15		20 x 15 ml	20 carriers for tubes with Ø 17 mm and max length of 120 mm	see page 7
21 14 350	TF 30.15		30 x 15 ml	30 carriers for tubes with Ø 17 mm and max length of 120 mm	see page 7
21 14 400	TF 6.50 F		6 x 50 ml Falcon	Hermetically sealing lid	---
21 14 500	TF 8.50		8 x 50 ml	Hermetically sealing lid	see page 8
21 14 650	TF 6.94		6 x 94 ml	Hermetically sealing lid	see page 8

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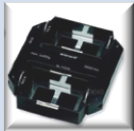


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Swing-out Rotors: (for performance in respective centrifuges see rotor data sheet)

Cat. No.	Rotor Type	Image	Max. Capacity	Included Extras	Adapters
21 14 550	TS 2.6		2-6 Microtiter Plates	2 carriers for microtiter plates	---
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 7
21 14 600	TS 4.200		4 x 200 ml	4 buckets 200 ml, 4 sealing screw caps	see page 9



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Rotor Data Sheet:

Rotor Type	r _{max} (cm)	Weight (kg)	Angle	UniGen® M		UniGen® MR		k-Factor
				Max. Speed (rpm)	Max. g-Force (x g)	Max. Speed (rpm)	Max. g-Force (x g)	
TF 12.10	8.3	2.96	35°	16,000	23,755	18,000	30,065	478
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°	15,000	20,627	18,000	29,703	371
TF 30.2	10.0	2.58	45°	13,000	18,894	15,000	25,155	379
TF 6.94	10.6	6.92	30°	8,500	8,562	15,000	26,664	638
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 8.50	9.6	4.68	25°	10,000	10,733	14,000	21,036	626
TF 10.15 F	9.3	5.11	25°	10,000	10,397	14,000	20,379	1122
TF 6.50 F	9.3	5.35	25°	10,000	10,397	14,000	20,379	1460
TF 24 MH	9.0			12,000	14,489	12,000	14,489	3148
TS 4.200	14.6	1.97	--	4,300	3,018	5,000	4,081	11258
TF 20.15	13.9	1.28	33°	4,000	2,486	4,000	2,486	5207
TF 30.15	13.9	1.20	33°	4,000	2,486	4,000	2,486	8096
TS 2.6	10.3	1.67	--	3,000	1,036	3,000	1,036	27301



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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.	Tubes	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 20 50	1.5 ml PP with cap (conical, Eppendorf)	∅ 11 x 40 mm	20,000	36,000	1,000

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

Accessories for rotor TF 12.10:

Cat. No.	Tubes	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 24 01	10 ml PC-AOR with cap	∅ 16 x 80 mm	24,000	57,960	10
25 24 11	10 ml PPCO(PA)-AOR with cap	∅ 16 x 80 mm	24,000	57,960	10
25 24 41	10 ml PE-AOR with cap	∅ 16 x 80 mm	18,000	32,600	10
25 24 51	10 ml PF-AOR with cap	∅ 16 x 80 mm	20,000	40,250	10



Accessories for rotor TF 20.15 and TF 30.15:

Cat. No.	Tubes	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 12 80	15 ml Duran glass, round bottom	∅ 17 x 98 mm	5,000	3,000	10

In these rotors you can also use 9-10 ml or 15 ml Monovettes or 15 ml Falcon Tubes.

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Accessories for rotor TF 8.50:

Cat. No.	Tubes	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 32 01	50 ml PC-AOR with cap	Ø 29 x 103 mm	24,000	69,549	10
25 32 11	50 ml PPCO(PA)-AOR with cap	Ø 29 x 103 mm	24,000	69,549	10
25 32 15	50 ml PE-AOR with cap	Ø 29 x 103 mm	12,000	17,387	10
25 32 21	50 ml PF-AOR with cap	Ø 29 x 103 mm	18,000	39,121	1
25 31 00	50 ml PC-RB/FL	Ø 29 x 103 mm	24,000	69,549	10
25 31 05	50 ml PC-RB/FL with loop cap	Ø 29 x 103 mm	24,000	69,549	10
25 31 30	50 ml PE-RB/FL	Ø 29 x 103 mm	20,000	48,298	10
25 31 45	50 ml PPCO(PA)-RB/FL w. loop cap	Ø 29 x 103 mm	24,000	69,549	10
25 31 51	50 ml PF-RB/FL	Ø 29 x 103 mm	20,000	48,298	1
25 31 60	50 ml PPCO(PA)-RB/FL	Ø 29 x 103 mm	24,000	69,549	10

Cat. No.	Adapters	For Tubes	Sizes (mm)	No. of places	For Tubes Cat. No.	Pieces per pack
25 50 00	Microliter tubes	1 ml	Ø 7 x 50	4	25 20 00 (PS)	4
25 50 10	Microliter tubes with lid	1.5 ml	Ø 11 x 40	2	25 20 50 (PP Eppendorf)	4
25 50 11	Centrifuge tubes	4.5-5 ml	Ø 12 x 75	2	25 22 30 (PP), 25 22 00 (PS)	4
25 50 30	Tubes with screw cover (AOR)	10 ml	Ø 16 x 80	1	25 24 01 (PC), 25 24 11 (PPCO), 25 24 41 (PE), 25 24 51 (PF)	4
25 50 50	Centrifuge tubes	16 ml	Ø 18 x 100	1	25 27 00 (PC), 25 27 20 (PPCO), 25 27 40 (PE), 25 27 51 (PF)	4
25 50 61	Tubes with screw cover (AOR)	30 ml	Ø 25 x 92	1	25 29 51 (PC), 25 29 61 (PPCO), 25 29 65 (PE), 25 29 71 (PF)	4
25 55 00	Glass tubes (conical bottom)	1 ml	Ø 8 x 63	2	25 10 00 (D)	4
25 55 10	Glass tubes	3 ml	Ø 10 x 75	2	25 10 10 (D)	4
25 55 30	Glass tubes	10 ml	Ø 13 x 100	1	25 10 40 (D)	4
25 55 40	Glass tubes (conical bottom)	10 ml	Ø 18 x 102	1	25 10 60 (D)	4
25 55 50	Glass tubes	12 ml	Ø 18 x 102	1	25 11 00 (B)	4
25 55 60	Glass tubes	30 ml	Ø 24 x 105	1	25 11 10 (B), 25 11 41 (HS)	4
25 58 00	(Bottom pad) glass tubes	45 ml	Ø 28 x 102	1	25 12 60 (B)	10

For tubes fitting these adapters please refer to our catalog "Centrifuge Labware".



Accessories for rotor TF 6.94:


Cat. No.	Tubes	Size	Tested up to ... rpm	Tested up to ... x g	Pieces per pack
25 32 41	80 ml PC-AOR with cap	Ø 38 x 105 mm	20,000	50,086	10
25 32 45	80 ml PPCO(PA)-AOR with cap	Ø 38 x 105 mm	20,000	50,086	10
25 32 47	80 ml PE-AOR with cap	Ø 38 x 105 mm	12,000	18,031	10
25 32 49	80 ml PF-AOR with cap	Ø 38 x 105 mm	15,000	28,174	1
25 32 50	94 ml PP-RB	Ø 38 x 106 mm	6,000	5,635	10

In this rotor you can also use 94 ml ultra-centrifuge tubes. (Please refer to our catalog "Centrifuge Labware".)

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Accessories for rotor TS 4.200:

Cat. No.	Replacement Buckets and Screw Covers	Pieces per pack
21 14 601	Set of buckets with thread for 200 ml bottles, without screw cover	4
21 14 602	Sealing screw cover for bucket 200 ml	1

Cat. No.	Bottles	Material	Form	Extras	Pieces per pack
23 33 71	200 ml	PC	flat bottom		6
23 33 73	200 ml	PP	flat bottom		6
23 33 75	200 ml	PC	conical bottom*		6
23 33 77	200 ml	PPCO (PA)	conical bottom*		6
25 33 71	200 ml	PC	flat bottom	incl. sealing screw cover	6
25 33 73	200 ml	PP	flat bottom	incl. sealing screw cover	6
25 33 75	200 ml	PC	conical bottom*	incl. sealing screw cover	6
25 33 77	200 ml	PPCO (PA)	conical bottom*	incl. sealing screw cover	6
24 46 55	Sealing screw cover for 200 ml bottles				6
25 58 53	O-Ring for sealing screw cover for 200 ml bottles				3

* For tubes with conical bottom a bottom pad (Cat. No. 21 14 610) is required.

Cat. No.	Adapters	For Tubes	Sizes (mm)	No. of places	For Tubes Herolab Cat. No.
21 14 608	Basic adapter for bores with customized diameters (up to 50 mm) – ask for details				
21 14 611	Microtiter tubes	1.5-2.2 ml	up to Ø 11 mm	12	25 20 50 (PP Eppendorf)
21 14 619	Centrifuge tubes	5 ml	12 x 75	12	25 10 20 (B), 25 22 00 (PS), 25 22 30 (PP)
21 14 634	Vacutainers	5-7 ml	13.5/17.5 x 65-90	7	----
21 14 613	Centrifuge tubes	7 ml	12 x 100	12	----
21 14 616	Centrifuge tubes	13,5 ml	16 x 76	6	25 24 01 (PC), 25 24 11 (PPCO), 25 24 41 (PE), 25 24 51 (PF) 25 24 70 (PP)
21 14 625	Monovettes or Tubes with cover	9-10 ml 15 ml	17/20 x 90-110	4	----
21 14 628	Culture tubes **	15 ml	Falcon tubes **	3	----
21 14 622	Centrifuge tubes	13-17 ml	16 x 102 17 x 98	7	25 26 20 (PA thin wall) 25 26 40 (PC thick w.) 25 26 10 (13 ml PP), 25 12 80 (15 ml D) 25 11 10 (B), 25 11 41 (HS),
21 14 631	Centrifuge tubes or Tubes with screw cover (AOR)	30 ml	24 x 105 25 x 92	2	25 29 51 (PC), 25 29 61 (PPCO), 25 29 65 (PE), 25 29 71 (PF)
21 14 637	Culture tubes	50 ml	Falcon tubes	1	----
21 14 638	Centrifuge tubes or Tubes with screw cover (AOR)	50 ml	29 x 103	1	25 31 00/05 (PC), 28 31 30 (PE) 25 31 51 (PF), 25 31 60/45 (PPCO) 25 32 01 (PC), 25 32 11 (PPCO), 25 32 15 (PE), 25 31 21 (PF)
21 14 640	Centrifuge tubes	50 ml	34 x 100	1	----
21 14 643	Centrifuge tubes	100 ml	45 x 100	1	25 33 20 (PC), 25 33 30 (PP)
21 14 641	Centrifuge tubes	100/120 ml	40 x 115	1	25 33 00 (100 ml PC), 25 33 10 (120 ml PP)
21 14 610	Bottom pad for Conical bottles **	200 ml		1	25 33 75 (PC), 25 33 77 (PPCO)

** Do not use the screw cap of the rotor bucket.

For tubes fitting these adapters please refer to our catalog "Centrifuge Labware".

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